Green Climate Fund SAP020:

Climate Resilient Food Security for Farming Households Across the Federated States of Micronesia (FSM)



Baseline Assessment: January 30, 2024

GREEN CLIMATE FUND

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Recommended Citation:
2024. Rutgers, The State University of New Jersey. Baseline Assessment in Support of Climate-resilient Food Security for Farming Households across the Federated States of Micronesia. Technical Report to the Federated States of Micronesia, Micronesia Conservation Trust and the Green Climate Fund. 481 pages

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The President
Palikir, Pohnpei
Federated States of Micronesia

FOREWORD

The Federated States of Micronesia (FSM), with its unique and diverse terrestrial and marine ecosystems, stands at the forefront of the battle against climate change. The nation is already grappling with severe climate consequences such as sea-level rise, ocean acidification, and increasingly frequent natural disasters. These changes are profoundly impacting a large portion of our population who practice traditional agriculture and subsistence food production.

The "Climate-resilient food security for farming households across the Federated States of Micronesia" project, funded by the Green Climate Fund (GCF), represents a significant stride in addressing this urgent issue. Launched in 2021 by our national office of Resources and Development and administered through the Micronesia Conservation Trust, this initiative aims to develop comprehensive, integrated strategies to support FSM's subsistence farming families threatened by climate change.

Central to this project is the GCF Baseline Assessment, meticulously crafted and conducted to understand the climate challenges faced by FSM's farming households as well as our farmers' food production goals and expressed needs. This assessment, led by Rutgers University in collaboration with state governments, local NGOs and community leaders, surveyed over 600 farming families and food producers in Chuuk, Kosrae, Pohnpei, and Yap. Through extensive data collection, including interviews and focus group discussions, this baseline report provides a detailed assessment of our farmers' reported climate challenges and food production aspirations.

The findings from this survey underscore the urgency of climate-smart interventions to sustain and improve FSM's food production including terrestrial and aquatic foods as well as livestock. As reported by our farmers and highlighted in the report, climate change impacts such as extreme heat, heavy rains, flooding, and drought are significantly affecting our crops and livelihoods. Additionally, issues like pests, diseases, and environmental stressors further complicate our food security landscape.

This report conveys our farmers' needs and their requests for information, new tools and farming technologies including improved climate resilient crop varieties. There is a strong desire among our people to produce and consume more locally sourced and nutritious foods and substitute imported foods with local food options if affordable and available. These findings emphasize our potential to strengthen local supply chains and enhance our food production capabilities while protecting our environment.

By prioritizing actions identified by our farming communities, we can enhance food security, reduce dependency on imports, and improve the overall well-being of our people. The findings from this report will hopefully be instrumental in guiding the next phases of this project, ensuring that our efforts are effectively aligned with the needs and aspirations of our farming families.

I extend my gratitude to all those who contributed to this essential work especially our farming families most threatened by climate change. Together, we can develop a sustainable, food-secure and resilient FSM ensuring the health, livelihoods and environmental well-being of our present and future generations.

Wesley W. Simina
President
Federated States of Micronesia

Acknowledgements

This baseline food security document is a result of a joint effort carried out in consultations between the State of Chuuk, State of Kosrae, State of Pohnpei, and State of Yap, with the national government of the Federated States of Micronesia and Rutgers, the State University of New Jersey, USA. Special thanks is extended to the warm hospitality and fruitful discussions with His Excellency President David Panuelo, First Lady Trish Edwin, and FSM Finance Secretary Eugene Amor. Secretary of Resources and Development Elina Akinaga and her staff, Secretary of Environment and Climate Change Andrew Yatilman, former FSM President Manny Mori. We thank the staff members in the FSM departments of Statistics, Health, Trade, Aquaculture, Finance and Marine Resources and Transportation for sharing data.

Chuuk

Our sincere appreciation is extended to the Chuuk State Government including the Department of Agriculture and the Disaster Coordinating Office, Justin Fritz, Director of DCO, Director Tos Nakayama, and to Fredrick Andrew, DOA; Harmen Mailo, DOA; Tim Mondale, DOA; Nely Mori, CWC; Mary Rose Nakayama, CWC; Sally Poll, CWC; Christine Grace Robert, CWC; Dehelalynn Robert, CWC; Saramita Salle, CWC; Grace P. Serious, CWC; Shinobu Courtney Stinnett-Benito, CWC; Petricia Tesime, DCO (Disaster Coordinating Office).

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Kosrae

Our sincere appreciation is extended to Governor Carson Sigrah; Lt. Governor Arthy Nena and the Kosrae State Legislators for their gracious hospitality to the Rutgers and MCT teams during visits to Kosrae and their support via the ODA and the KCSO. Special thanks to Director Gerson Jackson, DREA, Ms. Heidi Floyd, ODA Administrator, Ms. Seno Danny, ODA Assistant, and to Bruno Ned, Administrator DFMR for their support, guidance and logistical assistance. We thank Freddy Nena, Jacob Talley, Zackylin George, Mayor Caston Segal, Mayor Ruben Charley, Mayor Presley Abraham, Mayor Jackson Albert and Robson Henry, KCSO Board Chairman, each of whom helped make this work possible and enriched it by their support.

We also acknowledge the leadership of the Kosrae State Government, the Kosrae State legislators with whom we meet, Office of Overseas Development Assistance, and the Department of Resources & Economic Affairs. We also thank Robert and Nora Sigrah of Finanpes Farms on the Island of Kosrae, and Martin and Delphia Selch, Kosrae Aquaculture Center.

Kosrae Enumerators and Team: Nicholas Abraham, Andy George, Robert Richard George, Rollinson Jackson, Senolyn Joe, Mixon Jonas, Stacey Kilafwasru, Maiyalisa N. Mike, Sepe A. Obet, Moro Lenton Palik, Sylvia Salik, Masayuki Skilling, Trenton Skilling, Reed Tilfas

Pohnpei

We thank Pohnpei State Government, and in particular the Honorable Governor Reed Oliver and his Cabinet, and the Department of Resources and Development led by Hubert K. Yamada, Director of Resources and Development. Many other people have contributed information and ideas that have been incorporated into the preparation of this report. Special thanks to Senator Jayson Walter, Chairman of Resources and Development Committee, the Honorable Marvin Yamaguchi, Speaker of Pohnpei Legislature, Vice Speaker Honorable McGarry Miguel and Senator Ricky Carl, Chairman of the Climate Change and Environment Committee. We appreciated the discussions with Mr. Saimon Mix, Mrs. Emihner Johnson (Island Food Community) and Dr. Manoj Nair (College of Micronesia Land Grant), Dr. Singeru Singeo, Executive Director/ Director, Research/Extension COM, Timothy James Mamangon, COM Entrepreneurship program, Mr Emerald from VITAL Energy Coconut Processing Plant.

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Yap

We thank and express our sincere appreciation to Yap State Government, and in particular the Honorable Governor T.H. Jesse Salalu; and discussions with Yap State Director of Civic Affairs Sebastian Tamagken, special thanks to Arlynne Chugen, Yap State Director of Resources & Development for her gracious support. We give special thanks to the Council of Pilung, Traditional Council of Yap Chiefs, and the Council of Tamol, and Traditional Council of Yap Neighboring Island Chiefs who provided their gracious counsel. In particular we thank Yap State Chief of Agriculture Tamdad Sulog who provided significant advice and counsel as the baseline survey questions were being designed. We thank the Yap Women's Association; Yap Fishing Authority; and to each of the community groups and businesses participating in survey; and to each of the individual community members participating in survey and the municipalities of Gilman, Kanifay, Dalipebinaw, Rull, Weloy, Fanif, Tamil, Gagil, Maap, Rumung, Neighboring Island Communities residing on Yap Proper. Special thanks to Sylvia Gurepin, Yap Women's Association; and Paul Ayin, Yap Fishing Authority.

Yap Enumerators and Team: Joseph Rikin Choay, Jesse Foruw, Stephenia E. T. Gilsowuth, Barbara Gorfich, Josephine Libian, Magmay Magmay, Jordan Paam, Linson Sautaiyal, Janice R. Tamangided, Mercedes Tiningmow, Bryan Dabugsiy Yow, Constantine Yowbalaw with Yap Administrative Support and Data Entry Team: Yap Catholic High School Michael Wiencek, Principal; Brian Southwick, Director of College Counseling; Cyril Joseph Moofel, Administrative Assistant, Jalani Gootinmutnguy, Faculty, Teresita G. Laarwon, Faculty, Demetria Mtag, Faculty, Saralyn Wuyoch, Faculty. We thank the Yap Catholic High School for their assistance in administrative support and data entry, including: Michael Wiencek, Principal; Brian Southwick, Director of College Counseling; Cyril Joseph Moofel, Administrative Assistant, Jalani Gootinmutnguy, Faculty, Teresita G. Laarwon, Faculty, Demetria Mtag, Faculty, Saralyn Wuyoch, Faculty.

Rutgers, The State University of New Jersey

We thank Juliana De Oliveira for her assistance in graphics and formatting data; Anne McPeak for creating the maps of the study areas. We also thank the New Jersey Agricultural Experiment Station, the Rutgers Center for Agricultural Food Ecosystems, and Departments of Plant Biology and Marine and Coastal Sciences for partial support. We thank Rutgers Global for providing a travel grant to our research team for travel to FSM.

US Embassy, Federated States of Micronesia and USDA

We thank the USAID Country Coordinator Roger Garner, US Department of Interior representative Cheryl Burkindine and US State Department Economic/Consular Officer Frank Talluto for their counsel and fruitful discussions. We also thank Amy Koch, FPAC-NRCS, USDA, Hawaii for assisting us with accessing soil maps of the FSM.

2023. Simon, J.E., D.K. Seidel, R. Govindasamy, O. Schofield, M. Balick, E. Merchant, S. Arumugan, M. Kostka, H. K. Yamada, E. Ioanis, E. Joseph, F. Sohl Obispo, A. George, E. Gomes, E. Schoolman, H. Floyd, M.R. Nakayama, S. Courtney Stinnett-Benito, G. Poll-Serious, T. Mondale, C. Yowbalaw, M. Wiencek, W. Mudong, M. Tiningmow, N. Khanna, L. Brindisi, J. Shope, M. Seidel, M. Zorde, D. Hoffman, M. De Luca. **Baseline Assessment in Support of Climate Resilient Food Security for Farming Households across the Federated States of Micronesia.** Technical Report submitted by Rutgers, The State University of New Jersey. to the Micronesia Conservation Trust, Federated States of Micronesia and the Green Climate Fund. January 30, 2024. 481 pages

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Executive Summary

The Federated States of Micronesia (FSM), home to richly diverse terrestrial and ocean ecosystems, is on the front line of climate change, and already experiencing profound impacts of sea-level rise, ocean acidification, and more frequent and severe natural disasters. These changes have significant impacts on the nation's agriculture and food systems. The people of Micronesia rely heavily on subsistence farming for their food and livelihoods. While dependent on imported foods, the country's isolation and limited transportation infrastructure make food imports expensive and difficult. Disruptions to local food production and to transportation (sea/air) have severe consequences on the country's food security. Inadequate food intake and malnutrition can lead to a range of health problems, particularly among vulnerable populations including children and pregnant women. Climate change can exacerbate these issues by reducing food availability and quality.

Therefore, studying the impact of climate change on food security in the Federal States of Micronesia is crucial for understanding the potential risks and developing risk mitigation strategies. This can help to ensure the country's food security and the well-being of its people, especially those who are most vulnerable to the impacts of climate change.

In an effort to address this urgent issue, the Green Climate Fund (GCF) project titled “Climate-resilient food security for farming households across the Federated States of Micronesia (FSM)” was awarded to the FSM national government through the Micronesia Conservation Trust in 2021. This GCF initiative seeks to develop holistic, integrated, and adaptive strategies intended to enhance food security, strengthen livelihoods, and increase the resilience of all FSM communities to future risks from a rapidly changing climate. Recognizing that the first step to develop effective alternatives to food security are understanding the conditions, the problems, and goals of the communities, a GCF Baseline Survey of climate resiliency among FSM’s farming households was prepared and implemented to assess the important food security risks related with a changing climate in the FSM.

More than 600 farming families and local food producers across FSM were surveyed for the baseline assessment for this project. This assessment was conducted by Rutgers University in collaboration with each of the four state governments and local NGOs, by way of interviews with more than 150 farming families in each state of Chuuk, Kosrae, Pohnpei and Yap. Additional data was captured by way of focus group discussions with women’s associations, agricultural/farmers’ associations and fishers’ associations, along with key players involved in commercial food production analysis and report dissemination, as described in detail below. The core criteria for selection of the communities from which farming families were interviewed was done in consultation with the State governments, local NGOs and MCT to ensure (i) geospatial distribution across each of the states to ensure representation across townships/districts, (ii) inclusion of communities living on the coastal areas, (iii) inclusion of communities that had been impacted by prior environmental/weather/storms, and (iv) inclusion of communities that participated in prior national surveys as a result of their vulnerability. Essential to the mission of this GCF food security baseline survey is giving voice to the nation's subsistence farmers and aspiring commercial farmers about their needs, goals and market challenges for future agriculture, livestock, poultry, fish and aquaculture production within a changing climate.

The GCF Baseline surveys were detailed and extensive, using questionnaires designed in participation with local partners in each of the four states, and prepared and implemented to assess the key food security risks associated with climate change that FSM family farmers are facing. These surveys were designed to provide valuable quantitative and qualitative data that can be used for Climate-Smart Agriculture (CSA) development tailored to the specific needs of the diverse communities across each of FSM’s four independent states. Climate-Smart Agriculture takes a systems approach to increasing access to locally and sustainably grown nutritious food while building a supply chain that integrates with the local communities to make them economically, socially, and environmentally more sustainable in a changing climate. For the survey, a trained enumerator conducted the interview at the home of interviewee who was identified as a family farmer. All enumerators were required to complete CITI certification and received training in conducting this survey.

The current report contains an introduction to contextualize the work performed as part of an effort to promote food resiliency in the face of climate change, a detailed methodology section, a description of the main results in each of the four states with cross-comparison among Yap, Pohnpei, Chuuk and Kosrae and a conclusion highlighting the findings, possibilities for strategic interventions, and recommended paths forward. In addition to the main structure of the document, the Appendix section contains the data collection tools including the three survey instruments and an extensive dataset with the survey results by each state and in a cross-comparison as well as interview transcripts. The Appendix section also includes a list of key informants for the completion of the surveys and a list of references and the body of available literature and published reports about the FSM and climate change that was directly or indirectly used to inform this work.

Analyzing the main results obtained by the surveys, differences as well as similarities among the states were observed related to their food systems. Survey results showed that the majority of households across the FSM are subsistence farmers engaged in growing/collecting local food and medicinal crops, raising livestock, poultry and/or fishing. Most recognize that climate change is impacting their livelihoods and communities and report significant negative impacts on their local environment and their food production. Many households have begun to undertake changes to their farming (terrestrial and marine based) because of climate change, yet others have not because they don't know what they can do. Despite important distinctions between states, there are thematic issues that are common across all states in the FSM. For example, in each of the four states, the main impacts associated with crop loss are extreme heat, heavy rains, flooding, and drought, which shows the impact that climate exerts on food systems. Additional environmental issues that impact each of the states but were observed to be of greater or lesser significance among the states included concerns about increases in pests, diseases, invasive weeds, coral bleaching, coastal flooding, saltwater inundation and issues facing water availability and quality. As respondents in each state are impacted by each of these biotic and abiotic stressors, there was a call for improved genetic varieties to be available, and a range of environmental remediations needed to mitigate climate change.

An important commonality across the FSM is that in each of the four states, most respondents want to consume more locally sourced seafood, meat and meat products, vegetables, and fruits if they were more readily available and affordable. Many perceive local foods to be healthier and more nutritious. Most respondents in each of the four states are interested in replacing imported rice with local starch crops such as taro and breadfruit and replacing imported milk products with coconut milk products for cooking, again if these products were more readily available and affordable. Such results show the need and potential to strengthen the supply chains and the local commercial sector to improve local food production and processing, expand meeting internal market demands and consider expansion into regional markets that could generate jobs locally while improving living conditions and food security. Strategic interventions with commercial or household farmers could include agriculture and agribusiness training, introduction of genetic materials resistant to stresses caused by climate change, infrastructure modification (drainage, irrigation, greenhouses, etc.), post-harvest handling, building storage capacity, development of processing of food products and development of aggregation/consolidation centers, among many others. Suggested paths forward for the FSM include value addition, diversification of crops, aquaculture, organic and sustainable agriculture, technology adoption, public-private partnerships, development of export markets, agroforestry, culturally based ecotourism, and ecological restoration of coral reefs and mangrove forests. Recognizing that there are many common overlapping actions for paths forward for each state, the report provides suggestions that could be considered to improve household food security and strengthen community and household resilience to climate change and significantly reduce the importation of fresh and processed products that can be grown and sold in each state. These insights, that also consider and respect the cultural aspects of each state, could be used to build a foundation upon which the State and National government can prioritize those areas that the households have identified as their suggested needs to strengthen their long-term resiliency for a safer and sustainable future in the face of climate change.

Introduction:

Climate Resilient Food Security for Farming Households across the Federated States of Micronesia (FSM) Baseline Assessment



Finanpes Farms grows food for Kosrae markets (top left). Pohnpei clam farmers (top right). Yap Fishing Authority sells locally caught wild fish (bottom left). Pohnpei farmer prepares took cook breadfruit in earth oven 'uhmw' (bottom right).

Introduction: GCF Baseline Assessment for Climate Resiliency Among Farming Households

The Federated States of Micronesia (FSM) is vulnerable to the projected impacts of a rapidly changing global climate. The nation is already experiencing a higher incidence of flooding from sea level rise and changes in weather patterns. Such changes significantly impact local food production and access to potable water. Rising average temperature has also significantly impacted important marine and agricultural species, negatively affecting yield and production. Projections on climate change indicate that impacts in the Pacific will directly affect FSM communities, burdening their health, incomes and subsistence. For these reasons, it is vital to assess the key risks and factors associated with a changing climate and its impact on the FSM, and to gather baseline data for staple crops in the FSM (e.g., taro, yam, breadfruit, banana and coconut); marine species that possess the potential for local aquaculture development and other foods; modeling climate change impacts such as salinization, increasing temperature, saltwater intrusion/inundation, etc., on future crop yields.

The people of FSM require action to ensure their food security in the coming decades through crop loss, loss of arable land, catastrophic weather patterns, price/supply shocks, and forced migration of outlying communities. Since 2011, the Federated States of Micronesia (FSM)'s long-term development goals have included enhancing the resilience of the nation's agriculture sector to strengthen food security for the people of FSM (Agriculture Policy 2012-2016).

In 2021, the Green Climate Fund (GCF) project titled "Climate-resilient food security for farming households across the Federated States of Micronesia (FSM)" was awarded to the FSM national government through the Micronesia Conservation Trust. This project is the first comprehensive national effort to focus on increasing the resilience of FSM's most vulnerable populations, especially subsistence farming families, with the goal of strengthening food security for all FSM communities impacted by climate change. Thus, this GCF initiative seeks to develop holistic, integrated and adaptive strategies intended to enhance food security, strengthen livelihoods, and increase the resilience of all FSM communities to future risks from a rapidly changing climate. Planned measures include introducing sustainable agricultural practices and developing a climate-resilient food system across all four FSM states.

Achieving national food security, safety and nutritional health is one of the priority goals outlined in the FSM National Agriculture Policy (2012-2016) and FSM's Strategic Development Plan 2004-2023. These reports identified agriculture as one of the priority economic sectors to prepare the nation for long- term food security. In addition, FSM's 2016 Integrated Agriculture Census concluded that approximately 40% of the land in the nation is used for agricultural purposes (10% Kosrae, 40% Pohnpei, 70% Chuuk, 47% Yap) and over 90% of FSM households have access to land that can be used for agriculture. Much of the land is used for agroforestry and tree crops.

This Green Climate Fund Food Security Project specifically includes supporting traditional farming systems, increasing volumes of saleable local products for the market, and environmentally sound and sustainable production. This project seeks to strengthen FSM's local food system across the nation where 63% of households conduct some form of agriculture and forestry as identified in the FSM 2013/2014 Household Income and Employment Survey Agriculture Factsheet. The project's targeted outcomes align with FSM's 2015 Second National Communication on climate change by supporting three key adaptation strategies specifically: 1) Conserving and promoting island and oceanic ecosystem services; 2) Preserving and promoting traditional culture; 3) Improving food and water security with a focus on domestic production that supports local economies. The Second National Communication built on the National Climate Change Strategy (2009), which established national goals to develop and implement appropriate strategies to improve food production and new opportunities for communities and decision makers to access technical skills and knowledge to respond to climate change impacts.

FSM's food insecurity includes a dependence on imported, highly processed, nutrient deficient foods. Across the four States, food expenditures make up significant portions of household spending. The *Second National Communication to the UNFCCC highlighted that imported food constitutes up to 43% of FSM households' diets*. Dependence on imported foods has had a negative impact on local food production. Increased consumption of imported food and beverages rich in sugars, sweeteners, carbohydrates and highly processed foods with limited nutritional value, drain and deplete the local economy while increasing diet-related diseases. As a result of this dependency on highly processed imported foods, there is a reduced consumption of local, nutritious culturally preferred foods that were once endemic and popular across the FSM before WWII. This means that there is a higher cost to produce and purchase local foods, making competing with food imports harder. Tragically, increasing consumption of imported processed foods is associated with now epidemic levels of non-communicable diseases (NCDs) such as high blood pressure, heart disease, diabetes, and several forms of cancer, obesity, anemia, vitamin A and iron deficiencies, low birthweight and high infant mortality. All this has resulted in higher health care costs, shorter lifespans and reduced quality of life for its citizens.

How A Changing Climate Threatens FSM's Food Security:

The most severe challenge to the food system in FSM is the increase in frequency and impact of extreme weather events which reduce the amount of arable land suitable for farming as well as reduce crop yields. FSM's islands are particularly vulnerable because the anticipated sea level rise will threaten fertile coastal plains as saltwater intrudes into previously fertile land.



These climate change impacts will make it increasingly difficult for FSM to produce enough food to meet its populations' needs.

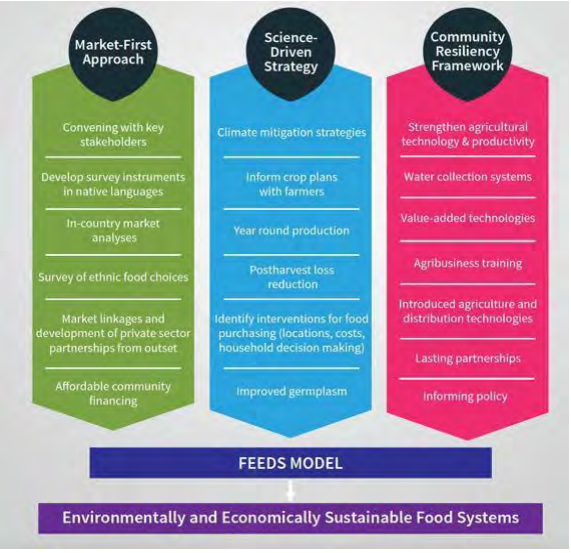
Close to 100% of the nearly 35 inhabited outer islands in FSM lie within the 2-meter zone of potential sea level rise and within a 5- meter zone of storm surge. Due to saltwater inundation, many of these outer island communities have had to abandon their taro patches, a key food security crop (Keim, 2010, FSM, 2015). It is anticipated that the high volcanic islands of the FSM will need to prepare for population increase in the form of climate change refugees from low-lying islands, while at the same time, enhancing and adapting their own food production systems. Aside from direct crop damage from inundation and erosion, increasing soil salinity is the greatest threat to crop productivity on the atolls of the FSM. Saltwater intrusion from coastal erosion, sea level rise, and extreme events are critical risks for food security and agricultural production. The 2016 Integrated Agriculture Census highlighted that at least 60% of households with land for agriculture have experienced some loss from weather, diseases, pests, or other reasons with weather damage reported as resulting in ten percent (6,903 acres) or more land parcels with crop losses.

Supporting FSM States' Individual Food System Development Goals:

This GCF Baseline Survey of climate resiliency among FSM's farming households was prepared and implemented to assess the key food security risks associated with a changing climate in the FSM. This assessment will be used to develop Climate-Smart Agriculture (CSA) tailored to the specific needs of the diverse communities across each of FSM's four independent states. One of the primary aims of developing a CSA for the FSM communities will be to increase access to locally and sustainably grown nutritious food while building a supply chain that integrates with the local communities to make them *economically, socially, and environmentally more sustainable in a changing global climate*. This project uses a holistic approach to conduct baseline assessments to understand the perceptions of targeted communities and

regions so that interventions can be developed aligned with national and state goals as well as the aspirations of the vulnerable communities to whom climate resiliency and food security are a daily concern.

This project not only builds upon the many prior reports conducted in the FSM (as cited above and with a complete literature listing presented in the Annex Reference) but in context also is guided by community-based Climate-Smart Agriculture initiatives that include market-first, science-driven solutions. Rutgers' FEEDS model (Food-systems for Empowerment, Economic Development, and Sustainability) has produced transformative changes across many regions and communities in developing countries (Simon et al. 2021). This model engages farmers and consumers directly in formulating the research agenda by combining concepts from food security and food sovereignty discourse in a united and holistic effort to rebuild local economies, regenerate ecosystems, and mitigate climate impact. Furthermore, this model actively engages farmers and consumers in the process of developing and disseminating technological innovation through hands-on demonstrations and storytelling that captures shared experiences, strengthening local community resiliency and improving nutrition outcomes.



This model was used as a pillar when the survey instruments were designed to capture a holistic view of what vulnerable farming communities were facing relative to climate change.

2022-2023 Baseline Survey of FSM Farming Families impacted by Climate Change

More than 600 farming families and local food producers across FSM were surveyed for the baseline assessment for this project. This assessment was conducted by Rutgers University in collaboration with each State government and local NGOs, through interviews with more than 150 farming families in each state of Chuuk, Kosrae, Pohnpei and Yap. Additional data was captured through focus group discussions with women's associations, agricultural/farmers' associations and fishers' associations, and key players involved in commercial food production analysis and report dissemination, as described in detail below. The core criteria for selection of the communities from which farming families were interviewed was done in consultation with the State government, local NGOs and MCT to ensure (i) geospatial distribution across each of the states to ensure representation across each of the townships/districts and (ii) inclusion of communities living on the coastal areas; (iii) inclusion of communities that prior environmental/weather/storms had impacted; (iv) inclusion of communities that participated in prior national surveys as a result of their vulnerability.

Essential to the mission of this GCF food security baseline survey is giving voice to the nation's subsistence farmers and aspiring commercial farmers about their needs, goals and market challenges for future agriculture, livestock, poultry, fish and aquaculture production within a changing climate. *Data from this baseline survey is intended to support each state's plans for initiating and implementing sustainable food system development that is place-based, culturally and socially relevant and meaningful to the people of FSM*. The survey's primary purpose is to document the impact of climate change on local food production systems and the potential for increasing their marketability. Thus, this project seeks to strengthen FSM's local food production in the face of climate change by reducing reliance on imported foods. Sustainable holistic food system development increases local jobs and income opportunities that benefit the nation's economy.

These baseline surveys were designed and implemented considering the critical role of traditional farming and fishing practices. Considering the demographic, economic, and cultural factors, two sets of questionnaires were prepared to survey the targeted family farmers and commercial growers. The structured questionnaire was created to collect data on the production of agricultural products in conjunction with changing climate change in the FSM. The comprehensive voluntary survey was designed in partnership with each State representative and community-based NGOs. A trained enumerator conducted the surveys at the home of interviewees. All enumerators were required to complete CITI certification. Community partners facilitated enumerator training, established enumerator teams and helped conduct the baseline surveys in each state. The leading community partners included the Chuuk Women's Council, the Kosrae Conservation and Safety Organization, the Conservation Society of Pohnpei, and the Yap Catholic High School.

Three Survey Tools were prepared with community-based partners

Household Survey included many sections to cover family farm details; land ownership and use; asset and livestock ownership; agriculture production and preference with reference to climate change; processing and value addition; marketing; labor allocation to key crops; farmer training and extension needs; access to financial capital; constraints in agriculture and household demographics. The survey was administered in local languages by trained members of the local community.

Commercial Survey A survey tool specific to commercial growers was also prepared as commercially produced food needs to be grown, processed, transported, distributed, prepared, consumed, and sometimes discarded. Each of these steps can be both affected by and contribute to climate change.

Focus Groups included meeting with food production special interest groups such as local women's associations, agricultural/farming associations, and fishing associations in each of the four main island States of Yap, Chuuk, Pohnpei and Kosrae.

Rutgers food system researchers train enumerators in Pohnpei (top left) and also support enumerator mock interview training in Kosrae (top right), August 2022. A trained enumerator interviews a family farmer in Pohnpei (bottom left). Chuuk Women's Council enumerator interviews farmer (bottom right), September 2022.






Methods Used to Survey Farming Families in FMS 2022/2023

Baseline Climate-Resilient Food Security Household Surveys were undertaken in the Federated States of Micronesia (FSM) states of Chuuk, Kosrae, Pohnpei, and Yap during 2022-2023. The Baseline Climate-Resilient Food Security Household Survey was designed to provide information on the perceptions of farming households across FSM relative to their food security, current food production, barriers and constraints on production and consumption and trade within a changing climate. For purposes of the baseline survey, a farming family was defined as any FSM household that produced/procured/harvested/raised their own food by agriculture, agroforestry, fishing, aquaculture, poultry, or livestock.

The survey tools (household, commercial, and focus groups) were developed using a participatory process designed by Rutgers University and FSM partners that involved input from all stakeholders (local NGOs, community interest groups, and members of government) to ensure that questions were relevant and reflected the voices and interests of the local communities. In addition, the survey tools were constructed to capture essential data relative to each of FSM's priority sectors. As the surveys were designed to address people's perceptions of food security within a climate change framework, we used both a quantitative and qualitative approach to draw out richer and more detailed responses. The purpose of the surveys was explained to respondents, and prior informed consent was obtained before people participated in the survey. Each household survey, on average, took 1.5 hours to complete, conducted by local enumerators in local languages.

This baseline survey for FSM was designed and implemented with consideration for the critical role of traditional farming and fishing practices. Considering the demographic, economic, and cultural factors, two sets of questionnaires were prepared separately to survey the targeted FSM's family farmers as well as commercial growers. The survey tools were designed in partnership with community-based expert groups in each of the four States. The structured questionnaire was created to collect data on the production of agricultural products in conjunction with changing climate change in the FSM.

Our approach to designing, planning and conducting the baseline surveys ensured that this work both empowered local champions (local NGOs and/or organizations) and reflected the opinions of the subsistence farming families who are most vulnerable and impacted by climate change, and focused on issues such as their food security and livelihoods. The voices of those most impacted can often be overlooked because of the difficulty in taking the time, effort and additional expense to ensure their full participation. Yet, the models of community-led sustainable development and those seeking to understand what subsistence farm families are facing must ensure the inclusion of those community members and leaders most impacted by climate change and that live on the frontline in addition to those in government leading and shaping public policy. Engaging communities is fundamental to successfully create solutions using a holistic approach to long-term sustainable development that involves agriculture, agroforestry, and environmental considerations (Simon et al. 2021). Toward that end, the project invested considerable time, in concert with the State governments, to identify local champions in each of the four States across the FSM with whom we partnered. These initial steps were critical to ensuring a robust baseline study would be designed and implemented.

The comprehensive voluntary survey was designed in partnership with each State representative from each of the four States and community-based NGOs that served as the local champions and implementers. This included the Chuuk Women's Council (CWC) in Chuuk; in Kosrae, the Kosrae Conservation and Safety Organization (KCSO); in Pohnpei, the Conservation Society of Pohnpei; and in Yap, the Catholic High School (CHS). For the survey, a trained enumerator conducted the interview at the home of interviewee who was identified as a family farmer.

To ensure the survey was relevant and culturally appropriate for each of the four States, and yet also employing the same survey instruments allowing cross State comparisons, the project methodology

employed weekly or biweekly calls using zoom and other platforms with our core partners in each State. Extensive time in initial meetings to review each question with local champions allowed for the multiple reiterations and modifications to survey questions. Our local champions, in concert with the State government liaison offices, then worked under difficult times (due to COVID-19 and related close-downs) to identify local enumerators. The continual meetings at the outset allowed for a shared lexicon of language and descriptors to be forged with a shared vision and mission for the survey project. Differences in 'opinions/recommendations' were resolved through discussion and arriving at an agreed upon decision using a consensus approach. This process helped produce a trusting and strong relationship that is essential to the integrity of the data obtained. To ensure continuous communication, the Rutgers team met with each State and local champions sometimes weekly, sometimes biweekly for several months. Using Zoom, WhatsApp, Messenger and Email, an ongoing communication platform was achieved despite time differences in the physical locations of all team members.

Each GCF baseline survey partner invested significant time and effort and every single individual helped to ensure the success of the project. The surveys in each State were co-led by local champions, with the Rutgers University team helping to provide the approach, original drafts of the survey instruments, backup support and training, and ensuring the quality of the data and its analysis. Each of the local champions and partners contributed to revising and modifying survey questions, shared their local expertise and experiences, handled the local logistics and identified the local enumerators. The team then identified the households, the focus groups and the commercial operators who were then invited to participate in the survey. The Rutgers Team came to Kosrae, Pohnpei and Yap and conducted in-person 2-day enumerator training workshops during which each enumerator practiced being in the role of interviewer and later interviewee. Questions and issues arising during this training were then discussed and surveys were then further refined as needed for clarity, succinctness and to minimize words that could have different understandings locally. As Chuck was closed to all visitors due to the COVID-19 pandemic, the 2-day training with the Chuuk champions and enumerators took place online using Zoom. During the times in FSM, the Rutgers Team met with members of the state and national government, researchers, educators, industry, and agricultural leaders as well as subsistence farmers as well as visited commercial and pilot projects focused on local food systems production. The Rutgers team spent eight weeks during 2022/23 in FSM identifying and establishing local survey teams in partnership with local NGOs, training local enumerators and overseeing the baseline survey across all four States.

All data was collected, entered into computers, and quality control checked locally, and questions that arose along each part of the workflow were conveyed to the Rutgers team for response and to the Micronesian Conservation Trust MCT team as well. Once data was ready locally, it was then shared with the Rutgers team for another series of quality control checks, following which the data sets were analyzed. This community-led approach gave voice to more than 600 sustainable family farming households to be heard and which then can be used to forge stronger and longer- term interventions that support their hopes, aspirations and needs for them to become more climate-resilient. The study procedures included responding to an in-person in-depth survey assessing the household's food security, involvement in food production, current practices and constraints, dietary diversity, the household members' perceptions of climate change, and what, if anything, had changed for them and their families over the past decade. Each of these farming households was asked a series of primarily quantitative questions with some open-ended questions purposefully included, to gather information on their perceptions of climate change. The objective was to better understand the households' current situations and reflections on changes over the last decade relative to food production, availability, and consumption, and individual perception and understanding of if and how the weather and the environment have changed. In addition, the survey tools were constructed to capture important data relative to each of FSM's priority sectors.

Structured questionnaires were used as a tool to collect data on food security and agricultural production in conjunction with changing climate in the FSM. All those involved in the survey design and implementation were trained and were required to be certified in the Collaborative Institutional Training Initiative (CITI

program, https://about.citiprogram.org/). Questions were developed with stakeholders (local NGOs, community interest groups, members of government) across the FSM and were pilot-tested with the core partners in each State and then also with the enumerators in each State prior to conducting the actual surveys. These steps were undertaken to ensure each question was clear and there would be a shared understanding of the question given the different cultures and languages across the FSM. Project members developing and leading the surveys were sensitive to ensure that questions were relevant and meaningful to the households and importantly be certain that the results reflected the voices, concerns and interests of the local communities in Chuuk, Kosrae, Pohnpei and Yap.

In addition to a national survey on farming households, the project also undertook a second smaller baseline production survey for commercial food producers and intermediaries regarding climate change. Commercially produced food needs to be grown, processed, transported, distributed, prepared, consumed, and sometimes discarded. Each of these steps can be affected by climate change and contribute to climate change. The primary purpose of these baseline surveys was to document the impact of climate change on food production and profitability and perceptions of changes over the last decade and to identify the greatest concerns as expressed by vulnerable communities. Considering the demographic, economic, and cultural factors, two sets of questionnaires were prepared separately to survey farming households and targeted FSM commercial food producers, in context to what are their major constraints and opportunities.

Additional data was also captured through focus group discussions in each State including women's associations, agricultural/farmers' associations and fishers' associations, along with key players involved in commercial food production analysis and report dissemination. The number of focus groups in each state varied as its purpose was to help triangulate responses heard in the household survey and to again probe to ensure everyone's voices were heard and could then be incorporated into a National report. Importantly, the surveys were anonymous, the prior consent form was signed and then kept separate from the coded survey tool. Prior to data entry, the prior consent forms were physically separated from the completed survey and thus could not be tracked to the individual responder.

Community Based Survey Methods: Giving Voice to Farming Families and Local Food Producers

Local enumerator training emphasized the need to capture the authentic answers and concerns of FSM's farming families and local food producers. As such, the baseline surveys were conducted at the homes or residents of those being interviewed within a survey protocol meant to ensure interviewees were most comfortable with the process.

At the outset of each interview, enumerators read the following statement to the farming household and commercial farming respondents to provide context and describe the purpose of the survey and then requested their approval to be interviewed using a consent form: "*This survey is voluntary and has been created in partnership with the states and community-based NGOs as an opportunity for farming and fishing families to be heard and communicate your needs and goals for future local food production. It is intended to gather data to assess FSM farming households' food production, market challenges and goals for agriculture, livestock, poultry, fish and marine mammals, within a changing climate. Data from this survey will be used to support each state's food system development plans to provide needed resources to you the subsistence farmers and aspiring commercial farmers. Survey results will be made publicly available in each state*".

Each respondent was informed that their responses would be anonymous and that they didn't have to answer any question (for whatever reason), as there was no obligation or expectation to do so. Each enumerator was instructed to respect each respondent's decision to skip any question without probing further. Each enumerator and each respondent received a stipend above that which was considered the norm for local surveys conducted by the state or national government. Each enumerator was prepared to conduct each survey and anticipated it may last from 1.5 hrs. to 2 hrs. Each respondent was verbally informed of the expected length of time. Descriptive statistics, tabulation and charting were used in data analysis to present and summarize data in a clear and concise manner. Descriptive statistics involve measures such as mean, median, mode, variance and standard deviation that help to summarize and describe the central tendency, variability and distribution of a dataset. Tabulation is the process of organizing and presenting data in a table format, which provides a convenient way of summarizing large amounts of data in a concise and easy-to-read manner. Charting involves the use of visual representations such as graphs, charts and diagrams to help interpret and understand the patterns and trends in the data. These tools were used to effectively communicate research findings to both technical and non-technical audiences.



In Yap State, our core partners included the State of Yap with the Yap Catholic High School and Mr. Constantine Yowbalaw as core contact and project implementers. The Yap survey was conducted across 166 farming households from 10 municipalities (Dalipebinaw, Fanif, Gagil, Gilman, Kanifay, Maap, Rull, Rumung[11], Tamil, Weloy) from October 21, 2022, to November 19, 2022. Residents from Yap's inhabited neighboring islands (Outer Islands—Faraulep, Woleai, Falalop, Fadrai, Euripek, Satawal, and Ifalik—and villages of Ruu, Makiy, Daboch, Gargey, Gitam and Madrich) were also surveyed. The Outer Island farming household residents of Yap Proper chose to live on Yap Proper rather than in the Outer Islands for reasons pertaining to employment, education, healthcare, and commerce. Commercial food producers from five districts were interviewed: Gagil, Tamil, Rull, Weloy, and organizations in Colonia town. The study population for farming household surveys had the following gender breakdown: male, 86; female: 77; with 3 not answering the gender question. Given time constraints and the low production level and small size of commercial food producers in Yap, seven focus group interviews were conducted in place of commercial surveys. The respondents represented a variety of income sources and food sources to model the full, diverse population of Yap State.

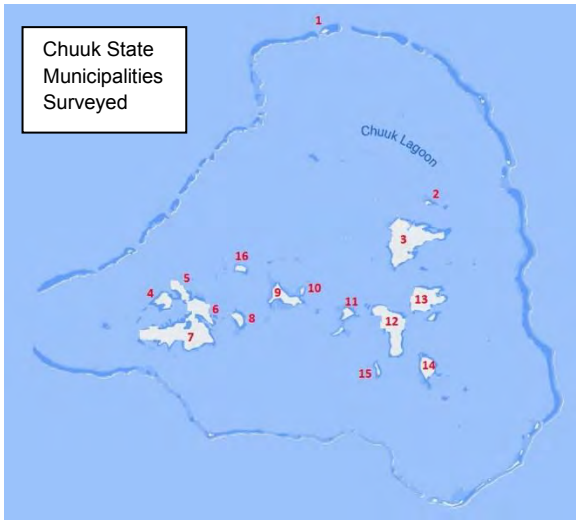




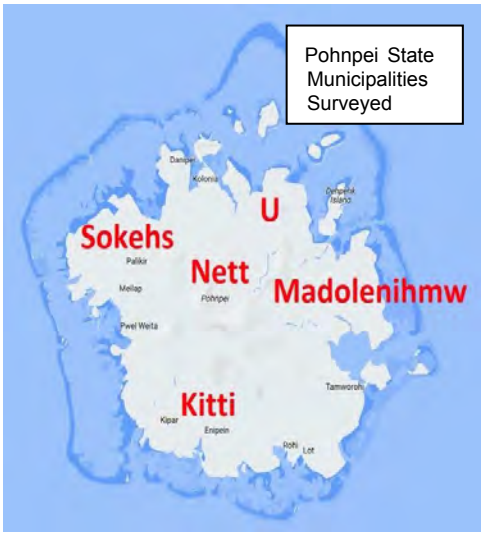
Sea cucumber aquaculture project, Pohnpei State, 2022

[1] The farming households surveyed to represent the municipality of Rumung were not permanent residents on the island of Rumung (can only be accessed by boat); they resided in other municipalities (primarily Maap and Weloy) as their primary residence and would travel to Rumung on certain weekends or holidays

In Chuuk State, our core partners included the State of Chuuk with the Department of Agriculture as the primary contact and the Chuuk Women's Council (CWC) as the lead. The household survey was conducted across 150 farming households on 16 islands within the Chuuk lagoon. In addition, 15 commercial food producers, and 5 focus groups of men, women, or youth groups who fish or farm for a living, were surveyed from November 16, 2022, to February 24, 2023. The study population was isolated to islands within the Chuuk Lagoon as represented in map: (1) Weno; (2) Piis-Panewu; (3) Fonoton; (4) Fefen; (5) Siis; (6) Parem; (7) Tonoas; (8) Uman; (9) Oneisomw; (10) Fanapanges; (11) Udot; (12) Eot; (13) Polle; (14) Toleisomw; (15) Paata; (16) Romanum, and did not include the Mortlocks and the Northwest islands. Population data from the King Tide 2021 Municipalities Initial Damage Assessment (MIDA) Report was used to determine how many household farming family interviews should be conducted on each of the 16 inhabited islands in the Chuuk Lagoon. The main island of Weno is the only community that enumerators could reach by car, with the rest of the islands being only reachable by boat, so travel needed to be arranged strategically to save time and fuel while concurrently prioritizing the safety of the survey team. The mission of the Chuuk Women's Council is to assist women in becoming more productive and self-sufficient through comprehensive programs that include supporting local women farmers.

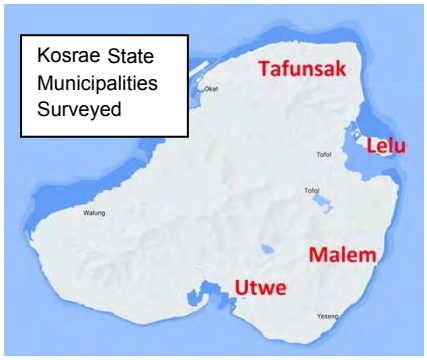


In Pohnpei State, our core partners included the State of Pohnpei with the Department of Resources and Development with Director Hubert K. Yamada as core contact, with assistance from the Department of Agriculture (with Mr. Mr. Engly Ioanis, co-leader) and in concert with the Conservation Society of Pohnpei (CSP) as the core project implementers (Eugene Joseph and Francisca Obispo). Additional initial assistance was provided by the College of Micronesia Cooperative Research & Extension (CRE) of the FSM. In Pohnpei the survey was conducted across 160 farming households from five municipalities (Kitti, Madolenihmw, Nett, Sokehs, U) from September 5, 2022, to September 30, 2022. The survey was conducted with households that farm or fish to supplement their main primary source of livelihood in communities throughout the five municipalities. The interviewees were mostly subsistence farmers who were available when the enumerators were in their communities and volunteered to participate in the survey.



In Kosrae State, our core partners included the State of Kosrae with the Kosrae Conservation and Safety Organization (KCSO) the core project implementers. The survey was conducted across 150 farming households and four commercial food producers from Kosrae's four municipalities (Lelu, Malem, Tafunsak, Utwe) from September 21, 2022, to December 10, 2022. Four focus groups were conducted in Kosrae with the fishers' association, youth association, farmers association, and women's association. The interviewees were pre-selected by the Department of Resources & Economic Affairs of the Kosrae State

government. The questionnaire collected data on dietary diversity and food security for farming households in the context of climate change in Kosrae.



Limits to the Study Design

Post-survey responses from enumerators in the field indicated that some of the participating farming family households found the survey to be longer than expected. While each enumerator was aware that surveys could last up to 1.5 hrs. to 2 hrs., most in retrospect were not used to such extensive surveys. While respondents were also informed as to the length, a theme reported back to the project was that some of the respondents found the surveys to be too long. As such, it is important to recognize that a possible limitation in this study design was that respondents could have provided less robust responses toward the end of the survey. Another limitation was that some respondents found it to be a challenge to provide details of food crops over the last decade, as most do not keep written records, all were from memory recall. This could impact the accuracy and/or completeness of estimating specific numbers or the number of food crops planted and/or harvested. For example. many participants answered "don't know" when asked which months they had experienced a particular crop loss. A few respondents found some of the questions to be unclear. In that case, a participant may have provided a general answer instead of a specific one. A few interviewees from the commercial operators were also reluctant to share what they considered to be sensitive information relative to their details of farming household income, sources of income, number of food crops on their land or planted, quantity of food crops harvested. The project purposefully included several similar questions posed in different ways to confirm if the answers would be similar. However, a few respondents 'felt' some questions were repetitive, causing them to question their earlier responses. Future studies should include an additional sentence as to the range of time that would be required to complete the survey and plan, if needed, for breaks during the interview. Additionally, a reduction of similar questions could be beneficial. While enumerators preferred to hand record responses, the future use of computer tablets may be helpful.

The results show that the data captured was robust, and several common themes and issues emerged across FSM, despite variation by state as to the relative importance of particulars. While conducting such a thorough survey took far longer, it also ensured that the voices of the communities were heard. In contrast to many prior studies, this project chose the more difficult and time-consuming path and included a quantitative and qualitative approach. This resulted in a thorough and detailed survey allowing for a fuller range of opinions, reflections and aspirations of the vulnerable farming families in the FSM to be expressed on issues such as their food security and livelihoods relative to climate change. These insights can then form the foundation upon which the State and National government can prioritize those areas that the households and communities identify to strengthen their long-term resiliency.

Cultivated vegetable production in Kosrae, 2022



Results from Household Food Security, Focus Groups and Climate Resilience Survey

Baseline Indicator (D2 of SAP020) Findings

The baseline values for the baseline indicators are detailed below. Further information as to how each indicator was calculated is presented in Appendix 1. **The number of beneficiaries** of CSA interventions, measured by the households of the people surveyed, has a baseline of 3,953 people, with 2,240 females and 1,713 males. This number exceeds the original target mentioned in the d2 indicator table.

Loss of lives averaged 0.12 per household. This measures the number of household members lost to severe weather and climate-related events over the preceding year. This number is relatively high for a nation and stresses the need for mitigation strategies to tackle climate change issues.

Losses of economic assets caused by climate change or extreme weather in **plants**, **livestock,** and **aquatic foods** were measured over the preceding year and we found them to be $444, $213, and $156 lost per household on average, respectively.

The average **Livelihood Coping Strategies Index (LCSI)** is 5.5, indicating a low "Stress" category. This indicator is used to understand households' medium and longer-term coping capacity in response to lack of food or lack of money to buy food and their ability to overcome challenges in the future. Although LCSI is low, there is room for improvement.

The average **Crop Diversification Index (CDI)** is 6.7, indicating moderate crop diversity. This index measures the number of different foods, food groups (e.g. staples, fruit, medicinals), and traditional crops grown. This index does not indicate the quantity of any particular crop (1 or many such plants) grown but merely the presence of the number of crops.

As this was a baseline survey, the **Harvest from demonstration gardens** is currently 0. This was expected as it's the beginning of a larger GCF project for the FSM.

The farming communities' perception of soil erosion was significant with 41% of those surveyed in Yap, 63% of those surveyed in Chuuk and 66% of those surveyed in Kosrae stating that they have experienced or observed soil erosion. In Pohnpei, a lesser amount of 23% surveyed said they had experienced or observed soil erosion. The mathematical estimation of actual soil erosion was noteworthy. The current **mean Soil Erosion** across the FSM was estimated to be 34.6 tons of soil/hectare/year. Yet, only, on average 13.6% of households are currently using **soil erosion practices**. 37% of farmers who experienced climate change reported using known **Climate Smart Agriculture** methods to adapt.

The average **net crop yield** per household is currently 652 lbs./year. The average **Food Consumption Score (FCS-N)** for the entire FSM is 60, indicating Acceptable Food Consumption; the FCS in male-headed households is 56.62, whereas the FCS in female-headed households is 58.58. FCS measures households' dietary diversity and food frequency, weighted to reflect the nutritional importance of the food. The **Food Expenditure Share (FES)** measures a households' economic vulnerability as the higher the share of a household's consumption expenditures on food – out of the total consumption expenditure – the more vulnerable the households are to food insecurity. Based on this survey, the Food Expenditure Share is **71**% across the FSM *indicating moderate food insecurity across the nation*.

The average **Individual Dietary Diversity Score (IDDS)** is 4.65/9. IDDS assesses the number of (pre-determined) food groups that were eaten by the respondent the previous day or night. It is an indicator of a diet's micronutrient adequacy, an important dimension of its quality. It does not measure the intake of kilocalories. As can be seen from the score, there is a lot of room for improving this indicator. The average **Household Dietary Diversity Score (HDDS)** is 8.15/12. HDDS assesses a household's economic access to food (i.e. its ability to produce, purchase, or otherwise secure food for consumption by all household members). It does not provide data on the nutritional quality of a person's diet. Although the HDDS score is better than the IDDS, there is still room to improve this score. **The percentage of household survival deficit** is measured by a proxy, the frequency of experiencing hunger. The average value for the FSM is 6.26, indicating occasional hunger.

About 35 percent of the people surveyed reported that they have **access to locally processed foods** in the entire FSM.

Chuuk - Household Food Security, Focus Groups and Climate Resilience Survey

Household Food Security and Climate Resilience Surveys were conducted with 150 people in Chuuk, from which 100 were male and 50 were female. The average age of the respondents was 46 years old and the average number of people per family was 8. The most frequent sources of livelihood for Chuuk respondents were growing crops (mentioned by 79% of participants), fishing (66%), subsistence living (52%), raising livestock (51%) and remittances (49%) (Annex Chuuk survey Q.2.4). The most frequent highest level of education of Chuuk respondents are incomplete primary school (26%) and incomplete secondary school (21%).

The majority of Chuuk respondents farm and/or harvest local food crops (95% of respondents) and medicinal crops (85%), raise livestock and/or poultry (83%) and fish/harvest ocean food sources (75%). Extreme heat is the most frequent farm problem in Chuuk, classified as a big problem by 69% of respondents, followed by drought, invasive species and heavy rains (Annex Chuuk Survey Q.3.2). For example, one respondent noted that "*due to flooding, it is difficult to keep seedling grow or stay in place*." – Chuuk HHS open-ended questions. In addition, a respondent reported that "*heavy rainfall affects our plants and their growth; heat and mud affect their growth; for fishing it is difficult because of lack of materials and supplies, boat, and engine to go fishing*." – Chuuk HHS open-ended questions. Around 77% of Chuuk respondents noticed that the mean temperature increased in the last 10 years, while 37% noticed an increase in rainfall and 35% noticed that the rainy season is starting later. (Annex Chuuk Survey Q.3.3.1 to Q.3.3.3).

Approximately 42% of respondents in Chuuk had to make adjustments in their farming practices over the last years, and, from those, the most frequently mentioned changes were changing crop types, mentioned by 61% of respondents, changing crop varieties, implementing soil conservation techniques, putting crops under protected environment and changing fishing locations. One respondent noted that they "*have to find more shady areas far away from usual places*." – Chuuk HHS open-ended questions. In addition, another respondent noted adapting the way they cultivate: "*I used to plant my crops into the soil but now I grow my crops from planting basins in order for me to take good care of the plants and crops*." – Chuuk HHS open-ended questions. One respondent reported relocating their farm to "*places that is easily accessible to water and where it is not easy to reach by sea rise*." – Chuuk HHS open-ended questions. Furthermore, a respondent reported how they managed the financial burden of farming and fishing by *"...partner[ing] with other people in farming and fishing to afford the high cost of fuel*." – Chuuk HHS open-ended questions. Another respondent noted intercropping to protect against saltwater intrusion: "*Planting trees such as hibiscus around taro patch to help protect from saltwater inundation*." – Chuuk HHS open-ended questions.

For those who did not change farming practices, the most frequent reasons were not seeing the need to change, lack of information and labor shortage (Annex Chuuk Survey Q.3.3.5 and Q.3.3.6). A little more than 30% of Chuuk respondents have experienced issues with water quality, and, from those, the most frequently mentioned issues were related to water being off-color, safety and sanitation and smell (Q.3.3.7). For example, one respondent noted "*During high tide salt water is mixed with fresh water; During heavy rain, some sewage system leaks out*." – Chuuk HHS open-ended questions.

Most of Chuuk respondents (96%) grow and/or harvest food crops, and the totality of those do it for family consumption, while 39% grow/harvest food to sell and 14% for traditional exchange. When asked to describe the food production and/or harvesting that they do, the most frequent answers of Chuuk respondents were raising livestock to feed the family, mentioned by 87% of respondents, fishing/collecting marine food for the family (77%) and collecting products from the forest for the family (70%) (Annex Chuuk Survey Q.4.3). Almost 30% of Chuuk respondents declared that they do not have adequate access to land for growing and/or harvesting crops and around 22% believe that the land that they have is not

enough. Approximately 32% would want more land if available and more than 90% of respondents declared that the land they use to grow and harvest crops is shared (Annex Chuuk Survey Q.5.1).

When asked to list the foods they grow and/or harvest, the most frequently cited by Chuuk respondents was banana, mentioned by 98% of respondents, followed by breadfruit, coconut, mango and hard taro, mentioned by 95%, 95%, 81% and 78% of participants, respectively. For important crops such as hard taro, breadfruit and mango, once a month is the most common harvest frequency according to Chuuk respondents, while once a week and every other week are the most common for bananas, and several times a week is the most frequent harvest regime for coconuts. Other crops more frequently harvested several times a week in Chuuk include limes/lemons, betelnuts, and medicinal crops. As for the quantity harvested over the course of one year, bananas, breadfruit and coconuts are harvested in small quantities (less than 50 lbs.), while mango and hard taro are frequently not ready to harvest over this time. On average, hard taro is the crop with the highest number of plants per field, with 191 plants, followed by breadfruit, with 106 plants. Important crops such as banana, coconut and mango averaged 52, 42 and 7 plants per field, respectively. Chuuk participants were also asked to cite the foods subjected to crop loss and the most frequently mentioned ones were hard taro (81%), banana (65%), breadfruit (65%), soft taro (60%), and tapioca (59%). The complete list of most commonly grown/harvested foods, frequency of harvest, quantity harvested, number of plants per field and frequency of crop losses can be found in Annex Chuuk Survey Q5.2.1 to Q.5.2.5.

Nearly half of Chuuk respondents practice organic agriculture and, from those, the most frequent methods are using compost, green manure, chipping for mulch and chili spray. Around 66% of Chuuk respondents reported that their ability to grow food had been affected by climate change and almost 77% mentioned that a change in climate impacted their crop yield. This was expanded on by one participant: "*Difficult and slow to grow; some food crops like soft taro and Cabbage; Before it was easy, and they grow well and fast*." – Chuuk HHS open-ended questions. In addition, another respondent noted that, "*I used to grow watermelon, cucumber and leafy greens but now I grow hot peppers, soursop and papayas because watermelon, cucumbers and leafy greens are too sensitive to the temperature and climate change*." – Chuuk HHS open-ended questions. The crops most frequently mentioned as affected by climate in Chuuk were bananas (72%), hard taro (70%), breadfruit (69%), coconut (44%) and soft taro (44%). The most frequently mentioned cause of crop loss according to Chuuk respondents is extreme heat, followed by drought, heavy rains, saltwater inundation, and flooding (complete list of frequency of crop loss and issues common issues causing crop loss available in Annex Chuuk Survey Q.3.5 and Q.3.6). Almost 70% of Chuuk respondents only have access to enough water for crop production some of the time, while 2% mentioned that water is never available (none of the time). Rain is the most frequent source of water for crops in Chuuk, mentioned by 69% of respondents, followed by stream (46%), well (42%), public water system (12%) and pond (8%).

When asked to cite the crops they grow (as opposed to foods they grow and/or harvest, addressed in Annex Chuuk survey Q.5.2.1), bananas are the most frequently mentioned by Chuuk respondents (mentioned by 98% of participants), followed by breadfruit (97%), coconut (94%), hard taro (80%) and lemons/limes (74%). When asked to cite the products where crop losses are experienced, the most frequently mentioned by Chuuk farmers was hard taro (mentioned by 81%), followed by bananas (71%), breadfruit (65%), tapioca (55%) and coconut (51%) (Annex Chuuk survey Q.5.4.1 and Q.5.4.2). For important crops such as banana, breadfruit, coconut and lemons/limes, extreme heat and drought are the major causes of crop loss, mentioned by more than 50% of the respondents for each of those crops. For hard taro, in addition to extreme heat and drought, flooding and saltwater inundation are also frequent issues. A complete list of frequent climate-associated issues with each of the commonly grown crops in Chuuk is available in Annex Chuuk survey Q.5.4.3.1-20.

The vast majority (85%) of Chuuk respondents declared raising livestock and/or poultry and, from those, 71% had access to adequate land for this activity. Around 30% of people raising livestock/poultry feel like the land that they have is not enough, and 32% would want more land if available. Around 94% of respondents share the land they use to raise livestock/poultry. Almost 40% of survey participants noticed a

change in raising animals in the last 10 years. More than 60% of Chuuk respondents would like to raise livestock/poultry commercially and, from those, the most frequently mentioned obstacles to do so were availability of animal feed (62%), tools and equipment (29%), land (29%), time (16%), knowledge (5%), capital (1%) and availability of initial materials such as chicks (1%). One respondent noted that "*Feeding is more expensive, demand to buy is more than usual, and price is higher*." – Chuuk HHS open-ended questions.

More than 75% of Chuuk respondents harvest marine or freshwater fish/organisms and, from those, around 40% feel like they don't have enough access to marine resources. When asked to indicate how often they harvest/collect marine resources in specific environments, the most frequent answer for mangrove, open ocean and river was 'never', while for outer reef the two most frequent answers were 'never' and 'several times a week' and for inner reef, the most frequent answer was 'several times a week. For all the environments mentioned above, the majority of Chuuk respondents noticed a reduction in food sources (aquatic species) in the last 10 years (Annex Chuuk survey Q.7.2).

More than 80% of Chuuk participants would grow/fish/harvest more food or raise more livestock if they could and, from those, the most frequently mentioned barriers are, in order of importance, lack of production resources/tools (64%), not enough time (50%), weather (49%), lack of financial source (38%), and lack of ways to keep the foods fresh (33%). Around 83% of respondents either agree or disagree that climate change is causing a lot of problems for their farm/fishing, 81% either agree or strongly agree that climate change is making it harder for them to grow crops/fish/harvest, and 61% agree or strongly agree that climate change is making it harder for them to raise livestock. Nearly 87% of Chuuk respondents agree or strongly agree that climate change is causing a lot of extreme weather, while 44% either agree or strongly agree that they might have to stop farming because of climate change. For example, one respondent noted that "*the rainy season is not when it's supposed to be anymore. High tides no longer happen during the actual months of high tides. The season for when crops should be bearing fruit, like breadfruit, is out of sync*." - Chuuk FG2. About 55% of Chuuk farmers agree (or strongly agree) that climate change has caused them to make many changes on their farm and 64% either agree or strongly agree that climate change is the biggest problem their farm faces right now (Annex Chuuk survey Q.8.1.2 and 8.2.1). In order to adapt to the changes imposed by climate change, a respondent noted that "*There is a need to learn about salt water resistant taro. There is a need to learn about how to prevent heavy rainfall into our garden areas. There is also a need to learn which plants to plant and cultivate during which months*." - Chuuk FG2. Approximately 66% of respondents declared that a change in climate impacted their access to clean fresh water. Almost 40% of Chuuk farmers have changed/adapted their farming practices in the past 10 years and more than 55% of those indicated that climate change was the prime reason for the change.

Cultivated places are the most frequently reported source of food for Chuuk respondents, followed by relatives and extended families, formal markets, informal markets, wild places, and supplemental food assistance. Walk, boat and personal car are the most frequent ways in which Chuuk residents use to travel to get their food. The most frequent answer when Chuuk respondents were asked how long it takes to travel to obtain food they produce/harvest, was 'not much time' while for the food they purchase the most frequent answers were '30-45 minutes' and 'more than 45 minutes. The most frequent barriers that prevent Chuuk respondents from attaining healthy, nutritious food was affordability (56%), availability (55%) and lack of assistance from relatives or extended families (23%) (Annex Chuuk Survey Q.9.1.1 to Q.9.1.6). More than 82% of respondents at least rarely (sum of rarely, sometimes and often) worried that they wouldn't have enough healthy and nutritious food to eat, while more than 80% said that, at least rarely, they could not afford to eat healthy and nutritious food. Around 83% of Chuuk participants at least rarely couldn't afford to eat the foods they prefer and had to eat different types of foods, while almost 72%, at least rarely, skipped meals because there wasn't enough money for food. Approximately 77% of respondents at least rarely ate less than preferred because there wasn't enough money for food and, 76% at least rarely were hungry because there wasn't enough money for food and, around 40% went a whole day without eating at least rarely (Annex Chuuk Survey Q.9.2.1 to Q.9.2.7).

Chuuk respondents were asked to cite the frequency of consumption of 40 common foods. Rice stands out for being most frequently reported to be consumed multiple times a day. For other important foods such as taro, breadfruit, banana and coconut, 1 to 4 times a week was the most frequent answer. For the majority of other foods, the more common frequencies of consumption were 1 to 4 times a week and never. The foods most frequently cited by Chuuk respondents as favorite foods were reef fish (96%), breadfruit (96%), open ocean fish (95%), coconut (94%) and banana (93%). When asked to cite the food often subject to shortages, breadfruit was the most frequently mentioned (72%), followed by eggs (63%) taro (63%), rice (62%) and banana (61%). As for the crops whose availability has been impacted by changes in climate, taro was the most frequently mentioned (71%), followed by breadfruit (70%), banana (66%), crustaceans (66%), and octopus and squid (66%). Regarding the foods whose affordability have been impacted by climate change, the most frequently mentioned by Chuuk respondents were taro (68%), breadfruit (67%), rice (67%), open ocean fish (66%) and reef fish (63%). In addition, several participants noted preserving food when it was available. For example, one respondent noted that they "*add…salt to fish, dry it under the sun... Breadfruit we cut them into small pieces, and we conserve under the ground for future* " – Chuuk HHS open-ended questions. The complete lists of frequency of consumption, favorite foods, foods subject to shortages, and impacts of climate change in availability and affordability is available in Annex Chuuk Survey Q.9.3.1 to Q.9.3.6). More than 46% of Chuuk respondents had to change the places where they get their food from due to climate change and, from those, the majority is getting more food from cultivated places (70%), from formal markets (51%) and relatives and extended families (50%) (Annex Chuuk Survey Q.9.4.3). The majority of respondents that had to change their food sources believe that now it is harder to access foods. More than 85% are concerned how climate change will impact the foods that they eat, mainly related to food availability, affordability, quality, and safety.

Approximately 47% of Chuuk respondents believe that the consumption of local foods changed during the COVID 19 pandemic and, from those, 51% believe there was an increase in consumption of local foods. As for the production of local foods, 40% believe it changed during the COVID 19 pandemic and, from those, 73% believe it increased. Regarding demand of local foods during the pandemic, 47% believe there was a change and, from those, 78% responded that the demand increased for local consumption. Around 14% of respondents declare that they have sent their food products overseas and, from those, hard taro and breadfruit were the most demanded foods overseas (Annex Chuuk Survey Q.10.1 to Q.10.8).

When Chuuk respondents were asked what foods they consider to be healthy and nutritious, fresh vegetables (mentioned by 97% of respondents), fresh fruit (94%), fresh fish/seafood (94%) and fresh meat (79%) were the most frequently mentioned. One participant summarized this by saying, "I called it rainbow color and fresh." – Chuuk HHS open-ended questions. The most frequent answer when Chuuk respondents were asked what percentage of their diet is imported food is '50 to 75%'. More than 72% of Chuuk respondents feel that their diet is healthy and nutritious. The vast majority (96%) of respondents would be interested in consuming more locally sourced seafood and marine fish on a daily basis if they were more available and affordable and the same trend was observed for locally sourced meat and meat products, locally produced coconut milk and locally produced vegetables and fruits. The majority of respondents would also be interested in replacing imported milk products with coconut milk products for cooking, replacing imported rice with local starch crops. More than 82% of respondents would be more willing to buy locally produced foods if they knew they were healthier than imported foods. While some local food and imported foods are healthy, others are highly processed and contain excess calories and sodium and have minimal required nutrients. This can pose a health risk as noted by one participant: "All local food is healthy food, imported food are nutritious food we are strong, but we have there side effect." – Chuuk HHS open-ended questions. For people that declared a preference for imported foods, the most commonly mentioned reasons were that they were easier to prepare, more available and convenient (Annex Chuuk Survey Q.11.1 to 11.12).

When asked what solutions and/or resources they feel can assist them with long term local food production goals, the most frequently mentioned are availability of tools (87%), agriculture training (83%) and climate

resilient crops (49%). For example, a respondent noted that they "*need to continue to learn from those who know more in farming, for example, Department of Agriculture, Chuuk Women's Council, and Small Business Development Center*." - Chuuk FG2. In addition, respondents reported utilizing the training and funding resources currently available to them: "*Applied food security grants to obtain more efficient tools proper tools, to do farming amid climate change. Attend workshops to obtain information or how to tackle climate adversity*." – Chuuk HHS open-ended questions.

Kosrae - Household Food Security, Focus Groups and Climate Resilience Survey

A total of 150 people participated in the Kosrae household survey. On average respondents were 49 years old, had an average of 6 people per household, and a majority of respondents were male (94%). Around 30% of Kosrae respondents have completed higher education, 29% completed secondary (high) school, 22% incomplete higher education, 9% incomplete secondary school, 8% completed graduate studies, 1% completed primary (elementary) school and 1% have incomplete primary school (Annex Kosrae Survey Q.2.5).

The majority of Kosrae respondents reported that they fish or harvests ocean food sources (87%), raise livestock and/or poultry (64%), farm and/or harvest medicinal crops (57%) and farm and/or harvest local food crops (89%). The most frequent issues classified as big problems for farming in Kosrae are invasive species (67%), increased threats to crops from pests and diseases (58%), inland flooding (56%), extreme heat (54%) and heavy rains (51%). A complete list of main issues for farming and their importance can be found in Annex Kosrae Survey Q.3.2. About 87% of respondents noticed that the mean temperature increased in the last 10 years, while 71% noticed that the mean rainfall increased in the same period. More than half of Kosrae survey participants noticed changes in the start of the rainy season, either starting earlier or later or being more erratic. From those who noticed changes in climate, 56% reported that they had to make adjustments to their farming due to climate change. The most frequent adjustments mentioned by respondents were implementing irrigation (73%), putting crops under protected structures (67%), changing crop types (65%) and varieties (64%), and implementing soil conservation techniques (60%). The complete list of adjustments and their frequency can be found in Annex Kosrae Survey Q.3.3.5. For those declaring not making changes, the most frequent reasons mentioned by respondents were lack of information (77%), lack of money/credit (48%), not seeing the need to change (45%), labor shortage (35%), water shortage (11%) and land shortage (11%). When asked if they experienced any issues with water quality, off-color was the most frequent answer, followed by safety and sanitation (Annex Kosrae Survey Q.3.3.7).

The vast majority (92%) of Kosrae respondents grow and/or harvest food crops (including marine organisms) and, from those, 100% do it for family consumption, 73% for sale and 46% for traditional exchange (Annex Kosrae Survey Q.4.2). When asked to describe their activities, 81% of Kosrae respondents affirm that they raise livestock to feed their own family, 58% raise livestock to sell at market, 22% participate in agroforestry, 90% collect products from the forest for the family, 55% collect products from the forest to sell at market, 89% fish/collect marine food for the family, 70% fish/collect marine food to sell at the market and 55% fish/collect marine products to send to family/friends outside of the FSM. The value of household food production was expanded on by a participant: "*I have been seeing how home gardening to be a very effective practice that we have today. Even growing simple vegetables that we see in markets. It would be great if we can encourage women to do it. This will help lessen our dependence on imported goods*." -Kosrae FG3.

More than 91% of Kosrae respondents have access to land for crops, but almost 30% of those feel that the land that they have is not enough. More than 61% of respondents would want more land if available and almost 64% declare that the land they use is shared (Annex Kosrae Survey Q.5.1). When asked which foods are grown/harvested, the most frequently mentioned by respondents were bananas (94%), breadfruit (91%), coconut (90%), copra (86%) and hard taro (85%). The complete list of foods more commonly grown/harvested can be found in Annex Kosrae Survey Q.5.2.1 (1-28). Kosrae residents were asked regarding how often they harvested each of their most commonly harvested/grown foods. For bananas,

breadfruit, coconut and copra, the most common harvest frequency was once a week, while for hard taro it was once a month. Locally grown/collected fresh vegetables and hot peppers are highlighted to be frequently harvested several times a week, according to Kosrae respondents. As for the quantity harvested, important foods such as breadfruit, coconut and copra are most frequently harvested in medium quantities (between 50 and 100 lbs.) over the course of a year, while hard taro is more commonly harvested in small quantities (less than 50 lbs.) and bananas in large quantities (more than 100 lbs.) over the same period. Regarding the number of plants per farm/field/property, hard taro was reported to be the most prevalent, with an average of 655 plants per field. The average for other important crops were 115 plants for bananas, 87 for coconut and 25 for breadfruit. A detailed list of the frequency of harvesting, quantity harvested and number of plants per field for each food/crop can be found in Annex Kosrae Survey Q.5.2.2, Q.5.2.3 and Q.5.2.4.

When asked about foods subject to crop loss, limes/lemons were the most frequently mentioned, cited by 64% of respondents, followed by soft taro (55%), locally grown/collected fresh vegetables (54%) and hard taro (54%) (Annex Kosrae Survey Q.5.2.5). More than half of Kosrae respondents (56%) practice some form of organic agriculture, from which, the most frequently mentioned method is compost (mentioned by 93%), green manure (61%), chipping for mulch (44%) and chili spray (27%). Almost 80% of Kosrae respondents affirm that their ability to grow food has been affected by a change in climate, and 78% assert that a change in climate impacted their crop's yield. When asked to cite which foods are most affected by climate change, citrus was the most frequent, mentioned by 68% of respondents, followed by hard taro (64%), banana (60%), breadfruit (59%) and soft taro (59%). When asked how climate contributed to crop loss, the most frequently mentioned events by Kosrae residents were extreme heat, heavy rains, invasive species, and plant diseases. In some cases, climate change stopped individuals from farming all together: "*Based on my observation, climate change has caused me to temporarily stop farming because of extreme heat and little water.*" - Kosrae HHS open-ended questions. Detailed information of crops affected by climate and climate events associated with crop loss, see Annex Kosrae Survey Q.5.3.5 and Q.5.3.6. More than half (55%) of Kosrae respondents have access to enough water for crop production some of the time, while 44% declared to have enough water all of the time and 1% none of the time. Rain and public water system are the most common sources of water for crops in Kosrae, followed by stream, well and pond (Annex Kosrae Survey Q.5.3.8).

When asked the crops they grew (exclusively grown as opposed to grow and/or harvest, addressed in Q.5.2.1), the most frequently mentioned by Kosrae respondents were bananas (94%), breadfruit (91%), coconut (89%), copra (85%) and hard taro (83%). When ask to cite the foods that are subject to crop loss, lemons/limes were the most common, mentioned by 69% of respondents, followed by breadfruit (59%), hot peppers (58%), soft taro (56%) and hard taro (54%) (complete list of crops grown and crops frequently subject to crop loss available in Annex Kosrae Survey Q.5.4.1 and Q.5.4.2). For important crops such as soft and hard taro, bananas and coconut, flooding, extreme heat and heavy rains are the most frequent issues associated with crop loss, according to Kosrae respondents. For breadfruit, flooding is not as frequent of an issue as it is for other main crops, but extreme heat and heavy rains are the most frequent issues. A complete dataset of main events associated with climate change causing crop loss can be found in Annex Kosrae Survey Q.5.4.3.

Around 64% of Kosrae respondents raise livestock and/or poultry and 91% have access to adequate land for the practice. The majority of respondents raising livestock/poultry feel like the land that they have is enough, but 56% would want more land if available. Approximately 70% of Kosrae respondents involved with livestock/poultry production cited that the land that they use for this activity is shared. Pigs, chickens, and dogs are the main animals raised/kept by Kosrae respondents. About 13% of respondents noticed a change in raising animals in the last 10 years and 80% would like to raise livestock/poultry commercially. Respondents reported on how climate change has impacted raising animals. For example, "*Because of climate change, we have limited local food available for our pigs.*" – Kosrae HHS open-ended questions.

Regarding marine food sources, more than 80% of respondents harvest marine or freshwater fish/organisms and, from those, 79% feel that the access they have to marine resources is enough. From those affirming that they harvest marine resources, a follow-up question was asked about the frequency of harvesting in specific environments. For inner reef, outer reef and open ocean, the most common frequency of harvest was several times a week, while for mangrove it was once a month. For all the above-mentioned environments, the majority of Kosrae survey participants declare that the resources are shared with other people and that they have noticed a reduction in aquatic species in the last 10 years (Annex Kosrae Survey Q.7.2). One participant expanded on how climate change is impacting both marine and terrestrial food production: "*Based on our experience in farming so far, one issue we face today is Invasive Species such as the Giant African Snail and White flies that harmed our crops. This issue is still new to us that the generations before never get to experience. Another environmental change is salinity from sea level rise. Not every plant can tolerate salinity, so with this we notice the impact it does to our farm. We see lesser number of banana and more. Not just with our bananas, we've experienced saltwater inundation a lot in other locations*." -Kosrae FG2.

Almost 90% of Kosrae respondents would grow/fish/harvest more food or raise more livestock if they could. The most frequent barriers to expanding food production mentioned by respondents are lack of production resources/tools, lack of financial sources, difficulty getting to the land or sea, transportation to market and lack of time (complete list of barriers in Annex Kosrae Survey Q.8.1.2). Around 88% of respondents either agree or strongly agree that climate change is causing a lot of problems for the farm/fishing, 80% believe that climate change is making it harder to grow crops/fish/harvest, and 59% believe that climate change is making it harder for them to raise livestock. More than 90% of Kosrae participants mentioned that climate change is causing a lot of extreme weather, over 70% affirm that climate change has caused them to make significant changes on their farm, and 44% consider stopping farming because of climate change. Close to 30% of respondents declared that a change in climate impacted their access to clean fresh water and that they had to adapt their farming practices (including fishing) because of a change in climate (Annex Kosrae Survey Q.8.2.1 to Q.8.4.4). This was expanded on by a participant as follows "*Climate change affects our drinking water. It also affects quality of water coming through the main pipeline. When it floods, the flood makes our water dirty and destroys everything in its path including our farms and gardens and household water.*" - Kosrae HHS open-ended questions. In addition to contaminated fresh water, respondents noted that "*saltwater intrusion during high tide and flooding affect our access to clean quality water in Kosrae today.*"- Kosrae HHS open-ended questions.

Participants of Kosrae were asked to cite the places where they get their food from. The most cited sources are wild places (95%), cultivated places (83%), formal markets (76%) and relatives and extended family (67%) (for a complete list, see Annex Kosrae Survey Q.9.1.1). Personal car and walking are the most common ways for Kosrae respondents to get their food, followed by boat, someone else's car, bike, and carpool. When asked about the average time to get access to most of their food (both grown/harvested or purchased), the most frequent answer by Kosrae residents was between 5 and 30 minutes. The most common barriers mentioned by Kosrae participants to attain healthy, nutritious food are availability, affordability, and distance to walk (see Annex Kosrae Survey Q.9.1.3 to Q.9.1.6). More than 67% of Kosrae respondents at least rarely (defined as the sum of rarely, sometimes and often) were worried that they wouldn't have enough healthy and nutritious food to eat, while 63% at least rarely couldn't afford to eat healthy and nutritious food. About 32% of respondents sometimes could not afford to eat the foods they prefer and had to eat different types of foods and, about 47%, at least rarely, have skipped meals because there wasn't enough money for food. At least rarely, almost 57% of respondents ate less than preferred because there wasn't enough money for food, 38% went hungry because there wasn't enough money for food, and 20% went a whole day without eating (Annex Kosrae Survey Q.9.2.1 to Q.9.2.7).

When asked the frequency of consumption of the most common foods, the majority of Kosrae residents mentioned eating rice multiple times a day. Other foods frequently eaten multiple times a day in Kosrae are open ocean fish, reef fish, coffee and tea. For important food/crops such as taro, breadfruit, bananas, coconut

and copra, the most common frequency was between 1 and 4 times a week. For a complete dataset of the frequency of consumption of each food, see Annex Kosrae Survey Q.9.3 (1-40). When asked to list their favorite foods, banana was the most frequently mentioned by Kosrae respondents, followed by open ocean fish, fresh/local meat and meat products, reef fish and local fresh fruits. When asked to cite foods that were subject to shortages, rice was the most common mention (58%), followed by eggs (55%), local (52%) and imported citrus (51%) and processed meat and meat products (51%). Reef fish, open ocean fish, local citrus, locally grown/collected fresh vegetables, and breadfruits are the most frequent foods whose availability is impacted by climate change. The same foods, with the exception of breadfruit, are the most frequently mentioned when asked to cite foods whose affordability has been affected by climate changes. For the complete lists of favorite foods, food shortages and foods whose availability and affordability are most impacted by climate change, see Annex Kosrae Survey Q.9.3.2, Q.9.3.3, Q.9.3.4 and Q.9.3.6.

Half of Kosrae residents have changed the places where they get their food from due to climate change. From those, the majority is getting more food from wild places and formal markets and almost 74% believes that now it is less difficult to obtain food. Almost 77% of respondents are concerned with how climate change will impact the food that they eat, mainly with issues related to food availability, affordability, quality and safety (Annex Kosrae Survey Q.9.4.2 to Q.9.4.6). In addition, several respondents noted several ways they preserve food during the harvest season. For example, "*Because of climate change, I grind my taros and freeze them for future use. With fish, I would cut them into pieces and dry them under the sun so that they could last a bit longer.*" - Kosrae HHS open-ended question. However, some respondents noted limitations in their ability to preserve food, particularly if they intend to scale production for commercial sales: "*I would need a better storage and bigger container to contain and preserve food from my farm. I am currently doing small-scale farming, enough to feed one or two families. But, if I decide to go big, I would need the better storage. I also need equipment to help clear my land for farming*" - Kosrae HHS open-ended question. In addition, a respondent requested additional training on how to preserve foods: "*I think that we need training on preservation techniques for fish products.*" – Kosrae FG1.

Almost 30% of Kosrae survey participants changed their consumption and production of local foods during the COVID-19 pandemic and, from those, the majority (60%) mentioned that both consumption and production decreased. Around 33% of respondents also believed that the demand for local products changed and, from those, more than 85% believed that the demand increased during the pandemic. About 17% of Kosrae residents stated that they have sent their food products overseas (both commercial and to family members), and, according to those, hard and soft taro and breadfruit were the most demanded products overseas (Annex Kosrae Survey Q.10.1 to Q.10.8).

When asked to cite the foods that they consider healthy and nutritious, the most frequent answers by Kosrae residents were fresh vegetables, fruit, fish/seafood, and meat (Annex Kosrae Survey Q11.1a). Some respondents noted that, "*food that is healthy is food that is grown and harvested locally and not imported from elsewhere.*" – Kosrae HHS open-ended questions. Between 25 and 50% was the most frequent answer when Kosrae respondents were asked what percentage of their diets is composed of imported foods. Almost 54% of Kosrae respondents do not feel that their diet is healthy and nutritious and 44% reported they believe they are unhealthy because of their diet. The vast majority of respondents would be interested in consuming more locally sourced seafood, meat and meat products, fruits, vegetables and coconut milk as well as would be interested in replacing rice with local starch crops if those foods were more available and affordable. More than 95% of respondents would consume more locally produced foods if they knew they were healthier than imported and/or processed foods (Annex Kosrae Survey Q.11.2 to Q.11.11). For individuals preferring imported and/or processed foods over local/fresh foods, the most frequent justifications were that imported and/or processed foods are more convenient, more available, take less work to prepare and taste better.

When asked what solutions and/or resources they feel can assist them with long term local food production goals, the most frequently mentioned by Kosrae residents were availability of tools, greenhouses and aquaculture and agricultural training. Respondents requested specific training relative to sustainable

agricultural production methods: "*I want training in composting and in making local pig feed and fertilizer*." -Kosrae FG3. Relative to fishing, respondents requested training to *"...identify when each species of food fish or marine organism such as crabs are spawning so that we can protect them from being harvested during spawning seasons*." – Kosrae FG1. Furthermore, respondents requested "*training to be able to differentiate between male fish from female fish. This way, we can be a bit more selective and only catch the male fish while leaving the female fish to reproduce more*." – Kosrae FG1.

Pohnpei - Household Food Security, Focus Groups and Climate Resilience Survey

For Pohnpei, household surveys were conducted with 160 respondents, from which 127 (79%) were male and 33 (21%) female, with an average age of 47 years old and reporting, on average, 7 people per family. Approximately 22% of the respondents completed higher education degree, 20% have some higher education but not completed, while 4% received traditional/non-formal education and approximately 17% did not complete but had access to some primary school.

The majority (92%) of respondents in Pohnpei grow their own food for household consumption (subsistence living). Additionally, 85%, 72% and 59% of respondents declare growing crops, raising livestock, and fishing, respectively, as sources of livelihood for their household. Less frequent livelihood sources include salaried employment, social security, remittances, paid work in agriculture, government transfers/NGO support and NGO employment.

Most of the respondents in Pohnpei, farm or harvest local food crops, medicinal crops, raise livestock/poultry and fish or harvest ocean food sources, all of which are activities directly impacted by climate change. The main concerns of Pohnpei residents related to climate change impacts on food security are extreme heat (49%), heavy rains (38%), invasive species (36%), and increased threats to crops from pests and disease (32%). Other issues reported as significant concerns are difficult to predict when the rainy season will come, inland flooding, drought and lack of water, landslides, coral bleaching and riverbank erosion, coastal flooding, coastal erosion, saltwater inundation, and cyclones/hurricanes.

When asked if, in the last 10 years, any change in the average temperature was perceived, the majority of respondents (79%) noticed that the mean temperature increased and an additional 9% noticed that the temperature was more erratic. In a similar trend, 61% of respondents noticed that mean rainfall increased in the last 10 years, with an additional 21% perceiving the rainfall as more erratic. Along with volume of rainfall, changes in the start of the rainy season were perceived by Pohnpei residents. Around 40% of respondents noticed that the rainy season starts earlier, while 29% noticed that it is more erratic than a decade ago. The impact of erratic heavy rains on agriculture was summarized by a focus group participant, "*Heavy rains too much wet causes runoffs. When too much rain, this washes away the fertile soil and this also affects the growth of the food crops*." -Pohnpei FG1.

For respondents that noticed changes in climate variables, 36% declare having to make adjustments in farming (including marine) practices. From those, 48% mention that they planted trees in response to the climate changes. In addition to planting trees, farmers reported that they stopped cutting trees, which provide shade, as summarized "*Planting but reduce cutting all trees*" – Pohnpei HHS-open ended questions. In addition, 46% mention that they had to change crop types. For example, "*Grow some crops, yam, sakau mostly, but rotate the crops depending on harvesting and season. Before used to plant all kind of food crops, now I only plant yam*" – Pohnpei HHS-open ended questions. Additionally, 41% implemented soil conservation techniques to prevent erosion or soil contamination, 36% changed crop varieties and 23% built a water harvesting scheme. Other adjustments related by respondents to mitigate climate change impacts in food security are irrigation, included/augmented livestock herding, migration, finding an off-farm job, leasing the land, putting crops under protected structures, changing harvest fish species and changing fishing location.

Respondents declaring that they did not make adjustments to their farming strategies (64%), were asked the reason why that was the case. Among the reasons, not seeing the need to make adjustments was mentioned

by 55% of respondents, lack of information was brought up by 51%, lack of money and credit by 32%, and shortages of labor, land and water was mentioned by 23%, 13% and 4% of respondents, respectively. In addition to food source impacts, Pohnpei respondents also express concerns about water quality. Almost 50% of respondents relate that they experience the water to be off-color, while others demonstrate concern about water taste (31%), safety and sanitation (25%) and smell (16%).

The vast majority (91%) of Pohnpei respondents affirm that they grow and/or harvest food crops, including marine organisms. From those growing and harvesting food crops, around 99% affirm that they do it for family consumption, 81% for traditional exchange and 61% for sale. When asked to describe the food production and/or harvest that they do, 85% of respondents assert that they raise livestock to feed their own family, 64% are involved with agroforestry, 55% fish and collect food for their family and 54% collect products from the forest for family consumption.

When asked if they had adequate access to land for growing and/or harvesting crops, 78% of respondents answered yes. The majority (72%) of respondents feel that the land they currently have access to is enough, although 47% of respondents declare they would want more land if available. Around 80% of respondents declare that the land they use to grow/harvest crops is shared. When asked which food do they grow or harvest, bananas were mentioned by over 99% of Pohnpei respondents, followed by breadfruit (99%), coconut (97%), yam (86%), limes/lemons (86%), sakau (kava) (83%) and swamp/hard taro (83%). Other food sources mentioned by Pohnpei residents are land/soft taro, copra (coconut product), mango, pineapple, sweet potatoes, tapioca, papaya, locally grown collected fruits and vegetables, soursop, black pepper, hot peppers, sugar cane, betel leaf, durian, cacao, chestnut, betelnut, tangerine/orange and medicinal crops. The data of frequency of growing or harvesting each specific food can be found in Annex Pohnpei Survey Q.5.2.1 (1-28).

Survey participants were asked how often they harvest each of the abovementioned foods. For bananas, coconut and limes/lemon, the majority of respondents claim harvesting several times a week. However, the most frequent response was once a month, including frequently harvested foods such as breadfruit, hard taro, yam and sakau. Detailed data on frequency of harvesting for each of the foods used by Pohnpei residents can be found in Annex Pohnpei Survey Q.5.2.2 (1-28).

As for the amount harvested over the course of a year, significant variation was observed for each food. Banana, hard taro and limes/lemons were more frequently reported to be harvested in small quantities (less than 50 lbs.), while coconut and yam were collected/harvested in medium quantities (50 to 100 lbs.) and sakau in large quantities (more than 100 lbs.). The complete data set related to amount harvested of each food can be found in Annex Pohnpei Survey Q.5.2.3 (1-28). In terms of number of plants in each property, hard taro and sakau appear among the highest numbers, with averages of 475.63 and 254.28 plants per field respectively. The complete list of average, minimum and maximum number of each plant per field can be found in Annex Pohnpei Survey Q.5.2.4 (1-28).

When asked about foods jeopardized by crop losses, the products more frequently cited by Pohnpei respondents included breadfruit (45%), yam (39%), soft taro (38%), hard taro (35%), sakau (34%) and banana (34%). The complete dataset of crop losses associated with each food are available in Annex Pohnpei Survey Q.5.2.5 (1-28). More than half (53%) of Pohnpei residents affirm that they practice organic agriculture, and, from those, the most commonly mentioned practices were compost (86%), green manure (64%), chipping for mulch (20%) and chili spray (10%).

The largest part of respondents (74%) asserts that their ability to grow food has been affected by a change in climate and 72% declare that a change in climate impacted their crop yield. For those who declared crop growth being affected by climate change, breadfruit, yam and sakau were mentioned by 75%, 64% and 61% as the most affected by climate. When asked how climate contributed to crop loss, extreme heat and heavy rains, mentioned by 87% and 74% of respondents, respectively were, by far, the more frequent answers, followed by plant diseases, mentioned by 57% of respondents. For example, "*As the temperature increases, it makes the soil dry and not fertile enough to grow food crops*." – Pohnpei FG1. The complete

lists of crops affected by climate change and how climate change contributes to crop losses can be found in Annex Pohnpei Survey Q.5.3.5 and Q.5.3.6.

Although the majority of respondents in Pohnpei (56%) declare to have enough water for crop production, 38% affirm to have enough water only some of the time, and 6% none of the time. When asked where the water for crops comes from, rain was cited by 58% of respondents, stream by 49%, public water system by 41%, well by 18% and pond by 5%. When respondents were asked which crops they grow, the most frequent crops mentioned were banana (96%) followed by breadfruit (94%), coconut (92%) and yam (86%). For a complete list of crops grown by Pohnpei residents, see Q.5.4.1 (1-20). Crop losses associated with climate change are mentioned by 45% of banana farmers, 55% of producers of breadfruit and 44% of coconut farmers, the three most frequent crops grown for food according to respondents. A complete list of frequency of reported crop loss for each crop can be found in Annex Pohnpei Survey Q.5.4.2 (1-20). Those who reported crop losses due to climate were asked what the main cause of loss for each crop was. For banana, the most frequent cause of loss according to respondents were extreme heat, heavy rains and plant diseases. For a detailed list of main causes of losses reported for each crop, see Annex Pohnpei Survey Q.5.4.3 (1-20).

In addition to crops, livestock and poultry are also important food sources for Pohnpei residents. Around 90% of respondents declare that they raise livestock and/or poultry and, from those, 78% have access to adequate land for the practice. About 37% of respondents declare that they would like more land for livestock and/or poultry and 82% declare that the land they have access to is shared. Approximately 57% of respondents declare that they would like to raise livestock/poultry commercially.

The more frequent types of animals raised or kept by Pohnpei residents are pigs (96%), dogs (87%) and chickens (79%) and a small fraction (1%) mention keeping deer. Around 31% of respondents declared that they noticed changes in raising animals in the last 10 years. The main obstacles related by respondents to livestock/poultry production are availability of food and cost of food for the animals, availability of tools and equipment and capital. In addition, respondents noted that "*... before ...livestock were fine, but these days ...livestock are affected by extreme heat, feed prices, and climate change*." – Pohnpei HHS-open ended questions. A complete list of the main obstacles to livestock/poultry production are available in Annex Pohnpei Survey Q.6.10.

Along with livestock, marine food sources are also of primary importance for communities in Pohnpei. More than 70% of respondents reported that they harvest marine or freshwater fish/organisms and, from those, 39% assert that the access to marine resources is not enough to supply their demands. Respondents were asked how often they fish and/or collect food from mangrove, inner reef, outer reef and river. For mangrove, outer reef and river, the most frequent answer was 'never', while for inner reef the most frequent answer was several times a week. The majority of respondents declare that the location to access marine/aquatic food resources are shared and, a vast majority assert that, in the last 10 years, in each of the habitats, the food sources have decreased in number (see Annex Pohnpei Q.7.2.3, Q7.2.4, Q.7.2.5, Q7.2.6, Q.7.2.7 and Q7.2.8 for details).

Around 61% of respondents from Pohnpei declared that they would grow/fish/harvest more food or raise more livestock if they could. Lack of production resources/tools, lack of income source, no land or ocean available are the most frequent barriers preventing respondents from expanding their production. More detailed information on barriers to expansion of food systems are available in the Annex Pohnpei Q.8.1.2. More than 70% of respondents either agree or totally agree that climate change is causing problems for farm/fishing, growing and harvesting crops. More than 50% agree or strongly agree that climate change is making it harder to raise livestock.

Almost 80% of Pohnpei respondents agree (or strongly agree) that climate change is causing extreme weather, while more than 30% agree (or strongly agree) that they might have to stop farming because of climate change and that climate change has caused them to make changes on the farm. About 60% of respondents believe that climate change is the biggest problem facing their farm right now. Nearly half of

respondents relate that climate change impacted their access to clean fresh water and around 12% reported that they need to change the crops they grow because of climate related issues.

Wild places (such as forests, freshwater, rivers, and/or the ocean) are the most frequent source of food to Pohnpei residents (78%), followed by formal markets (66%) and cultivated places (59%). Other sources include informal markets, supplemental food assistance and relatives and extended family. Most respondents declared traveling to get their food by walking (85%) or by personal car (72%) and boat (41%). Survey participants were asked how long it takes for them to reach the location where they get the majority of the food that they harvest/produce and the ones they purchase. For the food produced/harvested, the most frequent answer was between 5 and 30 minutes, while for time required to access the purchased food, the most frequent answer was more than 45 minutes. The most frequent barriers mentioned by respondents regarding their access to healthy, nutritious food are availability, affordability and transportation (too far to walk). For more detailed information on barriers associated with food access, please see Annex Pohnpei Q9.1.4.

Some households experienced food insecurity within a 30-day period as evidenced by 30% of Pohnpei respondents reporting that they sometimes worried that they would not have enough healthy and nutritious food to eat, while 6% often could not afford healthy food. In addition, 30% of the respondents reported that they sometimes or often could not afford to eat foods of their choice and instead had to eat other foods less expensive. Around 12% of respondents, at least on rare occasions, had to skip meals because there was not enough money for food and around 17% admitted that, at least on rare occasions, had to eat less than preferred due to lack of money for food. Additionally, more than 10% of respondents indicated that they went hungry at times because there was not enough money for food and around 3% declared that, at least on rare occasions, they went a whole day without food.

Regarding the consumption of specific foods, rice is the most frequent food mentioned by respondents (79% of respondents declared eating multiple times a day). Other important foods, frequently mentioned to be eaten between 5 and 7 times a week include breadfruit, bananas, open ocean fish, reef fish, processed meats and meat products, eggs, coffee and tea, pasta and ramen noodles and sakau. The complete dataset on frequency of consumption per food is available in Annex Pohnpei Q9.3.1 (1-40). Breadfruit, bananas, yam, local fresh fruits, reef fish, crustaceans and eggs were the most frequently mentioned foods when respondents were asked if those were favorite foods. From those, breadfruit and eggs are the most frequently mentioned when respondents were asked if there was ever a shortage of their most consumed foods. When asked about what foods were impacted by climate change in terms of availability, the most frequently mentioned are breadfruit, yam and reef fish. When the question addressed the affordability of foods affected by climate change, the most frequently mentioned were breadfruit, yam, open ocean fish and reef fish. Detailed data sets on most frequent food shortages, climate change impacts on food availability and affordability are available in Annex Pohnpei Q9.3.3 (1-40), Q9.3.4 (1-40) and Q9.3.6 (1- 40).

About 35% of survey participants in Pohnpei mentioned that they had to change the places where they get their food from due to climate change. From those, around 82% mentioned that they are getting more food from wild places, while only 27% declared getting more food from cultivated places (See Annex Pohnpei Q9.4.3 for more details on changing food sources). From the respondents declaring that they changed their food source, 71% mention that it became less difficult to access foods. More than 67% of Pohnpei respondents are concerned about how climate change will impact the foods that they eat, including availability, affordability, quality and safety.

Survey participants were also asked about their perception of how the COVID-19 pandemic influenced their food system. Around 24%, 29% and 33% of respondents declared that food consumption, production and demand of local foods has changed during the pandemic. This was summarized by a participant, "*COVID-19 does not affect the food production locally however high inflation rate of imported food is in effect; people don't plant food much these days; and cost of food is very high including local food*." – Pohnpei HHS open-ended questions. In relation to consumption and production, the majority of respondents

declared that there was a decrease, while for the demand of local foods there was an increase (More detailed information in Annex Pohnpei Q10.1 to Q10.6). Approximately 13% of respondents have sent food products overseas during the COVID-19 pandemic (both commercial and to family members), and, from those the most demanded products were swamp taro, breadfruit and banana (Annex Pohnpei Q.10.8).

Regarding their perception, preference and attitudes, Pohnpei respondents were asked what foods they consider to be healthy and nutritious. Among the most frequently mentioned foods are fresh vegetables, fresh fruit, fresh fish/seafood, fresh meat and eggs. In addition, respondents noted consuming more imported foods. For example, "*Now most families depend on imported food and goods. They consider rice, canned meat and frozen meat as food... [Many years ago] most meals were local food like banana, breadfruit or taro*" – Pohnpei FG1. More detailed information related to perception of healthy and nutritious foods is available in Annex Pohnpei Q.11.a. When asked if they feel their diet is healthy and nutritious, the majority of respondents (72%) responded yes and 53% feel that their current diet positively affects their health. The majority of respondents declared that they would be interested in consuming locally sourced foods if they were available and affordable. For example, 72% of respondents reported that they would be interested in replacing imported rice with local starch crops such as taro and breadfruit. About 82% of respondents would be more willing to buy locally produced foods if they knew they were healthier than imported and processed foods. For those that declared that they would not be willing to buy locally produced foods to replace imported and processed foods, the most frequent reasons were that they are perceived as more convenient and take less work to prepare (see detailed data in Annex Pohnpei Q.11.12). In addition, a respondent noted that due to poor harvests and availability of wild foods, they "*switch[ed] to processed food and wait[ed] for a good and better harvest*." – Pohnpei HHS-open ended questions.

When asked what solutions and/or resources they feel can assist them with long term local food production goals, the most frequently mentioned by Pohnpei residents were availability of tools and agricultural training. Some respondents specified the type of training that would be most useful. For example, "*Knowledge to grow local crops to adapt to climate change.*" – Pohnpei FG2. In addition, respondents noted that "*since the soil is not good like before we need training for creating our own fertilizer*." -Pohnpei FG4. Furthermore, respondents requested "*training … to process local food crops from spoiling or rotten*." -Pohnpei FG3. Among the most poignant statement from a respondent was that she would "*prefer that food security issues be centred and concentrated locally by planting indigenous food stuff that are resilient to our island. God has given us food sources specific for our environment that are disease free compatible to our own environment. Stop bringing other food stuff not belonging to this environment*" – Pohnpei HHS open-ended questions.

Yap - Household Food Security, Focus Groups and Climate Resilience Survey

For Yap, household surveys were conducted with 163 participants, from which 86 (52%) are male and 77 (47%) are female, with an average age of 47 years old and declaring, on average, having 5 people per family. Growing crops, growing foods for household consumption (subsistence living) and fishing were the most frequent livelihood sources mentioned by Yap respondents. Other sources included raising livestock, paid work in agriculture, government and private employment, NGO employment, remittances, social security and government/NGO support. Around 47% of respondents completed secondary (high) school, 21% completed higher education and 19% have incomplete higher education. For more details on the frequencies of livelihood sources and education, please see Annex Yap Survey Q.2.4 and Q.2.5.

The majority of Yap respondents declared that they are engaged in fishing/harvesting ocean food sources, raising livestock/poultry, farming/harvesting medicinal crops and farming/harvesting local food crops for family consumption.

When asked about the main problems related to farming, coastal flooding and extreme heat where the most frequent issues, both being classified by 58% of Yap respondents as big problems for their farm. Other issues frequently classified as big problems were drought, invasive species, saltwater inundation, difficulty predicting when the rainy season will come and coral bleaching (detailed information on main problems

associated with farming can be found in Annex Yap Survey Q.3.2). More than 80% of respondents have noticed that both mean temperatures and rainfall increased or was more erratic in the last 10 years (Annex Yap Q.3.3.1 and Q.3.3.2). This erratic weather causes "*seasons [to be] different times and more extreme. Farmers and fisherman report it is harder to predict production levels and generally harder to farm and fish*." -Yap FG6.

Over 60% of respondents also noticed that the start of the rainy season has been more erratic in the last 10 years.

From those that noticed changes in climate, 19% declared that they had to make adjustments to their farming. The most frequently mentioned changes in farming included changing crop varieties and types, building a water harvesting schemes, implementing soil conservation techniques, planting trees, and changing fishing locations For example, one respondent noted that they "*used to grow taro in patches near coastal area and now growing away from coastal areas.*" - Yapp HHS open-ended questions. Another participant noted that they "*migrate crops/plants/vegetables to higher elevations. Plant trees along coastal areas that are susceptible to erosion/ changed fishing methods to strictly catching fish of mature sizes (sustainable fishing)*" - Yapp HHS open-ended questions. For a complete list of the most frequent farming adjustments see Annex Yap Survey Q.3.3.5. For respondents that affirmed not changing farming practices, the most frequent reasoning was lack of information, mentioned by 63% of respondents, followed by labor shortage and lack of money/credit, mentioned by 31% and 30% of respondents, respectively (Annex Yap Survey Q.3.3.6). When asked if they experienced any issues with water quality, off color was mentioned by 46%, while not experiencing issues was mentioned by 40% of Yap participants (Annex Yap Survey Q.3.3.7).

Around 93% of Yap respondents grow and/or harvest food crops and marine organisms and, from those, over 99% grow for family consumption, 32% for sale and 25% for traditional exchange. When asked to describe the food production/harvesting that they do for household consumption, the most frequent answers were collecting products from the forest, raising livestock, and fishing and collecting marine food. Other, less frequently related activities included raising livestock, collecting forest products, and fishing/harvesting marine food to sell at the market, agroforestry and fishing/collecting marine products to send to family/friends outside FSM (Annex Yap Survey Q.4.1, Q.4.2 and Q.4.3).

A majority of Yap respondents (85%) declared they have adequate access to land for growing and/or harvesting crops, 21% feel that the land that they own is not enough and 23% would want more land if available. About 67% of Yap participants declared that the land that they have to raise/harvest crops is shared (Annex Yap Survey Q.5.1). When asked about what foods are grown and harvested, the most frequently mentioned by Yap residents were bananas, coconut, betelnut, hard taro and copra (coconut product). When asked how often each food is harvested, most respondents declared that copra and betelnut are harvested several times a week, hard taro once every other week, coconuts once a week and bananas once a month. From the main foods, respondents answered that they most frequently harvest large quantities (more than 100 lbs.) of hard taro, copra and betelnut over the course of year, while for coconuts the most frequent answer was medium quantities (between 50 and 100 lbs. a week) and for bananas, the majority of respondents declared that they are not ready for harvest over the course of a year. The complete list of foods grown/harvested, the frequency and the amount of harvest over the course of a year can be found in Annex Yap Survey Q.5.2.1 (1-28), Q.5.2.2 (1-28), Q.5.2.3 (1-28).

As for the number of plants in the field, betelnut was reported to have the highest average number per farm, 212.79 plants, followed by hard taro and coconut with 185.81 and 152.51 plant per farm, respectively. Crops such as cacao, sakau and black pepper are highlighted for being in the smallest number of plants per farm, with averages of around 7. When asked about the foods that had a higher incidence of crop loss, hard and soft taro were the most frequent, mentioned by about 70% of respondents, followed by copra, betelnut, betel leaf and bananas. For a complete list of the minimum, maximum, and average number of plants in the field for each food, incidence of each crops' loss, please see Annex Yap Survey Q.5.2.4 and Q.5.2.5. More

than half of Yap Survey participants (55%) declare practicing some form of organic agriculture and, from those, 94% mention using compost, 48% chipping for mulch, 38% using green manure and 5% chili spray.

Approximately 62% of Yap respondents believe their ability to grow food has been affected by changes in climate and over 70% declared that a change in the climate has impacted their crop yield. For those who had their crops/food affected by weather, a follow-up question was asked to assess which of the crops are more affected.

The most frequent foods/crops affected by climate change, according to Yap residents, are betelnut, mentioned by 78% of respondents, hard taro by 70%, soft taro by 64%, banana by 50% and sweet potatoes by 47% (see detailed list of crops affected by climate change in Annex Yap Survey Q.5.3.5). For those who believe climate change impacted crop yield, the main events associated with losses are extreme heat, heavy rains, and increased threats to crops from pests and disease (more detailed information on issues associated with crop losses can be found in Annex Yap Q.5.3.6). One respondent reported the impact of this extreme heat: "*This year of 2022, we have witnessed for the first-time full-grown coconut and betelnut trees die due to extreme heat*." - Yapp HHS open-ended questions. When asked if they have access to enough water for crop production, 39% of respondents answered that they had access all of the time, 57% most of the time and 4% none of the time. The majority of respondents declared that the water that they use for crops comes from rain (82%), public water system (64%), stream (27%), well (16%) and pond (3%).

When asked about the crops they grow (exclusive grown as opposed to grow and/or harvest, addressed in Q.5.2.1), the most frequently mentioned by Yap respondents were bananas (mentioned by 96%), betelnut (94%), hard taro (93%) and coconut (91%). When asked to cite the foods where crop losses happen, betelnut was the most frequent crop cited by 79% of Yap respondents, followed by soft taro, hard taro and sweet potatoes. Detailed data on most frequent crops and frequency of each crops' losses can be found in Annex Yap Survey Q.5.4.1 and Q.5.4.2. Respondents relating that they experience crop losses were asked, for each crop, what were the causes of loss associated with the climate. For the main crops, bananas, betelnut, hard taro and coconut, extreme heat, drought, plant diseases are among the most frequent issues mentioned by Yap respondents. Other important issues for most crops include flooding, saltwater inundation and unpredictability of the rainy season. Detailed information on frequency of issues related to weather for each major crop in Yap can be found in Annex Yap Survey Q.5.4.2.

More than half (53%) of Yap respondents reported that they raise livestock and/or poultry. From those, 82% claim to have access to adequate land for this activity, more than 88% believe that they have enough land and 57% mention that the land they have access to is shared (Annex Yap Survey Q.6.1 to Q.6.5). When asked what animals/livestock they raise or keep, the most frequently mentioned by Yap residents were pigs, mentioned by 85% of respondents, chickens (68%) and dogs (28%). Other animals cited in the survey were goats, deer and bovine. Around 9% of survey respondents noticed changes in raising animals in the last 10 years and around 34% mention that they would like to raise livestock/poultry commercially. In order of importance, tools and equipment, availability of food, knowledge, time, capital, land, initial materials, lack of veterinary doctors and marketing are the main obstacles to livestock/poultry production, according to Yap respondents (Annex Yap Survey Q.6.6 to Q.10). In addition, it was noted however that "[*it] costs more to maintain environment-friendly conditions (ex: pig pens & waste management)"* –Yapp HHS open-ended questions.

Most Yap respondents harvest marine or freshwater organisms (64%) and around 39% feel that they do not have access to enough marine resources. The majority of respondents obtaining food from open ocean, outer reef, inner reef and mangrove declared that they share these spaces with other people. When asked how often they fish or collect food from specific locations, the most frequent answer for mangrove, open ocean and rivers was 'never', while for inner reef, once a week was the most common frequency and, for outer reef, once a month (Annex Yap Survey Q.7.2.1). Most of respondents noticed that, in the last 10 years, aquatic species have decreased in number in mangroves, inner reef, outer reef, open ocean and river (Annex Yap Survey Q.7.2.3 to Q.7.2.8).

Around 61% of respondents in Yap would grow more crops, fish/harvest marine resources and/or raise more livestock if they could. According to Yap residents, the most frequent barriers to expand food production/collection are lack of production resources, lack of source of finance, lack of management skills, weather issues, not enough time and disease or pest infestation (detailed information in Annex Yap Survey Q.8.1.2). Most of Yap respondents (74%) either agree or strongly agree that climate change is causing problems for their farm/fishing. Around 61% either agree or strongly agree that climate change is making it harder for them to grow crops/fish/harvest, while 35% agree or strongly agree that climate change is making it harder to raise livestock. More than half (52%) of Yap residents strongly agree that climate change is causing extreme weather, while 30% either agree or strongly agree that they may have to stop farming because of climate change. More than 24% of Yap farmers agree that climate change caused significant changes in their farm, while 26% strongly agree that climate change is the biggest problem facing their farm now (Annex Yap Survey Q.8.2.1 to 8.2.7).

About 17% of respondents affirm that climate change impacted their access to clean fresh water, while 12% declared that they had to change crop types in the past 10 years (from those, 41% mention that climate change was an important reason for the change). More than 21% of respondents changed/adapted farming practices during the last 10 years, most of those claiming that climate change was an important reason for the changes (Annex Yap Survey Q.8.3.1 to 8.4.5).

When asked where they acquire most of their food, wild places (such as forests, freshwater, rivers and/or the ocean) and cultivated places were the most frequently cited, mentioned by 74% and 71% of respondents, respectively. Other sources include informal and formal markets, supplemental food assistance, relatives, and extended family. The most common methods to travel to get food for Yap respondents are walk and personal car and between 5 and 30 minutes is the most frequent time mentioned by respondents to get the majority of food they harvest/produce and the food they purchase (Annex Yap Survey Q.9.1.2 to Q.9.1.4).

Affordability and availability are the most frequent barriers preventing Yap respondents from attaining healthy, nutritious food (detailed list of barriers available in Annex Yap Survey Q.9.1.6). The majority (more than 55%) of Yap participants in this survey at least rarely (sum of rarely, sometimes, and often responses) worried that they would not have enough nutritious food to eat, could not afford to eat healthy food and/or could not afford to eat the foods they prefer and had to eat a different type of food (Annex Yap Survey Q.9.2.1 to Q.9.2.3). Almost 30% of respondents at least rarely had to skip meals because there was not enough money for food, and almost 40% at least rarely ate less than preferred because there was not enough food. Around 30% of respondents declared that they at least rarely went hungry because there was not enough food to eat and, almost 17%, at least rarely, went a whole day without food (Annex Yap Survey Q.9.2.4 to Q.9.2.7).

Yap survey participants were asked the frequency of consumption of 40 common foods in their diet. Rice was the most regularly eaten food, with the majority of respondents (58%) declaring to eat it multiple times a day. Foods such as taro, banana, processed meats and meat products and imported vegetables are commonly eaten 5 to 7 times a week. For other foods, the most common frequency of consumption is between 1 and 4 times a week. A detailed list of the most common frequencies of eating each specific food can be found in Annex Yap Survey Q.9.3 (1-40). When asked to report their favorite foods, the most frequent answers by Yap respondents were meat and meat products, mentioned by 96% of respondents, and taro, reef fish, open ocean fish and local fresh vegetables, mentioned by 95%, 92%, 91% and 90% of respondents, respectively. A complete list of favorite foods is available in Annex Yap Survey Q.9.3.2. When asked to cite which foods were often subject to crop loss, the most commonly mentioned by respondents were breadfruit, eggs, yam, local fresh fruit, sweet potatoes and reef fish, all mentioned by around 60% of respondents. The most frequent foods cited when asked if climate change had impacted their availability were yam, tapioca, sweet potatoes, local fresh fruits and reef fish. In addition, participants noted that climate change influenced the affordability of eggs, cited by 46%, followed by sodas, processed meats, meat products and dairy, each mentioned by 44% of participants. More detailed lists of frequency of shortages

in each food and climate impacts on availability and affordability can be found in Annex Yap Survey Q.9.3.3 (1-40), Q.9.3.4 (1-40) and Q.9.3.6 (1-20).

Half of Yap respondents declared that the places where they get their food from has changed due to climate change. Due to climate change, a majority of participants reported acquiring more food from formal markets and from cultivated places (Annex Yap Survey Q.9.4.3) and the majority (63%) of respondents believe that it is now less difficult to access food. More than 80% of respondents are concerned how climate change will impact the foods that they eat, and, from those, the main concerns are related to food availability, affordability, quality, and safety (Annex Yap Survey Q.9.4.4 to Q.9.4.6). One respondent (a retailer) noted that "*finding a synergy through a co-op can help all businesses and agriculture activities in the community*" – Yap FG5 which could improve the availability, accessibility, and affordability of locally produced food.

Approximately 18% of Yap respondents declared that their consumption of local foods has changed during the COVID 19 pandemic, and, from those, the majority reported a decrease in the consumption. A similar trend is observed for the production of local foods. Regarding the demand for local foods during the pandemic, 18% observed changes and, from those, the 66% noticed that the demand increased for local consumption and 16% noticed an increased demand for export. Around 17% of respondents mention that they sent food products overseas during the pandemic and the most demanded products were betelnut, hard taro and soft taro (Annex Yap Survey Q.10.1 to Q.10.8).

When asked to cite which foods they consider to be healthy and nutritious, all Yap respondents included fresh vegetables, 98% mention fresh fruits, 96% fresh fish/seafood, 93% fresh meat, 70% coconut milk and 64% eggs (for the complete list, please see Annex Yap Survey Q.11.1a). A respondent was able to expand on this and note that a healthy diet is when you "*consume less processed food and eat more local food*" – Yapp HHS open-ended questions. When asked what percentage of their diet is imported food, between 50 and 75% was the most frequent answer (Annex Q.11.1.b). More than half of Yap respondents (52%) feel their diet is healthy and nutritious. The majority of Yap residents believe their diet impacts their health. Almost 67% of participants would be willing to replace imported milk products with coconut milk for cooking, while over 90% would be interested in consuming more locally produced vegetables and fruits if they were more available and affordable. More than 85% of respondents would be more willing to buy locally produced foods if they knew they were healthier than imported products. For those who prefer imported products, the main reasons pointed out for the choices are they are more convenient, take less work to prepare and they taste better.

When asked what solutions and/or resources they feel can assist them with long term local food production goals, the most frequently mentioned by Yap residents were availability of tools and agricultural training. Some respondents reported the need for technology innovation, business, and administration training, and "*grant writing and project management*" – Yap FG2. In addition, a respondent (a retailer) noted that they "*would like to know more about value-added and niche markets. How can I keep production levels the same but make more money*?" -Yap FG3. Furthermore, several respondents noted that an increase in "*business in Guam…*" – Yap FG6.

2022 Survey of Outer Islanders living on main Island Yap

While the 2022/23 GCF baseline survey focused on farming families living in the main islands of each state, some respondents were outer islanders who moved to the main islands for several reasons including, and in part due to, a changing climate. Surveys were intentionally conducted in Yap targeting outer islanders from Faraulep, Woleai, Falalop, Fadrai, Euripek, Satawal, and Ifalik—and villages of Ruu, Makiy, Daboch, Gargey, Gitam and Madrich who had moved to the main island Yap. About 67% of these outer islanders responding to the baseline survey reported that they grow crops for subsistence living. The majority shared that their ability to grow food on their land had been impacted by a change in climate and that climate change has impacted their overall crop yields.

Growing crops (93%), subsistence living (67%), fishing (40%) and social security (40%), were the most frequently mentioned livelihoods sources for the households. The vast majority (93%) of outer island respondents farm and/or harvest local food crops and around 60% farm and/or harvest medicinal crops. Around 40% of respondents raise livestock and/or poultry and 47% fish or harvest ocean food sources. Coastal flooding and coastal erosion, saltwater inundation, difficulty predicting when the rainy season will come, increased threats to crops from pests and disease and coral bleaching are the most frequently mentioned as big farm problems associated with climate by outer island respondents.

More than 73% of outer island respondents grow and/or harvest food crops and, from those, 100% does so for family consumption, 84% for sale and 64% for traditional exchange. Extreme heat, lack of water and increased threats to crops from pests and disease are the main issues causing crop loss according to respondents of this survey. Lack of sufficient income, coupled to higher expenses for many commodities and supplies due to the additional shipping charges to the more remote areas, further contribute to the difficulty in reducing vulnerability. The observations by these outer islanders living on the main island of Yap are in agreement with the overall results from other respondents but with greater intensity of the hardships that they face and with fewer options that would have allowed them to stay on the outer islands.

Comparisons in Perceptions of Household Food Security and Climate Resiliency Between Yap, Kosrae, Pohnpei and Chuuk and Observations from the Commercial Sector

Growing crops and subsistence living are the two most frequently mentioned livelihoods sources in Pohnpei and Yap, while for Chuuk, the most frequent ones are growing crops and fishing and, for Kosrae fishing is the most frequently mentioned source of livelihood, followed by growing crops. Raising livestock are among the top 3 main livelihood sources for Kosrae and Pohnpei but not for Yap and Chuuk (Annex All Household Survey Q.2.4). The most frequent highest level of education in Yap is completed secondary (high) school, while for Kosrae and Pohnpei it is complete higher education and for Chuuk it is incomplete primary school (Annex All Household Survey Q.2.4).

In all four states, most respondents report farming/harvesting local food crops and medicinal crops, raising livestock/poultry and fishing/harvesting ocean foods. The three main farm problems for Pohnpei respondents are extreme heat (mentioned by 49% of respondents), heavy rains (38%) and invasive species (36%), somewhat similar to Chuuk, where the most commonly mentioned problem is extreme heat (59%), and the third most mentioned is invasive species, the second being drought. In Yap coastal flooding and extreme heat share the first place, each mentioned by 58% of respondents, followed by drought (54%) and invasive species (54%). In contrast, respondents in Kosrae reported a very different scenario, with invasive species being their main problem (67%), followed by increased threats to crops from pests and diseases (58%) and inland flooding (56%) (Annex All Household Survey Q.3.1 and Q.3.2).

For Yap, Pohnpei and Kosrae, most respondents perceive that mean temperature and average rainfall increased over the last 10 years. Despite the majority observing that mean temperature increased, in Chuuk, only 37% perceived increases in rainfall. More than half of Kosrae respondents (54%) indicated that they needed to make changes to their farming practices because of climate change while for the other states, a smaller percentage had to make such adjustments. From those having to alter farming practices, the three most frequent changes in Kosrae were the need to introduce irrigation (reported 73% of respondents), learning to grow crops under protected structures (67%) and changing crops they grow (65%). Pohnpei and Yap reported the same two changes as their main farming adjustments due to climate: implementing soil conservation techniques and planting trees. In Chuuk, the primary adjustments were changing crop types grown and the need to change crop varieties to include those more climate resilient. For those that did not alter their farming practices, the most common reasoning as reported by those from Kosrae and Yap residents was the lack of information (not knowing what to do/how to adjust) while for Pohnpei and Chuuk the most frequent reason for those not making any adjustments was ‘not seeing the need to do so’, and in

part that reflected not knowing if anything they could do would make any improvement (Annex All Household Survey Q.3.3.4 to Q.3.3.6).

Most respondents from each state grow and/or harvest food crops (including marine organisms) for family consumption and/or for sale. Raising livestock to feed the family and fishing/collect marine food for the family are among the most common activities in all four states. Agroforestry is among the most common activities for Pohnpei but not for Yap and other states, while collecting products from the forest for the family is more frequent in Yap and Kosrae, and less so in Pohnpei and Chuuk. The majority of respondents in all four states assert that they have adequate access to land to produce/harvest food and believe that what they currently have is enough (this includes their own land or shared land with family). Only in Kosrae, the majority of respondents indicated that they would like to have more land if available to pursue food production and other business opportunities.

There is a wide diversity of crops grown and/or collected in each of the states across the FSM. The largest differences reported, and as expected, was the relative rank order of importance of the specific crops and food products in each of the four states. Given the wide list of foods grown/collected/caught, the Annex provides the detailed responses for all crops by state. Here, we present illustrative examples of the most frequently grown/harvested foods. Bananas were the most frequent across all four states and coconut was reported in the top 5 crops of all states. Breadfruit was one of the top 5 most frequent foods grown in Kosrae, Pohnpei and Chuuk, but not in Yap. Betelnut was a top 5 food grown/harvested in Yap but not in Kosrae, Chuuk and Pohnpei. Yam and limes/lemons were among the 5 most frequent foods in Pohnpei, but not in other states. Mango was in the top 5 foods frequently mentioned to be grown/harvested in Chuuk, but not in the other states. In Pohnpei bananas and coconuts are most frequently harvested several times a week, while in Kosrae those crops are commonly harvested once a week. In Chuuk coconuts are also harvested several times a week, while bananas are commonly harvested once a week or every other week. In Yap, bananas are most commonly harvested once a month and coconuts once a week. In Kosrae, bananas are most frequently harvested in large quantities (more than 100 lbs.) in the course of a year, while in Pohnpei and Chuuk they are harvested most commonly in small quantities (less than 50 lbs.). Coconuts are more commonly harvested in medium quantities (between 50 and 100 lbs.) over the course of a year in Yap, Pohnpei and Kosrae, while in small quantities in Chuuk. Pohnpei and Kosrae respondents' most frequent answer for how much hard taro is harvested over the course of year was 'small quantities', while for Yap the most frequent answer was large quantities. (See complete lists with each food/crop, their harvest frequency and quantity harvested are available in Annex All Household Survey Q.5.2.1 to Q.5.2.3).

Climate change has significantly impacted food producers across the FSM. Hard taro and soft taro are among the most frequently mentioned foods associated with crop losses in all four states due to climate change. Bananas are among the main foods associated with crop losses in all states except Kosrae and breadfruit is among the most frequent crop losses for Pohnpei and Chuuk (Annex All Household Survey Q.5.2.5). Those from Pohnpei also indicated significant crop losses from yam and sakau due to climate change. Nearly half of the respondents in all 4 states indicated that they practice some form of organic agriculture and, in across all 4 states the most frequently mentioned methods were the use of compost, green manure (to provide nutrients and moisture retention), chipping for mulch (weed control, moisture retention) and home-made chili spray (for pest control).

For those who believe that climate change affected their crops, extreme heat was the most frequently mentioned issue in all four states and heavy rains was the second most frequently mentioned in Yap, Kosrae and Pohnpei. In Chuuk, drought was the second most mentioned weather event causing crop loss. Saltwater inundation and flood were also frequently mentioned events in Chuuk but not in other states Only in Pohnpei did respondents indicate that they have water all of the time for their crops as opposed to 'some of the time', the most common answer of other states. Rain was the most frequently mentioned source of water for crops in all 4 states (Annex All Household Survey Q.5.3.5 to Q.5.3.8) and availability of water and water quality remains a concern across much of the FSM.

For important crops such as bananas and coconuts, in Chuuk, Pohnpei and Yap, extreme heat was the most frequent weather event associated with crop loss, while for Chuuk flooding was the number one issue. Heavy rains were the third most frequent issue for bananas and coconuts in Kosrae and second in Pohnpei, while in Yap and Chuuk the second most frequently mentioned event was drought. Plant diseases are among the most frequently mentioned issues for bananas in Yap and Pohnpei, but less so relative to other pressing concerns in other states (Annex All Household Survey Q.5.4.3).

Yap was the state where the lowest number of people (53%) reported to be raising livestock and/or poultry, while Pohnpei was where most people are involved in animal husbandry (89%). In all states, more than 70% indicated that they have enough access to land to raise livestock/poultry, but only in Kosrae more than half (56%) of respondents would like to get more land if available. Pigs and chickens were the most frequently raised animals according to respondents in all 4 states. Only in Yap, less than half of respondents would like to raise livestock/poultry commercially. Kosrae had the highest proportion of respondents willing to raise livestock/poultry commercially (79%) (Annex All Household Survey Q.6.1 to Q.6.9). The inclusion of dogs as livestock as shown in the results in Pohnpei for example actually reflects the use of these animals for companionship and security, though in some cases and in more traditional settings also as a food source.

Similar to livestock production, Yap had the lowest proportion of respondents (64%) reported to harvest marine or freshwater fish/organisms from all the states. This is in contrast with Kosrae, where the highest proportion of respondents are involved in this activity (84%). For Yap, Pohnpei and Chuuk, 'never' is the most frequent answer when asked how often they fish/collect foods from mangrove and open ocean, while in Kosrae, the most frequent answer was 'once a month' for mangrove and several times a week for open ocean. As for the frequency of fishing/collecting in inner reef the most frequent answer in Kosrae, Pohnpei and Chuuk was 'several times week', while in Yap it was 'once a week'. For outer reef, Kosrae and Chuuk's most common frequencies were 'several times a week', while for Yap it was 'once a month' and for Pohnpei, 'never' was the most frequent answer. The majority of respondents in all 4 states noticed a decrease in number of food sources (aquatic species) over the last 10 years in mangrove, inner reef, outer reef, open ocean and rivers (Annex All Household Survey Q.7.1 to Q.7.5).

The majority of respondents in all four states indicate that they would grow/fish/harvest more food or raise more livestock if they could. In all four states, lack of production resources/tools was the most frequently mentioned barrier to expand food production. Lack of finance sources and options was also a major barrier across all of FSM. The majority of respondents in all four states either agree or strongly agree that climate change is causing a lot of problems for their farm/fishing, that it is making it harder for them to grow crops/fish/harvest and that it is causing a lot of extreme weather. In Yap, only 35% of respondents 'agree or strongly agree' that climate change is making it harder for them to raise livestock, while in Chuuk this number is 61%. Around 30% of respondents in Yap and Pohnpei either 'agree or strongly agree' that they might have to stop farming because of climate change, while in Kosrae and Chuuk these percentages are higher, around 45% of respondents. More than half of respondents in each state 'either agree or strongly agree' that climate change is the biggest problem facing their farm right now (Annex All Household Survey Q.8.1 to Q.8.2.7).

Around 66% of respondents in Chuuk indicated that a change in climate impacted their access to clean fresh water, a significantly higher proportion than Kosrae and Yap, where 29% and 17%, respectively, report problems with access to water. Chuuk also had the highest proportion among all states of respondents mentioning that they changed/adapted farming practices (including fishing) in the past 10 years due to climate change (Annex All Household Survey Q.8.3.1 to Q.8.4.5). Chuuk is also the leader across the FSM in local food production and agriculture and fishery/marine farming.

Wild places (including forest and undeveloped tracts) and cultivated places were the most frequent answers in Yap, Pohnpei and Kosrae when respondents were asked where they get most of their food from, while in Chuuk the two most frequent answers were cultivated places and relatives and extended family, wild

places being only the 5th most frequent answer in the state. In all four states, availability and affordability are the common barriers mentioned by respondents to attain healthy, nutritious food (Annex All Household Survey Q.9.1.1 to Q.9.1.6).

More than 82% of respondents in Chuuk at least rarely (sum of rarely, sometimes, and often responses) worried that they wouldn't have enough healthy and nutritious food to eat, while more than 80% said that, at least rarely, they could not afford to eat healthy and nutritious food. Those numbers contrast with Pohnpei, which had the lowest frequencies of such issues, with 51% at least rarely worrying that they wouldn't have enough healthy and nutritious food to eat and 45% that they could not afford to eat healthy and nutritious food. In Chuuk around 40%, at least rarely, went a whole day without food, while in Kosrae, Yap and Pohnpei these numbers were 20%, 17% and 3%, respectively (Annex All Household Survey Q.9.2.1 to Q.9.2.7).

Rice was the most frequently eaten food according to respondents of all four states, being most frequently mentioned to be consumed several times a day. In Yap, banana, taro, and meat products are frequently eaten 5 to 7 days a week, somewhat similar to Pohnpei, which also included breadfruit, open ocean fish, reef fish, and eggs in the category of foods most frequently eaten 5 to 7 days a week. In Chuuk, for important foods such as taro, breadfruit, banana, and coconut, 1 to 4 times a week was the most frequent answer. Kosrae was the only state where foods other than rice were frequently mentioned to be eaten multiple times a day, such foods included open ocean fish, reef fish, coffee and tea.

Meat and meat products were the most frequently cited when Yap respondents were asked to list their favorite foods. For Chuuk, Pohnpei and Kosrae, reef fish, breadfruit and bananas were the most frequently mentioned favorite foods, respectively. Reef fish was among the top five favorite foods in all four states and open ocean fish was among the top 5 of all states, except for Pohnpei. Banana was among the top 5 favorite foods for Chuuk, Kosrae and Pohnpei, but not Yap. When asked to cite foods subject to shortages, breadfruit and eggs were the 2 most frequently mentioned by Yap, Chuuk and Pohnpei respondents, while in Kosrae rice and eggs were the 2 most common. In Yap, yam, tapioca, sweet potatoes, local fresh fruits, and reef fish are the most frequently mentioned foods whose availability has been impacted by climate change. Yam and reef fish were also among the most frequently mentioned by Pohnpei respondents, while Kosrae respondents also mention reef fish, but not yam as the most frequent foods whose availability has been affected by climate change. In Chuuk, the most frequent foods mentioned to have their availability affected by climate change were taro, breadfruit, and bananas. When asked to cite the foods whose affordability has been impacted by climate change, reef fish and open ocean fish were among the most frequent answers in Chuuk, Pohnpei and Kosrae. In Yap, the most frequent answers were eggs, sodas, and processed meats. Taro, breadfruit, and reef fish were the most frequently mentioned to have their affordability affected by climate change in Chuuk, Pohnpei and Kosrae, respectively (Annex All Household Survey Q.9.3.1 to 9.3.6).

Approximately half of the respondents in Yap, Kosrae and Chuuk had to change the 'places' where they get their food from due to climate change, while in Pohnpei this percentage is slightly lower (35%). For those having to change the food sources, the majority of respondents in Yap and Chuuk indicated they are now getting more food from formal markets and cultivated places and informal markets, while respondents in Pohnpei and Kosrae most frequently reported getting more food from wild places. Only in Chuuk the majority of respondents reported that it is now harder to access food than it was before. The majority of respondents in all four states declare that they are concerned how climate change will impact the foods that they eat, and, from those, the main concerns are related to food availability, affordability, quality, and safety (Annex All Household Survey Q.9.4.2 to Q.9.4.6).

Chuuk was the state where the highest proportion of respondents believe that the Covid-19 pandemic changed the consumption, production, and demand of local food products. Chuuk was also the only state in the FSM where more than half of respondents believe that the consumption of local foods increased during the pandemic. The majority of respondents in all states declare the production of local foods

decreased and the demand for local products increased during the pandemic. Around 17% of respondents in Kosrae and Yap mention that they sent food products overseas during the pandemic, while in Pohnpei and Chuuk those percentages were 13 and 14%, respectively. The most demanded product overseas according to Chuuk, Pohnpei and Kosrae respondents was hard taro, while in Yap the most frequently mentioned was betelnut (Annex All Household Survey Q.10.1 to Q.10.8).

When asked to cite which foods they consider to be healthy and nutritious, the most frequently mentioned in all four states are fresh vegetables, fresh fruit, fresh fish/seafood, fresh meat. For Yap, Chuuk and Pohnpei, the most common answer when respondents were asked what proportion of their diet is imported food was 'between 50 and 75%', while for Kosrae it was 'between 25 and 50%'. Kosrae is the only state where less than half of respondents feel that their diet is healthy and nutritious. **In all 4 states more than 90% of respondents would be interested in consuming more locally sourced seafood and marine fish, meat and meat products, vegetables and fruits if they were more available and affordable**.

Most respondents in all four states would also be interested in replacing imported rice with local starch crops such as taro and breadfruit and replacing imported milk products with coconut milk products for cooking if they are more available and affordable. More than 80% of respondents in all four states would be more willing to buy locally produced foods if they knew that those foods were healthier than imported and/or processed foods (Annex All Household Survey Q.11.1 to Q.11.12). One of the most salient focus group comments we heard in support of this was: "*We would prefer that food security issues be centred and concentrated locally by planting indigenous food stuff that are resilient to our island. God has given us food sources specific for our environment that are disease free compatible to our own environment. Stop bringing other food stuff not belonging to this environment*." – Pohnpei HHS open-ended questions.

Availability of tools and agricultural training were cited as the most common needs to provide solutions to what most respondents saw as their pressing current limitations and constraints as well as need for additional resources including access to financial capital. Yap, Chuuk and Pohnpei respondents reported that these solutions would assist them with their longer-term local food production goals and food security needs, while in Kosrae, the answer was similar relative to need for availability of tools and agricultural trainings but there the need for greenhouses and aquaculture were also among their most frequent responses (Annex All Household Survey Q.12.2).

Observations from the Commercial Sector

In addition to household surveys, a limited number of commercial surveys were also conducted in Chuuk, Pohnpei and Kosrae. The surveys in Chuuk, Pohnpei and Kosrae were conducted with 14, 8 and 4 respondents, respectively. In Yap, few identified as commercial operators and as such interviews with focus groups were used as a proxy. In the next paragraphs highlights from commercial surveys are presented to illustrate their alignment with findings from the household community surveys. The complete dataset for further details and analysis is available in Annex A3. Commercial Chuuk, Pohnpei and Kosrae surveys.

Cucumber, watermelon and taro are among the crops that commercial respondents of Chuuk and Pohnpei tried to grow, but did not succeed, while in Kosrae the crops mentioned were avocado, dragon fruit and vanilla orchard. Seed problems and lack of production technologies are among the main reasons why respondents stopped growing those crops in Chuuk and Pohnpei, while in Kosrae, low yield and lack of production technologies were among the most common issues (Annex Commercial Survey Q.2.3.1). Lack and difficulty in timely and affordable shipping out of island with its associated high costs and few options associated with shipping (for agricultural inputs and for marketing products to other markets) is a serious issue. This issue needs to be re-addressed at the state and national government levels. Changes in public policy that facilitate support of commercial operations and for all households are critical not only in Kosrae but in all the other FSM states. Shipping limitations impacted everyone surveyed with regard to importation of foods, goods and services and the export of food and other local products to outside markets.

Chicken and pigs are the most common animals raised by Chuuk and Pohnpei commercial survey respondents. The average number of chickens and pigs per farm in Chuuk are 23 and 3, respectively, while for Pohnpei the average number per farm were 35 chickens and 10 pigs.

The most frequent crops grown in Chuuk according to commercial respondents are cucumbers and bananas, while in Pohnpei bananas and breadfruit are the most frequent and in Kosrae cabbage, cucumber and eggplant. The most frequently mentioned reasons to grow those crops in Chuuk and Pohnpei are good prices and home consumption, while in Kosrae good prices and available market are most frequent reasons (Annex Commercial Survey Q.4.1 and Q.4.2).

When asked what type of water collecting systems they had, the most frequent answer by commercial farmers in Chuuk was bucket. In Pohnpei and Kosrae the most frequently mentioned method to collect water was tanks. The majority of respondents in Chuuk, Pohnpei and Kosrae have problems with excessive rainfall and the main strategy to reduce losses associated with this event are making ditches at the side of plants in Chuuk, digging drainage in Pohnpei and crop selection in Kosrae (Annex Commercial Survey Q.4.8 to Q.4.10).

The majority of Pohnpei and Kosrae commercial respondents noticed that production costs increased in the last 5 years, mainly due to increased cost of planting materials. The majority of Chuuk commercial respondents did not notice a change in production costs in the same time period (Annex Commercial Survey Q.4.11 and Q.4.12).

The most frequently mentioned trading partners for Chuuk and Kosrae commercial respondents were retailers, while in Pohnpei it was family relatives. The majority of respondents in all 3 states are often aware of crop prices before they decide to sell. Buyers are the most commonly mentioned determinants of prices of each crop sold by Chuuk, Pohnpei and Kosrae respondents. Chuuk respondents believe improved hygiene would allow them to receive a higher price or a premium if improved, while for Pohnpei ‘organically produced’ is the most frequent answer and for Kosrae hygiene, taste and organically produced were each mentioned (Annex Commercial Survey Q.6.1, Q.6.4, Q.6.4.5, Q.6.12).

The main actions taken against crop loss due to climate, according to respondents in Pohnpei and Chuuk, was starting to grow new crops including climate resilient crops or improved germplasm, adapting to drought, and new land management practices. In Kosrae, they are adopting new land management practices. When asked what type of training and assistance they would like to receive, the most frequent answer for Chuuk commercial survey participants was agriculture training, while for Pohnpei it was food processing and packaging, local vegetable production and marketing. For Kosrae, the most frequently mentioned needs were management skills, marina operator, soil testing lab and source of vegetable seeds. (Annex Commercial Survey Q.7.3 and Q.10.5.1).





Saimon Mix's store in Pohnpei 2022 and Yap farmer harvests turmeric 2024

Conclusions

In 2021, the Green Climate Fund (GCF) project titled "Climate-resilient food security for farming households across the Federated States of Micronesia (FSM)" was awarded to the FSM national government through the Micronesia Conservation Trust. In this context, the GCF Baseline Survey of climate resiliency is the first step on data collection to support decision making and strategic interventions to increase food security in the FSM in the context of a changing climate. More than 600 farming families, local food producers and focus groups involved in food production and marketing across FSM were surveyed for the baseline assessment for this project, with the goal of documenting the impact of climate change on a variety of local food production as well as giving voice to the nation's subsistence farmers and aspiring commercial farmers about their needs, goals and current constraints and market challenges for them to remain viable and more resilience relative to strengthening the land- and marine-based agriculture including, livestock, poultry, fish and aquaculture production within a changing climate.

The GCF Baseline surveys were detailed and extensive using questionnaires designed in participation with local partners in each of the four states and prepared and implemented to assess the key food security risks associated with climate change that FSM family farmers are facing. These surveys were designed to provide valuable data that can be used for Climate-Smart Agriculture (CSA) development tailored to the specific needs of the diverse communities across each of FSM's four independent states. Climate-Smart Agriculture takes a systems approach to increasing access to locally and sustainably grown nutritious food while building a supply chain that integrates with the local communities to make them economically, socially, and environmentally more sustainable in a changing climate.

Significant Findings including Baseline Indicators

Significant findings relative to the baseline indicators include the **loss of economic assets** caused by climate change or extreme weather in **plants**, **livestock,** and **aquatic foods** were measured over the preceding year and we found them to be $444, $213, and $156 lost per household on average, respectively.

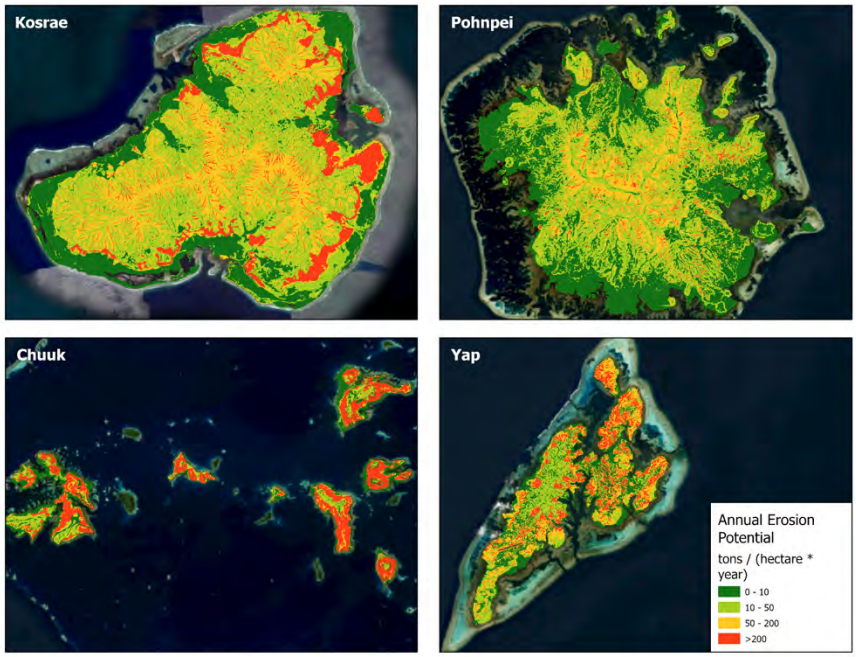
***Survey question*:**
What is your estimated economic loss due to climate change/extreme weather in the past year?

Perceived Economic Loss Due to Climate Change/Extreme Weather	Yap	Pohnpei	Chuuk	Kosrae	FSM
No Households	148	155	151	150	604
Economic Loss Plants $	210	586	307	645	$444
Economic Loss Livestock $	56	42	347	399	$213
Economic Loss Aquatic Foods $	88	40	257	235	$156

The farming communities' perception of soil erosion was significant with 41% of those surveyed in Yap, 63% of those surveyed in Chuuk and 66% of those surveyed in Kosrae stating that they have experienced or observed soil erosion. In Pohnpei, 23% of those surveyed said they had experienced or observed soil erosion.

Mathematical estimations for soil erosion in each of the four FSM states were also significant. The methods for estimating and calculating soil erosion are found in Appendix 1.

Most striking is the estimated potential of 70 tons per hectare per year of soil erosion for the islands of Chuuk State. Yap State's estimated annual soil erosion comes in second at 32 tons per hectare/year.



FSM State	Median Erosion Tons per hectare per year (Slope < 50%)
Pohnpei	13.3
Chuuk	70.9
Kosrae	22.1
Yap	32.2
Mean	**34.6**

The current **mean Soil Erosion** across the FSM was estimated to be 34.6 tons of soil/hectare/year. Yet, only, on average 13.6% of households are currently using **soil erosion practices**. Given that the soil erosion rate is high in the FSM, education, and adoption of effective soil erosion practices must be considered.

Farming families reported that they experienced arable land loss and tidal surges. The highest rates of observed arable land loss and tidal surges were reported taking place in Chuuk

Survey Question	Yap	Chuuk	Pohnpei	Kosrae
Have you or your family experienced any arable land loss due to climate change/extreme weather in the past year?	101 NO 68% 47 YES 32% Total 148	67 NO 44% 86 YES 56% Total 153	135 NO 87% 20 YES 13% Total 155	101 NO 67% 49 YES 33% Total 150
Have you or your family experienced tidal surge (king tides) in the past year?	129 NO 87% 20 YES 13% Total 149	61 NO 40% 90 YES 60% Total 151	143 NO 92% 12 YES 8% Total 155	120 NO. 81% 29 YES. 19% Total 149

Food Expenditure Share:

For FSM as a nation, 71% of household expenditure is on food out of total expenditure



	Category	Score	Yap	Pohnpei	Chuuk	Kosrae	FMS
			% Sample	% Sample	% Sample	% Sample	% Sample
1.	Food Secure	0-49%	7	45	17	17	11
2.	Marginally Food Secure	50% - 64%	17	11	25	15	17
3.	Moderately Food Insecure	65% - 74%	32	21	25	18	24
4.	Severely Food Insecure	75% - 100%	44	63	33	51	48

The **Food Expenditure Share (FES)**, which reflects the percentage of a household's expenditures that goes to the purchase of food, is **71**% across the nation, *indicating* ***moderate food insecurity nationwide*****.**

Food Expenditure Share measures a households' economic vulnerability. The higher the share of a household's consumption expenditures on food – out of the total consumption expenditure – the more vulnerable the households are to food insecurity.

Analyzing the main results obtained by the surveys, it is clear that there are differences among the states related to their food systems and vulnerabilities. For example, survey results show that growing crops and subsistence living are the two most frequently mentioned livelihoods sources in Pohnpei and Yap, while for Chuuk, the most frequent ones are growing crops and fishing and, for Kosrae fishing is the most frequently mentioned source of livelihood and while horticulture (via limes and other fruit) and small-greenhouse/protected cultivation systems has been a focus. Most respondents in all four states assert that they have adequate access to land to produce/harvest food but, only in Kosrae, the majority of respondents indicated that they would like to have more land if available. Although hard taro and soft taro are among the most frequently mentioned foods associated with crop losses in all four states due to climate change, bananas are among the main foods associated with crop losses in all states except Kosrae and breadfruit is among the most frequent crop losses for Pohnpei and Chuuk. The same surveys administered in each state provide results that illustrate the necessity of different approaches in each state, given the geographical environmental differences and as types of foods that are preferred and consumed have a strong cultural and environmental component.

The GCF Baseline survey results thus provide important insights into FSM's food system strengths and vulnerabilities as well as the food system development goals and needs for FSM farming communities across all four states. To support FSM states' food system development goals, the data has been summarized into the below categories:

FSM food system strengths as shared by surveyed farming families

FSM: The FSM has, as a nation, shown international leadership in protecting its waters and oceans, and it's ocean food sources (75%) and collecting products from the forest for family consumption (70%). Chuuk respondents expressed great pride in their involvement in farming from land or sea, particularly their horticultural industry and fishery sectors. As expressed during a Focus Group meeting, "the lands that are covered with other kinds of plants will be filled with food crops." -Chuuk FG2. Chuuk has developed successful farmers markets and a high number of respondents prefer to grow and/or purchase local foods. The vast majority (96%) of respondents would be interested in consuming more locally sourced seafood and marine fish on a daily basis if they were more available and affordable and the same trend was observed

for locally sourced meat and meat products, locally produced coconut milk and locally produced vegetables and fruits. The majority of Chuuk households would also be interested in replacing imported milk products with coconut milk products for cooking, replacing imported rice with local starch crops. More than 82% of respondents would be more willing to buy locally produced foods if they knew they were healthier than imported foods. This indicates great potential to develop and implement actions (from educational awareness, public campaigns and more) that would provide such health and nutritional information about local foods to households. Results from this baseline survey clearly indicate that the nation and each state can take steps to sustainably develop and increase local food production significantly to reduce imports of many of the same products, and as a consequence generate new jobs, income and new opportunities for its youth, women and those already involved in subsistence and small-scale farming and fishing. Projects to mitigate against climate change, that may be led by the national or state governments, with funding from international donors, can be designed to increase community engagement and resiliency, strengthen the preservation of the local ecology and habitat, restore coastal areas and coral reefs, improve the access and availability of fresh clean water, and significantly reduce food insecurity by developing long-term local-based strategies that strengthens both the households across the FSM and as well as create public policies and programs that strengthen private sector development with a sensitivity and recognition of the importance to preserve and respect the traditional cultures and a focus on long-term development that builds upon economic, environmental and cultural sustainability across the FSM.

Chuuk: The majority of Chuuk respondents are subsistence farmers growing local food crops (95% of respondents) and medicinal crops (85%), raising livestock and/or poultry (83%) and fish/harvest. Approximately 42% of respondents in Chuuk not only recognized the negative impacts of climate change but took proactive steps to mitigate their perceived risks by altering their farming practices. They had the initiative and willingness to trial and grow new and improved varieties of crops, implement soil conservation techniques, use protected environments (plastic/greenhouses) to grow some crops to mitigate adverse weather, and change their fishing locations and practices. Chuuk respondents exhibit a strong entrepreneurial and marketing orientation as 39% grow/harvest food to sell and 14% for traditional exchange and these are real strengths when seeking to further strengthen the food production sector. In Chuuk there are successful growers and marketing groups/associations such as the Chuuk Women's Council and these groups provide significant support to its members which can be scaled-up. Chuuk's grows and trades in a wide variety of crops and households noted that their favorite foods included reef fish (96%, open ocean fish (95%) breadfruit (965), coconut (94%) and banana's (93%). Given that rice is consumed multiple times a day, any replacement/substitution with other important foods that are also 'foods of their choice' such as taro, breadfruit, banana, coconut and mango could be significant to the growing local economy.

Kosrae: Most Kosrae respondents are subsistence farmers (land and ocean based) who are heavily engaged in and champion local foods. 90% of respondents indicated that they collect products from the forest for the family and grow/harvest food crops, 89% fish/collect marine food for the family, 81% raise livestock to feed their own family, 70% fish/collect marine food to sell at the market and 55% fish/collect marine products to send to family/friends outside of the FSM. Kosrae is unique as it has a strong and valued local commercially oriented fishing culture where many fishers also sell their catch, beyond what is needed to feed their families, at established local fish markets around the island. Kosrae is poised to expand their current aquaculture, including its diversity of products now being raised and sold, and a strengthening of the local fishing industry. Results from interviews and meetings also indicated that local hotels and restaurants prefer to offer local foods on their menu but often need to rely on imported foods as local foods to meet their customer demand. This source of local pride for their fish, their pork, limes and fresh produce and more among the respondents and those in the food service and tourist/hotel sector further confirms the strong interest and local market opportunities. Kosrae respondents indicated that both the fishing in the inner reef, outer reef and open ocean were of particular significance and respondents were very protective as to how to better care and protect these environments in a sustainable manner for themselves and future generations. Kosrae grows and trades in a wide variety of crops and households noted that while their

favorite foods included banana (94%), open ocean fish, fresh/local meat, reef fish and local fresh fruits (limes), the food most often grown also included breadfruit (91%), coconut (90%) and hard taro (85%). Most respondents (95%) are interested in consuming more locally sourced seafood, meat and meat products, fruits, vegetables and coconut milk as local foods are considered to be healthier and more nutritious than imported and/or processed foods.

Pohnpei: Most respondents (91.25%) are involved in subsistence farming with 85% of respondents raising livestock to feed their own family, 64% involved with agroforestry, 55% with fishing, and 54% collecting products from the forest for family consumption. In Pohnpei many are involved with crops and livestock/poultry and fishing. With fishing most appears to revolve within the lagoons and within the coral reef in contrast to open ocean fishing. Most are growing and collecting for family consumption and few involved in commercial marketing**.** Their reported favorite foods included breadfruit, bananas, yam, local fresh fruits, reef fish, crustaceans and eggs; and this is in line with the crops they grow such as bananas (9%), breadfruit (99%), coconut (97%), yam (86%), limes/lemons (86%), sakau (kava) (83%) and swamp/hard taro (83%). 72% responded that they would be interested in replacing imported rice with local starch crops such as taro, breadfruit and yam. Respondents (82%) indicated that they want to consume more locally sourced foods if they were available and affordable. 82% of respondents would be more willing to buy locally produced foods if they knew local foods would be healthier than imported and processed foods. Pigs were the most popular animal raised (96%), followed by dogs (87%) and chickens (79%). Dogs are kept for comfort and security even more than as a food source. Programs focused on swine health, best practices to handle pig manure to avoid effluent run-off into water systems and as a source of fertilizer would strengthen this value chain. There was a strong interest in re-introducing local production of eggs and chickens for meat. There is an embryonic hatchery and aquaculture industry in Pohnpei.

Yap: Yap State respondents expressed the importance of traditional knowledge for agriculture and food production practices with >93% involved in food production. Respondents expressed the highest rates of climate change from heat and flooding. At the same time, more than 80% of Yapese respondents said they had made adjustments to the farming practices due to climate change. One Yapese respondent said: *"Most of my production is zero cost, traditional cultivation, and maintenance. If we have traditional knowledge, it is easy now and would probably be easier in the future with more technology".* While almost all (99%) are involved in food production/harvesting/catching (crops, livestock, fish) for family consumption, 32% were involved in sales and 25% for traditional exchange. Yap is proud of their ecological biodiversity and many collect products from the forest to feed their family. Yap is also well-known for betelnut, an important traded 'commodity' used in local, regional and international sales. Yapese indicated that their favorite foods were meat and meat products, taro, reef fish, open ocean fish and local fresh vegetables. Additional foods including bananas, coconut and food products such as copra were among the most important cultivated crops. Foods such as taro, banana, processed meats and meat products and imported vegetables are commonly eaten 5 to 7 times a week, with rice being consumed multiple times a day. About 67% of participants would be willing to replace imported milk products with coconut milk for cooking, while over 90% would be interested in consuming more locally produced vegetables and fruits if they were more available and affordable. More than 85% of respondents would be more willing to buy locally produced foods if they knew they were healthier than imported products.

FSM food system vulnerabilities as shared by surveyed farming families

FSM*:* Despite the important distinctions between states' current conditions, there are issues and common concerns across the FSM. For example, in all states, the main events associated with crop loss are extreme heat, heavy rains, flooding and drought, which shows the impact that climate exerts on food systems. Another important commonality between all states is the fact that in all four states, the majority of respondents are interested in consuming more locally sourced seafood, meat, vegetables and fruits if they were more available and affordable. The majority of the respondents in all four states are interested in replacing imported rice with local starch crops such as taro and breadfruit, and replacing imported milk

products with coconut milk products for cooking if they are more available and affordable. Results show the potential to expand the internal market and generate jobs locally, while improving livelihood conditions and food security. Strategic interventions with commercial or household farmers include agriculture training, locally developing genetic materials resistant to stresses caused by climate change, infrastructure modification, post-harvest handling, building storage capacity, possibility to do some level of processing of food products and marketing, among many others.

Chuuk: Extreme heat is the most frequently cited concern for household farm families, followed by drought, invasive species and heavy rains. About 2/3 (77%) of Chuuk respondents perceive that the mean temperature increased in the last 10 years, while 37% noticed an increase in rainfall and 35% noticed that the rainy season is starting later. About 1/3 of the respondents expressed concerns with water quality, and 66% of those respondents felt this is due to climate change. They also had safety and cleanliness concerns about the water based, in part, on animal waste effluent entering the water supply. Bananas, breadfruit, coconut and lemons/limes have been impacted severely by excessive heat and drought, yet hard and soft taro, banana, breadfruit and tapioca all witnessed crop losses. Flooding and saltwater inundation were reported as the other leading cause for crop loss particularly for taro. The lack of postharvest systems to keep foods fresh (lack of cooling and more) were reported as a vulnerability by 1/3 of the respondents. Because many respondents have other jobs, lack of time to get involved in food production was cited as an issue by 50%. Notably, about 83% of Chuuk participants indicated that there are rare times when they couldn't afford to eat the foods they prefer and only rarely did they need to skip meals because there wasn't enough money for food. About 77% of respondents indicated that at 'rare' times they ate less than preferred because there wasn't enough money for food and went hungry because there wasn't enough money for food and. In those 'rare' times, about 40% of those that found themselves in such a situation went a whole day without eating.

Kosrae: The most frequent issues classified as their vulnerabilities for farming households are invasive species, (67% of respondents), increased threats to crops from pests and diseases (58%), inland flooding (56%), extreme heat (54%) and heavy rains (51%). Additionally, about 87% of respondents perceived that the mean temperature increased in the last 10 years, while 71% noticed that the mean rainfall increased in the same period. More than half of Kosrae survey participants noticed changes in the start of the rainy season, either starting earlier or later or being more erratic. Many experienced issues with water quality, off-color was the most frequent answer, followed by safety and sanitation. Crop/food losses with the most important crops such as soft and hard taro, bananas and coconut were noted and caused by flooding, extreme heat and heavy rains. For breadfruit, flooding is not as frequent of an issue as it is for other main crops, but extreme heat and heavy rains are the most frequent issues, and such adverse weather leads to fruit dropping. This climate change has led to serious crop loss with limes/lemons (64%), soft taro (55%), locally grown/collected fresh vegetables (54%) and hard taro (54%). The most frequent barriers to expanding food production are lack of production resources/tools, lack of finance source, difficulty getting to the land or sea, transportation to market and lack of time. Close to 30% of respondents felt that a change in climate impacted their access to clean fresh water and that they had to adapt their farming practices (including fishing) because of a change in climate. About 32% of respondents sometimes could not afford to eat the foods they prefer and had to eat different types of foods and, about 47% have skipped meals because there wasn't enough money for food. At least rarely, almost 57% of respondents ate less than preferred because there wasn't sufficient money for food, 38% went hungry because there wasn't enough money for food, and 20% went a whole day without eating

Pohnpei: The main concerns of Pohnpei residents related to climate change on food security are extreme heat, heavy rains, invasive species, and increased threats to crops from pests and disease. Respondents (78%) noticed over the last decade that the mean temperature increased, and 61% noticed that mean rainfall increased. Almost 60% of respondents believe that climate change is the biggest problem facing their farm. Nearly half of respondents relate that climate change impacted their access to clean fresh water and around 12% reported the need to have altered the crop types because of climate related issues. When asked about

foods jeopardized by crop losses, the products more frequently brought by Pohnpei respondents were breadfruit, mentioned by 45%, yam (39%), soft taro (38%), hard taro (35%), sakau (34%) and banana (34%). Almost 30% of Pohnpei respondents worried sometimes that they would not have enough healthy and nutritious food to eat, while 6% often could not afford healthy food. Almost 30% of respondents declared that sometimes or often they could not afford to eat the food they would prefer and had to eat different types of food. The most frequent barriers mentioned by respondents regarding their access to healthy, nutritious food are availability, affordability and transportation (too far to walk). Almost half the respondents experienced concerns with water quality (off-color). while others indicated concern about water taste (31%), safety and sanitation (25%) and smell (16%). Respondents indicated there was a lack of production resources/tools, lack of places to procure fertilized eggs, baby chicks, and seeds, cuttings, plants of improved germplasm.

Yap: The most important concerns reported in Yap were problems related to farming, coastal flooding and extreme heat. More than 80% of respondents reported that both mean temperatures and rainfall increased or became more erratic over the last decade. Over 60% of respondents also noticed that the start of the rainy season has been more erratic in the last 10 years. For the main crops, bananas, betelnut, hard taro and coconut, extreme heat, drought, plant diseases are among the most frequent issues mentioned by Yap respondents. Other important issues for most crops include flooding, saltwater inundation and unpredictability of the rainy season**.** The main crops that are grown and tat were reported as their favorite foods are also each experiencing serious crop losses due to climate change. About 80% of respondents cited crop losses with soft taro, hard taro, sweet potatoes, betel leaf, betel nut. The households and focus groups report that they are seeing losses with each of their crops. Respondents indicated that the most frequent barriers to expanding food production/collection are lack of production resources, lack of source of finance, lack of management skills, weather issues, not enough time and disease or pest infestation. Almost half of the respondents also experience concerns with water quality, with off- color (46%) as most common. Affordability and availability of food were cited as the most frequent barriers preventing Yap respondents from attaining healthy, nutritious food. The majority (more than 55%) of Yap participants in this survey indicated that at least rarely (sum of rarely, sometimes, and often responses) they experienced worry that they would not have enough nutritious food to eat, could not afford to eat healthy food and/or could not afford to eat the foods they prefer and had to eat a different type of food.

FSM farming families expressed goals for future food production

FSM: Despite differences between the states, in each of the 4 states more than 90% of respondents want to consume more locally sourced seafood and marine fish, meat and meat products, vegetables and fruits if they were more available and affordable. Most of the respondents in the four states are interested in replacing imported rice with local starch crops such as taro and breadfruit, and replacing imported milk products with coconut milk products for cooking if they are more available and affordable. Families still want to consume rice and milk products but are interested in shifting to locally produced foods, particularly the traditionally indigenous FSM foods. More than 80% of respondents in all four states would be more willing to buy locally produced foods if they knew that those foods were healthier than imported and/or processed foods. These results clearly support a strong national and state focus to strengthen the production of local foods from terrestrial or marine sources. More than 80% of respondents in all four states would be more willing to buy locally produced foods if they knew that those foods were healthier than imported and/or processed foods. This is particularly important given the high amount families spend on food relative to their total budgets and shows the potential to expand the market of locally produced foods and links to respondent's desire to improve their health and nutrition by consuming fresh, local foods and importantly consuming foods of their preference. The expansion of productivity should consider the expertise/tradition of each state and combine it with the most advanced scientific knowledge to ensure that the people are producing goods not only for profit, but also to increase their food security based on their local preference and in a sustainable manner to maintain their productive environment.

Specific aspirations include those in Kosrae who expressed an interest in implementing irrigation (73%), putting crops under protected structures including greenhouse (67%), changing crop types (65%) and varieties (64%), and implementing soil conservation techniques (60%). More than 91% of Kosrae respondents have access to land for crops, but almost 30% of those feel that the land that they have is not enough and they report serious issues with land title changes and purchasing of land. More than 61% of respondents would want more land. Almost 90% of Kosrae respondents want to grow/fish/harvest more food and/or raise more livestock if they could. In Chuuk, more than 80% of Chuuk participants want to grow/fish/harvest more food and/or raise more livestock including poultry and egg production. While in Yap, the majority of those surveyed said they would grow/fish/harvest more food or raise more livestock if they could. Most want to see greater mitigation against coastal flooding and erosion and salt inundation. In Pohnpei, around 61% of respondents from Pohnpei want to grow/fish/harvest more food and/or raise more livestock if they could, including poultry and egg production. Many respondents would like to further their agroforestry fields, introduce crops under protected structures including greenhouse, trial and use improved germplasm (e.g., disease resistant varieties) and expand their aquaculture and local fishing operations. There is a strong local foods movement and private sector champions wanting to introduce technologies for processing and new product development with local and traditional foods.

FSM farming families expressed needs to reach their food production goals in a changing climate:

Chuuk: The majority of the Chuuk farming household participants stated that they need three resources to assist with the long-term food production goals. These top-needed resources are the availability of tools, agriculture training, and climate-resilient crops. In the focus group meeting in Chuuk, a respondent noted that they "need to continue to learn from those who know more about farming, for example, the Department of Agriculture, Chuuk Women's Council, and Small Business Development Center." Focus group participants also mentioned utilizing the training and funding resources currently available to them: "*Applied food security grants to obtain more efficient tools, proper tools, to do farming amid climate change. Attend workshops to obtain information on how to tackle climate adversity*." The most frequently mentioned barriers to expand production are, in order of importance, lack of production resources/tools (64%), not enough time (50%), adverse weather (49%), lack of the source of finance (38%), lack of ways to keep the foods fresh (33%).

Kosrae: Regarding the Kosrae farming household participants, when asked what solutions and/or resources they feel can assist them with long-term local food production goals, the most frequently mentioned were the availability of tools, greenhouses, aquaculture, and agricultural training. Some respondents requested specific training relative to sustainable agricultural production methods such as training in composting and in making local pig feed and fertilizer. Relative to fishing, respondents requested training to "…identify when each species of food fish or marine organism such as crabs are spawning so that we can protect them from being harvested during spawning seasons.". Furthermore, respondents requested "training to be able to differentiate between male fish from female fish. This way, we can be a bit more selective and only catch the male fish while leaving the female fish to reproduce more. Relative to land-based cropping systems, As reported by Norah Sigrah (personal communication) 60 small lumber framed family greenhouses constructed in Kosrae. 4 were funded by Australian Embassy small grant program and the remaining funded by the Church of Jesus Christ of Latter-Day Saints. Of these, approximately 75% are still active. There are also 18 large metal pipe framed greenhouses that were funded by the United Nations, US Department of State Regional Environmental Program and New Zealand North Pacific Development Fund. Approximately 75% of these are also active.

Pohnpei: When asked what solutions and/or resources they feel can assist them with long-term local food production goals, the most frequently mentioned by Pohnpei farming household respondents were availability of tools and agricultural training. Some respondents specified the type of training that would be most useful. Specifically, requested training to improve the knowledge to grow local crops to adapt to

climate change, improvement of soil fertility through local composting, and training to process local crops so that they don't get spoiled. One of the focus group respondents mentioned that the food security issues be centered and concentrated locally by planting indigenous foodstuffs that are resilient to the island.

Yap: Regarding the Yap farming household participants, when asked what solutions and/or resources they feel can assist them with long-term local food production goals, the most frequently mentioned by Yap respondents were the availability of tools and agricultural training. Some respondents reported the need for technology innovation, business, and administration training, grant writing, and project management. In addition, respondents wanted to know more about value-added products, niche markets, and making more profits with the same level of production.

The majority of respondents in each of the four states across the FSM assert that they have adequate access to land to produce/harvest food but, only in Kosrae, the majority of respondents indicated that they need more land to pursue food production and to engage and strengthen agricultural business and commercial opportunities. While for Kosrae, availability of more land seems to be fundamental, in Chuuk, Pohnpei, and Yap, where the majority of respondents' strategies could instead focus on increasing productivity, expanding agriculture, agroforestry, and marine/aquaculture farming, Poultry and livestock farming, agricultural technologies, greenhouse production, improved processing/postharvest, training, and marketing. As for commercial farmers, agriculture training, food processing and packaging, local vegetable production and marketing, management skills, marina operator, soil testing lab and source of vegetable seeds were among the most frequently mentioned needs to expand the production of local products. The development of local food processing, preservation, and value-addition of converting fresh into dried, locally processed foods remains a significant opportunity both to improve food security and for economic development.

Exciting opportunities for FSM's sustainable food system development and growth:

FSM: The majority of the respondents in all four states expressed interest in replacing imported foods with locally produced foods. Respondents said that they were willing to replace imported rice with local starch crops such as taro and breadfruit and replace imported milk products with coconut milk products for cooking if they are more available and affordable. More than 80% of respondents in all four states would be more willing to buy locally produced foods if they knew that those foods were healthier than imported and/or processed foods. This information is important because it shows that there is an enormous potential to expand the market of locally produced foods, with a strong demand that can be further increased by educational campaigns showing the environmental and personal health implications of consuming fresh, local foods. Paths forward in each state would work most effectively with proactive public-private, community-based partnerships involving for example, COM, CRE, local high schools, vocational with the different offices in the state and federal government. With a combined public and private sector commercial focus FSM can develop short- and long-term programs, coupled with state and national policies enabling the further protection of the environment, reversal of current ecological degradation and sustainable production/collecting and catching of natural resources for economic and food security applications.

Suggested Sustainable Development Paths Forward by State

Paths forward for each state were developed based on the results from the farming household survey, commercial producer survey, focus group meetings, and personal conversations during the visits. Recognizing that there are many common overlapping actions for paths forward for each state, the following offers selected projects that can improve household food security and strengthen community and household resilience to climate change for each state. In general, recommendations for each state, several paths forward for agribusiness and aquaculture development are presented with each needing to be aligned with state goals and objectives in support of food security activities that can mitigate risk to climate change,

significantly reduce the importation of fresh and processed products that can be grown and sold in each state.

While the following suggested paths for each state focuses on food security and environmental conservation in face of climate change, each state food security sustainable development plans would benefit by considering (I) Leadership, governance, and co-ordination of local food system development; (2) Improving and establishing public policies that impact food availability, cost, access, and consumption; (3) Increasing and improving the sustainable production and productivity of local agriculture and marine food production; (4) Supporting enterprises in agriculture and aquaculture that link food producers to local (schools, hospitals government) and export markets; (5) Prioritizing access to and awareness of local, nutritious foods including knowledge of traditional food production and preparation practices and conservation of natural resources that yield food; (6) Strengthening and reinforce proven strategies to improve nutrition for all FSM residents but especially most vulnerable including women and children; (7) Increasing educational and training opportunities in food security related fields; (8) Strengthening emergency preparedness and responsiveness; and of course always accompanied with (9) Effective monitoring and evaluation.

Suggested Paths Forward for Chuuk

Among the FSM states, Chuuk is most advanced in commercial production and very strong in developing grower and marketing associations. Interviewees expressed serious interest in expanding both their terrestrial and ocean/aquaculture and in developing added-value to their current food production so that food processing, packaging, marketing and sustainability becomes integrally linked to their production and harvesting. There is a great awareness and concern to preserve and protect and not over-exploit their natural resources. Given the adverse weather and storms, programs to protect their homes and environment is a major concern and need.

1. Value addition: Adding value to crops by processing them into finished products such as chips, jams, and sauces can increase their value and create new markets. This can also lead to the development of cottage industries and support small-scale entrepreneurs.
2. Diversification of crops: Chuuk's agricultural sector is currently dominated by taro and yam. Diversifying the crop base to include high-value crops such as fruits, vegetables, and spices can create new opportunities for agribusiness development. These crops can be sold locally and exported to other markets, including neighboring islands.
3. Aquaculture: Chuuk is surrounded by water, and aquaculture can be a promising area for agribusiness development. This can include the production of fish and other seafood, as well as seaweed farming. These products can be sold locally and exported to other markets, including neighboring islands.
4. Sustainable agriculture: Adopting sustainable farming practices can improve the quality of Chuuk's crops, increase productivity, and create a niche market for high-quality, eco-friendly products. This can also attract eco-tourism and contribute to the conservation of Chuuk's natural resources.
5. Technology adoption: Adopting new technologies, such as precision farming and greenhouse farming, can improve crop yields, reduce input costs, and create new markets for crops. This can also support innovation and entrepreneurship in the agribusiness sector.
6. Public-private partnerships: The government of Chuuk State can partner with private sector entities to develop the agribusiness sector. This can include developing infrastructure such as storage facilities, providing training and technical assistance to farmers and fishers, and establishing market linkages to ensure that farmers have access to markets for their products.

7. Development of export markets: Chuuk State can explore export markets for its agricultural and aquaculture products. This can include working with neighboring islands, such as Guam and Palau, to develop trade relationships and export products to international markets.

Overall, developing the agribusiness sector in Chuuk State requires a multi-faceted approach that involves adding value to crops, diversifying the crop and aquaculture base, promoting aquaculture, adopting sustainable farming practices, adopting new technologies, establishing public-private partnerships, and developing export markets. By pursuing these paths, Chuuk State can create new opportunities for economic growth and development and ensure food security for its population.

Suggested Paths Forward for Kosrae

Those in Kosrae are very proud and committed to expanding and strengthening their fishing and aquaculture industries. Programs focused on maintaining aquatic species diversity and water quality were expressed as priorities. Shipping was identified as a key constraint. Thus, improving national and state policies and port authorities to improve the shipping of agricultural products out and agricultural supplies and equipment into Kosrae were noted as key factors to strengthen their food security. A need to ensure reliable and affordable transportation to other islands, nations and territories of fresh and processed plant and fish products is key to all of FSM.

1. Value addition: Adding value to crops by processing them into finished products such as chips, jams, and sauces can increase their value and create new markets. This can also lead to the development of cottage industries and support small-scale entrepreneurs.
2. Diversification of crops: Kosrae's agricultural sector is currently dominated by taro and yam. Diversifying the crop base to include high-value crops such as fruits, vegetables, and spices can create new opportunities for agribusiness development. These crops can be sold locally and exported to other markets, including neighboring islands.
3. Organic and sustainable agriculture: Adopting organic and sustainable farming practices can improve the quality of Kosrae's crops, increase productivity, and create a niche market for high-quality, eco-friendly products. This can also attract eco-tourism and contribute to the conservation of Kosrae's natural resources.
4. Aquaculture: Kosrae is surrounded by water, and aquaculture can be a promising area for agribusiness development. This can include the production of fish and other seafood, as well as seaweed farming, sea grapes, ornamental clams, and giant clams. These products can be sold locally and exported to other markets, including neighboring islands.
5. Technology adoption: Adopting new technologies, such as precision farming and greenhouse farming, can improve crop yields, reduce input costs, and create new markets for crops. This can also support innovation and entrepreneurship in the agribusiness sector.
6. Public-private partnerships: The government of Kosrae State can partner with private sector entities to develop the agribusiness sector. This can include developing infrastructure such as storage facilities, providing training and technical assistance to farmers and fishers, and establishing market linkages to ensure that farmers have access to markets for their products.
7. Development of export markets: Kosrae State can explore export markets for its agricultural and aquaculture products. This can include working with neighboring islands, such as Guam and Palau, to develop trade relationships and export products to international markets.

Overall, developing the agribusiness sector in Kosrae State requires a multi-faceted approach that involves adding value to crops, diversifying the crop and aquaculture base, adopting sustainable farming practices, promoting aquaculture, adopting new technologies, establishing public-private partnerships, and

developing export markets. By pursuing these paths, Kosrae State can create new opportunities for economic growth and development and ensure food security for its population

Suggested Paths Forward for Pohnpei

Pohnpei's strength in agroforestry could be expanded upon. With so many farmers sharing land, and much still undeveloped, increased sustainable cultivation, coupled with the eradication of invasive weeds can open up land and opportunity for strengthening farming. With the state involved for many years in R&D with hatcheries and small projects in aquaculture by farming communities, each is poised to move ahead with the right investments and support for commercialization using a private sector or a public: private sector approach. Among all FSM, the raising of livestock, mainly pigs, has been shown to be successful. With champions in local foods, the development of food products based upon breadfruit and taro and other crops creates promising opportunities if guided with an environmental/cultural/economics sustainable commercial focus.

1. Diversification of crops: Pohnpei's agricultural sector is currently dominated by staple crops such as taro, yam, and cassava. Strengthening the value chain of these crops as well as diversifying the crop base to include high-value crops such as fruits, vegetables, and spices can create new opportunities for agribusiness development. These crops can be sold locally and exported to other markets, including neighboring islands and regionally to US military bases and others.
2. Organic and sustainable agriculture: Adopting organic and sustainable farming practices can improve the quality of Pohnpei's crops, increase productivity, and create a niche market for high- quality, eco-friendly products. This can also attract eco-tourism and contribute to the conservation of Pohnpei's natural resources.
3. Value-addition: Adding value to crops by processing them into finished products such as juice, jams, sauces, chips, can increase their value and create new markets. This can also lead to the development of cottage industries and support small-scale entrepreneurs. Establishing local collecting centers can be used for community-based processing facilities and/or transportation to larger fresh market wholesale and retail markets and also used for gathering staple local crops for drying and processing into other food products (chips, flour, etc.). Centralized food innovation centers serving as an incubator for processing may help small growers to participate and produce final high-value products. The Innovative Center at COM can serve as a model research site while commercially operated private sector or public: private sector incubators/distribution facilities could actually engage in commercialization in support of local food product manufacturing. A small incubator center for food processing and preservation could be transformative in processing and packaging of taro and breadfruit chips, and other food products.
4. Technology adoption: Adopting new technologies, such as precision farming and greenhouse farming (protected cultivation) can improve crop yields, provide year-round supply of fresh produce), reduce input costs, and create new markets for crops. This can also support innovation and entrepreneurship in the agribusiness sector. Introduction of leap-frog technology (technologies found to be developed elsewhere and adaptable to a new area) into Pohnpei could include low-cost affordable coolers for extension of shelf-life and improve food safety with solar refrigeration systems.
5. Aquaculture: Aquaculture has been studied for a long-time yet the transition from R&D to commercial hatcheries and commercial enterprise development is still in its embryonic stage and can be a promising area for agribusiness development. This can include the production of fish and other seafood, as well as seaweed farming, sea cucumbers, and rabbitfish. These products can be sold locally and exported to other markets, including neighboring islands.

6. Agroforestry: Agroforestry is common and one of the strengths in Pohnpei. The practice of integrating trees with crops to create a sustainable farming system. It can improve soil fertility, protect crops from extreme weather, and create new markets for timber and non-timber forest products. This can also contribute to the conservation of Pohnpei's forests and biodiversity. Toward this end, the continued focus on elimination of invasive weeds is important.
5. Public-private partnerships: The government of Pohnpei should consider partnering with private sector entities to develop the agribusiness sector. This can include developing infrastructure such as storage facilities, providing training and technical assistance to farmers, and establishing market linkages to ensure that farmers have access to markets for their products. Such pilot programs in egg and poultry production, greenhouse production, aquaculture production and the establishment and strengthening of the COM Entrepreneurial Center are among a few promising areas.
6. Focus on ecological restoration of coral reefs and mangrove forests
7. Environmental and Cultural-Based Tourism: Strategic expansion of the tourist industry based upon surfing, the World Heritage site and more can not only generate significant job opportunities but also create demand for local foods, and a resurgence in local arts and crafts. Public policy relative to charging non-FSM citizens special visa entry with funds at least partially going toward the development of environmental preservation and maintenance of parks and forests.

Overall, developing the agribusiness sector in Pohnpei requires a multi-faceted approach that involves diversifying the crop base, adopting sustainable farming practices, adding value to crops, adopting new technologies, promoting agroforestry, and establishing public-private partnerships. By pursuing these paths, Pohnpei can create new opportunities for economic growth and development and ensure food security for its population under changing climate.

Suggested Paths Forward for Yap

One of Yap's great strengths is their continued practice of traditional culture and respect for traditional methods of sustainable food production. Most interviewees expressed strong interest in working within the traditional system along with the modern government system to ensure a vibrant commitment to environmental and cultural long-term sustainability. Given the serious and continued issues with coastal and soil erosion, and saltwater inundation (here and in other FSM states too), programs to protect and rehabilitate these vulnerable areas are a priority for long-term household food security. Introduction of perennial nitrogen-fixing trees/shrubs and other plants, coupled to the introduction of salt-tolerant plants with appropriately-scaled technologies for fresh fruits and vegetables would improve household food security.

1. Value addition: Adding value to crops by processing them into finished products such as chips, jams, and sauces can increase their value and create new markets. This can also lead to the development of cottage industries and support small-scale entrepreneurs.
2. Diversification of crops: Yap's agricultural sector is currently dominated by taro and yam. Diversifying the crop base to include high-value crops such as fruits, vegetables, and spices can create new opportunities for agribusiness development. These crops can be sold locally and exported to other markets, including neighboring islands.
3. Organic and sustainable agriculture: Adopting organic and sustainable farming practices can improve the quality of Yap's crops, increase productivity, and create a niche market for high-quality, eco-friendly products. This can also attract eco-tourism and contribute to the conservation of Yap's natural resources.

4. Agroforestry: Agroforestry is the practice of integrating trees with crops to create a sustainable farming system. It can improve soil fertility, protect crops from extreme weather, and create new markets for timber and non-timber forest products. This can also contribute to the conservation of Yap's forests and biodiversity.
5. Technology adoption: Adopting new technologies, such as precision farming and greenhouse farming, can improve crop yields, reduce input costs, and create new markets for crops. This can also support innovation and entrepreneurship in the agribusiness sector.
6. Public-private partnerships: The government of Yap State can partner with private sector entities to develop the agribusiness sector. This can include developing infrastructure such as storage facilities, providing training and technical assistance to farmers, and establishing market linkages to ensure that farmers have access to markets for their products.
7. Development of export markets: Yap State can explore export markets for its agricultural products. This can include working with neighboring islands, such as Guam and Palau, to develop trade relationships and export products to international markets.

Overall, developing the agribusiness sector in Yap State requires a multi-faceted approach that involves adding value to crops, diversifying the crop base, adopting sustainable farming practices, promoting agroforestry, adopting new technologies, establishing public-private partnerships, and developing export markets. By pursuing these paths, Yap State can create new opportunities for economic growth and development and ensure food security for its population.

Sustainable Development Opportunities for the Nation

FSM's need to adapt and prepare for climate change while sustainably developing the local food system through a Climate Smart approach provides the nation with unique opportunities for economic growth and job development. The following guiding principles can be used in each state as appropriate.

The role of Traditional Knowledge in Sustainable Development

FSM's indigenous peoples and local communities (IPLCs) apply traditional knowledge in day-to-day social, economic and environmental decision-making, and therefore traditional knowledge can play an important role in FSM's sustainable development planning and implementation.

In FSM, traditional knowledge systems are understood to be living cultural traditions that evolved over centuries as the result of local people interacting with their natural surroundings. Traditional knowledge includes community governance, social and family institutions, language, naming and classification systems, natural resource use and conservation practices, rituals, spirituality and world views.

Traditional knowledge systems have been, and are, empirically tested, applied, and validated by indigenous peoples and local communities, and are continually evolving through contemporary problems-solving.

Opportunities Related to Local Food System Development

A long-term commitment to environmental conservation and preservation coupled with increased production of local food to reduce importation of fresh and processed foods can lead to a stronger local circular economy. Traditional agricultural systems can be made more efficient for food production and sustainable development strategies could enhance sustainable agricultural production for both food and cash earnings.

There are many new opportunities related to the sustainable development of local foods, including the establishment of aggregation centers, incubator centers for food processing and preservation, and related trainings and capacity building. In addition, introduction of the commercialization of aquaculture, protected

cultivation (greenhouses), and clean drinking water that incorporate green energies such as solar power will create new jobs and new markets.

Challenges: In order to cope and adapt, IPLCs rely on essential elements of traditional knowledge, cultural values and customary institutions, households, extended families and clans for relief and support. In contrast, many government policies regarding access to land and resources restrict communities' capacity to adapt, and the support provided in the form of cash transfers or external technical assistance risk creating IPLC dependency upon institutions and government services that are beyond their control.

Opportunities for Aquaculture

On small islands and low atolls, marine food sources are often the principal means of survival and production since agriculture and freshwater resources are limited. High islands, such as the main island of Pohnpei State, are fortunate in having a wider range of aquaculture options since fresh water, brackish and marine environments provide potential sites for aquaculture. Pohnpei has a well-developed barrier reef surrounding a narrow lagoon with an area of about 181 km^2. Off-shore aquaculture may also be a possibility. FSM is perfectly situated to develop marine aquaculture, with some of the highest tropical marine biodiversity in the world and clean ocean waters that provide a unique opportunity for growing native marine species with an integrated aquaculture strategy.

For example, green mussels represent a potential candidate for aquaculture but require areas with high productivity, such as those adjacent to fringing mangrove systems, where there is ample phytoplankton production for these filter feeding bivalves.

The FSM Aquaculture Management and Development Plan 2019–2023, produced by the FSM Department of Resources and Development, provides a list of priority Yap State marine commodities developed through consultations with a range of stakeholders and resource personnel. The marine commodities listed were scored based on their aquaculture feasibility and impact. Feasibility was defined by how appropriate the technology was for Yap and how well the marine commodity might be grown and marketed. Impact was defined by the potential benefits of that marine commodity and how the commodity would affect local culture, society and the environment. In both categories—feasibility and impact—the giant clam received the highest priority ranking.

Challenges: Marine aquaculture success requires development of effective methods to maintain proper local conditions combined with effective management to minimize environmental degradation. Proactive approaches are required to develop resilient aquaculture management strategies that protect and conserve marine and terrestrial habitats from the impacts of climate change. Forecasting seasonal shifts in habitats and species will inform adoption of management strategies to sustain farming, fishing and aquaculture operations as well as to identify suitable future food production opportunities. Over the long-term, rising sea levels will impact the island atolls and shoreline, however, “living” shorelines have been demonstrated to have beneficial impacts in minimizing shoreline erosion. Site surveys exist that provide good characterizations of local habitat and should be used to inform MPA establishment, management and sustainability and the potential establishment of zones specifically delineated for aquaculture. Ultimately, the challenges to successful aquaculture development for Pohnpei State includes lack of Technical Capacity Building, lack of marketing and lack of infrastructure (Federated States of Micronesia Aquaculture Management and Development Plan 2019–2023).

Opportunities for Processing Clean Drinking Water:

FSM’s remote islands are vulnerable to freshwater shortages and access to clean and reliable sources of drinking water is an urgent priority that also provides opportunities for infrastructure development, capacity building and job creation. Pohnpei Island, for instance, is one of the wettest places on earth, yet the people of Pohnpei import the majority of their bottled drinking water. Strategies to ensure reliable, clean drinking water is available to everyone is a priority for the people of Pohnpei (Pohnpei State Department of

Resources and Development Food Security Strategy 2023). There are currently nascent water processing operations in Pohnpei that can be developed and further commercialized while protecting this precious natural resource. Public policies coupled with capital investment can support the development of local water collection and transport methods that do not increase plastic pollution. Local water production on the atolls could also consider solar-powered desalinization units with proper training and maintenance protocols to provide reliable drinking water for outer island communities.

Challenges: A multipronged approach to the processing of local drinking water must include the voices of all stakeholders to ensure protection and sustainable development of this critical resource.

Opportunities for Traditional Cropping and Agroforestry:

Intercropping and agroforestry systems have been leveraged throughout the Pacific to optimize dietary diversity and resilience with limited land and have been proposed as climate adaptive strategies (Burgess et al. 2022). Agroforestry systems are designed to balance production considerations with ecosystem services, many of which (e.g., water filtration, shade, habitat for natural enemies of pests) are important for coping with climate change stressors. Additionally, like intercropping, these mixed systems allow farmers to maximize the chance that at least some crops will be successful, as the varied species planted often have a range of stress tolerances. Additionally, mixing ecologically complementary species can create synergistic systems, in some cases with land equivalence ratios capable of superseding net yields in monocultures of the component species to a substantial degree. Agroforestry is the traditional cultivation method for many of the food crops on Pohnpei, and while a great deal of local research has been done on this topic, much more could be accomplished, perhaps through a partnership with the Ministry of Agriculture. This potential should be investigated as part of the food security strategy.

The FSM has sophisticated agroforestry systems and traditional knowledge for the sustainable harvesting of forest crops that can be combined as part of a sustainable harvest strategy for both subsistence needs and market sales. The main cash crops of the FSM of bananas (Kosrae, Pohnpei), citrus (Kosrae, Yap), pepper (Pohnpei), sakau (Pohnpei) and betel nut (Yap) are all well suited to production within a multitiered agroforestry production system.

Challenges: The lack of grower and marketing associations; limited financial, research and development investments; lack of postharvest refrigeration, processing and packaging facilities; and the high costs of imports relative to agricultural equipment and supplies all are challenges to locally based and economically competitive commercial agriculture.

Opportunities for Culturally Based Agrotourism and Ecotourism:

Ecotourism is one of the fastest growing sectors in the global economy. Ecotourism tends to attracts tourists of financial means seeking authentic traditional and environmental experiences. Visitors from the United





FSM farmers bring their copra to VITAL Coconut Oil processing plants.

States dominate tourist arrivals to FSM, and the 2014 FSM National Tourism Sector Development Framework included ecotourism with linkages to local agriculture. The FSM National Tourism Policy 2015–2019 includes the objective of promoting local traditional knowledge, expressions of culture including production and preparation of local foods and traditional livelihood skills as part of a national tourism development strategy. In addition, the FSM 2023 Action Plan describes sustainable tourism as a driver for economic growth. Agritourism can include opportunities for visitors to pay to learn traditional agroforestry and ethnobotanical practices, visit local farms and farmers markers and learn to cook traditional meals. FAO has been supporting agritourism in the Micronesian region as part of sustainable tourism initiatives that include local food cultivation traditions intended to empower women, increase local nutrition and reduce dependence on imported foods (FAO, 2023). FSM has the potential to be a global destination for high-end specialty cultural ecotourism by **attracting a targeted market of educated, ecologically minded travelers that prefer to enjoy lands with rich cultural heritages and traditional local foods**.

Challenges: A successful culturally based ecotourism development requires that traditional resource owners and communities must be fully involved in the protection, conservation, preservation and sustainable use of the state's biodiversity for the development of ecotourism. FSM's local resource owners and communities need to be empowered to promote conservation and thus be included in the design of ecotourism strategies.



A Yapese farmer produces his own coconut oil for sale, 2024

Appendices:

Climate Resilient Food Security for Farming Households across the Federated States of Micronesia (FSM) Baseline Survey Report







Aquacultured rabbit fish in Pohnpei (top left)

Hydroponic lettuce at the College of Micronesia (top right)

Kosrae's aquaculture farm includes a focus on coral reef restoration. Reef fish are a staple for FSM families.

A.1 D2 Indicators, Calculations and Results

D2 entry - #Beneficiaries

Expected Result	Indicator	Means of Verification (MoV)	Baseline
Increased climate resilient sustainable development	Total number of direct and indirect beneficiaries; number of beneficiaries relative to total population	**Household surveys workshop and training, minutes, inventory of CSA packages**	2,466 people (1,233 men/1,233 women)

Calculations and results

The baseline number of people impacted was calculated by multiplying the total number of people surveyed times (X) the average household size (number of people per family):

members surveyed = 623

Average family size = 6.345

Total family members = 6.345 X 623 = 3953

The gender ratio of the population was calculated from the gender of all household members:

	#	%
Female	1949	**56.67%**
Male	1490	**43.33%**
Total	**3439**	**100.00**

#Females in impacted population = 3953 x 56.67% = 2240

#Males in impacted population = 3953 x 43.33% = 1713

D2 entry – loss of lives and economic assets

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.1 Change in expected loss of lives and economic assets (USD) due to the impact of extreme climate- related disasters in the geographic area of the GCF intervention	**Household surveys Effectiveness of Training through pre/post tests**	6 million USD of major crops are estimated to be vulnerable to disaster loss

Calculations and results

Survey question: Have members of your family suffered loss of life due to climate change/extreme weather in the past year?

	Freq.	Percent
No	563	**93.21**
Yes	41	**6.79**
Total	**604**	**100.00**

If yes, how many?

	# Observations.	sum
No. of people	28	**74**

Average loss of life per household = 0.12

Survey question: ***What is your estimated economic loss due to climate change/extreme weather in the past year?***

	#Obs.	%	Average/household
Economic Loss Plants $	306	50.66%	**$444**
Economic Loss Livestock $	184	30.46%	**$213**
Economic Loss Aquatic Foods $	139	23.01%	**$156**

D2 entry - #Beneficiaries

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	Quantitative Surveys: Independent Household surveys	1,040 male 1,040 female

<see D2 entry #Beneficiaries above>

D2 entry - LCSI

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	**Livelihood Coping Strategy Index (LCSl)**	To be determined during Year 1 implementation

Baseline value results

LCS Category	Score	Freq.	% Sample
None	0	383	**63.10**
Stress	1 – 14	134	**22.08**
Crisis	15 - 38	76	**12.52**
Emergency	39 - 73	14	**2.31**
Total		**607**	**100.00**

Livelihood Coping Strategies Index (LCSI) calculation[2]

We used LCS–FS: Livelihood Coping Strategies – Food Security.

This indicator is used to understand households' medium and longer-term coping capacity in response to lack of food or lack of money to buy food and their ability to overcome challenges in the future.

Calculating this index requires asking 10+ questions (strategies) from the WFP master list[3].

- 4+ Stress coping strategies
- 3+ Crisis coping strategies
- 3+ Emergency coping strategies

Each strategy is assigned a weight, and the "YES" answers are used to calculate the LCSI.

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[2] https://www.indikit.net/indicator/5044-livelihood-coping-strategy-index#:~:text=The%20Livelihood%20Coping%20Strategy%20Index%20measures%20strategies%20a%20household%20employs,the%20Index%20indicates%20coping%20capacity

https://fscluster.org/handbook/Section_two_coping.html

[3] "Livelihood Coping Strategies Indicator for Food Security - List of strategies and their definitions" (https://docs.wfp.org/api/documents/WFP-0000147820/download/) contains 25 strategies for "Urban and Rural" settings, and an additional 6 that apply only to Rural settings

LCS – FS: Survey questions asked

Q4	Question	Category	Weight
4.1	During the past 30 days, have you experienced any significant shocks or stresses that affected your household's livelihood?	NA	-
4.2	During the past 30 days, did anyone in your household have to sell household assets/goods (radio, furniture, television, jewelry, etc.) due to lack of food or money to buy food?	Stress	3
4.3	During the past 30 days, did anyone in your household have to prioritize the food consumption of active household members due to lack of food or money to buy food?	Stress	4
4.4	During the past 30 days, did anyone in your household have to borrow money to cover food needs due to lack of food or money to buy food?	Stress	2
4.5	During the past 30 days, did anyone in your household have to reduce or cease payments on essential utilities and bills due to lack of food or money to buy food?	Stress	4
4.6	During the past 30 days, did anyone in your household have to send family members to eat somewhere else due to lack of food or money to buy food?	Stress	1
4.7	During the past 30 days, did anyone in your household have to sell productive assets or means of transport (sewing machine, wheelbarrow, bicycle, car, etc.) due to lack of food or money to buy food?	Crisis	7
4.8	During the past 30 days, did anyone in your household have to barter/exchange clothing for food.	Crisis	5
4.9	During the past 30 days, did anyone in your household have to move within the FSM (e.g. moving from atoll to main island for example) due to lack of food or money to buy food?	Crisis	7
4.10	During the past 30 days, did any minor household members (under 15) migrate informally (sending a child off to live with relatives/family out of the FSM) due to lack of food or money to buy food?	Emergency	8
4.11	During the past 30 days, did anyone in your household have to decrease expenditures on fertilizer, pesticide, fodder, animal feed, veterinary care, etc. due to lack of food or money to buy food?	Crisis	5
4.12	During the past 30 days, did anyone in your household have to ask for assistance (i.e., ask friends/neighbors/strangers on the streets for money or food) due to lack of food or money to buy food?	NA	-
4.13	During the past 30 days, did your household have to mortgage/sell the house where your household was permanently living in or land due to lack of food or money to buy food?	Emergency	10

4.14	During the past 30 days, did anyone in your household have to sell the last female (productive) animal due to lack of food or money to buy food?	Emergency	9
4.15	During the past 30 days, did anyone in your household have to gather wild foods that you normally don't consume due to lack of food or money to buy food?	Emergency	8
4.16	During the past 30 days, did your family accept new people into your household because they suffered from lack of food or lack of money to buy food?	NA	-

LCS – FS: Calculation and Reporting

Multiply all the "yes" answers by the assigned "weight" (severity), sum the weights to get the total LCSI score for the given respondent. Score range is 0 – 73. Use the score to classify each household by their stress level:

LCS Category	Score	% sample
None	0	
Stress	1 – 14	
Crisis	15 - 38	
Emergency	39 - 73	

Report the percentage of households in each category, and the average value of the LCSI scores of all the respondents' households (i.e. sum up all the Index scores and divide them by the number of respondents).

D2 entry – CDI

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	**Increased Crop Diversification** **Quantitative assessment through farmer surveys**	To be determined during year 1 of implementation (activity 1.2.3)

Baseline value results:

Categories	Thresholds	Freq.	Percent
Low crop diversity	3– 4	118	**19.19**
Moderate crop diversity	5 - 7	240	**39.02**
High crop diversity	8 - 9	257	**41.79**
Total		**615**	**100.00**

Crop Diversity Index (CDI) calculation

Survey questions

Q5.2	Food items	5.2.1.1-28 Do you grow and/or harvest this food? (0=no, 1=yes,)	Food group	Traditional food?
1	Swamp taro or hard taro		Staple	Yes
2	Land taro or soft taro		Staple	Yes
3	Breadfruit		Staple	Yes
4	Banana		Staple	Yes
5	Coconut		Staple	Yes
6	Copra (coconut product)		-	-
7	Yam		Staple	Yes

8	Mango		Fruit	Yes
9	Pineapple		Fruit	Yes
10	Limes/lemons		Fruit	Yes
11	Sweet Potatoes		Staple	Yes
12	Tapioca		Staple	Yes
13	Papaya		Fruit	Yes
14	Locally grown/collected Vegetables (if so, please list top: .....)		Vegetable	
15	Locally grown/collected Fruits (if so,please list top: .....)		Fruit	
16	Soursop		Fruit	Yes
17	Black Pepper		Condiment/spice	Yes
18	Hot peppers		Condiment/spice	Yes
19	Sakau (Kava)		Sakau	Yes
20	Sugar cane		Sugar	Yes
21	Betel Leaf		Condiment/spice	Yes
22	Durian (football plant)		Fruit	No
23	Cacao		Nut	Yes
24	Chestnut		Nut	Yes
25	Betelnut		Nut	Yes
26	Tangerine/Orange		Fruit	Yes
27	Medicinal crops (example: Noni)		Other	Yes
28	If others, list them here:			

For each household, total the following 3 scores:

1. Number of Different Crops Grown: Count the "yes" answers in Questions 5.2.1.1-28

- 0 - Omit this respondent from Crop Diversity Calculation
- 1 - 8 - Score: 1

- 9 - 14 - Score: 2
- 15 - 28 (or 15+) - Score: 3

2. Crop Variety: Count the different types of crops grown from the tables (Eg. Staples, fruit, condiments, etc.)

- 1 - 3 - Score: 1
- 4 - 5 - Score: 2
- 6 - 8 - Score: 3

3. Incorporation of Traditional Crops: Count the number of traditional crops grown from the tables:

- 0 - 8 - Score: 1
- 9 - 14 - Score: 2
- 15 – 23 (or 15+) - Score: 3

CDI - Reporting

Use the thresholds below to classify households into three groups - Low, Moderate and High Crop Diversity. Report the percentage of the sampled households that fall in each group.

Categories	Thresholds	% households
Low crop diversity	3 – 4	
Moderate crop diversity	5 - 7	
High crop diversity	8 - 9	

D2 entry – Harvest from demonstration gardens

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	**Mass of food-crops harvested from demonstration gardens**	0

Baseline value results:

No food harvested from demonstration gardens yet:

Baseline value 0 as stated above

D2 entry – #Households using soil erosion practices

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	**Number of HHs utilizing soil erosion practices promoted by project CSA packages developed in 2.1.1**	To be determined during year 1 of implementation (activities 1.2.1 and 1.2.2)

Calculations and results

Survey question: Q3.3.5 If yes, which behavioral changes (did you make)?

1= Changed crop types

2= Changed crop varieties

3= Built a water harvesting scheme (collecting water)

4= Implemented soil conservation techniques (to prevent erosion or soil contamination)

5=

…

14= Other

Count how many people answered #4

	Resp	No	Yes	Total
YAP	Freq	23	12	**35**
	%	65.71	34.29	**100**
Pohnpei	Freq	32	23	**56**
	%	58.93	41.07	**100**
Kosrae	Freq	20	30	**50**
	%	40	60	**100**
Chuuk	Freq	22	20	**42**
	%	52.38	47.62	**100**
All	Freq	97	**85**	**183**
	%	**53.01**	**46.45**	**100**

Average #households utilizing soil erosion = 85 / 623 = 13.6%

D2 entry – Soil Erosion

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	**Soil erosion level increase after CSA packages deployed**	Baseline: measurement of rate of erosion prior to CSA package

Calculations and results

The baseline is obtained using the Revised Universal Soil Loss Equation (RUSLE) based on five contributing factors:

0 Rainfall Erosivity (R) – MJ mm ha-1 h-1 y-1

1 Soil Erodibility Factor (K) – Mg ha h MJ-1 ha-1 mm-1

2 Slope Length and Steepness Factor (LS) – dimensionless

3 Cover Management Factor (C) – dimensionless

4 Conservation Practice Factor (P) – dimensionless

Average annual soil loss (*A*) due to water erosion can be calculated as: A = *R K LS C P*

<See attached erosion document for details>

Island	Mean Erosion	Median Erosion	Mean Erosion (Slope < 50%)	Median Erosion (Slope < 50%)
Pohnpei	41.8	16.5	33.4	**13.3**
Chuuk	422.0	66.5	373.3	**70.9**
Kosrae	252.4	40.4	210.0	**22.1**
Yap	155.0	36.2	151.1	**32.2**
Mean	**217.8**	**39.9**	**192.0**	**34.6**

D2 entry – Crop yields

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A1.0 Increased resilience and enhanced livelihoods of the most vulnerable people, communities and regions	A1.2 Number of males and females benefiting from the adoption of diversified, climate resilient livelihood options (including fisheries, agriculture, tourism, etc.)	Farmer direct beneficiaries experience an increase in **Crop yields**	To be determined during year 1 of implementation (activity 1.2.3)

Calculations and results

Survey questions - for EACH crop:

5.2.1.1-28: Do you grow and/or harvest this food? (0=no, 1=yes,)

5.2.3.1-28 Over the course of a year, how much do you harvest for each crop? (0=crop not ready for harvest;1=small quantity (<50 lbs); 2=medium quantity (50-100 lbs); 3=large quantity (>100 lbs)

Assume the following average numbers:

- 1=25 lbs
- 2=75 lbs
- 3=125 lbs

Calculate net crop yield per crop, then average crop yield for the total surveyed population (divide net crop yield by 623) Finally aggregate these average crop yields to produce net average crop yield per family.

Baseline value

Average net crop yield per household = 652 lbs/year

D2 entry – FCS, by sex of household head

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	**Food Consumption Score (FCS) disaggregated by sex of household head**	To be determined during Year implementation

Baseline results net

Categories	Thresholds	Freq.	% Households
Poor food consumption	0-20	22	**3.81**
Borderline food consumption	21-35	50	**8.65**
Acceptable food consumption	36+	506	**87.54**
Total		**578**	**100.00**

Disaggregate by gender of Head of Household

Decision maker	Mean	Freq.
Myself		
Female	60.38	**73**
Male	55.05	**155**
My spouse		
Female	59.83	**76 (males)**
Male	53.32	**25 (females)**
Unknown		
Female	61.13	**119**
Male	64.11	**118**

Total respondents 329

Female Headed Households = 98/329 = 30%

Male Headed Households = 231/329 = 70%

FCS Male headed households = (55.05 x 155 + 59.83 x 76) / (155+76) = 56.62

FCS Female headed households = (60.38 x 73 + 53.32 x 25) / (73+25) = 58.58

Calculating Food Consumption Score (FCS-N)[4]

The Food Consumption Score (FCS) is a composite score based on households':

- **Dietary Diversity**: number of individual foods consumed over a reference period.
- **Food frequency**: number of days (in the past 7 days) that a specific food item has been consumed.
- **Nutritional importance**: food groups are weighted to reflect their nutritional importance.

FCS-N – Survey Questions (sample)

	Foods	Number of days eaten in the past 7 days (0 – 7) If 0 days, do not specify the main source.	How was this food acquired? Write the main source of food for the past 7 days Use codes below
6.1	Grains, roots and tubers, such as: Taro, breadfruit, Rice, pasta, bread, corn, potato, yam, cassava/tapioca, white/light sweet potato, banana (starchy banana or plantain), and other starch rich foods	|_ |	|_ |
6.2	Pulses/legumes/nuts, such as: beans, cowpeas, peanuts, lentils, nuts, soybeans, tofu	|_ |	|_ |

Calculate a consumption score for each household

Food Groups (definitive)	Weight	Frequency of consumption	Frequency x weight
Meat, Fish & Eggs	4		
Milk	4		
Pulses	3		
Staples	2		
Vegetables	1		
Fruits	1		
Oil	0.5		

[4] https://resources.vam.wfp.org/data-analysis/quantitative/food-security/food-consumption-score
https://docs.wfp.org/api/documents/WFP-0000146648/download/

https://www.wfp.org/publications/food-consumption-score-nutritional-quality-analysis-fcs-n-technical-guidance-note

Sugar	0.5		
Condiments	0		
		TOTAL	<Household FCS>

FCS-N - Reporting

Use the thresholds below to classify households into three groups: Poor, Borderline or Acceptable food consumption. Report the percentage of the sampled households that fall in each group.

Categories	Thresholds	% households
Poor food consumption	0-20	
Borderline food consumption	21-35	
Acceptable food consumption	36+	

FCS-N – Reporting – disaggregating by gender of Head of Household

Correlate the gender of respondent to their answer for who makes decisions regarding land to determine 'head of household' – either answer 1 or 2 to question 8.2.

Survey questions

2.1a: Gender of respondent

8.2: In your household, who makes a majority of the decisions regarding where to farm, what types of food to farm, where to wild forage, and what types of foods to wild forage?

- myself
- my spouse

D2 entry - FES

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	**Food Expenditure Share (FES)**	32-76% of HH expenditures

Baseline results

Category	Value	FES Value	Freq.	% Sample
Food Secure	1	0-49%	67	**11.24**
Marginally Food Secure	2	50% - 64%	101	**16.95**
Moderately Food Insecure	3	65% - 74%	144	**24.16**
Severely Food Insecure	4	75% - 100%	284	**47.65**
Total			**298**	**100.00**

Food Expenditure Share (FES) calculation[5]

FES is used to measure households' economic vulnerability: the higher the share of households' consumption expenditures on food - out of the total consumption expenditure - the more vulnerable the households are to food insecurity.

For computing the FES, it is required to collect consumption expenditure data through the standard expenditure module. This is composed of three sub-modules:

- Food submodule (seven-day recall)
- Non-food submodule (30-day recall)
- Non-food submodule (six-month recall)

[5] https://resources.vam.wfp.org/data-analysis/quantitative/food-security/food-expenditure-share

The questionnaire is available at: https://docs.wfp.org/api/documents/WFP-0000134275/download/ (We need to administer the first 3 modules, not the 2supplementary modules.)

Instructions for calculating the FES from the results of the survey questions are on pages 23/24 of the CARI document from INDIKIT:

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiI7r33n7WBAxXjFlkFHTmIAKEQFnoECCAQAQ&url=https%3A%2F%2Fwww.indikit.net%2Fdocument%2F421-consolidated-approach-to-reporting-indicators-of-food-security-cari&usg=AOvVaw2A4p2IffMIihSsntN4rCSg&opi=89978449

FES – Food Submodule (7 day)

Survey questions (sample)

5.1	Item name	Example	5.1.(1-14).1 Did your household purchase any [item] for household consumption in the last 7 days, using cash or on credit?	5.1.(1-14).2 Considering both purchases made in cash and on credit, how much did your household spend on [item] in the last 7 days? US $	5.1.(1-14).3 In the last 7 days, did your household consume any [item] that came from in-kind gifts or in-kind assistance?	5.1.(1-14).4 What would be the value of the consumed [item] that came from in-kind gifts or assistance if you were to buy that at the market? US $	5.1.(1-14).5 In the last 7 days, did your household consume any [item] that you produced, gathered/hunted/fished, or received in exchange of labor?	5.1.(1-14).6 What would be the value of the consumed [item] that you produced, gathered/hunted/fished, or received in exchange of labor if you were to buy that at the market? US $
1	Cereals	maize, rice, sorghum, wheat, etc. in the form of raw cereals, flour, bread, pasta and similar products	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____

2	Tubers	Potatoes, sweet potatoes, cassava, plantains, yams	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____

FES – Non-Food Submodule (30 day) Survey questions (sample)

5.2	Item name	Example	5.2.(1-10).1	5.2.(1-10).2	5.2.(1-10).3	5.2.(1-10).4
			In the last 30 days, did your household purchase any [item], using cash or credit?	Considering both purchases made in cash and on credit, how much did your household spend on[item] in the last 30 days? US $	In the last 30 days, did your household use any [item] that came from in-kind gifts or in-kind assistance?	What would be the value of [item] that came from in-kind gifts or in-kind assistance if you were to pay for it? US $
	Personal care					
1	Hygiene items and services	Soap, toothbrush, toothpaste, toilet paper, razors, detergents, insecticides, cosmetics; hairdressers/barber, beauty salon	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
	Transport					
2	Transport-related goods and services	Public transportation (bus, rail, boat etc.), taxi, rental of vehicles, maintenance of vehicles used for transportation	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____

		(including lubricant, tyres, spare parts, repairs fees etc.) DO NOT INCLUDE PURCHASE OF VEHICLES; EXCLUDE FUEL				

FES – Non-Food Submodule (6 months) Survey questions (sample)

5.3	Item name	Example	5.3.(1-8).1 In the last 6 months, did your household purchase any or pay for [item], using cash or credit?	5.3.(1-8).2 Considering both purchases made in cash and on credit, how much did your household spend on [item] in the last 6 months? US $	5.3.(1-8).3 In the last 6 months, did your household use or benefit from any [item] that came from in-kind gifts or in-kind assistance?	5.3.(1-8).4 What would be the value of [item] that came from in-kind gifts or in-kind assistance if you were to pay for it? US $
	Health					
1	Health services	Outpatient and hospital services, doctor fees, traditional healing	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
2	Medicines & Health products	Medicines, other medical products and equipment like glasses, syringes, crutches etc.	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____

FES – Calculation

For each household:

- Sum together the total food expenditures (cash and credit), and the total value of non-purchased food items which were consumed in past 7 days. This is the household's total 'food basket value' for the past 7 days. Multiply by 30/7; you now have the variable 'food_monthly'.
- Sum together short-term (30 day) non-food expenses; you now have the variable 'nonfood1_monthly'.
- Sum together longer-term (6 months) non-food expenses; divide this by 6. You now have the variable 'nonfood2_monthly'.
- Calculate $food\ expenditure\ share$ = ($food_monthly$) / ($food_monthly$ + $nonfood1_monthly$ + $nonfood2_monthly$)

FES – Reporting

Convert the FES to a 4-point scale. Report the percentage of the sampled households that fall in each category.

Category	Value	FES Value	% sample
Food Secure	1	0-49%	
Marginally Food Secure	2	50% - 64%	
Moderately Food Insecure	3	65% - 74%	
Severely Food Insecure	4	75% - 100%	

D2 entry - IDDS

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	**Increase in Individual Dietary Diversity Score (IDDS)**	To be determined during year 1 of implementation

Baseline result

Mean IDDS = 4.65 / 9

D2 entry - HDDS

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	**Increase Household Dietary Diversity Score (HDDS)**	To be determined during year 1 of implementation

Baseline result

Mean HDDS = 8.15 / 12

D2 entry – DDS (= HDDS)

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	**Dietary Diversity Score**	To be determined during year 1 of implementation

<= HDDS as detailed above>

Baseline result

Mean DDS (HDDS) = 8.15 / 12

Calculating Household Dietary Diversity Score (HDDS) and Individual Dietary Diversity Score (IDDS)[6]

HDDS assesses a household's economic access to food (i.e. its ability to produce, purchase or otherwise secure food for consumption by all household members). It does not provide data on the nutritional quality of a person's diet.

IDDS assesses the number of (pre-determined) food groups which were eaten by a specific target group the previous day or night. It is an indicator of a diet's micronutrient adequacy, an important dimension of its quality. It does not measure the intake of kilocalories.

HDDS and IDDS Survey questions (sample)

#	Food Groups	Examples	7.(1-18).1 Household level responses: did anyone in your household consume this food? Does NOT include food consumed outside of the household.	7.(1-18).2 Individual level responses: did YOU consume this food? This DOES include food consumed outside of the household.
7.1	CEREALS	Any breadfruit, bread, rice noodles, biscuits, or any other foods made from millet, rice,	CIRCLE ONE 0= No 1= Yes	CIRCLE ONE 0= No 1= Yes

6 https://www.indikit.net/indicator/13-individual-dietary-diversity-score-idds
https://www.indikit.net/indicator/19-household-dietary-diversity-score
Guidelines for Measuring Household and Individual Dietary Diversity (.pdf)

		or wheat, starchy banana (plantain)		
7.2	WHITE ROOTS AND TUBERS	Any taro, white potatoes, white yam, white cassava, manioc, or other foods made from roots	CIRCLE ONE 0= No 1= Yes	CIRCLE ONE 0= No 1= Yes

IDDS Calculation

Aggregate the food groups from the questionnaire as shown, score each respondent with a "1" for each group consumed and total the score:

0 – 9 for each individual

Question number(s)	Food group
1,2	Starchy staples
4	Dark green leafy vegetables
3,6	Other vitamin A rich fruits and vegetables
5,7	Other fruits and vegetables
8	Organ meat
9,11	Meat and fish
10	Eggs
12	Legumes, nuts and seeds
13	Milk and milk products

HDDS Calculation

Aggregate the food groups from the questionnaire as shown, score each household with a "1" for each group consumed and total the score:

0 – 12 for each household

Question number(s)	Food group
1	Cereals
2	White tubers and roots
3,4,5	Vegetables
6,7	Fruits
8,9	Meat

10	Eggs
11	Fish and other seafood
12	Legumes, nuts and seeds
13	Milk and milk products
14	Oils and fats
15	Sweets
16	Spices, condiments and beverages

HDDS and IDDS Reporting

Report the mean IDDS (out of a max of 9)

Report the mean HDDS (out of a max of 12)

D2 entry - %Households survival deficit

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	**Percentage of HHs survival deficit**	To be determined during year 1 of implementation

Baseline results

Categories	Thresholds	Freq.	% households
No hunger	1-4	301	**48.71**
Occasional hunger	5 - 12	305	**49.35**
Moderate hunger	13- 14	7	**1.13**
Severe hunger	15 - 16	5	**0.81**
Total		**618**	**100.00**

Percentage of Households Survival Deficit

The survival deficit measures the total food and cash income required to cover the food and non-food items necessary for survival in the short term. It includes (1) 100% of minimum food energy needs; (2) the costs associated with food preparation and consumption; and (3) where applicable, the cost of water for human consumption.

It is a complex index measured as part of the HEA (Household Economy Approach)[7]; we use a proxy that measures frequency of hunger.

Calculating Percentage of Households Survival Deficit

Survey questions

9.2.4	(I/we) skipped meals because there wasn't enough money for food.	CIRCLE ONE 1= Never 2= Rarely (Only 1 or 2 months) 3= Sometimes (Some months, but not every month) 4= Often (Almost every month or more)

[7] https://fscluster.org/handbook/Section_two_survival.html

9.2.5	(I/we) ate less than preferred because there wasn't enough money for food.	CIRCLE ONE 1= Never 2= Rarely (Only 1 or 2 months) 3= Sometimes (Some months, but not every month) 4= Often (Almost every month or more)
9.2.6	(I/we) were hungry because there wasn't enough money for food.	CIRCLE ONE 1= Never 2= Rarely (Only 1 or 2 months) 3= Sometimes (Some months, but not every month) 4= Often (Almost every month or more)
9.2.7	(I/we) went a whole day without eating.	CIRCLE ONE 1= Never 2= Rarely (Only 1 or 2 months) 3= Sometimes (Some months, but not every month) 4= Often (Almost every month or more)

Percentage of Households Survival Deficit – Reporting

For each respondent, aggregate the responses to the 4 questions:

Score range: 4 – 16

Use the thresholds below to classify households by their Hunger frequency. Report the percentage of the sampled households/individuals that fall in each group.

Categories	Thresholds	% households
No hunger	4	
Occasional hunger	5 - 12	
Moderate hunger	13 - 14	
Severe hunger	15 - 16	

D2 entry – Locally processed foods

Expected Result	Indicator	Means of Verification (MoV)	Baseline
A2.0 Increased resilience of health and well-being, and food and water security	A2.2 Number of food secure households (in areas/periods at risk of climate change impacts)	Increase in availability of **locally processed foods**	To be determined during year 1 of implementation

Calculation and results

***Survey question**: Are you able to purchase or procure locally processed and packaged foods that you want? (e.g taro and breadfruit from your area that has been made into chips and/or other foods)*

Baseline results

Particulars	Frequency	Percent
No	387	**64.72%**
Yes	211	**35.28%**
Total	**598**	**100.00%**

A.1.1 Micronesia Soil Erosion Risk Calculations

The potential annual risk of soil erosion due to water runoff was assessed using the Revised Universal Soil Loss Equation (RUSLE). The RUSLE equation is based on five contributing factors:

1. Rainfall Erosivity (*R*) – MJ mm ha^{-1} h^{-1} y^{-1}
2. Soil Erodibility Factor (*K*) – Mg ha h MJ^{-1} ha^{-1} mm^{-1}
3. Slope Length and Steepness Factor (*LS*) – dimensionless
4. Cover Management Factor (*C*) – dimensionless
5. Conservation Practice Factor (*P*) – dimensionless

Average annual soil loss (*A*) due to water erosion can be calculated as:

$A = R\ K\ LS\ C\ P$

Individual Factor Calculations

For the purposes of this brief report, individual equations/calculation processes for each factor will not be listed, but the relevant literature containing the equations are referenced.

R

R was calculated from more than 10 years of daily rainfall data (in mm) from the U.S. National Weather Service stations listed in Table 1 for years where more than 95% of daily rainfall amounts were logged.

Table 1. Weather station locations and estimated rainfall erosivity

Station	Latitude	Longitude	Rainfall Erosivity (MJ mm ha^{-1} h^{-1} y^{-1})
Pohnpei			
Pohnpei	6.9667	158.2167	16196
Chuuk			
Chuuk	7.45	151.8333	12215
Kosrae			
Kosrae	5.3544	162.9533	17649
Tofol	5.3264	163.005	19506
Utwa	5.2739	162.9742	16107
Yap			
Dugor	9.5367	138.1211	13365
Gilman	9.45	138.0667	11361
North_Fanif	9.5667	138.1167	11667
Rumung	9.6333	138.1667	9583
Tamil	9.55	138.15	11511

Grassland or Savanna	0.09	Ebabu et al. (2022)
Mangrove Forest	0.004	Chatterjee et al. (2014)
Marsh	0	Wischmeier & Smith 1978
other vegetated	0.0775	Ebabu et al. (2022)
Palm Forest	0.004	Assume forest category from Ebabu et al. (2022)
Secondary Vegetation	0.5	da Cunha et al. (2016)
Swamp Forest	0.004	Ebabu et al. (2022)
Upland Forest	0.004	Ebabu et al. (2022)
Urban Buildup	0	Kadaverugu et al. (2022)
Urban Cultivated	0.05	Assuming discontinuous urban fabric from Wischmeier & Smith 1978
Vegetated non-forest	0.05	Based on non-forest vegetation classes from Wischmeier & Smith 1978
Water	0	Kadaverugu et al. (2022)

P

The support practice factor (*P*) incorporates the efforts and agricultural practices that help reduce the rate of runoff and soil erosion. For the island of Pohnpei, these values are unknown to the author as cropping practices for Pohnpei are not represented in the literature and the associated P-factors in Pohnpei have not been empirically measured at this time. Additionally, these values will likely differ between field agriculture (which is more represented within the literature) vs agroforestry. Lacking this information, a *P* factor of 1 was used across the island, which has been used for non-agricultural land use types without specific erosion mitigation practices (Girma and Gebre, 2020). A *P* factor of 1 should be viewed as a very conservative estimate (i.e., producing a larger amount of erosion) when incorporated into the RUSLE equation.

Results

Table 3. Mean and median erosion estimates in tons hectare^{-1} year^{-1}. Note both estimates for the whole island and just those lands with slopes less than 50% grade are provided.

Island	Mean Erosion	Median Erosion	Mean Erosion (Slope < 50%)	Median Erosion (Slope < 50%)
Pohnpei	41.8	16.5	33.4	13.3
Chuuk	422.0	66.5	373.3	70.9
Kosrae	252.4	40.4	210.0	22.1
Yap	155.0	36.2	151.1	32.2
Mean	217.8	39.9	192.0	34.6

The mean soil erosion risk across each island is typically high, with Pohnpei being the lowest at 41.8 tons hectare^{-1} year^{-1} and the highest being Chuuk at 422 tons hectare^{-1} year^{-1}. These values are variable across each island, with some of the greatest erosion values being along steep slopes, rivers, and regions with limited tree cover (Figure 1). Similar estimates are generated for the islands on slopes less than 50% grade. In this case, it is likely that erroneously high erosion estimates generated through this technique along the islands are disproportionately affecting the mean. The median estimates are much more in line with other humid tropical region estimates, though often being somewhat higher (Millward and Mersey, 1999; Labrière et al., 2015). Overall, these higher values compared to other humid tropical regions likely indicate the limitations of the RUSLE approach with limited ground-truthing. Similarly, there is a level of uncertainty with the calculation of each contributing variable to the RUSLE equation that would need to be constrained by field measurements. In particular, the *R* and *C* factors would need to be locally calibrated from higher temporal resolution data for R and on-site measurements of *C* across the Micronesian islands.

For practical usage and reporting, this report suggests using the median erosion estimates in Table 3 as being more representative of the islands overall. A second suggestion would be to use the values estimates for just the slopes less than 50% grade as the maximum suggested slope for the above method as cited by Panagos et al. (2015) is about 50%. If a mean value as opposed to median value is desired, this report recommends reporting the mean for the slopes less than 50% from Table 3.

Future assessments of soil erosion in Micronesia need to consider the unique conditions of each island. Given the tropical setting, potential for intense rainfall, and sleep slopes on many of these islands, it is important to effectively calibrate any erosion modeling for soil loss to these conditions. Assumptions for the slope steepness factor, for example, may want to be reassessed using models calibrated for alpine environments despite the climate setting being very different. Finally, note that the erosion values are extremely variable between islands primarily due to land cover classification and topography. Certain land cover classes such as forestry and agroforestry have very different literature C values but may be similar in practice in Micronesia. Subsequent analyses would need to try to bridge the differing land cover classifications utilized on each island for more consistent erosion values.

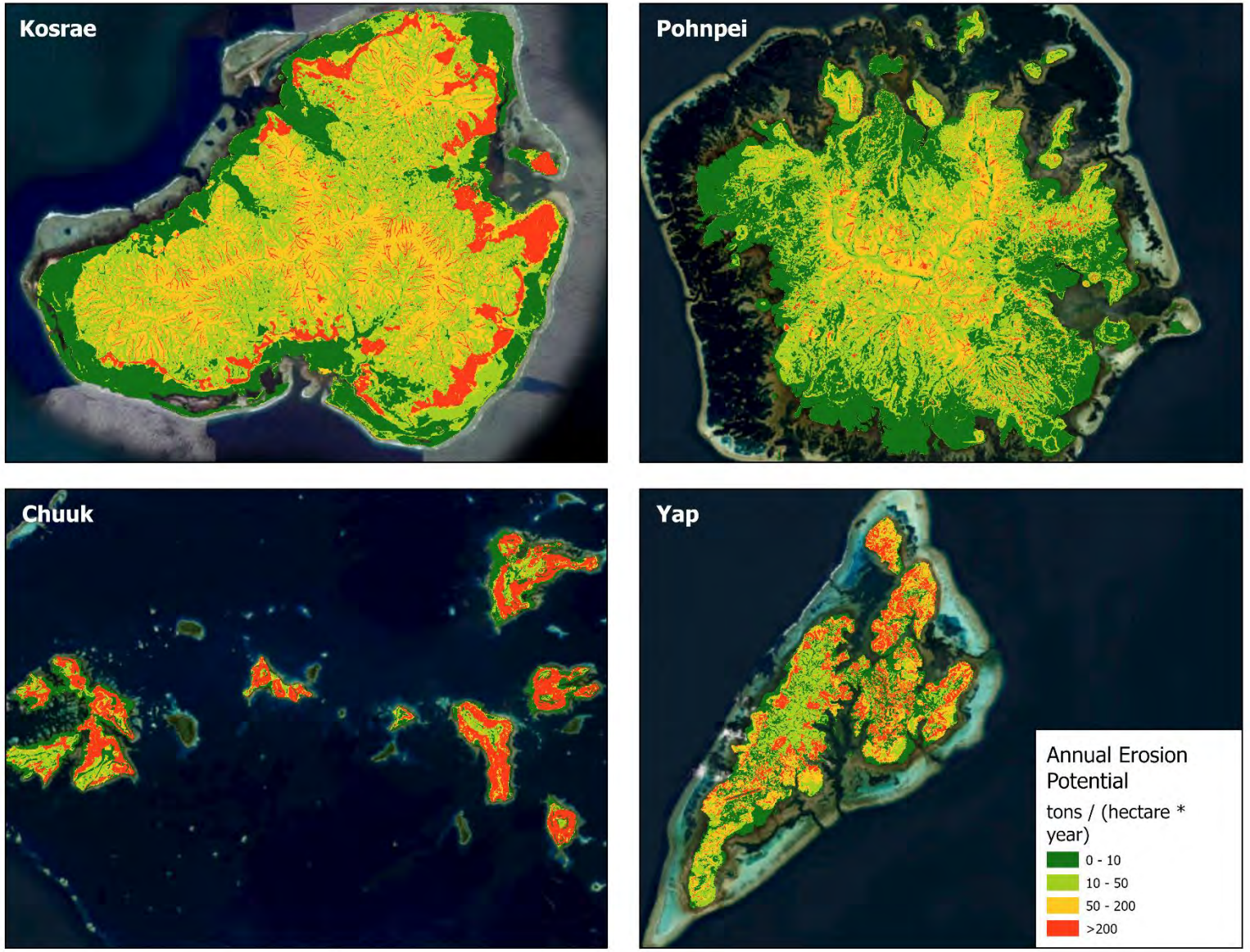


Figure 1. Spatial distribution of rainfall-driven erosion risk across the main islands of the Federated States of Micronesia.

A2: Data Collection Tools Including Survey Instruments









The Island Food Community NGO uses locally sourced taro to make chips and flour (left). A fresh market in Pohnpei (above) sells crops local farmers harvest from the forest.

Appendix A.2.1

Climate-Resilient Food Security for Farming Households Across the FSM
And
Baseline Production Survey for Agriculture (Animals/poultry/plant-based) and Aquaculture Marine Foods in the FSM

General Consent and Other Forms

Consent script
Principal Investigator: James E. Simon
Project Title: Baseline Assessment in Support of Climate-resilient food security for farming households across the Federated States of Micronesia

INFORMED CONSENT FORM

You are invited to participate in a research study that is being conducted by James E. Simon, who is a Distinguished Professor in the Department of Plant Biology at Rutgers University, and his team members. The purpose of this research is to conduct a baseline assessment on the Federated States of Micronesia (FSM) regarding food security, food production, consumption and trade as it may relate to climate resiliency while factoring in climate change models.

Approximately 600 households and 200 growers/intermediaries will participate in the study, and each individual's participation will last approximately one hour. From each household selected, surveys will be conducted for men and women (ages 18-65 years).

The study procedures include responding to an in-person survey about assessing dietary diversity and household food security for farming households in the context of climate change within all four FSM states. The objective is to understand your state's current situation better relative to food production and consumption, and how the weather and the environment affect you and your family. It is the intention of the funding agency, The Micronesia Conservation Trust and the Green Climate Fund, in concert with your state government, to use the results of this survey to help invest in strategies that improve people's livelihoods and food security.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth, etc. If you agree to take part in the study, you will be assigned a random code number that will be used on each test and the questionnaire. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for at least three years.

There are no foreseeable risks to participation in this study. You may receive no direct benefit from taking part in this study. Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

If you have any questions about the study or study procedures, you may contact either of us at:

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If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Phone: 732-235-9806
Email: humansubjects@orsp.rutgers.edu

If you agree to participate, please sign off on the box for consent.

AGREEMENT TO PARTICIPATE

Subject Consent:

I have read this entire consent form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form and this study have been answered. I agree to take part in this study and received an honorarium.

Date:

Participant Signature:_____ Date: _____

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed all the important details about the study including all of the information contained in this consent form.

Investigator/Person Obtaining Consent Name (Print):

Signature:_____ Date: _____

Appendix A.2.2

CLIMATE-RESILIENT FOOD SECURITY FOR FARMING HOUSEHOLDS ACROSS THE FSM

Household Food Security and Climate Resilience Survey

Certified Organic: An ecological farming system that uses no synthetic pesticides, no hormones or antibiotics, no irradiation, no genetically modified (GM) ingredients, no sewage biosolids, and no chemical fertilizers. Organic produce includes fruits and vegetables and tree nuts. These products are inspected and certified by the USDA and must be at least 95% organic. These products have been produced (grown) and handled (stored, packaged, or processed) in accordance with the USDA's regulations. Third-party agents accredited by the USDA perform inspections of farms and food handlers. Organic farms must use management and cultural techniques to maintain or improve soil organic matter and soil health. Any materials used for organic production must be natural (and not on the list of prohibited natural or must be provided for in the regulation.

Reef fish means any species of fish that predominantly inhabits inland waters, lagoons at whatever depth, and reef areas, inclusive of outer and submerged reefs to a depth of 50 fathoms

Sea fish is a fish that lives in saltwater.

Marine fish means anadromous or non-anadromous finfish that occur in marine waters

[If answered yes, proceed with the interview. If answered no, thank the participant for their valuable time.]

1. INTRODUCTION: ENUMERATOR INFORMATION

Q1	Question	Response
1.1	Enumerator name	
1.2	Date of Interview	
1.3	Time of interview	
1.4	State	**CIRCLE ONE AND WRITE ISLAND NAME (IF APPLIES)** ● 1=Yap Outer Island_____ ● 2=Chuuk Outer Island_____ ● 3=Pohnpei Outer Island_____ ● 4=Kosrae
1.5	If you are from an outer island, did you move to the main island due to climate change issues?	• 1= Yes • 2= No

2. DEMOGRAPHIC INFORMATION

Q2	Question	Response
2.1	Gender of informant	**CIRCLE ONE** • 1= Male • 2= Female
2.2	Age of informant (years)	
2.3	What is the total number of people in your household?	
2.4	What are the livelihoods sources for your household?	**CIRCLE ALL THAT APPLY** ● 1=Subsistence living - growing food for household consumption ● 2=Growing Crops ● 3=Raising livestock ● 4=Fishing ● 5=Paid work in agriculture ● 6=Salaried government employment (non-agriculture) ● 7=Salaried private employment (non-agriculture) ● 8=Salaries NGO employment ● 9=Remittances ● 10=Social security ● 11=Government transfers/NGO support ● 12=Other (specify)
2.5	What is your highest level of education?	**CIRCLE ONE** ● 1=Traditional/Non-Formal ● 2=Some primary school, but not completed ● 3=Completed primary (Elementary) school ● 4=Some secondary school, but not completed ● 5=Completed secondary (High) school ● 6=Some higher education, but degree not completed ● 7=Completed higher education degree such as COM-FSM ● 8=Completed graduate studies

3. CLIMATE IMPACT ON FOOD SOURCES

Q3.1	Question	Response
3.1.1	Do you farm and/or harvest local food crops?	**CIRCLE ONE** ● 0= No ● 1= Yes
3.1.2	Do you farm and/or harvest medicinal crops?	**CIRCLE ONE** ● 0= No ● 1= Yes

3.1.3	Do you raise livestock and/or poultry?	**CIRCLE ONE** ● 0= No ● 1= Yes
3.1.4	Do you fish or harvest ocean food sources?	**CIRCLE ONE** ● 0= No ● 1= Yes

READ: Now I'm going to describe some issues that local food producers in FSM are facing. Please tell me whether this issue is a problem for your farm, and if so, how big a problem it is.

Q3.2	Problem	Rating (1= not a problem; 2 = little problem; 3= big problem)
3.2.1	Coastal flooding	
3.2.2	Inland flooding	
3.2.3	Extreme heat	
3.2.4	Saltwater inundation	
3.2.5	Lack of water	
3.2.6	Cyclones/hurricanes	
3.2.7	Heavy rains	
3.2.8	Landslides	
3.2.9	Difficulty predicting when the rainy season will come	
3.2.10	Drought	
3.2.11	Increased threats to crops from pests and disease	
3.2.12	Invasive species	
3.2.13	Coastal erosion	
3.2.14	Riverbank erosion	
3.2.15	Coral bleaching	

Q3.3	Question	Response
3.3.1	In the last 10 years, have you noticed any change in the average temperature over a long period?	**CIRCLE ONE** ● 1= Yes, mean temperature increased ● 2= Yes, mean temperature decreased ● 3= Yes, more erratic ● 4= No, no change ● 5= Not sure

3.3.2	In the last 10 years, have you noticed any changes in the average rainfall over a long period?	**CIRCLE ONE** ● 1= Yes, mean rainfall increased ● 2= Yes, mean rainfall decreased ● 3= Yes, more erratic ● 4= No, no change ● 5= Not sure
3.3.3	In the last 10 years, has the start of the rainy season changed?	**CIRCLE ONE** ● 1= Yes, the rainy season starts later ● 2= Yes, the rainy season starts earlier ● 3= Yes, more erratic ● 4= No, no change ● 5= Not sure
3.3.4	If yes (*to any of the previous questions*), Have you made any adjustments in your farming (including marine)?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 3.3.5] [If NO skip to 3.3.6]
3.3.5	If yes, which behavioral changes?	**CIRCLE ALL THAT APPLY** ● 1= Changed crop types ● 2= Changed crop varieties ● 3= Built a water harvesting scheme (collecting water) ● 4= Implemented soil conservation techniques (to prevent erosion or soil contamination) ● 5= Planted trees ● 6= Irrigation ● 7= Included/augmented livestock herding ● 8= Migration ● 9= Found an off-farm job ● 10= Leased the land ● 11=Put crops under protected structures ● 12=Changed harvested fish species ● 13=Changed harvested fishing location ● 14= Other (specify) [Skip to 3.3.7]
3.3.6	If no, why?	**CIRCLE ALL THAT APPLY** ● 1= Lack of information ● 2= Lack of money/credit ● 3= Labor shortage ● 4= Land shortage ● 5= Water shortage ● 6= Do not see the need to change ● 7= Other (specify)

3.3.7	Have you experienced any issues with water quality?	**CIRCLE ALL THAT APPLY**: • 0= No • 1= Safety and sanitation • 2= Smell • 3= Taste • 4= Off-color • 5= Other (specify)

4. Local Food Production and Climate Change

Q4	Question	Response
4.1	Do you grow and/or harvest food crops (including marine organisms)?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 4.2] [If NO skip to 5.1]
4.2	Why do you grow and/or harvest food crops?	**CIRCLE ALL THAT APPLY** ● 1=Family consumption ● 2=For sale ● 3=Traditional exchange ● 4=Other (specify)
4.3	How would you describe the food production and/or harvesting that you do?	**CIRCLE ALL THAT APPLY** ● 1=I raise livestock to feed my own family ● 2=I raise livestock to sell livestock products at market ● 3=Agroforestry *(define this in colloquial terms for respondents)* ● 4=I collect products from the forest for my family ● 5=I collect products from the forest to sell at market ● 6=I fish and collect marine food for my family ● 7=I fish and collect marine food to sell at the market ● 8=I fish and collect marine products to send to my family/friends outside of the FSM? ● 9=Other (specify)

5. Agriculture, Farming and Agroforestry

Q5.1	Question	Response
5.1.1	Do you have adequate access to land for growing and/or harvesting crops?	**CIRCLE ONE** ● 0= No ● 1= Yes
5.1.2	Do you feel:	**CIRCLE ONE** ● 1=It is enough, ● 2=Not enough
5.1.3	Do you want more land?	**CIRCLE ONE** ● 0= No ● 1= Yes
5.1.4	Is the land you have for growing and harvesting crops shared? (Including family members)?	**CIRCLE ONE** ● 0= No ● 1= Yes

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.1), you may skip the other questions in that row.

Q5.2	Food items	5.2.1.1-28 **Do you grow and/or harvest this food?** (0=no, 1=yes,)	5.2.2.1-28 **How often do you harvest from the garden, agroforest and/or patch?** (1=several times a week; 2=once a week; 3=every other week; 4=once a month; 5=never)	5.2.3.1-28 **Over the course of a year, how much do you harvest for each crop?** (0=crop not ready for harvest; 1=small quantity (<50 lbs); 2=medium quantity (50-100 lbs); 3=large quantity (>100 lbs)	5.2.4.1-28 **Over the course of one year, how many plants do you have in your field?** (specify number)	5.2.5.1-28 **Is there ever crop loss** (0=no, 1=yes,)	5.2.6.1-28 **Which months do you experience crop loss?** (1=Jan 2=Feb 3=March 4=April 5=May 6=June 7=July 8=Aug 9=Sept 10=Oct 11=Nov 12=Dec 13= (Don't know)
1	Swamp taro or hard taro						
2	Land taro or soft taro						

3	Breadfruit						
4	Banana						
5	Coconut						
6	Copra (coconut product)						
7	Yam						
8	Mango						
9	Pineapple						
10	Limes/lemons						
11	Sweet Potatoes						
12	Tapioca						
13	Papaya						
14	Locally grown/collected Vegetables (if so, please list top:....)						
15	Locally grown/collected Fruits (if so, please list top:....)						
16	Soursop						
17	Black Pepper						
18	Hot peppers						
19	Sakau (Kava)						
20	Sugar cane						
21	Betel Leaf						
22	Durian (football plant)						
23	Cacao						
24	Chestnut						
25	Betelnut						

26	Tangerine/Orange						
27	Medicinal crops (example: Noni)						
28	If others, list them here:						

Q5.3	**Question**	**Response**
5.3.1	Do you practice organic agriculture, by which we mean… *using natural plants, compost, waste from animals and poultry as soil amendments or to repel insects and diseases*	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 5.3.2] [If NO skip to 5.3.3]
5.3.2	What organic methods do you use?	**CIRCLE ALL THAT APPLY** ● 1=compost ● 2=green manure ● 3=chili spray ● 4=chipping for mulch ● 5=Other (specify)
5.3.3	Has your ability to grow food been affected by a change in climate?	**CIRCLE ONE** ● 0= No ● 1= Yes
5.3.4	Has a change in climate impacted your crop yield?	**CIRCLE ONE** ● 0= No ● 1= Yes

		[If YES continue to **5.3.5**] [If NO skip to **5.3.7**]
5.3.5	If yes, which crops are the most affected by climate?	**CIRCLE ALL THAT APPLY** ● 1=Swamp taro ● 2=Land taro ● 3=Breadfruit ● 4=Betelnut ● 5=Banana ● 6=Coconut ● 7=Copra (coconut product) ● 8=Yam ● 9=Sweet Potatoes ● 10=Tapioca ● 11= Imported Vegetables ● 12=Locally grown/collected Vegetables ● 13=Papaya ● 14= Locally grown/collected Fruits ● 15= Imported fruits ● 16=Citrus ● 17=Black Pepper (peppercorns) ● 18=Hot peppers ● 19=Sakau (Kava) ● 20=Other (specify)
5.3.6	If yes, how did climate contribute to your crop loss?	**CIRCLE ALL THAT APPLY** ● 1=Flooding ● 2=Extreme heat ● 3=Saltwater inundation (intrusion) ● 4=Lack of water (etc.) ● 5=Cyclones/hurricanes ● 6=Heavy rains ● 7=Landslides ● 8=Difficulty predicting when the rainy season will come ● 9=Drought ● 10=Increased threats to crops from pests and disease ● 11=Invasive species ● 12=Plant diseases ● 13=Coastal erosion ● 14=Riverbank erosion ● 15=Displaced from land ● 16=other (specify)
5.3.7	Do you have access to enough water for crop production?	**CIRCLE ONE** ● 1=All of the time ● 2=Some of the time ● 3=None of the time
5.3.8	Where does the water for your crops come from?	**CIRCLE ALL THAT APPLY** ● 1=rain ● 2=well

		● 3=stream ● 4=pond ● 5=public water system ● 6=other (specify)

READ: Now I'm going to ask you about crop loss related to climate change. I will ask you about several crops. For each, please tell me which you grow and what is the climate-related cause of the crop loss.

For each crop, write the answers in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.4.1), you may skip the other questions in that row.

Q5.4	Crop	5.4.1.1-20 Do you grow this crop? (0= No, 1= Yes)	5.4.2.1-20 Do you experience crop loss? (0= No, 1= Yes)	5.4.3.1-20 If you observe crop loss due to climate change, what is the cause? Indicate all that apply. 1= Flooding 2= Extreme heat 3= Saltwater inundation (intrusion) 4= Lack of water (etc.) 5= Cyclones/hurricanes 6= Heavy rains 7= Landslides 8= Difficulty predicting when the rainy season will come 9= Drought 10= Increased threats to crops from pests and disease 11= Invasive species 12= Plant diseases 13= Coastal erosion 14= Riverbank erosion 15= Displaced from land 16= Other (specify below)
1	Swamp/hard taro			
2	Land/soft taro			
3	Breadfruit			
4	Betelnut			
5	Banana			
6	Coconut			
7	Copra (coconut product)			
8	Yam			
9	Sweet Potatoes			
10	Tapioca			
11	Soursop			

12	Locally grown/collected Vegetables			
13	Imported Vegetables			
14	Locally grown/collected Fruits			
15	Imported fruits			
16	Lime/Lemon			
17	Tangerine			
18	Black pepper (peppercorns)			
19	Hot peppers			
20	Sakau (Kava)			

6. Raising Livestock and Poultry

Q6	Question	Response
6.1	Are you raising livestock and/or poultry?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 6.2] [If NO skip to 6.9]
6.2	Do you have access to adequate land for rearing livestock and/or poultry?	**CIRCLE ONE** ● 0= No ● 1= Yes
6.3	Do you feel:	**CIRCLE ONE** ● 1=It is enough ● 2=Not enough
6.4	Do you want more land?	**CIRCLE ONE** ● 0= No ● 1= Yes
6.5	Is the land you have access to shared (including family members)?	**CIRCLE ONE** ● 0= No ● 1= Yes
6.6	What kind of livestock do you raise?	**CIRCLE ALL THAT APPLY** ● 1=Chickens ● 2=Pigs

		● 3=Goats ● 4=Dogs ● 5=Deer ● 6=Bovine ● 7=Other (specify)
6.7	In the last 10 years, have you noticed a change in raising animals:	**CIRCLE ONE** ● 0= No ● 1= Yes ● 2=Stayed the same [If YES continue to 6.8] [If NO/STAYED the same skip to 6.10]
6.8	If yes, please explain:	**SPECIFY: (<u>record</u>)**
6.9	Would you like to raise livestock/poultry commercially?	**CIRCLE ONE** ● 0= No ● 1= Yes
6.10	What do you feel is the main obstacle to your raising livestock/poultry production?	**CIRCLE ONE** • 1=Land • 2=Tools and Equipment • 3=Feed • 4=Capital • 5=Knowledge • 6=Initial material (chicks, etc) • 7=Marketing • 8=Veterinary doctors – Absence • 9=Time • 10=Other (specify)

7. Marine Food Sources

Q7.1	Question	Response
7.1.1	Do you harvest marine or freshwater fish/organisms?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 7.1.2] [If NO skip to 8.1.1]

7.1.2	In terms of access to marine resources, do you feel:	**CIRCLE ONE** ● 1=It is enough ● 2=Not enough

For each type of ground fishing, write the answers in each column according to the numbers specified in the table header. If participant does NOT fish in the location, you may skip the other questions in that row.

Q7.2	**Type of fishing ground:**	**7.2.1.1-5 How often do you fish or collect food from this location?:** (1=once a day, 2=several times a week. 3=once a week, 4=once a month, 5=once every three months or more; 6=never)	**7.2.2 Is it shared (by geographical area)?** (0=No, 1=Yes)	**7.2.3 What kind of fish/aquatic organisms do you harvest?** Indicate all that apply: 1=Open Ocean Fish; 2=Reef Fish, 3=Freshwater fish, 4=Sea cucumber, 5=Clams/oysters, 6=Crustaceans such as shrimp, lobster, mangrove crabs, 7=Octopus and squid, 8=Other (specify)	**7.2.4 In the last 10 years, have these food sources (aquatic species):** (1=increased in number, 2=decreased in number, 3=stayed the same)
1	mangrove				
2	inner reef (lagoon)				
3	outer reef				
4	open ocean				
5	river				

8. BARRIERS TO FOOD PRODUCTION

Q8.1	**Question**	**Response**

8.1.1	Would you grow/fish/harvest more food or raise more livestock if you could?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 8.1.2] [If NO skip to 8.2]
8.1.2	If yes, what barriers are preventing you from doing so?	**CIRCLE ALL THAT APPLY** ● 1=No barrier ● 2=Lack of production resources/tools (greenhouses, tractors, aquaculture, etc.) ● 3=Lack of the source of finance ● 4=No land or ocean available ● 5=Lack of management skills ● 6=Difficulty getting to the land or sea ● 7=Lack of the market to sell the produce ● 8=Lack of ways to keep my foods fresh ● 9=Lack of ways to process and dry the foods ● 10=Lack of storage to hold and keep food for home use and/or sale (refrigeration) ● 11=Lack of new tech & infrastructure ● 12=Transportation to market ● 13=Disease or pest infestation ● 14=Permit/regulation issues ● 15=Weather issues ● 16=Labor ● 17=Time ● 18=Other (specify)

Q8.2	**In general, how would you respond to the following statements:**	**1= Strongly disagree**	**2= Disagree**	**3= Neither agree or disagree**	**4= Agree**	**5= Strongly agree**
8.2.1	Climate change is causing a lot of problems for my farm/fishing					
8.2.2	Climate change is making it harder for me to grow crops/fish/harvest					
8.2.3	Climate change is making it harder for me to raise livestock					
8.2.4	Climate change is causing a lot of extreme weather					
8.2.5	I might have to stop farming because of climate change					
8.2.6	Climate change has caused me to make a lot of changes on my farm					
8.2.7	Climate change is the biggest problem facing my farm right now					

Q8.3	Question	Response
8.3.1	Has a change in climate impacted your access to clean fresh water?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 8.3.2] [If NO skip to 9.1.1.1]
8.3.2	If yes, how has it been impacted?	**SPECIFY (record)**

Q8.4	Question	Response
8.4.1	Have you changed crop types (including marine) in the past 10 years?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 8.4.2] [If NO skip to 8.4.4]
8.4.2	Was climate change an important reason for changing crop types?	**CIRCLE ONE** ● 0= No ● 1= Yes
8.4.3	What crops did you use to grow and what crops do you grow now?	**SPECIFY (record)**
8.4.4	Have you changed/adapted any of your farming practices (including fishing) in the past 10 years?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 8.4.5] [If NO skip to 8.4.7]

8.4.5	Was climate change an important reason for changing/adapting your farming practices (including fishing)?	**CIRCLE ONE** ● 0= No ● 1= Yes
8.4.6	How did you change/adapt your farming practices (including fishing) over the last 10 years?	**SPECIFY (record)**
8.4.7	Have you or your household done anything else to become more food secure in response to climate change?	**SPECIFY (record)**

9. DIET AND FOOD ACCESS, AVAILABILITY AND AFFORDABILITY

Q9.1	Question	Response
9.1.1	Where do you get most of your food?	**CIRCLE ALL THAT APPLY** ● 1= Wild places such as forests, freshwater, rivers, and/or the ocean ● 2= Cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture ● 3=Informal markets such as street vendors and kiosks ● 4=Formal markets such as farmers' markets, supermarkets, school meals, and restaurants ● 5=Supplemental food assistance such as government food rations, food from churches, schools and community organizations, etc. ● 6=Relatives and extended families ● 7=Other (specify)

9.1.2	How do you usually travel to get your food?	**CIRCLE ALL THAT APPLY** ● 1= Personal car ● 2= Walk ● 3= Someone else's car ● 4= Boat ● 5= Carpool ● 6= Bike ● 7= Other (specify)
9.1.3	How long does it take you to reach the location where you get a majority of the food that you produce/harvest?	**CIRCLE ONE** ● 1= Not much time ● 2= 15-30 minutes ● 3= 30-45 minutes ● 4= More than 45 minutes
9.1.4	How long does it take you to reach the location where you get a majority of the food that you're purchase?	**CIRCLE ONE** ● 1= 0-15 minutes ● 2= 15-30 minutes ● 3= 30-45 minutes ● 4= More than 45 minutes
9.1.5	How do you define healthy, nutritious food?	**SPECIFY (<u>record</u>)**
9.1.6	What barriers (if any) prevent you from attaining healthy, nutritious food?	**CIRCLE ALL THAT APPLY** ● 1= None ● 2= Too far to walk, and do not have other means of transportation ● 3= Health problems interfere with ability to walk or harvest crops (including marine) ● 4= Lack of assistance from relatives or extended families ● 5=affordability ● 6=availability ● 7=other (specify)

READ: I am going to read you several statements that people have made about their food situation. For these statements, please tell me how often the statement occurred for you and your household in the last 12 months.

Q9.2	Question	Response
9.2.1	(I/we) were worried (I/we) wouldn't have enough healthy and nutritious food to eat.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)
9.2.2	(I/we) couldn't afford to eat healthy and nutritious food.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)
9.2.3	(I/we) couldn't afford to eat the foods (I/we) prefer and had to eat different types of foods.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)
9.2.4	(I/we) skipped meals because there wasn't enough money for food.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)
9.2.5	(I/we) ate less than preferred because there wasn't enough money for food.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)
9.2.6	(I/we) were hungry because there wasn't enough money for food.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)
9.2.7	(I/we) went a whole day without eating.	**CIRCLE ONE** ● 1= Never ● 2= Rarely (Only 1 or 2 months) ● 3= Sometimes (Some months, but not every month) ● 4= Often (Almost every month or more)

For each food, write the answers in each column according to the numbers specified in the table header. If a food is NOT consumed (9.1.1), you may skip the other questions in that row.

Q9.3	FOOD	9.3.1.1-40 Consumption Frequency (1 =never, 2 =1-4 times a week, 3 = 5-7 times a week, 4 = multiple times a day)	9.3.2.1-40 Is this a favorite food? (0= No, 1= Yes)	9.3.3.1-40 Is there often a shortage (0= No, 1= Yes)	9.3.4.1-40 Which months do you experience the shortage? (1=Jan 2=Feb 3=March 4=April 5=May 6=June 7=July 8=Aug 9=Sept 10=Oct 11=Nov 12=Dec 13= (Don't know)	9.3.5.1-40 Has a changing climate impacted the availability of this food? (0= No, 1= Yes)	9.3.6.1-40 Has a changing climate impacted the affordability of this food? (0= No, 1= Yes)
1	Rice						
2	Taro						
3	Breadfruit						
4	Banana						
5	Coconut						
6	Copra (coconut product)						
7	Yam						
8	Sweet Potatoes						
9	Tapioca						
10	Soursop						
11	Locally grown/collected Fresh Vegetables						
12	Imported Vegetables Fresh						

13	Vegetables: Canned/Processed						
14	Local Fresh Fruits						
15	Imported Fresh Fruits						
16	Fruits: Canned/Processed						
17	Local Citrus						
18	Imported Citrus						
19	Open Ocean Fish (examples:)						
20	Reef Fish (examples:)						
21	Sea cucumbers						
22	Clams/oysters						
23	Crustaceans such as shrimp, lobster, mangrove crabs						
24	Octopus and squid						
25	Meat and meat products: fresh/local						
26	Meat and meat products: processed						
27	Dairy (milk, cheese, yogurt)						
28	Eggs						

29	Black Pepper						
30	Hot peppers						
31	Sodas						
32	Candies, Cakes, Cookies, Sugary foods						
33	Coffee and Tea						
34	Bread, Crackers, Biscuit						
35	Pasta and Ramen noodles						
36	Boxed cereal						
37	Sakau (Kava)						
38	Imported Juice						
39	Imported coconut milk						
40	Other						

Q9.4	Question	Response
9.4.2	Due to climate change, have the **places you get food** from (e.g., wild places, cultivated places, informal markets, formal markets, food aid) changed?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 9.4.3] [If NO skip to 9.4.5]
9.4.3	If yes, where are you getting more food from?	**CIRCLE ALL THAT APPLY** ● 1= More from wild places such as forests, freshwater, rivers, and/or the ocean ● 2= More from cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture ● 3=More from informal markets such as street vendors and kiosks ● 4=More from formal markets such as farmers' markets, supermarkets, school meals, and restaurants ● 5=More from supplemental food assistance such as government food rations, food from churches, schools, and community organizations, etc. ● 6=More from relatives and extended families ● 7=More from Other (specify)
9.4.4	If yes, is it more difficult or less difficult to access foods?	**CIRCLE ALL THAT APPLY** ● 0= More difficult, why? ● 1= Less difficult
9.4.5	Are you **concerned** with how climate change will impact the foods that you eat?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 9.4.6] [If NO skip to 10.1]
9.4.6	If yes: why? Is it because you feel climate change will impact…	**CIRCLE ALL THAT APPLY** ● 1=Food availability ● 2=Food affordability ● 3=Food quality ● 4=Food safety

		● 5=Other (specify)

10. IMPACT OF COVID 19

Q10	Question	Response
10.1	During the COVID 19 pandemic, did your consumption of local foods change?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 10.2] [If NO skip to 10.3]
10.2	If yes, how did it change?	**CIRCLE ONE** ● 1=Increase ● 2=Decrease ● 3=Stay the same
10.3	During the COVID 19 pandemic, did your production of local foods change?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 10.4] [If NO skip to 10.5]
10.4	If yes, how did it change?	**CIRCLE ONE** ● 1=Increase ● 2=Decrease ● 3=Stay the same
10.5	During the COVID 19 pandemic, did demand for local food change?	**CIRCLE ONE** ● 0= No ● 1= Yes [If YES continue to 10.6] [If NO skip to 10.7]
10.6	If yes, did it…	**CIRCLE ALL THAT APPLY** ● 1=increased for local consumption ● 2=decreased local consumption ● 3=increased for export ● 4=decreased for export ● 5=stayed the same
10.7	During COVID-19, have you sent your food products overseas (both commercial and to family members)?	**CIRCLE ONE** ● 0= No ● 1= Yes

		[If YES continue to 10.8] [If NO skip to 11.1]
10.8	If yes, which crops were in most demand?	**CIRCLE ALL THAT APPLY** ● 1=Swamp taro ● 2=Land taro ● 3=Breadfruit ● 4=Betelnut ● 5=Banana ● 6=Coconut ● 7=Copra (coconut product) ● 8=Yam ● 9=Sweet Potatoes ● 10=Tapioca ● 11=Soursop ● 12= Locally grown/collected Vegetables ● 13=Imported Vegetables ● 14= Locally grown/collected Fruits ● 15= Imported fruits ● 16=Citrus ● 17=Black Pepper ● 18=Hot peppers ● 19=Sakau (Kava) ● 20=other (specify)

11. PERCEPTION, PREFERENCE AND ATTITUDES

Q11	Question	Response
11.1a	What do you consider to be healthy and nutritious?	**CIRCLE ALL THAT APPLY** ● 1= Fresh vegetables ● 2= Processed vegetables ● 3= Fresh fruit ● 4= Processed fruit ● 5= Fresh fish/seafood ● 6= Processed fish/seafood ● 7= Fresh meat ● 8= Processed meat ● 9= Bread, crackers, biscuit ● 10= Pasta and ramen noodles ● 11= Dairy ● 12= Eggs ● 13= Coconut milk ● 14= Candies, Cakes, Cookies, Sugary foods ● 15= Boxed cereal ● 16= Soda ● 17= Sakau (Kava) ● 18= Coffee, tea

11.1b	What percentage of your diet is imported food?	**CIRCLE ONE** ● 1= Less than 25% ● 2= 25-50% ● 3= 50-75% ● 4= 75-100%
11.2	Do you feel your diet is healthy and nutritious?	**CIRCLE ONE** ● 0= No ● 1= Yes
11.3	Does your diet impact your health?	**CIRCLE ONE** ● 0= No ● 1= Yes, I feel healthy ● 2= Yes, I feel unhealthy
11.4	Would you be interested in consuming more locally sourced seafood and marine fish on a daily basis if they were more available and affordable?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.5	Would you be interested in consuming more locally sourced meat and meat products on a daily basis if they were more available and affordable?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.6	Would you be interested in replacing imported rice with local starch crops such as taro and breadfruit if they are more available and affordable?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.7	Would you be interested in consuming more locally produced coconut milk products on a daily basis if they were more available and affordable?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.8	Would you be willing to replace imported milk products with coconut milk products for cooking?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.9	Would you be interested in consuming more locally produced vegetables on a daily basis if they were more available and affordable?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.10	Would you be interested in consuming more locally produced fruits on a daily basis if they were more available and affordable?	**CIRCLE ONE** ● 0=No ● 1= Yes
11.11	If you knew any of these locally produced foods were healthier than imported and/or processed foods, would you be more willing to buy these food items?	**CIRCLE ONE** ● 0=No ● 1= Yes

		[If NO continue to 11.9] [If YES skip to 12.1]
11.12	If not, why do you find imported and/or processed foods preferable?	**CIRCLE ALL THAT APPLY** ● 1=More convenient ● 2=Less work to prepare ● 3=Tastes better ● 4=More affordable ● 5=More available ● 6=Higher status ● 7=Other (specify)

12. ADAPTATION AND RESILIENT QUESTIONS

Q12	Question	Response
12.1	What have you done to adapt your local food production or harvesting because of a changing climate?	**SPECIFY (record)**

12.2	What solutions and/or resources do you feel can assist you with long term local food production goals?	**CIRCLE ALL THAT APPLY** ● 1=agriculture training ● 2=tools ● 3=greenhouses and aquaculture ● 4=climate resilience crops ● 5=disease resistant animals/chickens ● 6=affordable feed ● 7=refrigeration ● 8=access to market ● 9=transportation ● 10=post-harvest handling (drying and cooling for long term storage) ● 11=financial credit ● 12=veterinary doctor ● 13=Other (specify)
12.3	Is there anything else you'd like us to know regarding your experience with food production, food security, climate change or COVID19?	**SPECIFY (<u>record</u>)**

<u>End of survey script</u>

<u>We thank you for taking the time to spend with us, answering the survey.</u>

Appendix A.2.3

Baseline Production Survey for Agriculture (Animals/poultry/plant-based) and Aquaculture Marine Foods in the FSM

Certified Organic: An ecological farming system that uses no synthetic pesticides, no hormones or antibiotics, no irradiation, no genetically modified (GM) ingredients, no sewage biosolids, and no chemical fertilizers. Organic produce includes fruits and vegetables and tree nuts. These products are inspected and certified by the USDA and must be at least 95% organic. These products have been produced (grown) and handled (stored, packaged, or processed) in accordance with the USDA's regulations. Third-party agents accredited by the USDA perform inspections of farms and food handlers. Organic farms must use management and cultural techniques to maintain or improve soil organic matter and soil health. Any materials used for organic production must be natural (and not on the list of prohibited natural, or must be provided for in the regulation.
Reef fish means any species of fish that predominantly inhabits inland waters, lagoons at whatever depth, and reef areas, inclusive of outer and submerged reefs to a depth of 50 fathoms

Sea fish is a fish that lives in saltwater.

Marine fish means anadromous or non-anadromous finfish that occur in marine waters

1. RESPONDENT'S DEMOGRAPHICS AND THE STUDY AREA

1.1. Gender of the respondent (if not household head) (*Only recorded, not asked!*) **(Circle one)**

1. Male; **0**. Female

1.2. Number of people in your family: _____

1.3. Number of people that are children (0-13 years) in your family: _____

1.4. In general, would you say your health is: **(Circle one)**

1. Excellent; **2.** Very good; **3.** Good; **4.** Fair; **5.** Poor

2. LAND/MARINE OWNERSHIP AND USE

2.1.1 What are the sizes of land/ocean/lagoon parcels (both land and in bay/ocean) you have access to (including renting) and how did you use them in **2014**?

Parcel No.	Land/ Marine Area*	Tenure **(See codes below**)**	Area under **vegetables** in last production cycle (M^2)*	Area under other crops (M^2)*	Area left to restore (M^2)*	Area rented out (M^2)*
1.						
2.						
3						
4.						
5.						

Note: Parcel 1 is the farm where the farmer (crops. Livestock, marine) lives.
*Note size and difference between square feet and a square meter. Record area and note whether your recording in square feet (ft^2) or square meter (m^2); 1 acre =43,560 square feet.
**Tenure: 1= Freehold with the title; 2=Freehold without title; 3=Lease/Rented –in; 4=Communal; 5=Other (specify):

2.1.2. What are the sizes of land/ocean parcels (both land and in bay/ocean) you have access to and how did you use them in **2021**?

Parcel No.	Land/ Marine Area*	Tenure **(See codes below**)**	Area under agric production cycle (M^2)* (animals/veggies/ fruits/indigenous foods/aquaculture	Area under other crops (M^2)*	Area left to restore (M^2)*	Area rented out (M^2)*
1.						
2.						
3						
4.						
5.						

Note: Parcel 1 is the farm where the farmer lives.
*Note size and difference between square feet and a square meter. Record area and note whether your recording in square feet (ft^2) or square meter (m^2); 1 acre =43,560 square feet.
****Tenure**: **1**= Freehold with the title; **2**=Freehold without title; **3**=Lease/Rented –in; **4**=Communal; **5**=Other (specify)____

2.2 Which are the major crops that this operation grows, and which inputs do you apply? (State the size or area under each crop/food product in the *Land Area* column.)

2.2.0 Crop name	2.2.1 Why the crop is preferred **(See codes below*)**	2.2.2 What is the most necessary trait for this crop to grow?	2.2.3 Land area (or area- and if area- define unit size	Did you apply the following in 2021?						2.2.10 Total harvest 2021 (**State units**)
				2.2.4 Manure **1**=Yes **0**=No	2.2.5 Fertilizer **1**=Yes **0**=No	2.2.6 Pesticide **1**=Yes **0**=No	2.2.7 Irrigation **1**=Yes **0**=No	2.2.8 Hired labor **1**=Yes **0**=No	2.2.9 Family labor **1**=Yes **0**=No	

** **1**=Own household consumption; **2**=Income generation; **3**=Equally for household consumption and income generation; **4**=Medicinal; **5**=Coping with the climate of the area; **6**=Other(specify) _____

2.3.1 Which crops, animals/poultry and/or fish/seafood/clams have you tried to grow that did not work or that you did not continue to grow?

2.3.1.1 Crops/ Products	2.3.1.2 Why did you stop growing it?*	Reason-1	Reason-2

*1. Low Yield; 2. Low Price; 3. Low Demand; 4. Seed Problem; 5. Lack of production technologies 6. Others (Specify)=……

2.3.2. Which crops/marine products would you like to grow but are not yet growing?

Crops/Products	Why are you not growing it?*	Reason-1	Reason-2

*1. Low Yield; 2. Low Price; 3. Low Demand; 4. Seeds Problem; 5. Lack of production technologies 6. Others (Specify)=_____

3. OWNERSHIP OF LIVESTOCK AND OTHER ASSETS

3.1. Please indicate the type and numbers of livestock and other assets you own

Livestock type	**Ownership (1=Yes 0=No)**	**Number**
3.1.1 Chicken		
3.1.2 Pigs		
3.1.3 Goats		
3.1.4 Cattle		
3.1.5 Ducks		
3.1.6 Others specify)		

3.2. Please indicate other assets you own or access to:

Other assets/services	**Ownership (1=Yes 0=No)**	**Other assets/services**	**Ownership (1=Yes 0=No)**
3.2.1 Radio		3.2.6 Mobile phone	
3.2.2 Television		3.2.7 Tractor	
3.2.3 Bicycle		3.2.8 Farm tools	
3.2.4 Motor vehicle		3.2.9 Wheelbarrow	
3.2.5 Landline phone		3.2.10 Electricity in house?	
		3.2.11 Other	

4. PRODUCTION AND PREFERENCES OF FOOD CROPS

4.1 Which Food crops do you grow?

S. No	Food Crop (4.1.0)	Why the vegetable is grown and preferred **(See codes below**)**		
		1st (4.1.1)	2nd (4.1.2)	3rd 4.1.3
1				
2				
3				
4				
5				
6				
7				
8				
9				
10	Other			

****1**=Good prices; **2**=Contract with partner; **3**=Production experience; **4**=Available market; **5**= Opportunity to earn extra income; **6**= Cultural reasons for IVs; **7**=Home consumption; **8**=Other (specify)

4.2 Which other fish/marine/shellfish/seafood do you grow?

S. No	List Aquaculture (4.2.0)	Why is it grown and preferred **(See codes below**)**		
		1st (4.2.1)	2nd (4.2.2)	3rd 4.2.3
1				
2				
3				
4				
5				
6				

****1**=Good prices; **2**=Contract with partner; **3** =Production experience; **4** =Available market; **5**= Opportunity to earn extra income; **6**= Cultural reasons for IVs; **7**=Home consumption; **8**= Other (specify)

4.3 Which of the following technologies have you ever seen or heard of (Awareness)? Which practices have you used (practices include e.g., improved seed varieties; different production systems; fertilizer and/or compost; other agric. inputs; use of pesticides, post-harvest processing; marketing)?

Technology 4.3	Awareness* 4.3.1.1-15	Year first aware 4.3.2.1-15	Use status ** 4.3.3.1-15	Year first used 4.3.4.1-15
1. Improved seed varieties				
2. Bedding Type (raised beds, growing in pots)				
3. Production systems (e.g. spacing (Within & Between Rows)				
4. Crop Rotation				
5. Hydroponics				
6. Packaging/Labeling				
7. Wood Chipper				
8. Fertilizers				
9. Compost				
10. Pesticides				
11. Irrigation				
12. Weeding				
13. Cooling/Drying processing				
14. Marketing				
15. Other				

***Awareness:** 0= Never heard, 1=heard; 2=heard and seen

****Use status: 0**=Never; **1**=Used before but stopped **2**=Still applying; **3**=Applied in 2020; **4**= Other (specify) _____

4.4 What are the three important reasons why you have never used or stopped to use practices you are aware of?

Technology (4.4.0)	Reason 1* (4.4.1)	Reason 2* (4.4.2)	Reason 3* (4.4.3)

*** Reason for never/stopping to use:**

1=Lack of requisite materials; **2**=Labor demand is high; **3**=Requires more money; **4**=Told by other farmers that is not effective in increasing yields; **5**=Makes crops susceptible to diseases and pests; **6**=Makes food taste bad; **7**=Other (specify)_____

4.5 List the farming practices, location and your experience with food crops you grow in 2021?

Food Crops name (4.5.0)	Variety Local name (4.5.1)	Variety release names* (4.5.2)	Best trait of this variety (4.5.3)	Year first grown (4.5.4)	Area planted (M^2) (4.5.5)	Planting method 1=Row 2=Broadcast (*If row state actual spacing*) (4.5.6)	Cropping 1 =Intercrop 2 =Mixed crop 3 =Sole stand 4=Other (4.5.7)	Seed source (4.5.8) **	Where grown 1=Farm 2=Kitchen garden (4.5.9)	Distance of plot from home (M) (4.5.10)	Number of harvests per cycle (4.5.11)	Yield/ harvest *(State units)* (4.5.12)	Quantities harvested from wild (4.5.13)

*Farmers may not know the variety name even if it exists.

** 1=Own from the previous season, 2=Neighbor farmer, 3=Retail Store, 4=other, _____

4.6 Input quantities and costs of food crops for the 2021 production cycle - Seed, fertilizer and pesticide

Crop name (4.6.0)	Seed (4.6.1)			Fertilizers1 **(See Code Below*)** (4.6.2)			Fertilizer2 **(See Code Below*)** (4.6.3)			Pesticides (4.6.4)		
	Variety Name (4.6.1.1)	Quantity (4.6.1.2)	Price /Unit (4.6.1.3)	Name (4.6.2.1)	Quantity (4.6.2.2)	Price/ Unit (4.6.2.3)	Name (4.6.3.1)	Quantity (4.6.3.2)	Price/ Unit (4.6.3.3)	Name (4.6.4.1)	Quantity (4.6.4.2)	Price/ Unit (4.6.4.3)

Note: *Please use a local unit of measurement, and then convert it to kg. If the local unit is a bundle, use a standard weight for the bundle as determined for the area in 4.2. Example: 1 bundle = 0.4kg (This is just an example!!!)*

***Fertilizer**: **0**=None; **1**=DAP; **2**=CAN; **3**=MAP; **4**=SSP; **5**=Farmyard manure; **6**=Green manure; **7**=Lime; **8**=fertilizer; **9**=Urea; **10**=specify other compost/coconut husk **11**=other manure top dress type

4.7 Labor, nursery and water managements:

For each crop (4.7.0)	Family Labor (4.7.1)		Hired Labor (4.7.2)		Cost at the nursery mgt (4.7.3)		Water mgt* (4.7.4)
	Total number of days contributed by all family members** (4.7.1.1)	Imputed Cost /day (4.7.1.2)	Total number of days contributed by all hired labor** (4.7.2.1)	Cost/ day (4.7.2.2)	Quantity (4.7.3.1)	Price/ Unit (4.7.3.2)	

Note: ***Water mgt**: **1**=Rain-fed; **2**=Bucket; **3**=Drip irrigation; **4**=Sprinkler irrigation; **5**=Other (specify) ____

** Add up number of days contributed by each family member (1 day=8 hours).

4.8 Do you have a water collection system? **(Circle all that apply):** 0. No, 1. Tank; 2. Bucket; 3. Container; 4. Other (specify) _____

4.9 Do you have problems with excessive rainfall? (**Circle one**): **1.** Yes; **0.** No

4.10 If so, how do you reduce crop and animal damage from excessive rains and runoff? (specify)

4.11 How have production costs for growing foods changed over the past 5 years? **(Circle one) 1**. Increased; **2**. Decreased; **3**. No change; **4**. Do not know

4.12 What were the major changes (for increased or decreased costs?):

5. PROCESSING AND VALUE-ADDITION

5.1. List and describe the extent of processing *(any procedure after harvesting, e.g., blending, value-addition, etc.)* by you.

Crop name (5.1.0)	Do you process (Yes/No) 5.1.1			Year household first processed. 5.1.2		The value added process **(See code**)** 5.1.3	Do you use the crop alone or with other foods? List others foods used with the main crop 5.1.4		Cost of processing /unit 5.1.5	Price of processed product/unit 5.1.6
	If yes, the name of final product 5.1.1.1	If yes, what is the most important quality of this crop? 5.1.1.2	For sale? If yes, what is the most important quality of this crop? 5.1.1.3	Year 5.1.2.1	Are you still processing (Yes/No) 5.1.2.2		First 5.1.4.1	Second 5.1.4.2		

****1**=Cutting/slicing only; **2**=cutting and sun-drying; **3**=Sun-dried and stored; **4**=Sorting & grading; **5**= Bulking with other farmers; **6**= Storage; **7**=Boiling. **8**=Grinding/blending **9**=Other (specify)_____

5.2. Are any of your food crops stored immediately after harvest? **(Circle one) 1**. Yes; **0**. No

5.3. If **yes** to **Question 5.2**, which are stored and how? **(Circle one) 1**. On ground under a shade; **2**. On ground under sun; **3**. On ground unknown; **4**. In basket; **5**. In crate; **6**. In cart; **7**. In plastic bag; **8**. In plastic sack; **9**. On a rack outside in the night; **10**. In a traditional hut; **11**. Above ground in shade; 12. Other (specify) _____

5.4. How do you harvest your food crops **(Circle all that apply)**:

1. Just cut a bunch of plant from top?
2. Just cut a bunch of leaves from side shoots?
3. Strip and harvest leaves only?
4. Pull the plant out and sell entire plant?
5. Other (specify) _____

5.5. How do you know your crops are ready for harvest?

5.6. Do you believe that some crops have more nutrition than others? If so, please describe?

5.7. Do you believe that any of the crops/plants you grow or collect have medicinal value? If so, please describe?

6. MARKETING

6.1 Who are your main trading partner(s)

1 = Direct to consumers……%

2 = Brokers ……. %

3= Direct to Supermarkets…. %

4= Roadside Stands……. %

5 = Retailers……. %

6 =Wholesalers……...%

7= Neighbors…….%

8 = Friends ……...%

9= Family Relatives……..…%

6.2 How frequently does your nearest market meet? **(Circle one)**

1. Daily; **2**. Weekly; **3**. Twice a week; **4**. Thrice a week; **5**. Other (specify) ____

6.3 How are your harvested crops normally packaged during transport? **(Circle one)**

1. Plastic bags/sacks; **2**. Cartons; **3**. Plastic containers; **4**. Wood boxes; **5**. Reed/woven or Bamboo baskets; **6**. Polyethylene bags; **7**. Crates; **8**. Other (specify)

_____

6.3.1. From where do you get the packaging material?_____

6.3.2. And what is its cost?_____

6.4 Are you often aware of crop prices before you decide to sell? **(Circle one) 1.** Yes; **0**. No

6.5 Who fixes or determines the prices of each crop you sold? **(Circle one)**

1. N/A; **2**. Self; **3.** The buyer; **4**. Negotiation; **5**. Middleman or broker; **6**. Other (Specify) _____

6.6 If "**Negotiations**" is one of the responses above, at which periods (certain times of the year, months, season) have you had the opportunity of bargaining for higher producer prices? **(Circle one) 1.** Yes; **0.** No

6.7 If prices were not fixed by you, how do you determine them? **(Circle one)**

1. N/A; **2**. I use prices in neighboring markets; **3**. I use published prices in the newspapers; **4**. I use prices announced on the radio; **5**. I use cost of production;

6. Other (specify) _____

6.8 When do you start checking prices prior to harvesting of produce? **(Circle one)**

1. Less than 3 days before; **2**. A week before; **3**. 2 weeks before; **4**. One monthly before;

5. Not at all

6.9 How have the food crop prices changed over the past 5 years? **(Circle one)**

1. Increased; **2**. Decreased; **3**. No change

6.10 Do you get paid at time of selling food crops? **1.**Yes; **2.**No

6.11 Are there any differences between the production and sale of the different food crops?

1.Yes; **2.** No

6.12 Of the characteristics listed below, which one do you believe would allow you as a grower and producer to receive a higher price or a premium if improved? (Circle one)

1. Hygiene; 2. Healthy; 3.Taste; 4. Organically produced; 4. Organically certified;

5. Others (specify) _____

6.13 As a commercial producer, please fill the Table below for last completed production cycle:

Food Crop name (use the same code as above for foods in other tables) 6.13.0	Quantity sold last completed cycle 6.13.1	Main form sold **(*See codes below)** 6.13.2	Main market **(**See codes below)** 6.13.3	Distance to market (km) 6.13.4	Mode of sale (6.13.5) **1**=Individual **2**=Group **3**=Cooperative **4**=Contract	Main trading partner 6.13.6 **1**=Other farmers **2**=Middlemen **3**=Retailers, **4**=Wholesalers	Sources of market information 6.13.7	Main type of market information 6.13.8	Means of transport **(***See codes below)** 6.13.9	Who transports **0**=self **1**=buyers 6.13.10	Transport cost/unit (If not sold on farm) 6.13.11	Total revenue *(/kg)* 6.13.12	Minimum price achieved *(/kg)* 6.13.13	Maximum price achieved *(/kg)* 6.13.14
Other														

***Main form sold:** **1**=Fresh (loose unsorted); **2**=Fresh (loose sorted); **3**=Fresh (packaged); **4**=Dried; **5**=Preserved; **6**=Other (specify);
****Main Market:** **1**=Farm gate; **2**=Local market; **3**=Urban markets (Supermarkets); **4**=Contract farming; **5**=Growing for a lodge/restaurant/other, specify - ; 6=Others (define).
*****Means of transport**: **1**=Manual (walking-on foot); **2**=Cart; **3**=Public transport; **4**=Pick up; **5**=Lorry; **6**=Car; **7**=a buyer picks up at your farm; **8**=Refrigerated truck; **9**=Motorcycle; **10**=Bicycle; **11**=Other (specify)

6.14 What are the key characteristics that you and buyers look for in food crops?

Food Crop name (use the same code as above for foods in other tables) 6.14.0	Preferences by grower and buyers **(See codes below)**			
	Grower		Buyers	
	Preferred characteristics* 6.14.1	Score** 6.14.2	Preferred characteristics* 6.14.3	Score** 6.14.4

Characteristics: ***Agronomic:1**= Tolerance diseases and pests; **2**=Little input required; **3**=Leaf yield**; 4**=Leaf size**; 5**=Leaf colour; **6**=Marketability (demand); **7**=price;
Cooking & utilization:8=Appearance; **9**=Texture; **10**=Taste; **11**=Palatability; **12**=Requires less/ingredients to taste good; **13**=Cooking time; **14**=Nutritive quality; **15**=Medicinal; **16**=Shelf life; **17**=Freshness; **18**=Food safety traits (absence of fertilizer and pesticide residues); **19**=Absence of food-based pathogens; **20**=Origin of crop (Source of vegetables—Traceability); **21**=Shape; **22**=Convenience; **23**=Freshness; **24**=Sorting; **25**=Packaging; ****Score:** **1**=Very much; **2**=Much; **3**=Moderate; **4**=A little; **5**=Not at all

7. FARMER TRAINING AND EXTENSION NEEDS

7.1 Has anyone in your operation accessed agricultural extension services in the last 12 months? **1**. Yes; **0**. No

7.2 If **yes** to **Question 7.2,** indicate the source of the advice and main messages

Training area/main message 7.2.0	Whether or not received 7.2.1 **(Yes=1 No=0)**	Which organization gave the training? 7.2.2 **(**See codes below)**	Frequency of training 7.2.3	Was it useful? 7.2.4 **(Yes=1 No=0)**	Ever applied knowledge received 7.2.5 **(Yes=1 No=0)**
Seed or fingerlings production technology, methods, or practices					
Management technologies					
Varieties					
Disease and pest control					
Basic business management and income generation					
Ways and methods to increase commercial index					
Marketing					
Nutrition and health					
Value-addition/processing methods					
Others (specify)					

**** 1**=Visit by government extension agent; **2**=Radio; **3**=Local administrative meeting (Baraza); **4**=TV; **5**=Newspaper; **6**=Research organizations; **7**=NGOs; **8**=Other farmers; **9**=Field days/demonstrations; **10**=Exchange visits; **11**=Shows; **12**=Other (specify) _____; For the NGOs, or Non NGO- list: ASNAPP for example. The trainings could be done by more than one organization and more than one time._

7.3 What type of training and assistance do you need, and would you like to receive?
(Write the bullets or main points here):

7.4 Do you or any of your commercial partners/members belong to inside community/outside community groups/ or associations? (*These could be formally organized groups or informal groups of people who meet regularly to talk or do an activity)*. **(Circle one) 1**=Yes; **0**=No

7.5 If yes to Question 8.3, what is the nature of the groups/associations? **(Circle all that apply)** 1. CBO; 2.NGO; 3. Trade and business; 4. Farmer groups; 5. Religious; 6. Community; 7. Political/movement; 8. Social welfare; 9. Merry go round/savings; 10.Others (specify) _____

7.6 Of the groups/organizations you belong to, which ones are the three most important to you and your business? ***Indicate in the boxes below the codes (from 7.5) of the groups/organizations with org/group 1 being the most important and org/group 3 being the least important.***

Org/group 1	Org/group 2	Org/group 3

8. Do you have any financial constraints in farming? **(Circle one) 1.** Yes; **2.** No

9. ACCESS TO FINANCIAL CAPITAL

9.1. Do you know any providers of financial credit services for agricultural activities? **(Circle one)**

1. Yes; **2**. No

9.2. Have any of your household members ever applied for credit either in cash or kind? **(Circle one)**

1. Yes; **2**. No

9.3. If yes, state the purpose for which the credit is applied_____

9.4. Have you ever-obtained credit in the past two years? **(Circle one) 1**. Yes; **2**. No

9.5. If yes, what were the three main sources of credit? **(Circle one) 1**. Money lender; **2**. Credit association/group; **3**. Bank; **4**. Cooperative; **5**. Family members; **6**. Agro-dealer; **7**. Self Help Group; **8**. Relatives; **9**. Friends; **10**. Neighbors; **11**. Others (specify)_____

9.5.1 ***Indicate in the boxes below the codes (from 9.5) of the 3 main sources with box 1 being the most important and box 3 being the least important.***

1	2	3

9.6. For what purpose was the credit granted? **(Circle one) 1**. School fees; **2**. Medical bill; **3**. Household needs; **4**. Your commercial business; **5**. Purchase of agricultural inputs; 6. No specific purpose; **7**. Other (specify): _____

9.7. What was the fee or % loan?

9.8. If credit was not granted, why not? **(Circle one) 1**. Lack of collateral **2**. Had outstanding loan **3**. No guarantor **4**. Do not know **5**. Others (specify) _____

9.9 Do you have any type of insurance for your business? **(Circle one) 1**. Yes; **2**. No

9.10 **If yes** to **Question 9.2**, state the type of insurance and for what? (Example: Car, Boat, shop, etc.):

_____

9.11 Have you ever received grant/gift support: **(Circle one) 1**. Yes; **2**. No

9.12 If so, **(*Circle all that apply)*** from whom: **1.** State; **2.** National government; **3.** international donor; **4.** private company; 5. Federal 6**.** other (specify): _____

10 CONSTRAINTS IN FOOD CROP FARMING

10.1. List the important constraints to farming and rank them (For plants and animals and poultry)

Major constraints	Most important Food Crop you Grow (and define which it is)=		What is 2nd most important Food Crop you grow (and define which it is)=		What is 3rd most important Food Crop you grow (and define which it is)=	
	Constraint? **1=Yes 0=No**	Rank its importance (only those with **Yes** in column 2)*	Constraint? **1=Yes 0=No**	Rank its importance (only those with **Yes** in column 4)*	Constraint ? **1=Yes 0=No**	Rank its importance (only those with **Yes** in column 6)*
10.1.0	**10.1.1.1-27**	**10.1.2.1-27**	**10.1.3.1-27**	**10.1.4.1-27**	**10.1.5.1-27**	**10.1.6.1-27**
Socioeconomic						
1. Lack of seed or plant materials						
2. Lack of improved seed						
3. High prices of improved seed						
4. Poor quality of seed						
5. Unavailability of credit to buy seed						
6. High price of fertilizer						
7. Lack of credit to buy fertilizer						
8. Poor access to markets and information						
9. Poor vegetable leaf market prices						
10. Food taboos						
11. Small land sizes						
12. Too many sellers but a few buyers						
13. Poor infrastructure						
14. Lack of labor						
15. lack of land						
16. Better prices for other vegetables						
17. Need to give attention to my major food crops (e.g. taro)						
18. Other						
Biophysical						
19. Drought						
20. Floods						
21. Pests (**name key diseases)**						
22. Diseases (**name key pests)**						
23. Soil fertility						
24. Other						
25. Do you know have or use a water collection system?						
26. Do you now use irrigation?						
27. Across how many months of the year are you able to and do grow IVs and other vegetables?						

***1**=Most important, **2**=Second most important…etc.

10.2. List the important constraints to farming and rank them (For aquaculture, fisheries, and marine products)

Major constraints	Most important Food Crop you Grow or Catch (and define which it is) =		What is 2nd most important Food Crop you grow or catch (and define which it is) =		What is 3rd most important Food Crop you grow or catch (and define which it is) =	
	Constraint? **1=Yes 0=No**	Rank its importance (only those with **Yes** in column 2)*	Constraint? **1=Yes 0=No**	Rank its importance (only those with **Yes** in column 4)*	Constraint? **1=Yes 0=No**	Rank its importance (only those with **Yes** in column 6)*
10.2.0	**10.2.1.1-25**	**10.2.2.1-25**	**10.2.3.1-25**	**10.2.4.1-25**	**10.2.5.1-25**	**10.2.6.1-25**
Socioeconomic						
1. Lack seafood, sea animals and fish in waters						
2. Lack of facilities to raise, incubate, grow seafood						
3. Technical expertise lacking						
4. Lack of water transport						
5. Unavailability of credit to support your business/operation						
6. High input costs (including fuel)						
7. Lack of starting animals, fish, and crustaceans						
8. Difficulty accessing markets						
9. Lack of cold storage and coolers						
10. Lack of dryers/smokers						
11. Not sufficient access to water area to make it commercially						
12. Local market too competitive						
13. Competition from larger international commercial fishing boats						
14. Lack of labor to assist						
15. Poor infrastructure						
16. Difficulty to access input supplies						
18. Other						
Biophysical						
19. Storms						
20. Floods						
21. Pests (**name key diseases)**						
22. Diseases (**name key pests)**						
23. Erosion						
24. Theft and security						
25. Do you know have or use a water collection system?						

***1**=Most important, **2**=Second most important…etc.

10.3 Did you notice any changes in the following weather parameters in the past?

S.No	Parameter 10.3.0	Yes = 1, No=0 10.3.1.1-8	Affecting agriculture? 10.3.2.1-8 Yes =1 No=0
1.	More frequent drought		
2.	Delayed on –set rainfall		
3.	Erratic rainfall pattern		
4.	Too much rain		
5.	Low rain		
6.	Higher temperature		
7.	Earlier on – set of rainfall		
8.	Others		

10.4 Did you face any damage due to any climate factor? If yes due to what?

S.No	Food Crop name (use the same code as above for foods in other tables) 10.4.1	Decline in yield 10.4.2		Increase in yield 10.4.3		Pest and diseases 10.4.4		Weed regime 10.4.5	
		Yes=1	No=0	Yes=1	No=0	Yes=1	No=0	Yes=1	No=0
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.	Other								

10.5 Did you take any action against crop loss due to climate? **(Circle one) 1**. Yes; **2**. No.

10.6 And if so, please list actions taken:

S.No	Action taken 10.6.0	Yes =1, No=0 10.6.1.1-7	Reason for changes* 10.6.2.1-7	Cost of adaption 10.6.3.1-7
1.	Started growing new crop			
2.	Adopted drought tolerant			
3.	Moved focus from crop to livestock production			
4.	Started non-farm activities			
5.	Started using new land management practices			
6.	Did nothing			
7.	Others			

Note: *1. To increase productivity, 2. To increase soil fertility, 3. To reduce erosion, 4. To response to climate change, 5. Control Pest and diseases, 6. Weed regime.

11 Commercial Farming Background

11.1 Characteristics of your commercial operation

S/No.	Members of the Farm (start with hh head) 11.1.1	Relationship to hh head 11.1.2 **1**=Head, **2**=Spouse, **3**=Son / daughter **4**=Parent, **5**=Brother / sister, **6**=Grandchild **7**=In law, **8**=Employee **9**=Other relatives **10**=Other	Age 11.1.3	Gender: 11.1.4 **1**=Male **0**=Female	Highest level of education 11.1.5 **1**=None **2**=Primary **3**=Secondary. **4**=College. **5**=University	Informal education 11.1.6 **1**=None **2**=Adult Education **3**=Training in food crop production **4**=Artisan training
1						
2						
3						
4						
5						
6						
7						
9						
10						
11						
12						

***Occupation codes**: **1**=Farming; **2**=Salary earner; **3**=Wage earner in agricultural sector; **5**=Wage earner in non-agriculture large business (factory operation); **6**=Petty business (kiosk, trade in farm produce); **7**=Artisan; **6**=None (applicable to 2nd most important occupations and preschool-age children only); **7**=Student (children going to school); **8**=Child (of school going age not in school); **9**=Others (specify)_____

11.2 What are the main sources of your farm labor? ***(Circle one)*** **1**. Household; **2**. Extended family; **3**. Friends; **4**. Hired; **5.** Other (specify) _____

11.3 As a commercial farmer, what were the main sources of farm/commercial income in 2014?

Source 11.3.0	**Rank** 11.3.1.1-17	**Amount ($US) 2014** 11.3.2.1-17
1. Permanent employment		
2. Wages from hired agricultural labor, local casual labor		
3. Self-employment off-farm (business)		
4. Casual labor		
5. Remittances		
6. Pension		
7. Sale of cereals		
8. Sale vegetables		
9. Sale fruits		
10. Sale of spices and other plant based products		
11. Sale of livestock products		
12. Sale of poultry (eggs and/or chickens)		
13. Sale of meat		
14. Sale of ocean fish		
15. Sale of clams		
16. Sale of Crustaceans such as shrimp, lobster, crabs		
17. Others (specify):		

***Note to enumerators:** If it is difficult to get the above information, ask how much they sell on average on a typical market day. Use the number of market days in a week to derive the monthly income.*

11.4 As a commercial farmer did you have additional income sources 2021?

Source 11.4.0	**Rank** 11.4.1	**Amount ($US) in 2021** 11.4.2
1. Permanent employment		
2. Wages from hired agricultural labor, local casual 3. labor		
4. Self-employment off-farm (business)		
5. Casual labor		
6. Remittances		
7. Pension		
8. Sale of cereals		
9. Sale vegetables		
10. Other crop products		
11. Sale of fruits		
12. Sale of animal, pig, poultry and livestock products		
13. Others (specify):		

Note to enumerators: *If it is difficult to get the above information, ask how much they sell on average on a typical market day. Use the number of market days in a week to derive the monthly income.*

11.5 How do you use your income from your commercial operation to support your business and achieve your household food security objectives?

Check all mentioned objectives and only rank 5 most important (1=most important)

Objective 11.5.0	**Rank** 11.5.1	Achievement of the objective now: **1**=Easily achievable **2**=No change **3**=Increasingly difficult 11.5.2
1. Re-invest in commercial business		
2. Food		
3. Housing		
4. Transport		
5. School fees		
6. Medical care		
7. Purchase of fertilizers		
8. Purchase seed		
9. Purchase pesticides		
10. Purchase of farm equipment and supplies		
11. Hiring labor		
12. Others (specify)		

11.6 Are you able to save any money for unexpected expenses? **(Circle one) 1**. Yes; **0**. No

11.7 What is your goal as a farmer (fisheries/aquaculture/farming land-based crops, animals, poultry) over the next 5 years?

11.8 What are the most important trainings you need to improve your production and farm?

12.1 Do you see any change in the environment that is impacting your farming and food production? **(Circle one) 1**. Yes; **0**. No

12.1.1 If so, what?

12.1.2 If so, is it making a positive or negative change, please explain?

13 What are the top 3 concerns you have to maintain your livelihood?

13.1_____

13.2_____

13.3_____

14 Do you believe the next generation will have it easier, harder or the same to maintain the life and culture?

You are now finished with the survey.
Thank you for your participation.

Appendix A.2.4

Federate States of Micronesia
Focus Group Questions as Part of the Baseline Climate-Resilient Food Security for Farming Households across the FSM

Questions from the surveys:

- What is your goal as a farmer (fisheries/aquaculture/farming land-based crops, animals, poultry) over the next 5 years?
- What are the most important training you need to improve your production and farm?
- Do you see any change in the environment that is impacting your farming and food production? If so what?
- What are the top 3 concerns you have to maintain your livelihood?
- Do you believe the next generation will have it easier, harder or the same to maintain the life and culture?

Other open-ended questions for focus groups to discuss:

- What motivates you to run your business?
- How do you want to improve your business?
- What resources would be helpful to help improve your business?
- Do you want to grow or scale up your business?
- What are the obstacles that limit your business?
- What are the greatest limitations to growing your business/making more money?
- What type of public policies could be put in place that would strengthen or expand your business?
- How does climate change affect your business? How do you think it will in the future?

Appendix A.2.5

CLIMATE-RESILIENT FOOD SECURITY FOR FARMING HOUSEHOLDS ACROSS THE FSM

Household Food Security and Climate Resilience Survey To Meet GCF SAP020 D2 Baseline Indicators

INFORMED CONSENT FORM

You are invited to participate in a research study that is being conducted by James E. Simon, who is a Distinguished Professor in the Department of Plant Biology at Rutgers University, and his team members. The purpose of this research is to conduct a baseline assessment on the Federated States of Micronesia (FSM) regarding food security, food production, consumption and trade as it may relate to climate resiliency while factoring in climate change models.

Approximately 600 households and 200 growers/intermediaries will participate in the study, and each individual's participation will last approximately one hour. From each household selected, surveys will be conducted for men and women (ages 18-65 years).

The study procedures include responding to an in-person survey about assessing dietary diversity and household food security for farming households in the context of climate change within all four FSM states. The objective is to understand your state's current situation better relative to food production and consumption, and how the weather and the environment affect you and your family. It is the intention of the funding agency, The Micronesia Conservation Trust and the Green Climate Fund, in concert with your state government, to use the results of this survey to help invest in strategies that improve people's livelihoods and food security.

This research is anonymous. Anonymous means that I will record no information about you that could identify you. This means that I will not record your name, address, phone number, date of birth, etc. If you agree to take part in the study, you will be assigned a random code number that will be used on each test and the questionnaire. There will be no way to link your responses back to you. Therefore, data collection is anonymous.

The research team and the Institutional Review Board at Rutgers University are the only parties that will be allowed to see the data, except as may be required by law. If a report of this study is published, or the results are presented at a professional conference, only group results will be stated. All study data will be kept for at least three years.

There are no foreseeable risks to participation in this study. You may receive no direct benefit from taking part in this study. Participation in this study is voluntary. You may choose not to participate, and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable.

If you have any questions about the study or study procedures, you may contact either of us at:

Jim Simon, Distinguished Professor of Plant Biology
Director, New Use Agriculture and Natural Plant Products Program (NUANPP),
Director, Center for Agricultural Food Ecosystems (RUCAFE), The New Jersey Institute of Food, Nutrition & Health, Rutgers University, Department of Plant Biology-Foran Hall
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OR:
Ramu Govindasamy, Professor and Chair, Dept. of Agricultural, Food and Resource Economics

Food Distribution Research Society (FDRS) Past President
Associate Director, New Use Agriculture and Natural Plant Products
Extension Specialist, Rutgers Cooperative Extension
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If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:

Institutional Review Board
Rutgers University, the State University of New Jersey
Liberty Plaza / Suite 3200
335 George Street, 3rd Floor
New Brunswick, NJ 08901
Phone: 732-235-9806
Email: humansubjects@orsp.rutgers.edu

If you agree to participate, please sign off on the box for consent.

AGREEMENT TO PARTICIPATE

Subject Consent:

I have read this entire consent form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form and this study have been answered. I agree to take part in this study and received an honorarium.

Participant Signature: Date:

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed all the important details about the study including all of the information contained in this consent form.

Investigator/Person Obtaining Consent Name (Print):

Signature: Date:

[If answered yes, proceed with the interview. If answered no, thank the participant for their valuable time.]

1. ENUMERATOR AND RESPONDENT BACKGROUND INFORMATION

Q1	Question	Response
1.1	Enumerator name	
1.2	Date of Interview	
1.3	Time of interview	
1.4	State that the respondent resides	**CIRCLE ONE AND WRITE ISLAND NAME (IF APPLIES)** ● 1=Yap Outer Island_____ ● 2=Chuuk Outer Island_____ ● 3=Pohnpei Outer Island_____ ● 4=Kosrae
1.5	If moved from an outer island, did they move to the main island due to climate change/severe weather issues?	**CIRCLE ONE** ● 1= Yes ● 2= No

2. DEMOGRAPHIC INFORMATION

Q2	Members of the Household	Gender (circle one)		Age in Years
2.1	How many members in your household, including you	_____		
2.1a	Member 1, Respondent (can answer gender without asking if applicable)	**M**	**F**	
2.1b	Member 2	**M**	**F**	
2.1c	Member 3	**M**	**F**	
2.1d	Member 4	**M**	**F**	
2.1e	Member 5	**M**	**F**	
2.1f	Member 6	**M**	**F**	
2.1g	Member 7	**M**	**F**	
2.1h	Member 8	**M**	**F**	
2.1i	Member 9	**M**	**F**	
2.1j	Member 10	**M**	**F**	

2.1k	Additional members		

2.2	What are the livelihoods sources for your household?	**CIRCLE ALL THAT APPLY** • 1=Subsistence living - growing food for household consumption • 2=Growing Crops • 3=Raising livestock • 4=Fishing • 5=Paid work in agriculture • 6=Salaried government employment (non-agriculture) • 7=Salaried private employment (non-agriculture) • 8=Salaried NGO employment • 9=Remittances • 10=Social security • 11=Government transfers/NGO support • 12=Other (specify)
2.3	What is your highest level of education?	**CIRCLE ONE** • 1=Traditional/Informal • 2=Some primary school, but not completed • 3=Completed primary (Elementary) school • 4=Some secondary school, but not completed • 5=Completed secondary (High) school • 6=Some higher education, but degree not completed • 7=Completed higher education degree such as COM-FSM • 8=Completed graduate studies

3. IMPACT OF EXTREME CLIMATE-RELATED DISASTERS IN GEOGRAPHIC AREA (1 year)

Q3	Question	Response	
3.1	Have members of your family suffered loss of life due to climate change/extreme weather in the past year?	**CIRCLE ONE** • 0= No • 1= Yes	If yes, how many _____

Q3	Question	Response	
3.2	What is your estimated economic loss (both plants, livestock and aquatic products) due to climate change/extreme weather in the past year?	Economic Loss Plants $ _____ Economic Loss Livestock $ _____ Economic Loss Aquatic Foods $ _____	
3.3	Does the household practice crop rotation or intercropping to maintain soil fertility and reduce pest pressure? (Circle one)	**CIRCLE ONE** • No rotation/intercropping • Occasional rotation/intercropping • Regular rotation/intercropping	
3.4	Have you or your family experienced any arable land loss due to climate change/extreme weather in the past year?	**CIRCLE ONE** ● 0= No ● 1= Yes	If yes, how much arable land have you lost (i.e., to flooding, erosion, or became salty)? _____
3.5	Have you or your family experienced saltwater intrusion impacting your crops in the past year?	**CIRCLE ONE** ● 0= No ● 1= Yes	If yes, how often?
3.6	Have you or your family experienced tidal surge (king tides) in the past year?	**CIRCLE ONE** ● 0= No ● 1= Yes	If yes, how often?
3.7	Have you or your family changed or stopped traditional agricultural practices due to climate change/extreme weather in the past year?	**CIRCLE ONE** ● 0= No ● 1= Yes	If yes, what did you change?

4. LIVELIHOOD COPING STRATEGY INDEX QUESTIONS (30 days)

Q4	Question	Response	If No, please clarify: **1 = No, because it wasn't necessary** **2 = No, because I already used up those assets within the last 12 months and I cannot continue to do it** **3 = Not applicable**
4.1	During the past 30 days, have you experienced any significant shocks or stresses that affected your household's livelihood?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.2	During the past 30 days, did anyone in your household have to sell household assets/goods (radio, furniture, television, jewelry, etc.) due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable

Q4	Question	Response	If No, please clarify: 1 = No, because it wasn't necessary 2 = No, because I already used up those assets within the last 12 months and I cannot continue to do it 3 = Not applicable
4.3	During the past 30 days, did anyone in your household have to prioritize the food consumption of active household members due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.4	During the past 30 days, did anyone in your household have to borrow money to cover food needs due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.5	During the past 30 days, did anyone in your household have to reduce or cease payments on essential utilities and bills due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.6	During the past 30 days, did anyone in your household have to send family members to eat somewhere else due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.7	During the past 30 days, did anyone in your household have to sell productive assets or means of transport (sewing machine, wheelbarrow, bicycle, car, etc.) due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.8	During the past 30 days, did anyone in your household have to barter/exchange clothing for food.	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.9	During the past 30 days, did anyone in your household have to move within the FSM (e.g. moving from atoll to main island for example) due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.10	During the past 30 days, did any minor household members (under 15) migrate informally (sending a child off to live with relatives/family out of the FSM) due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable

Q4	Question	Response	If No, please clarify: 1 = No, because it wasn't necessary 2 = No, because I already used up those assets within the last 12 months and I cannot continue to do it 3 = Not applicable
4.11	During the past 30 days, did anyone in your household have to decrease expenditures on fertilizer, pesticide, fodder, animal feed, veterinary care, etc. due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.12	During the past 30 days, did anyone in your household have to ask for assistance (i.e., ask friends/neighbors/strangers on the streets for money or food) due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.13	During the past 30 days, did your household have to mortgage/sell the house where your household was permanently living in or land due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.14	During the past 30 days, did anyone in your household have to sell the last female (productive) animal due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.15	During the past 30 days, did anyone in your household have to gather wild foods that you normally don't consume due to lack of food or money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable
4.16	During the past 30 days, did your family accept new people into your household because they suffered from lack of food or lack of money to buy food?	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 1=Unnecessary • 2=Asset used up • 3=Not applicable

5. FOOD EXPENDITURE SHARE (Varying time periods)

5.1 Food Expenditure Share - Food Submodule, 7 days

Note for enumerator: the respondent of this module should preferably be the member normally in charge of preparing and purchasing food. if s/he cannot be the direct respondent, try to have s/he helping the main respondent answering this module.

READ OUT LOUD: Now I would like to ask you (again) some questions regarding the consumption of food in your household in the last 7 days. We ask these questions to learn about the food consumption habits of households

Note: Before asking yes/no questions related to a certain item name, the enumerator should read: *now I will ask you about your consumption and expenditures of [item name]. This includes items such as…[Example]*

5.1	Item name	Example	5.1.(1-14).1 Did your household purchase any [item] for household consumption in the last 7 days, using cash or on credit?	5.1.(1-14).2 Considering both purchases made in cash and on credit, how much did your household spend on [item] in the last 7 days? US $	5.1.(1-14).3 In the last 7 days, did your household consume any [item] that came from in-kind gifts or in-kind assistance?	5.1.(1-14).4 What would be the value of the consumed [item] that came from in-kind gifts or assistance if you were to buy that at the market? US $	5.1.(1-14).5 In the last 7 days, did your household consume any [item] that you produced, gathered/hunted/fished, or received in exchange of labor?	5.1.(1-14).6 What would be the value of the consumed [item] that you produced, gathered/hunted/fished, or received in exchange of labor if you were to buy that at the market? US $
1	Cereals	maize, rice, sorghum, wheat, etc. in the form of raw cereals, flour, bread, pasta and similar products	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
2	Tubers	Potatoes, sweet potatoes, cassava, plantains, yams	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
3	Pulses and nuts	Beans, peas, lentils, nuts in shell or shelled	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
4	Vegetables	Dark green leafy vegetables, orange vegetable, and other vegetables	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
5	Fruits	Fresh, frozen, dry fruit	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
6	Meat	Fresh, chilled, frozen meat and poultry; dry and salted meat	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
7	Fish	Fresh and frozen fish and other seafood	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____

5.1	Item name	Example	5.1.(1-14).1 Did your household purchase any [item] for household consumption in the last 7 days, using cash or on credit?	5.1.(1-14).2 Considering both purchases made in cash and on credit, how much did your household spend on [item] in the last 7 days? US $	5.1.(1-14).3 In the last 7 days, did your household consume any [item] that came from in-kind gifts or in-kind assistance?	5.1.(1-14).4 What would be the value of the consumed [item] that came from in-kind gifts or assistance if you were to buy that at the market? US $	5.1.(1-14).5 In the last 7 days, did your household consume any [item] that you produced, gathered/hunted/fished, or received in exchange of labor?	5.1.(1-14).6 What would be the value of the consumed [item] that you produced, gathered/hunted/fished, or received in exchange of labor if you were to buy that at the market? US $
8	Fats	Vegetal oil, butter, margarin	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
9	Milk/Dairy products	Milk, cheese, yogurt, powdered milk	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
10	Eggs	Eggs	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
11	Sugar, confectionery and desserts	Raw sugar, honey, jams, chocolate, ice cream and similar products	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
12	Condiments	Salt, spices, cubes, fish powder	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
13	Non-alcoholic beverages (including bottled water)	Coffee, tea, herbal infusion; bottled water; soft-drinks; juices	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
14	Snacks and meals prepared outside the home	Ready-made meals and snacks prepared outside the home, no matter if consumed inside or outside the home	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____

5.2 Food Expenditure Share - Non-food submodule, 30 days

Note for enumerator: the respondent of this module should preferably be the head of household or any member most knowledgeable about non-food expenditures in the household

READ OUT LOUD: "Now I would like to ask you some questions regarding the consumption and use of non-food items in your household in the **last 30 days**. Again, we need to know this to understand the consumption habits of the population"

Note: Before asking yes/no questions related to a certain item name, the enumerator should read: *now I will ask you about your consumption and expenditures of [item name]. This includes items such as…[Example]*

5.2	Item name	Example	5.2.(1-10).1 In the last 30 days, did your household purchase any [item], using cash or credit?	5.2.(1-10).2 Considering both purchases made in cash and on credit, how much did your household spend on [item] in the last 30 days? US $	5.2.(1-10).3 In the last 30 days, did your household use any [item] that came from in-kind gifts or in-kind assistance?	5.2.(1-10).4 What would be the value of [item] that came from in-kind gifts or in-kind assistance if you were to pay for it? US $
	Personal care					
1	Hygiene items and services	Soap, toothbrush, toothpaste, toilet paper, razors, detergents, insecticides, cosmetics; hairdressers/barber, beauty salon	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
	Transport					
2	Transport-related goods and services	Public transportation (bus, rail, boat etc.), taxi, rental of vehicles, maintenance of vehicles used for transportation (including lubricant, tyres, spare parts, repairs fees etc.) DO NOT INCLUDE PURCHASE OF VEHICLES; EXCLUDE FUEL	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____

3	Fuel	Gasoline, diesel and any other fuel used for vehicles DO NOT REPORT ON FUEL USED FOR VEHICLES USED EXCLUSIVELY FOR PRODUCTIVE/BUSINESS PURPOSES; DO NOT REPORT ON FUEL USED FOR PURPOSES OTHER THAN TRANSPORTATION	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
	Housing					
4	Water supply for domestic use	Water for drinking (not bottled), washing, cooking, bathing etc. EXCLUDE BOTTLED DRINKING WATER	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
5	Electricity	Electricity DO NOT REPORT ELECTRICTY USED FOR BUSINESS/PRODUCTIVE PURPOSES ONLY	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
6	Other sources of energy for cooking, heating, lighting etc.	Gas, kerosene, other liquid fuels; wood, charcoal, candles, other solid fuels. DO NOT INCLUDE ELECTRICITY; DO NOT INCLUDE FUEL FOR TRANSPORTATION	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
7	Services related to dwelling	Waste collection, sewage collection, maintenance charge in collective buildings, security services, services of helpers like maids and lawnsboys.	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
	Communication					
8	Communication-related goods and services	Mobile top-up, internet, landline charges, postal services. DO NOT INCLUDE PURCHASE OF DEVICES LIKE PHONES, RADIOS, COMPUTERS, TVs…	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
	Recreation, sport and culture					

9	Goods and services related recreation, sport and culture	Entertainment, sports, lottery, gambling, newspapers, magazines, books, toys, hobbies, hotels DO NOT INCLUDE EXPENDITURES FOR LARGE/SPECIAL CEREMONIES LIKE WEDDINGS AND FUNERALS	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____
	Others					
10	Alcohol, Tobacco		1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next question	_____

5.3 Food Expenditure Share - Non-food submodule, 6 months

Note for the enumerator: the respondent of this module should preferably be the head of household or any member most knowledgeable about non-food expenditures in the household

READ OUT LOUD: "Now I will ask you again about the consumption and use of non-food items in your household. However, this time I will ask you about the last **6 months**"

Note: Before asking yes/no questions related to a certain item name, the enumerator should read: *now I will ask you about your consumption and expenditures of [item name]. This includes items such as…[Example]*

5.3	Item name	Example	5.3.(1-8).1 In the last 6 months, did your household purchase any or pay for [item], using cash or credit?	5.3.(1-8).2 Considering both purchases made in cash and on credit, how much did your household spend on [item] in the last 6 months? US $	5.3.(1-8).3 In the last 6 months, did your household use or benefit from any [item] that came from in-kind gifts or in-kind assistance?	5.3.(1-8).4 What would be the value of [item] that came from in-kind gifts or in-kind assistance if you were to pay for it? US $
	Health					
1	Health services	Outpatient and hospital services, doctor fees, traditional healing	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
2	Medicines & Health products	Medicines, other medical products and equipment like glasses, syringes, crutches etc.	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
	Clothing					

3	Clothing and footwear	Clothes, shoes, and repair, tailor and laundry services DO NOT INCLUDE SCHOOL UNIFORMS	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
	Education					
4	Education services	Tuitions fees, Exam fees, other fees	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
5	Education goods	Other education costs including uniforms, books, canteen, transport and other education material	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
	Housing					
6	Rent	Rent paid for housing	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
7	Household non-durable furniture and utensils	Textiles (like bed sheets, blankets, pillows, curtains, carpets), utensils (like bowls, plates, silverware, cookpots, brooms, brushes, umbrellas, torches, lamps etc.) DO NOT INCLUDE DURABLE FURNITURE, EQUIPMENT AND APPLIANCES LIKE BEDS, TABLES, CHAIRS, FRIDGE, TV, PHONES, FANS, STOVES, GAS COOKER…	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____
8	Household routine maintenance	Goods and services for household routine maintenance (like repairs to dwelling, repairs to appliances and furniture etc.).	1=Yes -> 0=No -> next question	_____	1=Yes -> 0=No -> next item	_____

6. FOOD CONSUMPTION SCORE – NUTRITION, 7 days

INSTRUCTIONS: ONLY read the list of foods items. Record the number of days the household consumed each of the different food items.

READ OUT LOUD: Now I am going to ask you how many days over the last 7 days, did most members of your household (50% +) eat the following food items, inside or outside the home? And what was their source?

Note for enumerator: Determine whether the consumption of fish, milk was only in small quantities, if in small quantities should be recorded under condiment.

	Foods	**Number of days eaten in the past 7 days (0 – 7)** ***If 0 days, do not specify the main source.***	**How was this food acquired? Write the main source of food for the past 7 days** ***Use codes below***

6.1	**Grains, roots and tubers, such as:** Taro, breadfruit, Rice, pasta, bread, corn, potato, yam, cassava/tapioca, white/light sweet potato, banana (starchy banana or plantain), and other starch rich foods	|___|	|___|
6.2	**Pulses/legumes/nuts, such as:** beans, cowpeas, peanuts, lentils, nuts, soybeans, tofu	|___|	|___|
6.3	**Milk and other dairy products, such as:** fresh milk / sour, yogurt, cheese, and other dairy products (Exclude margarine/butter or small amounts of milk for tea/coffee)	|___|	|___|
6.4	**Meat, fish and eggs, such as:** chicken, beef**,** goat, pork, blood, fish, including canned tuna, shellfish, and/or other seafood, eggs (meat and fish consumed in large quantities and not as a condiment)	|___|	|___|
	If 0, skip to question 6.5		
6.4.1	**Flesh meat, such as:** beef, pork, lamb, goat, dog, chicken, other birds, insects	|___|	|___|
6.4.2	**Organ meat, such as:** liver, kidney, heart and/or other organ meats	|___|	|___|
6.4.3	**Fish/shellfish, such as:** fish, including canned tuna, escargot, and/or other seafood (fish in large quantities and not as a condiment)	|___|	|___|
6.4.4	**Eggs**	|___|	|___|
6.5	**Vegetables and leaves, such as:** spinach, onion, tomatoes, carrots, peppers, green beans, lettuce, etc	|___|	|___|
	If 0, skip to question 6.6		
6.5.1	**Orange vegetables (vegetables rich in Vitamin A), such as:** carrot, red pepper, pumpkin, orange sweet potato and other orange vegetables	|___|	|___|
6.5.2	**Green leafy vegetables, such as:** Kangkong**,** water spinach, broccoli, cassava leaves, pumpkin tops, amaranth and/or other dark green leaves,	|___|	|___|
6.6	**Fruits, such as:** coconuts, sweet banana, apple, lemon, lime, mango, soursap, papaya, apricot, orange, citrus, peach and other fruits	|___|	|___|
	If 0, skip to question 6.7		
6.6.1	**Orange fruits (Fruits rich in Vitamin A), such as:** mango, papaya, apricot, and peach, karat banana [Exclude oranges] and other orange fruits	|___|	|___|
6.7	**Oil/fat/butter, such as:** coconut oil, vegetable oil, palm oil, shea butter, margarine, and other fats/oil	|___|	|___|
6.8	**Sugar, or sweet, such as:** sugar, honey, jam, cakes, candy, cookies, pastries, cakes and other sweet (sugary drinks)	|___|	|___|
6.9	**Condiments/spices, such as:** tea, coffee/cocoa, salt, garlic, spices, yeast/baking powder, tomato/sauce, meat or fish as a condiment, condiments including the small amount of milk/tea coffee.	|___|	|___|

Codebook list name: SRf	**Food acquisition codes** 100 = Own production (crops, animal) 200 = Fishing / Hunting 300 = Gathering 400 = Loan 500 = market (purchase with cash) 600 = market (purchase on credit) 700 = begging for food 800 = exchange labor or items for food 900 = gift (food) from family relatives or friends 999 = Other 1000 = food aid from civil society, NGOs, government, WFP etc.

7. HOUSEHOLD and INDIVIDUAL DIETARY DIVERSITY SCORE (24 hours)

Note to the enumerator: These questions should only be asked to households who consumed a regular diet the day prior. Households who consumed an unusual diet, for example they attended a wedding celebration, should be excluded from this question.

Household Dietary Diversity: These questions should be asked of the person who is responsible for food preparation, or if that person is unavailable, of another adult who was present and ate in the household the previous day. The questions refer to the household as a whole, not any single member of the household.

Individual Dietary Diversity: These questions can be answered by anyone in the household. They can include foods consumed inside and outside of the household.

Instructions: Read the list of foods. Under 'Household level responses', place a one in the box if anyone in the household ate the food in question, place a zero in the box if no one in the household ate the food.

Then ask the individual if they ate the food (in or out of the house). Under 'Individual level responses', mark a 1 if consumed and a 0 if not consumed.

READ OUT LOUD: Now I would like to ask you about the types of foods that you or anyone else in your household ate in your house **yesterday during the day and at night**. This **does not** include foods consumed outside of the house, for example at a restaurant.

Then I will ask you if you consumed that same food group. Your response **can include** food consumed outside of the household.

#	Food Groups	Examples	7.(1-18).1 **Household level responses: did <u>anyone in your household</u> consume this food? <u>Does NOT include</u> food consumed outside of the household.**	7.(1-18).2 **Individual level responses: did <u>YOU</u> consume this food? This <u>DOES include</u> food consumed outside of the household.**
7.1	*CEREALS*	Any breadfruit, bread, rice noodles, biscuits, or any other foods made from millet, rice, or wheat, starchy banana (plantain)	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.2	*WHITE ROOTS AND TUBERS*	Any taro, *white potatoes, white yam, white cassava, manioc, or other foods made from roots*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.3	*VITAMIN A RICH VEGETABLES AND TUBERS*	*pumpkin, carrot, squash, or sweet potato that are orange inside*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.4	*DARK GREEN LEAFY VEGETABLES (Vitamin A rich)*	*dark green leafy vegetables, including wild forms such as amaranth, cassava leaves, kale, spinach*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.5	*OTHER VEGETABLES*	*other vegetables (e.g. tomato, onion, eggplant) + other locally available vegetables*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.6	*VITAMIN A RICH FRUITS*	*Karat banana, ripe mango, cantaloupe, apricot (fresh or dried), ripe papaya, dried peach, and 100%, fruit juice made from these + other locally, available vitamin A rich fruits*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.7	*OTHER FRUITS*	*other fruits, including wild fruits and 100% fruit juice made from these such as coconuts, apples, oranges, citrus, grapefruits*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes

#	Food Groups	Examples	7.(1-18).1 Household level responses: did <u>anyone in your household</u> consume this food? <u>Does NOT include</u> food consumed outside of the household.	7.(1-18).2 Individual level responses: did <u>YOU</u> consume this food? This <u>DOES include</u> food consumed outside of the household.
7.8	*ORGAN MEAT*	*liver, kidney, heart or other organ meats or blood-based foods*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.9	*FLESH MEATS*	*beef, pork, lamb, goat, rabbit, game, chicken, duck, other birds, insects*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.10	*EGGS*	*eggs from chicken, duck, guinea fowl or any other egg*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.11	*FISH AND SEAFOOD*	*fresh or dried fish or shellfish*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.12	*LEGUMES, NUTS, AND SEEDS*	*dried beans, dried peas, lentils, nuts, seeds or foods made from these (eg. hummus, peanut butter)*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.13	*MILK AND MILK PRODUCTS*	*milk, cheese, yogurt or other milk products*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.14	*OILS AND FATS*	*oil, fats or butter added to food or used for cooking*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.15	*SWEETS*	*sugar, honey, sweetened soda or sweetened juice drinks, sugary foods such as chocolates, candies, cookies and cakes*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.16	*SPICES, CONDIMENTS, BEVERAGES*	*spices (black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages*	**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes

#	Food Groups	Examples	7.(1-18).1 **Household level responses: did <u>anyone in your household</u> consume this food? <u>Does NOT include</u> food consumed outside of the household.**	7.(1-18).2 **Individual level responses: did <u>YOU</u> consume this food? This <u>DOES include</u> food consumed outside of the household.**
7.17	*Household level only: Did you or anyone in your household eat anything (meal or snack) OUTSIDE the home yesterday?*		**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes
7.18	*Individual level: Did you eat anything (meal or snack) OUTSIDE the home yesterday?*		**CIRCLE ONE** • 0= No • 1= Yes	**CIRCLE ONE** • 0= No • 1= Yes

8. <u>HOUSEHOLD DECISION MAKING</u>

Q8	Question	Response
8.1	In your household, who makes a majority of the decisions regarding where to purchase food, what food to purchase, and how to prepare the food?	**CIRCLE ONE** 1. myself 2. my spouse 3. myself and my spouse together 4. my children 5. a family elder 6. other specify _____
8.2	In your household, who makes a majority of the decisions regarding where to farm, what types of food to farm, where to wild forage, and what types of foods to wild forage?	**CIRCLE ONE** 1. myself 2. my spouse 3. myself and my spouse together 4. my children 5. a family elder 6. other specify _____

<u>9., 10., 11., 12. MISCELLANEOUS</u>

#	Question	Response
9	Have you experienced/observed soil erosion on your land?	**CIRCLE ONE** • 0= No • 1= Yes
10	Are you able to purchase or procure locally processed and packaged foods that you want? (e.g taro and breadfruit from	**CIRCLE ONE** • 0= No

	your area that has been made into chips and/or other foods)	• 1= Yes
10.1	If YES what locally processed and packaged foods do you buy and consume?	_____ _____ _____
10.2	If NO, what locally processed foods would you like to see available?	_____ _____ _____
11	Does your household have regular access to clean drinking water?	**CIRCLE ONE** • 0= No • 1= Yes
12	If you could earn money raising/harvesting food (forest foods, cultivated crops, fish and/or animals) to sell at market, would you?	**CIRCLE ONE** • 0= No • 1= Yes

End of survey script

We thank you for taking the time to spend with us, answering the survey.

A3: Key Data Sets Including Interview Transcripts











A.3.1. Introduction

Appendix A.2 showcases the outputs from the farming household surveys, commercial producers, and focus group meetings from each of the four states. Household surveys in each state have two components, one on quantitative information and the other on qualitative responses to open-ended questions. The last section in this appendix compares the quantitative information from each of the household surveys among four states, proving an average for the entire FSM. The focus group transcripts were analyzed for each state. The focus group transcripts highlight quotes and capture the differences and similarities experienced among the four states: Chuuk, Kosrae, Pohnpei, and Yap. The document proceeds with each of the focus group discussion questions followed by a summary of quotes from each state.







Farming families in Pohnpei harvest from the main island's tropic rainforest and prepare local food 2022.

APPENDIX 3.2 CHUUK

HOUSEHOLD SURVEY

2. DEMOGRAPHIC AND LIVELIHOOD INFORMATION

Q2.1. Gender of the sample Respondents

Particulars	Frequency	Percent
Male	100	66.67
Female	50	33.33
Total	150	100.00

Particulars	Mean
Q2.2 Respondent's age (years)	45.8
Q2.3 Number of people in the family	7.69

Q2.4 The livelihoods sources for your household
Multiple response item

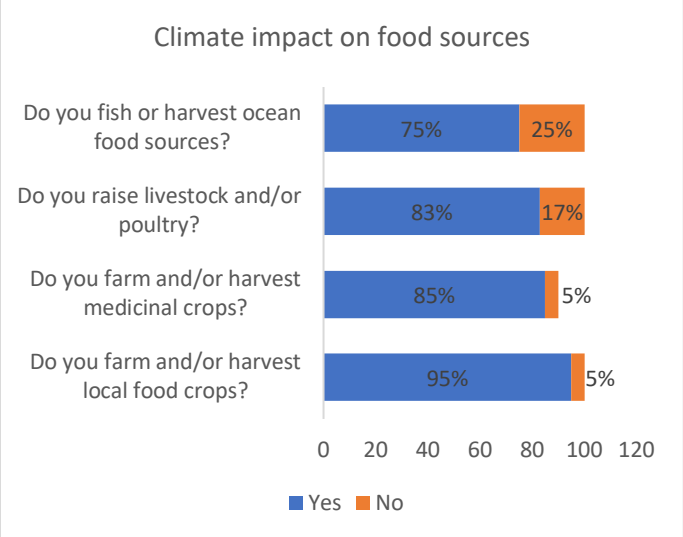
Particulars	Frequency	Percent
Subsistence living - growing food for household consumption	69	51.88
Growing Crops	113	79.02
Raising livestock	67	50.76
Fishing	91	66.42
Paid work in agriculture	2	1.65
Salaried government employment (non-agriculture)	26	21.49
Salaried private employment (non-agriculture)	20	16.53
Salaries NGO employment	10	8.26
Remittances	66	48.53
Social Security	15	12.20
Government transfers/NGO support	2	1.67
Other	9	7.38

Q2.5 Respondent's highest level of education

Particulars	Frequency	Percent
Traditional/Non-Formal	3	2.05
Incomplete primary school	38	26.03
Completed primary (Elementary) school	23	15.75
Incomplete secondary school	31	21.23
Completed secondary (High) school	26	17.81
Incomplete higher education	8	5.48
Completed higher education (*i.e.*, COM-FSM)	15	10.27
Completed graduate studies	2	1.37
Total	146	100.00

3. CLIMATE IMPACT ON FOOD SOURCES

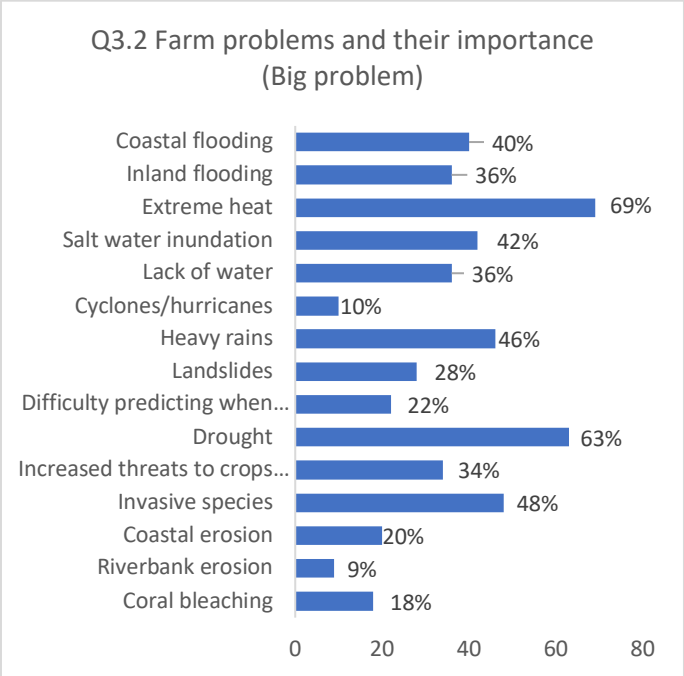
Q3.1.1 Do you farm and/or harvest local food crops?
Q3.1.2 Do you farm and/or harvest medicinal crops?
Q3.1.3 Do you raise livestock and/or poultry?
Q3.1.4 Do you fish or harvest ocean food sources?



Q3.2 Farm problems and their importance

Problem	Response	Frequency	Percent
Q3.2.1 Coastal flooding	Not a problem	58	38.67
	Little problem	32	21.33
	Big problem	60	40.00
	Total	150	100.00
Q3.2.2 Inland flooding	Not a problem	57	38.51
	Little problem	37	25.00
	Big problem	54	36.49
	Total	148	100.00

Problem	Response	Freq.	Percent
Q3.2.3 Extreme heat	Not a problem	11	7.38
	Little problem	35	23.49
	Big problem	103	69.13
	Total	149	100.00
Q3.2.4 Saltwater inundation	Not a problem	70	47.30
	Little problem	16	10.81
	Big problem	62	41.89
	Total	148	100.00
Q3.2.5 Lack of water	Not a problem	36	24.16
	Little problem	59	39.60
	Big problem	54	36.24
	Total	149	100.00
Q3.2.6 Cyclones/ hurricanes	Not a problem	116	79.45
	Little problem	15	10.27
	Big problem	15	10.27
	Total	146	100.00
Q3.2.7 Heavy rains	Not a problem	32	21.62
	Little problem	48	32.43
	Big problem	68	45.95
	Total	148	100.00
Q3.2.8 Landslides	Not a problem	78	52.70
	Little problem	29	19.59
	Big problem	41	27.70
	Total	148	100.00
Q3.2.9 Difficulty predicting when the rainy season will come	Not a problem	60	40.54
	Little problem	56	37.84
	Big problem	32	21.62
	Total	148	100.00
Q3.2.10 Drought	Not a problem	20	13.33
	Little problem	35	23.33
	Big problem	95	63.33
	Total	150	100.00
Q3.2.11 Increased threats to crops from pests and disease	Not a problem	61	41.22
	Little problem	36	24.32
	Big problem	51	34.46
	Total	148	100.00
Q3.2.12 Invasive species	Not a problem	51	34.23
	Little problem	27	18.12
	Big problem	71	47.65
	Total	149	100.00
Q3.2.13 Coastal erosion	Not a problem	82	55.78
	Little problem	35	23.81
	Big problem	30	20.41
	Total	147	100.00
Q3.2.14 Riverbank erosion	Not a problem	112	76.19
	Little problem	22	14.97
	Big problem	13	8.84
	Total	147	100.00
Q3.2.15 Coral bleaching	Not a problem	98	67.59
	Little problem	21	14.48
	Big problem	26	17.93
	Total	145	100.00



Q3.3.1 In the last 10 years, have you noticed any change in the average temperature over a long period?

Particulars	Frequency	Percent
Mean temperature increased	114	77.03
Mean temperature decreased	9	6.08
Yes, more erratic	10	6.76
No, no change	1	0.68
Not sure	14	9.46
Total	148	100.00

Q3.3.2 In the last 10 years, have you noticed any changes in the average rainfall over a long period?

Particulars	Frequency	Percent
Yes, mean rainfall increased	55	37.41
Yes, mean rainfall decreased	50	34.01
Yes, more erratic	19	12.93
No, no change	5	3.40
Not sure	18	12.24
Total	147	100.00

Q.3.3.3 In the last 10 years, has the start of the rainy season changed?

Particulars	Frequency	Percent
Yes, the rainy season starts later	52	34.90
Yes, the rainy season starts earlier	28	18.79
Yes, more erratic	26	17.45
No, no change	10	6.71
Not sure	33	22.15
Total	149	100.00

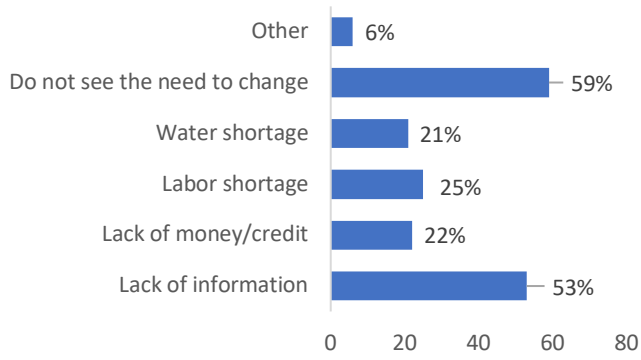
Q3.3.4 If yes (from Q3.3.2 to 3.3.4), have you made any adjustments in your farming (including marine)?

Particulars	Frequency	Percent
No	81	57.86
Yes	59	42.14
Total	140	100.00

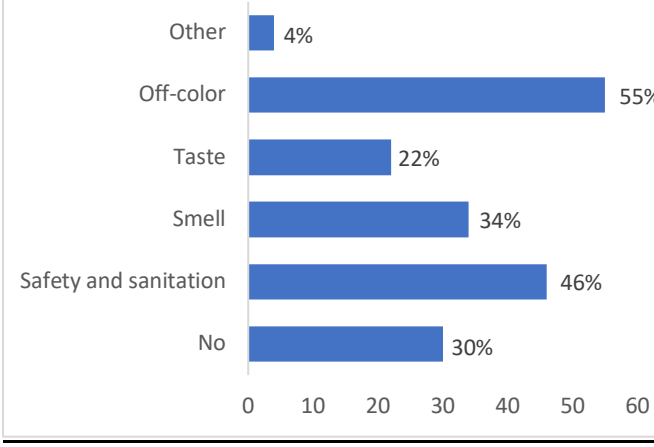
Q3.3.5 If yes, which behavioral changes? Multiple response item.

Question	Response	Freq.	Percent
1. Changed crop types	No	18	39.13
	Yes	28	60.87
	Total	46	100.00
2. Changed crop varieties	No	19	45.24
	Yes	23	54.76
	Total	42	100.00
3. Built a water harvesting scheme	No	33	78.57
	Yes	9	21.43
	Total	42	100.00
4. Implemented soil conservation techniques (to prevent erosion or soil contamination)	No	22	52.38
	Yes	20	47.62
	Total	42	100.00
5. Planted trees	No	30	76.92
	Yes	9	23.08
	Total	39	100.00
6. Irrigation	No	34	89.47
	Yes	4	10.53
	Total	38	100.00
7. Included/ augmented livestock herding	No	37	100.00
	Yes	0	0
	Total	37	100.00
8. Migration	No	36	97.30
	Yes	1	2.70
	Total	37	100.00
9. Found an off-farm job	No	37	100.00
	Yes	0	0
	Total	37	100.00
10. Leased the land	No	37	100.00
	Yes	0	0
	Total	37	100.00
11. Put crops under protected structures	No	24	58.54
	Yes	17	41.46
	Total	41	100.00
12. Changed harvested fish species	No	34	87.18
	Yes	5	12.82
	Total	39	100.00
13. Changed harvested fishing location	No	28	68.29
	Yes	13	31.71
	Total	41	100.00
14. Others	No	37	94.87
	Yes	2	5.13
	Total	39	100

Q3.3.6 If no, why?
Multiple response item



Q3.3.7 Have you experienced any issues with water quality?
Multiple response item.



4. LOCAL FOOD PRODUCTION AND CLIMATE CHANGE

Q4.1 Do you grow and/or harvest food crops (including marine organisms)?

Particulars	Frequency	Percent
No	6	4.00
Yes	144	96.00
Total	150	100.00

Q4.2 Why do you grow and/or harvest food crops? Multiple response item.

Question	Responses	Freq.	Percent
1. Family consumption	No	0	0
	Yes	142	100.00
	Total	142	100.00
2. For sale	No	70	61.40
	Yes	44	38.60
	Total	114	100.00
3. Traditional exchange	No	95	86.36
	Yes	15	13.64
	Total	110	100.00
4. Other	No	106	100.00
	Yes	0	0
	Total	106	100.00

Q4.3 How would you describe the food production and/or harvesting that you do? Multiple response item.

Question	Response	Freq.	Percent
1. I raise livestock to feed my own family	No	17	13.08
	Yes	113	86.92
	Total	130	100.00
2. I raise livestock to sell livestock products at market	No	93	83.78
	Yes	18	16.22
	Total	111	100.00
3. Agroforestry (define this in colloquial terms for respondents)	No	96	88.07
	Yes	13	11.93
	Total	109	100.00
4. I collect products from the forest for my family	No	37	29.84
	Yes	87	70.16
	Total	124	100.00
5. I collect products from the forest to sell at market	No	88	80.73
	Yes	21	19.27
	Total	109	100.00
6. I fish and collect marine food for my family	No	32	23.36
	Yes	105	76.64
	Total	137	100.00
7. I fish and collect marine food to sell at the market	No	83	75.45
	Yes	27	24.55
	Total	110	100.00
8. I fish and collect marine products to send to my family/friends outside of the FSM?	No	92	83.64
	Yes	18	16.36
	Total	110	100.00
9. Other	No	103	97.17
	Yes	3	2.83
	Total	106	100.00

5. AGRICULTURE, FARMING, AND AGROFORESTRY

Q5.1	Response	Freq.	Percent
1. Do you have adequate access to land for growing and/or harvesting crops?	No	42	28.19
	Yes	107	71.81
	Total	149	100.00
2. Do you feel:	It is enough	115	77.70
	Not enough	33	22.30
	Total	148	100.00
3. Do you want more land?	No	100	67.57
	Yes	48	32.43
	Total	148	100.00
4. Is the land you have for growing and harvesting crops shared? (Including family members)?	No	14	9.33
	Yes	136	90.67
	Total	150	100.00

For the following questions:

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.1), you may skip the other questions in that row.

Q5.2.1 (1-28) Do you grow and/or harvest this food?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	32	21.77
	Yes	115	78.23
	Total	147	100.00
2. Land/soft taro	No	75	53.19
	Yes	66	46.81
	Total	141	100.00
3. Breadfruit	No	7	4.73
	Yes	141	95.27
	Total	148	100.00
4. Banana	No	3	2.03
	Yes	145	97.97
	Total	148	100.00
5. Coconut	No	7	4.76
	Yes	140	95.24
	Total	147	100.00
6. Copra (coconut product)	No	81	57.45
	Yes	60	42.55
	Total	141	100.00
7. Yam	No	126	90.65
	Yes	13	9.35
	Total	139	100.00
8. Mango	No	27	19.15
	Yes	114	80.85
	Total	141	100.00
9. Pineapple	No	88	62.86
	Yes	52	37.14
	Total	140	100.00
10. Limes/lemons	No	38	26.95
	Yes	103	73.05
	Total	141	100.00
11. Sweet Potatoes	No	108	77.70
	Yes	31	22.30
	Total	139	100.00
12. Tapioca	No	72	50.70
	Yes	70	49.30
	Total	142	100.00
13. Papaya	No	53	37.59
	Yes	88	62.41
	Total	141	100.00
14. Locally grown/ collected fresh vegetables	No	87	63.50
	Yes	50	36.50
	Total	137	100.00
15. Locally grown/ collected fruits	No	82	60.29
	Yes	54	39.71
	Total	136	100.00
16. Soursop	No	60	43.17
	Yes	79	56.83
	Total	139	100.00
17. Black Pepper	No	136	98.55
	Yes	2	1.45
	Total	138	100.00
18. Hot peppers	No	72	51.06
	Yes	69	48.94
	Total	141	100.00
19. Sakau (Kava)	No	134	97.10
	Yes	4	2.90
	Total	138	100.00
20. Sugar cane	No	98	70.00
	Yes	42	30.00
	Total	140	100.00
21. Betel Leaf	No	120	86.33
	Yes	19	13.67
	Total	139	100.00
22. Durian (football plant)	No	139	100.00
	Yes	0	0
	Total	139	100.00
23. Cacao	No	139	100.00
	Yes	0	0
	Total	139	100.00
24. Chestnut	No	137	99.28
	Yes	1	0.72
	Total	138	100.00
25. Betelnut	No	53	38.41
	Yes	85	61.59
	Total	138	100.00
26. Tangerine/ orange	No	109	81.34
	Yes	25	18.66
	Total	134	100.00
27. Medicinal crops (example: Noni)	No	32	23.53
	Yes	104	76.47
	Total	136	100.00
28. If others, list them here:	No	72	83.72
	Yes	14	16.28
	Total	86	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.2), you may skip the other questions in that row.

Q5.2.2 (1-28) How often do you harvest from the garden, agroforest and/or patch?

1. Swamp taro or hard taro

Particulars	Freq.	Percent
Several times a week	26	22.81
Once a week	27	23.68
Every other week	15	13.16
Once a month	44	38.60
Never	2	1.75
Total	114	100.00

2. Land taro or soft taro

Particulars	Freq.	Percent
Several times a week	10	14.71
Once a week	13	19.12
Every other week	10	14.71
Once a month	31	45.59
Never	4	5.88
Total	68	100.00

3. Breadfruit

Particulars	Freq.	Percent
Several times a week	20	14.39
Once a week	28	20.14
Every other week	33	23.74
Once a month	55	39.57
Never	3	2.16
Total	139	100.00

4. Banana

Particulars	Freq.	Percent
Several times a week	30	21.28
Once a week	37	26.24
Every other week	38	26.95
Once a month	33	23.40
Never	3	2.13
Total	141	100.00

5. Coconut

Particulars	Freq.	Percent
Several times a week	38	27.54
Once a week	35	25.36
Every other week	28	20.29
Once a month	34	24.64
Never	3	2.17
Total	138	100.00

6. Copra

Particulars	Freq.	Percent
Several times a week	23	39.66
Once a week	18	31.03
Every other week	6	10.34
Once a month	7	12.07
Never	4	6.90
Total	58	100.00

7. Yam

Particulars	Freq.	Percent
Several times a week	1	5.56
Once a week	5	27.78
Every other week	4	22.22
Once a month	6	33.33
Never	2	11.11
Total	18	100.00

8. Mango

Particulars	Freq.	Percent
Several times a week	15	14.56
Once a week	16	15.53
Every other week	18	17.48
Once a month	52	50.49
Never	2	1.94
Total	103	100.00

9. Pineapple

Particulars	Freq.	Percent
Several times a week	4	6.90
Once a week	16	27.59
Every other week	12	20.69
Once a month	26	44.83
Never	0	0.00
Total	58	100.00

10. Limes/lemon

Particulars	Freq.	Percent
Several times a week	29	29.59
Once a week	28	28.57
Every other week	28	28.57
Once a month	13	13.27
Never	0	0.00
Total	98	100.00

11. Sweet Potatoes

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	3	10.71
Every other week	12	42.86
Once a month	12	42.86
Never	1	3.57
Total	28	100.00

12. Tapioca

Particulars	Freq.	Percent
Several times a week	2	2.99
Once a week	14	20.90
Every other week	16	23.88
Once a month	31	46.27
Never	4	5.97
Total	67	100.00

13. Papaya

Particulars	Freq.	Percent
Several times a week	15	17.65
Once a week	24	28.24
Every other week	28	32.94
Once a month	16	18.82
Never	2	2.35
Total	85	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Several times a week	10	21.28
Once a week	14	29.79
Every other week	16	34.04
Once a month	6	12.77
Never	1	2.13
Total	47	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Several times a week	11	20.37
Once a week	17	31.48
Every other week	14	25.93
Once a month	11	20.37
Never	1	1.85
Total	54	100.00

16. Soursop

Particulars	Freq.	Percent
Several times a week	10	12.99
Once a week	14	18.18
Every other week	21	27.27
Once a month	30	38.96
Never	2	2.60
Total	77	100.00

17. Black pepper

Particulars	Freq.	Percent
Several times a week	1	50.00
Once a week	1	50.00
Every other week	0	0.00
Once a month	0	0.00
Never	0	0.00
Total	2	100.00

18. Hot pepper

Particulars	Freq.	Percent
Several times a week	22	33.33
Once a week	15	22.73
Every other week	17	25.76
Once a month	10	15.15
Never	2	3.03
Total	66	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	1	33.33
Every other week	1	33.33
Once a month	1	33.33
Never	0	0.00
Total	3	100.00

20. Sugar cane

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	5	12.50
Every other week	11	27.50
Once a month	9	22.50
Never	15	37.50
Total	40	100.00

21. Betel leaf

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	4	22.22
Every other week	4	22.22
Once a month	2	11.11
Never	8	44.44
Total	18	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	0	0.00
Every other week	0	0.00
Once a month	0	0.00
Never	0	0.00
Total	0	0.00

23. Cacao

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	0	0.00
Every other week	0	0.00
Once a month	0	0.00
Never	0	0.00
Total	0	0.00

24. Chestnut

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	2	50.00
Every other week	0	0.00
Once a month	0	0.00
Never	2	50.00
Total	4	100.00

25. Betelnut

Particulars	Freq.	Percent
Several times a week	27	32.14
Once a week	17	20.24
Every other week	16	19.05
Once a month	23	27.38
Never	1	1.19
Total	84	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Several times a week	6	24.00
Once a week	4	16.00
Every other week	5	20.00
Once a month	9	36.00
Never	1	4.00
Total	25	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Several times a week	31	31.96
Once a week	27	27.84
Every other week	18	18.56
Once a month	19	19.59
Never	2	2.06
Total	97	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Several times a week	3	33.33
Once a week	1	11.11
Every other week	1	11.11
Once a month	3	33.33
Never	1	11.11
Total	9	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.3), you may skip the other questions in that row.

Q5.2.3 (1-28) Over the course of a year, how much do you harvest for each crop?

1. Swamp taro or hard taro

Particulars	Frequency	Percent
Crop not ready for harvest	51	45.13
Small quantity (<50 lbs)	46	40.71
Medium quantity (50-100 lbs)	15	13.27
Large quantity (>100 lbs)	1	0.88
Total	113	100.00

2. Land taro or soft taro

Particulars	Frequency	Percent
Crop not ready for harvest	38	58.46
Small quantity (<50 lbs)	21	32.31
Medium quantity (50-100 lbs)	5	7.69
Large quantity (>100 lbs)	1	1.54
Total	65	100.00

3. Breadfruit

Particulars	Freq.	Percent
Crop not ready for harvest	53	39.85
Small quantity (<50 lbs)	63	47.37
Medium quantity (50-100 lbs)	16	12.03
Large quantity (>100 lbs)	1	0.75
Total	133	100.00

4. Banana

Particulars	Freq.	Percent
Crop not ready for harvest	60	42.55
Small quantity (<50 lbs)	64	45.39
Medium quantity (50-100 lbs)	16	11.35
Large quantity (>100 lbs)	1	0.71
Total	141	100.00

5. Coconut

Particulars	Freq.	Percent
Crop not ready for harvest	64	48.12
Small quantity (<50 lbs)	57	42.86
Medium quantity (50-100 lbs)	11	8.27
Large quantity (>100 lbs)	1	0.75
Total	133	100.00

6. Copra

Particulars	Freq.	Percent
Crop not ready for harvest	28	52.83
Small quantity (<50 lbs)	21	39.62
Medium quantity (50-100 lbs)	4	7.55
Large quantity (>100 lbs)	0	0.00
Total	53	100.00

7. Yam

Particulars	Freq.	Percent
Crop not ready for harvest	7	58.33
Small quantity (<50 lbs)	4	33.33
Medium quantity (50-100 lbs)	1	8.33
Large quantity (>100 lbs)	0	0.00
Total	12	100.00

8. Mango

Particulars	Freq.	Percent
Crop not ready for harvest	57	54.29
Small quantity (<50 lbs)	40	38.10
Medium quantity (50-100 lbs)	5	4.76
Large quantity (>100 lbs)	3	2.86
Total	105	100.00

9. Pineapple

Particulars	Freq.	Percent
Crop not ready for harvest	30	58.82
Small quantity (<50 lbs)	18	35.29
Medium quantity (50-100 lbs)	2	3.92
Large quantity (>100 lbs)	1	1.96
Total	51	100.00

10. Limes/lemons

Particulars	Freq.	Percent
Crop not ready for harvest	68	66.02
Small quantity (<50 lbs)	31	30.10
Medium quantity (50-100 lbs)	4	3.88
Large quantity (>100 lbs)	0	0.00
Total	103	100.00

11. Sweet potatoes

Particulars	Freq.	Percent
Crop not ready for harvest	8	29.63
Small quantity (<50 lbs)	14	51.85
Medium quantity (50-100 lbs)	4	14.81
Large quantity (>100 lbs)	1	3.70
Total	27	100.00

12. Tapioca

Particulars	Freq.	Percent
Crop not ready for harvest	23	37.10
Small quantity (<50 lbs)	31	50.00
Medium quantity (50-100 lbs)	7	11.29
Large quantity (>100 lbs)	1	1.61
Total	62	100.00

13. Papaya

Particulars	Freq.	Percent
Crop not ready for harvest	47	57.32
Small quantity (<50 lbs)	28	34.15
Medium quantity (50-100 lbs)	6	7.32
Large quantity (>100 lbs)	1	1.22
Total	82	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Crop not ready for harvest	6	10.91
Small quantity (<50 lbs)	34	61.82
Medium quantity (50-100 lbs)	13	23.64
Large quantity (>100 lbs)	2	3.64
Total	55	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Crop not ready for harvest	35	74.47
Small quantity (<50 lbs)	10	21.28
Medium quantity (50-100 lbs)	2	4.26
Large quantity (>100 lbs)	0	0.00
Total	47	100.00

16. Soursop

Particulars	Freq.	Percent
Crop not ready for harvest	50	67.57
Small quantity (<50 lbs)	21	28.38
Medium quantity (50-100 lbs)	2	2.70
Large quantity (>100 lbs)	1	1.35
Total	74	100.00

17. Black Pepper

Particulars	Freq.	Percent
Crop not ready for harvest	4	100.00
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	0	0.00
Total	4	100.00

18. Hot peppers

Particulars	Freq.	Percent
Crop not ready for harvest	43	66.15
Small quantity (<50 lbs)	19	29.23
Medium quantity (50-100 lbs)	2	3.08
Large quantity (>100 lbs)	1	1.54
Total	65	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Crop not ready for harvest	4	100.00
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	0	0.00
Total	4	100.00

20. Sugar cane

Particulars	Freq.	Percent
Crop not ready for harvest	22	55.00
Small quantity (<50 lbs)	13	32.50
Medium quantity (50-100 lbs)	3	7.50
Large quantity (>100 lbs)	2	5.00
Total	40	100.00

21. Betel leaf

Particulars	Freq.	Percent
Crop not ready for harvest	8	42.11
Small quantity (<50 lbs)	10	52.63
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	1	5.26
Total	19	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Crop not ready for harvest	0	0.00
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	0	0.00
Total	0	0.00

23. Cacao

Particulars	Freq.	Percent
Crop not ready for harvest	0	0.00
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	0	0.00
Total	0	0.00

24. Chestnut

Particulars	Freq.	Percent
Crop not ready for harvest	0	0.00
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	0	0.00
Total	0	0.00

25. Betelnut

Particulars	Freq.	Percent
Crop not ready for harvest	33	39.29
Small quantity (<50 lbs)	39	46.43
Medium quantity (50-100 lbs)	12	14.29
Large quantity (>100 lbs)	0	0.00
Total	84	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Crop not ready for harvest	15	62.50
Small quantity (<50 lbs)	7	29.17
Medium quantity (50-100 lbs)	2	8.33
Large quantity (>100 lbs)	0	0.00
Total	24	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Crop not ready for harvest	66	71.74
Small quantity (<50 lbs)	18	19.57
Medium quantity (50-100 lbs)	7	7.61
Large quantity (>100 lbs)	1	1.09
Total	92	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Crop not ready for harvest	5	62.50
Small quantity (<50 lbs)	1	12.50
Medium quantity (50-100 lbs)	1	12.50
Large quantity (>100 lbs)	1	12.50
Total	8	100.00

Q5.2.4 (1-28) Over the course of one year, how many plants do you have in your field?

Variable	Obs.	Mean	Min	Max
1. Swamp taro or hard taro	119	191	0	3000
2. Land taro or soft taro	76	54	0	300
3. Breadfruit	139	106	0	11100
4. Banana	142	52	0	500
5. Coconut	138	42	0	700
6. Copra (coconut product)	60	54	0	1000
7. Yam	25	6	0	40
8. Mango	114	7	0	50
9. Pineapple	66	18	0	200
10. Limes/ lemons	108	5	0	70
11. Sweet Potatoes	44	31	0	305
12. Tapioca	76	56	0	400
13. Papaya	89	15	0	305
14. Locally grown/collected vegetables	51	19	0	100
15. Locally grown/collected fruits	59	6	0	100
16. Soursop	81	4	0	23
17. Black Pepper	14	2	0	8
18. Hot peppers	70	7	0	50
19. Sakau (Kava)	10	1	0	6
20. Sugar cane	52	14	0	100
21. Betel Leaf	26	8	0	100
22. Durian (football plant)	10	0	0	0
23. Cacao	10	0	0	0
24. Chestnut	12	1	0	6
25. Betelnut	91	19	0	100
26. Tangerine/ Orange	33	2	0	14
27. Medicinal crops	100	13	0	100
28. Others	11	5	0	25

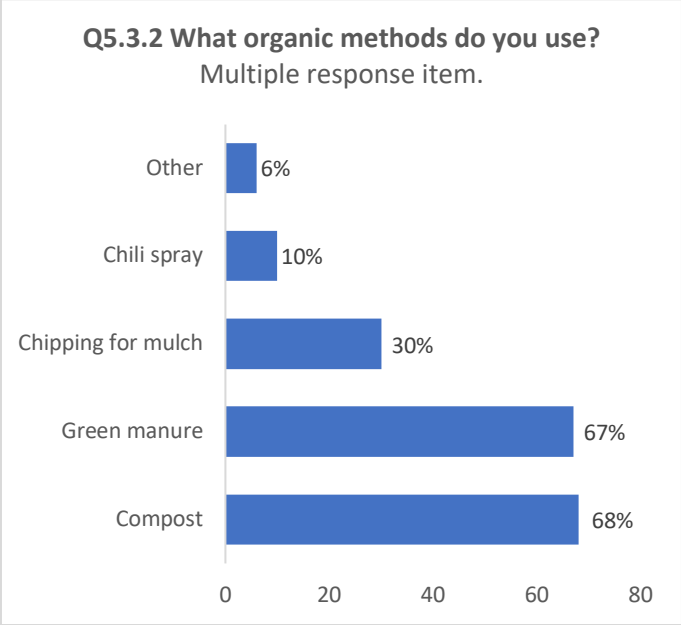
Q5.2.5 (1-28) Is there ever crop loss (0=no, 1=yes)?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	22	19.47
	Yes	91	80.53
	Total	113	100.00
2. Land/soft taro	No	33	40.24
	Yes	49	59.76
	Total	82	100.00
3. Breadfruit	No	49	35.25
	Yes	90	64.75
	Total	139	100.00
4. Banana	No	50	35.21
	Yes	92	64.79
	Total	142	100.00
5. Coconut	No	64	47.06
	Yes	72	52.94
	Total	136	100.00
6. Copra (coconut product)	No	45	70.31
	Yes	19	29.69
	Total	64	100.00

Question	Response	Freq.	Percent
7. Yam	No	22	73.33
	Yes	8	26.67
	Total	30	100.00
8. Mango	No	61	53.51
	Yes	53	46.49
	Total	114	100.00
9. Pineapple	No	34	52.31
	Yes	31	47.69
	Total	65	100.00
10. Limes/ lemons	No	67	62.62
	Yes	40	37.38
	Total	107	100.00
11. Sweet potatoes	No	24	54.55
	Yes	20	45.45
	Total	44	100.00
12. Tapioca	No	32	41.03
	Yes	46	58.97
	Total	78	100.00
13. Papaya	No	45	49.45
	Yes	46	50.55
	Total	91	100.00
14. Locally grown/collected fresh vegetables	No	30	51.72
	Yes	28	48.28
	Total	58	100.00
15. Locally grown/ collected fruits	No	31	51.67
	Yes	29	48.33
	Total	60	100.00
16. Soursop	No	49	56.98
	Yes	37	43.02
	Total	86	100.00
17. Black pepper	No	15	75.00
	Yes	5	25.00
	Total	20	100.00
18. Hot peppers	No	41	54.67
	Yes	34	45.33
	Total	75	100.00
19. Sakau (Kava)	No	17	94.44
	Yes	1	5.56
	Total	18	100.00
20. Sugar cane	No	26	50.98
	Yes	25	49.02
	Total	51	100.00
21. Betel leaf	No	19	63.33
	Yes	11	36.67
	Total	30	100.00
22. Durian (football plant)	No	15	93.75
	Yes	1	6.25
	Total	16	100.00
23. Cacao	No	13	86.67
	Yes	2	13.33
	Total	15	100.00
24. Chestnut	No	15	93.75
	Yes	1	6.25
	Total	16	100.00
25. Betelnut	No	49	55.06
	Yes	40	44.94
	Total	89	100.00
26. Tangerine/ orange	No	24	66.67
	Yes	12	33.33
	Total	36	100.00
27. Medicinal crops (example: Noni)	No	54	54.55
	Yes	45	45.45
	Total	99	100.00
28. If others, list them here:	No	15	88.24
	Yes	2	11.76
	Total	17	100.00

Q5.3.1 Do you practice organic agriculture, by which we mean… using natural plants, compost, waste from animals and poultry as soil amendments or to repel insects and diseases.

Responses	Freq.	Percent
No	74	50.68
Yes	72	49.32
Total	146	100.00



Question	Responses	Freq.	Percent
Q5.3.3 Has your ability to grow food been affected by a change in climate?	No	50	34.01
	Yes	97	65.99
	Total	147	100.00
Q5.3.4 Has a change in climate impacted your crop yield?	No	34	23.29
	Yes	112	76.71
	Total	146	100.00

Q5.3.5 If yes, which crops are the most affected by climate?

Question	Responses	Freq.	Percent
1. Swamp taro	No	31	29.52
	Yes	74	70.48
	Total	105	100.00
2. Land taro	No	49	56.32
	Yes	38	43.68
	Total	87	100.00
3. Breadfruit	No	29	30.53
	Yes	66	69.47
	Total	95	100.00
4. Betelnut	No	55	59.78
	Yes	37	40.22
	Total	92	100.00
5. Banana	No	29	28.43
	Yes	73	71.57
	Total	102	100.00
6. Coconut	No	49	55.68
	Yes	39	44.32
	Total	88	100.00
7. Copra (coconut product)	No	73	85.88
	Yes	12	14.12
	Total	85	100.00
8. Yam	No	79	94.05
	Yes	5	5.95
	Total	84	100.00
9. Sweet potatoes	No	70	80.46
	Yes	17	19.54
	Total	87	100.00
10. Tapioca	No	56	60.87
	Yes	36	39.13
	Total	92	100.00
11. Imported vegetables	No	75	89.29
	Yes	9	10.71
	Total	84	100.00
12. Locally grown/ collected vegetables	No	69	82.14
	Yes	15	17.86
	Total	84	100.00
13. Papaya	No	63	71.59
	Yes	25	28.41
	Total	88	100.00
14. Locally grown/ collected fruits	No	68	79.07
	Yes	18	20.93
	Total	86	100.00
15. Imported fruits	No	81	96.43
	Yes	3	3.57
	Total	84	100.00
16. Citrus	No	76	90.48
	Yes	8	9.52
	Total	84	100.00
17. Black pepper (peppercorns)	No	84	100.00
	Yes	0	0
	Total	84	100.00
18. Hot peppers	No	69	79.31
	Yes	18	20.69
	Total	87	100.00
19. Sakau (Kava)	No	84	100.00
	Yes	0	0
	Total	84	100.00
20. Other (specify)	No	82	96.47
	Yes	3	3.53
	Total	85	100.00

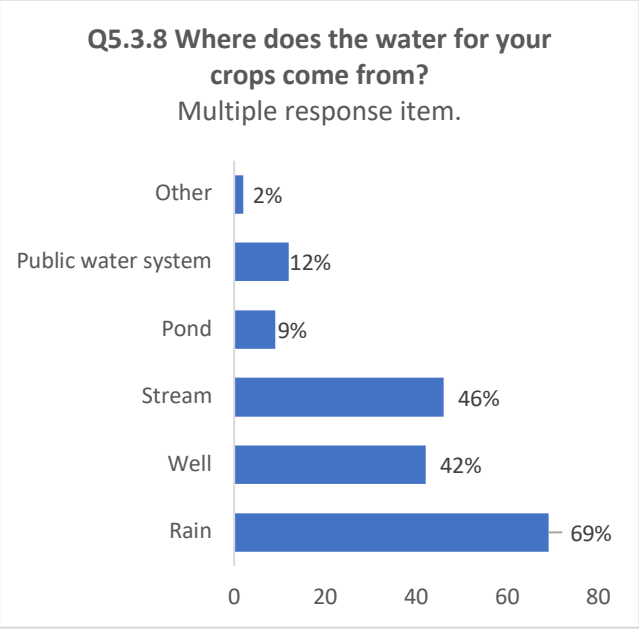
Q5.3.6 If yes, how did climate contribute to your crop loss?

Question	Response	Freq.	Percent
1. Flooding	No	48	51.61
	Yes	45	48.39
	Total	93	100.00
2. Extreme heat	No	15	13.64
	Yes	95	86.36
	Total	110	100.00
3. Saltwater inundation (intrusion)	No	43	43.00
	Yes	57	57.00
	Total	100	100.00
4. Lack of water (etc.)	No	60	63.83
	Yes	34	36.17
	Total	94	100.00
5. Cyclones/ hurricanes	No	81	93.10
	Yes	6	6.90
	Total	87	100.00
6. Heavy rains	No	38	40.86
	Yes	55	59.14
	Total	93	100.00
7. Landslides	No	73	82.02
	Yes	16	17.98
	Total	89	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	65	69.89
	Yes	28	30.11
	Total	93	100.00
9. Drought	No	27	26.73
	Yes	74	73.27
	Total	101	100.00
10. Increased threats to crops from pests and disease	No	63	69.23
	Yes	28	30.77
	Total	91	100.00
11. Invasive species	No	58	64.44
	Yes	32	35.56
	Total	90	100.00
12. Plant diseases	No	63	67.02
	Yes	31	32.98
	Total	94	100.00
13. Coastal erosion	No	78	88.64
	Yes	10	11.36
	Total	88	100.00
14. Riverbank erosion	No	82	96.47
	Yes	3	3.53
	Total	85	100.00
15. Displaced from land	No	84	98.82
	Yes	1	1.18
	Total	85	100.00
16. Other (specify)	No	82	96.47
	Yes	3	3.53
	Total	85	100.00

Q5.3.7 Do you have access to enough water for crop production?

Responses	Frequency	Percent
All the time	89	55.97
Some of the time	61	38.36
None of the time	9	5.66
Total	159	100.00



Q5.4 For each crop, write the answers in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.4.1), you may skip the other questions in that row.

Q5.4.1 (1-20) Do you grow this crop?

Question	Responses	Frequency	Percent
1. Swamp/ hard taro	No	30	20.41
	Yes	117	79.59
	Total	147	100.00
2. Land/ soft taro	No	75	52.82
	Yes	67	47.18
	Total	142	100.00
3. Breadfruit	No	5	3.42
	Yes	141	96.58
	Total	146	100.00
4. Betelnut	No	54	38.03
	Yes	88	61.97
	Total	142	100.00
5. Banana	No	3	2.07
	Yes	142	97.93
	Total	145	100.00
6. Coconut	No	8	5.56
	Yes	136	94.44
	Total	144	100.00
7. Copra (coconut product)	No	77	54.61
	Yes	64	45.39
	Total	141	100.00
8. Yam	No	125	91.24
	Yes	12	8.76
	Total	137	100.00
9. Sweet Potatoes	No	108	78.26
	Yes	30	21.74
	Total	138	100.00
10. Tapioca	No	82	58.57
	Yes	58	41.43
	Total	140	100.00
11. Soursop	No	61	43.88
	Yes	78	56.12
	Total	139	100.00
12. Locally grown/ collected fresh vegetables	No	93	67.39
	Yes	45	32.61
	Total	138	100.00
13. Imported fresh vegetables	No	126	93.33
	Yes	9	6.67
	Total	135	100.00
14. Locally grown/ collected fruits	No	81	58.70
	Yes	57	41.30
15. Imported fruits	No	138	100.00
	Yes	131	95.62
	Total	6	4.38

Question	Response	Freq.	Percent
16. Lime/Lemon	No	37	26.43
	Yes	103	73.57
	Total	140	100.00
17. Tangerine	No	112	81.75
	Yes	25	18.25
	Total	137	100.00
18. Black pepper (peppercorns)	No	135	98.54
	Yes	2	1.46
	Total	137	100.00
19. Hot peppers	No	73	52.52
	Yes	66	47.48
	Total	139	100.00
20. Sakau (Kava)	No	134	99.26
	Yes	1	0.74
	Total	135	100.00

Q5.4.2 (1-20) Do you experience crop loss?

Question	Response	Freq.	Percent
1. Swamp/hard taro	No	23	19.17
	Yes	97	80.83
	Total	120	100.00
2. Land/soft taro	No	47	48.96
	Yes	49	51.04
	Total	96	100.00
3. Breadfruit	No	50	35.46
	Yes	91	64.54
	Total	141	100.00
4. Betelnut	No	57	55.88
	Yes	45	44.12
	Total	102	100.00
5. Banana	No	41	28.87
	Yes	101	71.13
	Total	142	100.00
6. Coconut	No	69	48.94
	Yes	72	51.06
	Total	141	100.00
7. Copra (coconut product)	No	57	73.08
	Yes	21	26.92
	Total	78	100.00
8. Yam	No	38	82.61
	Yes	8	17.39
	Total	46	100.00
9. Sweet potatoes	No	41	64.06
	Yes	23	35.94
	Total	64	100.00
10. Tapioca	No	38	45.24
	Yes	46	54.76
	Total	84	100.00
11. Soursop	No	48	50.53
	Yes	47	49.47
	Total	95	100.00
12. Locally grown/ collected fresh vegetables	No	49	64.47
	Yes	27	35.53
	Total	76	100.00
13. Imported fresh vegetables	No	39	88.64
	Yes	5	11.36
	Total	44	100.00
14. Locally grown/ collected fruits	No	52	59.77
	Yes	35	40.23
	Total	87	100.00
15. Imported fruits	No	38	90.48
	Yes	4	9.52
	Total	42	100.00
16. Lime/ lemon	No	59	52.21
	Yes	54	47.79
	Total	113	100.00
17. Tangerine	No	41	73.21
	Yes	15	26.79
	Total	56	100.00
18.Black pepper (peppercorns)	No	36	100.00
	Yes	0	0
	Total	36	100.00
19. Hot peppers	No	50	57.47
	Yes	37	42.53
	Total	87	100.00
20. Sakau (Kava)	No	34	97.14
	Yes	1	2.86
	Total	35	100.00

Q5.4.3 (1-20) If you observe crop loss due to climate change, what is the cause? Indicate all that apply.

1. Swamp/hard taro

Question	Responses	Freq.	Percent
1. Flooding	No	41	48.24
	Yes	44	51.76
	Total	85	100.00
2. Extreme heat	No	30	33.71
	Yes	59	66.29
	Total	89	100.00
3. Saltwater inundation (intrusion)	No	34	38.20
	Yes	55	61.80
	Total	89	100.00
4. Lack of water	No	61	78.21
	Yes	17	21.79
	Total	78	100.00
5. Cyclones/ hurricanes	No	75	100.00
	Yes	0	0.00
	Total	75	100.00
6. Heavy rains	No	61	79.22
	Yes	16	20.78
	Total	77	100.00
7. Landslides	No	74	94.87
	Yes	4	5.13
	Total	78	100.00

Question	Response	Freq.	Percent
8. Unpredictability of the rainy season	No	68	88.31
	Yes	9	11.69
	Total	77	100.00
9. Drought	No	34	40.48
	Yes	50	59.52
	Total	84	100.00
10. Increased threats to crops from pests and disease	No	65	82.28
	Yes	14	17.72
	Total	79	100.00
11. Invasive species	No	65	86.67
	Yes	10	13.33
	Total	75	100.00
12. Plant diseases	No	64	84.21
	Yes	12	15.79
	Total	76	100.00
13. Coastal erosion	No	69	84.15
	Yes	13	15.85
	Total	82	100.00
14. Riverbank erosion	No	73	96.05
	Yes	3	3.95
	Total	76	100.00
15. Displaced from land	No	74	100.00
	Yes	0	0.00
	Total	74	100.00
16. Other (specify below)	No	72	97.30
	Yes	2	2.70
	Total	74	100.00

2.Land/soft taro

Question	Response	Freq.	Percent
1. Flooding	No	38	71.70
	Yes	15	28.30
	Total	53	100.00
2. Extreme heat	No	18	33.33
	Yes	36	66.67
	Total	54	100.00
3. Saltwater inundation (intrusion)	No	36	67.92
	Yes	17	32.08
	Total	53	100.00
4. Lack of water	No	43	89.58
	Yes	5	10.42
	Total	48	100.00
5. Cyclones/ hurricanes	No	49	98.00
	Yes	1	2.00
	Total	50	100.00
6. Heavy rains	No	34	68.00
	Yes	16	32.00
	Total	50	100.00
7. Landslides	No	46	92.00
	Yes	4	8.00
	Total	50	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	44	88.00
	Yes	6	12.00
	Total	50	100.00
9. Drought	No	24	45.28
	Yes	29	54.72
	Total	53	100.00
10. Increased threats to crops from pests and disease	No	40	81.63
	Yes	9	18.37
	Total	49	100.00
11. Invasive species	No	45	91.84
	Yes	4	8.16
	Total	49	100.00
12. Plant diseases	No	38	77.55
	Yes	11	22.45
	Total	49	100.00
13. Coastal erosion	No	46	92.00
	Yes	4	8.00
	Total	50	100.00
14. Riverbank erosion	No	48	96.00
	Yes	2	4.00
	Total	50	100.00
15. Displaced from land	No	48	100.00
	Yes	0	0.00
	Total	48	100.00
16. Other (specify below)	No	47	97.92
	Yes	1	2.08
	Total	48	100.00

3.Breadfruit

Question	Responses	Freq.	Percent
1. Flooding	No	67	82.72
	Yes	14	17.28
	Total	81	100.00
2. Extreme heat	No	29	29.90
	Yes	68	70.10
	Total	97	100.00
3. Saltwater inundation	No	63	73.26
	Yes	23	26.74
	Total	86	100.00
4. Lack of water	No	70	86.42
	Yes	11	13.58
	Total	81	100.00
5. Cyclones/ hurricanes	No	73	85.88
	Yes	12	14.12
	Total	85	100.00
6. Heavy rains	No	57	67.86
	Yes	27	32.14
	Total	84	100.00
7. Landslides	No	76	92.68
	Yes	6	7.32
	Total	82	100.00

Question	Responses	Freq.	Percent
8. Unpredictability of the rainy season	No	67	81.71
	Yes	15	18.29
	Total	82	100.00
9.Drought	No	42	44.68
	Yes	52	55.32
	Total	94	100.00
10. Increased threats to crops from pests and disease	No	60	71.43
	Yes	24	28.57
	Total	84	100.00
11.Invasive species	No	50	62.50
	Yes	30	37.50
	Total	80	100.00
12. Plant diseases	No	64	78.05
	Yes	18	21.95
	Total	82	100.00
13. Coastal erosion	No	79	98.75
	Yes	1	1.25
	Total	80	100.00
14. Riverbank erosion	No	78	100.00
	Yes	0	0.00
	Total	78	100.00
15. Displaced from land	No	78	100.00
	Yes	0	0.00
	Total	78	100.00
16. Other (specify below)	No	76	98.70
	Yes	1	1.30
	Total	77	100.00

4. Betelnut

Question	Responses	Freq.	Percent
1. Flooding	No	38	80.85
	Yes	9	19.15
	Total	47	100.00
2. Extreme heat	No	16	29.09
	Yes	39	70.91
	Total	55	100.00
3. Saltwater inundation	No	36	72.00
	Yes	14	28.00
	Total	50	100.00
4. Lack of water	No	38	84.44
	Yes	7	15.56
	Total	45	100.00
5. Cyclones/ hurricanes	No	42	87.50
	Yes	6	12.50
	Total	48	100.00
6. Heavy rains	No	34	72.34
	Yes	13	27.66
	Total	47	100.00
7. Landslides	No	43	97.73
	Yes	1	2.27
	Total	44	100.00

Question	Responses	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	39	84.78
	Yes	7	15.22
	Total	46	100.00
9. Drought	No	24	48.00
	Yes	26	52.00
	Total	50	100.00
10. Increased threats to crops from pests and disease	No	33	68.75
	Yes	15	31.25
	Total	48	100.00
11. Invasive species	No	42	91.30
	Yes	4	8.70
	Total	46	100.00
12. Plant diseases	No	38	80.85
	Yes	9	19.15
	Total	47	100.00
13. Coastal erosion	No	45	97.83
	Yes	1	2.17
	Total	46	100.00
14. Riverbank erosion	No	45	100.00
	Yes	0	0.00
	Total	45	100.00
15. Displaced from land	No	45	100.00
	Yes	0	0.00
	Total	45	100.00
16. Other (specify below)	No	43	97.73
	Yes	1	2.27
	Total	44	100.00

5. Banana

Question	Response	Freq.	Percent
1. Flooding	No	65	75.58
	Yes	21	24.42
	Total	86	100.00
2. Extreme heat	No	39	38.24
	Yes	63	61.76
	Total	102	100.00
3. Saltwater inundation (intrusion)	No	58	65.17
	Yes	31	34.83
	Total	89	100.00
4. Lack of water	No	68	81.93
	Yes	15	18.07
	Total	83	100.00
5. Cyclones/ hurricanes	No	77	85.56
	Yes	13	14.44
	Total	90	100.00
6. Heavy rains	No	56	65.88
	Yes	29	34.12
	Total	85	100.00
7. Landslides	No	77	93.90
	Yes	5	6.10
	Total	82	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	72	86.75
	Yes	11	13.25
	Total	83	100.00
9.Drought	No	49	53.85
	Yes	42	46.15
	Total	91	100.00
10. Increased threats to crops from pests and disease	No	64	72.73
	Yes	24	27.27
	Total	88	100.00
11. Invasive species	No	61	72.62
	Yes	23	27.38
	Total	84	100.00
12. Plant diseases	No	70	81.40
	Yes	16	18.60
	Total	86	100.00
13. Coastal erosion	No	81	97.59
	Yes	2	2.41
	Total	83	100.00
14. Riverbank erosion	No	80	98.77
	Yes	1	1.23
	Total	81	100.00
15. Displaced from land	No	80	98.77
	Yes	1	1.23
	Total	81	100.00
16. Other (specify below)	No	77	95.06
	Yes	4	4.94
	Total	81	100.00

6. Coconut

Question	Responses	Freq.	Percent
1. Flooding	No	56	80.00
	Yes	14	20.00
	Total	70	100.00
2. Extreme heat	No	37	47.44
	Yes	41	52.56
	Total	78	100.00
3. Saltwater inundation (intrusion)	No	58	80.56
	Yes	14	19.44
	Total	72	100.00
4. Lack of water	No	61	87.14
	Yes	9	12.86
	Total	70	100.00
5. Cyclones/ hurricanes	No	66	89.19
	Yes	8	10.81
	Total	74	100.00
6. Heavy rains	No	58	81.69
	Yes	13	18.31
	Total	71	100.00
7. Landslides	No	66	94.29
	Yes	4	5.71
	Total	70	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	61	85.92
	Yes	10	14.08
	Total	71	100.00
9. Drought	No	43	58.90
	Yes	30	41.10
	Total	73	100.00
10. Increased threats to crops from pests and disease	No	55	74.32
	Yes	19	25.68
	Total	74	100.00
11. Invasive species	No	45	63.38
	Yes	26	36.62
	Total	71	100.00
12. Plant diseases	No	61	85.92
	Yes	10	14.08
	Total	71	100.00
13. Coastal erosion	No	70	100.00
	Yes	0	0.00
	Total	70	100.00
14. Riverbank erosion	No	70	100.00
	Yes	0	0.00
	Total	70	100.00
15. Displaced from land	No	69	98.57
	Yes	1	1.43
	Total	70	100.00
16. Other (specify below)	No	67	95.71
	Yes	3	4.29
	Total	70	100.00

7. Copra (coconut product)

Question	Response	Freq.	Percent
1. Flooding	No	18	66.67
	Yes	9	33.33
	Total	27	100.00
2. Extreme heat	No	12	42.86
	Yes	16	57.14
	Total	28	100.00
3. Saltwater inundation (intrusion)	No	18	69.23
	Yes	8	30.77
	Total	26	100.00
4. Lack of water	No	21	77.78
	Yes	6	22.22
	Total	27	100.00
5. Cyclones/ hurricanes	No	25	89.29
	Yes	3	10.71
	Total	28	100.00
6. Heavy rains	No	23	88.46
	Yes	3	11.54
	Total	26	100.00
7. Landslides	No	26	100.00
	Yes	0	0.00
	Total	26	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	22	84.62
	Yes	4	15.38
	Total	26	100.00
9. Drought	No	9	33.33
	Yes	18	66.67
	Total	27	100.00
10. Increased threats to crops from pests and disease	No	23	92.00
	Yes	2	8.00
	Total	25	100.00
11.Invasive species	No	19	73.08
	Yes	7	26.92
	Total	26	100.00
12. Plant diseases	No	23	88.46
	Yes	3	11.54
	Total	26	100.00
13. Coastal erosion	No	26	100.00
	Yes	0.	0.00
	Total	26	100.00
14. Riverbank erosion	No	26	100.00
	Yes	0.	0.00
	Total	26	100.00
15. Displaced from land	No	26	100.00
	Yes	0.	0.00
	Total	26	100.00
16. Other (specify below)	No	26	100.00
	Yes	0.	0.00
	Total	26	100.00

8. Yam

Question	Response	Freq.	Percent
1. Flooding	No	12	80.00
	Yes	3	20.00
	Total	15	100.00
2. Extreme heat	No	9	69.23
	Yes	4	30.77
	Total	13	100.00
3. Saltwater inundation (intrusion)	No	13	92.86
	Yes	1	7.14
	Total	14	100.00
4. Lack of water	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
5. Cyclones/ hurricanes	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
6. Heavy rains	No	8	57.14
	Yes	6	42.86
	Total	14	100.00
7. Landslides	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
8. Difficulty predicting when the rainy season will come	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
9. Drought	No	7	53.85
	Yes	6	46.15
	Total	13	100.00
10. Increased threats to crops from pests and disease	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
11. Invasive species	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
12. Plant diseases	No	13	92.86
	Yes	1	7.14
	Total	14	100.00
13. Coastal erosion	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
14. Riverbank erosion	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
15. Displaced from land	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
16. Other (specify below)	No	13	100.00
	Yes	0	0.00
	Total	13	100.00

9. Sweet potatoes

Question	Response	Freq.	Percent
1. Flooding	No	19	70.37
	Yes	8	29.63
	Total	27	100.00
2. Extreme heat	No	18	62.07
	Yes	11	37.93
	Total	29	100.00
3. Saltwater inundation (intrusion)	No	22	84.62
	Yes	4	15.38
	Total	26	100.00
4. Lack of water	No	20	74.07
	Yes	7	25.93
	Total	27	100.00
5. Cyclones/ hurricanes	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
6. Heavy rains	No	14	56.00
	Yes	11	44.00
	Total	25	100.00
7. Landslides	No	24	92.31
	Yes	2	7.69
	Total	26	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	23	92.00
	Yes	2	8.00
	Total	25	100.00
9. Drought	No	19	70.37
	Yes	8	29.63
	Total	27	100.00
10. Increased threats to crops from pests and disease	No	22	78.57
	Yes	6	21.43
	Total	28	100.00
11. Invasive species	No	23	92.00
	Yes	2	8.00
	Total	25	100.00
12. Plant diseases	No	21	84.00
	Yes	4	16.00
	Total	25	100.00
13. Coastal erosion	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
14. Riverbank erosion	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
15. Displaced from land	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
16. Other (specify below)	No	25	100.00
	Yes	0	0.00
	Total	25	100.00

10. Tapioca

Question	Response	Freq.	Percent
1. Flooding	No	34	68.00
	Yes	16	32.00
	Total	50	100.00
2. Extreme heat	No	23	48.94
	Yes	24	51.06
	Total	47	100.00
3. Saltwater inundation (intrusion)	No	35	77.78
	Yes	10	22.22
	Total	45	100.00
4. Lack of water	No	34	77.27
	Yes	10	22.73
	Total	44	100.00
5. Cyclones/ hurricanes	No	43	100.00
	Yes	0	0.00
	Total	43	100.00
6. Heavy rains	No	25	52.08
	Yes	23	47.92
	Total	48	100.00
7. Landslides	No	41	87.23
	Yes	6	12.77
	Total	47	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	36	83.72
	Yes	7	16.28
	Total	43	100.00
9. Drought	No	30	63.83
	Yes	17	36.17
	Total	47	100.00
10. Increased threats to crops from pests and disease	No	31	67.39
	Yes	15	32.61
	Total	46	100.00
11. Invasive species	No	41	95.35
	Yes	2	4.65
	Total	43	100.00
12. Plant diseases	No	34	79.07
	Yes	9	20.93
	Total	43	100.00
13. Coastal erosion	No	43	100.00
	Yes	0	0.00
	Total	43	100.00
14. Riverbank erosion	No	43	100.00
	Yes	0	0.00
	Total	43	100.00
15. Displaced from land	No	42	97.67
	Yes	1	2.33
	Total	43	100.00
16. Other (specify below)	No	43	100.00
	Yes	0	0.00
	Total	43	100.00

11. Soursop

Question	Responses	Freq.	Percent
1. Flooding	No	34	77.27
	Yes	10	22.73
	Total	44	100.00
2. Extreme heat	No	19	40.43
	Yes	28	59.57
	Total	47	100.00
3. Saltwater inundation (intrusion)	No	37	84.09
	Yes	7	15.91
	Total	44	100.00
4. Lack of water	No	35	79.55
	Yes	9	20.45
	Total	44	100.00
5. Cyclones/ hurricanes	No	43	97.73
	Yes	1	2.27
	Total	44	100.00
6. Heavy rains	No	30	65.22
	Yes	16	34.78
	Total	46	100.00
7. Landslides	No	43	93.48
	Yes	3	6.52
	Total	46	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	39	86.67
	Yes	6	13.33
	Total	45	100.00
9. Drought	No	28	60.87
	Yes	18	39.13
	Total	46	100.00
10.Increased threats to crops from pests and disease	No	35	76.09
	Yes	11	23.91
	Total	46	100.00
11.Invasive species	No	36	80.00
	Yes	9	20.00
	Total	45	100.00
12. Plant diseases	No	31	67.39
	Yes	15	32.61
	Total	46	100.00
13. Coastal erosion	No	44	100.00
	Yes	0	0.00
	Total	44	100.00
14. Riverbank erosion	No	44	100.00
	Yes	0	0.00
	Total	44	100.00
15. Displaced from land	No	44	100.00
	Yes	0	0.00
	Total	44	100.00
16. Other (specify below)	No	44	100.00
	Yes	0	0.00
	Total	44	100.00

12. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	30	81.08
	Yes	7	18.92
	Total	37	100.00
2. Extreme heat	No	18	48.65
	Yes	19	51.35
	Total	37	100.00
3. Saltwater inundation (intrusion)	No	31	83.78
	Yes	6	16.22
	Total	37	100.00
4. Lack of water	No	29	80.56
	Yes	7	19.44
	Total	36	100.00
5. Cyclones/ hurricanes	No	36	100.00
	Yes	0	0.00
	Total	36	100.00
6. Heavy rains	No	21	56.76
	Yes	16	43.24
	Total	37	100.00
7. Landslides	No	35	97.22
	Yes	1	2.78
	Total	36	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	30	83.33
	Yes	6	16.67
	Total	36	100.00
9. Drought	No	25	69.44
	Yes	11	30.56
	Total	36	100.00
10.Increased threats to crops from pests and disease	No	24	66.67
	Yes	12	33.33
	Total	36	100.00
11. Invasive species	No	34	94.44
	Yes	2	5.56
	Total	36	100.00
12. Plant diseases	No	28	75.68
	Yes	9	24.32
	Total	37	100.00
13. Coastal erosion	No	36	100.00
	Yes	0	0.00
	Total	36	100.00
14. Riverbank erosion	No	36	100.00
	Yes	0	0.00
	Total	36	100.00
15. Displaced from land	No	36	100.00
	Yes	0	0.00
	Total	36	100.00
16. Other (specify below)	No	34	97.14
	Yes	1	2.86
	Total	35	100.00

13. Imported vegetables

Question	Response	Freq.	Percent
1. Flooding	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
2. Extreme heat	No	7	53.85
	Yes	6	46.15
	Total	13	100.00
3. Saltwater inundation (intrusion)	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
4. Lack of water	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
5. Cyclones/ hurricanes	No	12	100.00
	Yes	0	0.00
	Total	12	100.00
6. Heavy rains	No	7	53.85
	Yes	6	46.15
	Total	13	100.00
7. Landslides	No	13	100.00
	Yes	0	0.00
	Total	13	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
9. Drought	No	7	53.85
	Yes	6	46.15
	Total	13	100.00
10. Increased threats to crops from pests and disease	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
11. Invasive species	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
12. Plant diseases	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
13. Coastal erosion	No	12	100.00
	Yes	0	0.00
	Total	12	100.00
14. Riverbank erosion	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
15. Displaced from land	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
16. Other (specify below)	No	13	100.00
	Yes	0	0.00
	Total	13	100.00

14. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	32	84.21
	Yes	6	15.79
	Total	38	100.00
2. Extreme heat	No	15	37.50
	Yes	25	62.50
	Total	40	100.00
3. Saltwater inundation (intrusion)	No	34	87.18
	Yes	5	12.82
	Total	39	100.00
4. Lack of water	No	28	75.68
	Yes	9	24.32
	Total	37	100.00
5. Cyclones/ hurricanes	No	38	100.00
	Yes	0	0.00
	Total	38	100.00
6. Heavy rains	No	22	57.89
	Yes	16	42.11
	Total	38	100.00
7. Landslides	No	38	100.00
	Yes	0	0.00
	Total	38	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	31	79.49
	Yes	8	20.51
	Total	39	100.00
9. Drought	No	27	71.05
	Yes	11	28.95
	Total	38	100.00
10. Increased threats to crops from pests and disease	No	19	48.72
	Yes	20	51.28
	Total	39	100.00
11. Invasive species	No	32	80.00
	Yes	8	20.00
	Total	40	100.00
12. Plant diseases	No	25	62.50
	Yes	15	37.50
	Total	40	100.00
13. Coastal erosion	No	38	100.00
	Yes	0	0.00
	Total	38	100.00
14. Riverbank erosion	No	38	100.00
	Yes	0	0.00
	Total	38	100.00
15. Displaced from land	No	38	100.00
	Yes	0	0.00
	Total	38	100.00
16. Other (specify below)	No	38	100.00
	Yes	0	0.00
	Total	38	100.00

15. Imported fruits

Question	Response	Freq.	Percent
1. Flooding	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
2. Extreme heat	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
3. Saltwater inundation (intrusion)	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
4. Lack of water	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
5. Cyclones/ hurricanes	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
6. Heavy rains	No	9	81.82
	Yes	2	18.18
	Total	11	100.00
7. Landslides	No	11	100.00
	Yes	0	0.00
	Total	11	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
9. Drought	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
10. Increased threats to crops from pests and disease	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
11. Invasive species	No	9	81.82
	Yes	2	18.18
	Total	11	100.00
12. Plant diseases	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
13. Coastal erosion	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
14. Riverbank erosion	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
15. Displaced from land	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
16. Other (specify below)	No	11	100.00
	Yes	0	0.00
	Total	11	100.00

16. Lime/lemon

Question	Response	Freq.	Percent
1. Flooding	No	44	80.00
	Yes	11	20.00
	Total	55	100.00
2. Extreme heat	No	22	36.07
	Yes	39	63.93
	Total	61	100.00
3. Saltwater inundation (intrusion)	No	45	80.36
	Yes	11	19.64
	Total	56	100.00
4. Lack of water	No	44	80.00
	Yes	11	20.00
	Total	55	100.00
5. Cyclones/ hurricanes	No	55	100.00
	Yes	0	0.00
	Total	55	100.00
6. Heavy rains	No	41	73.21
	Yes	15	26.79
	Total	56	100.00
7. Landslides	No	54	96.43
	Yes	2	3.57
	Total	56	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	47	83.93
	Yes	9	16.07
	Total	56	100.00
9. Drought	No	32	56.14
	Yes	25	43.86
	Total	57	100.00
10. Increased threats to crops from pests and disease	No	36	61.02
	Yes	23	38.98
	Total	59	100.00
11. Invasive species	No	42	71.19
	Yes	17	28.81
	Total	59	100.00
12. Plant diseases	No	34	54.84
	Yes	28	45.16
	Total	62	100.00
13. Coastal erosion	No	54	100.00
	Yes	0	0.00
	Total	54	100.00
14. Riverbank erosion	No	54	100.00
	Yes	0	0.00
	Total	54	100.00
15. Displaced from land	No	54	100.00
	Yes	0	0.00
	Total	54	100.00
16. Other (specify below)	No	51	96.23
	Yes	2	3.77
	Total	53	100.00

17. Tangerine

Question	Response	Freq.	Percent
1. Flooding	No	18	85.71
	Yes	3	14.29
	Total	21	100.00
2. Extreme heat	No	13	61.90
	Yes	8	38.10
	Total	21	100.00
3. Saltwater inundation (intrusion)	No	20	100.00
	Yes	0	0.00
	Total	20	100.00
4. Lack of water	No	18	90.00
	Yes	2	10.00
	Total	20	100.00
5. Cyclones/ hurricanes	No	20	100.00
	Yes	0	0.00
	Total	20	100.00
6. Heavy rains	No	13	65.00
	Yes	7	35.00
	Total	20	100.00
7. Landslides	No	20	100.00
	Yes	0	0.00
	Total	20	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	18	85.71
	Yes	3	14.29
	Total	21	100.00
9. Drought	No	14	66.67
	Yes	7	33.33
	Total	21	100.00
10. Increased threats to crops from pests and disease	No	16	76.19
	Yes	5	23.81
	Total	21	100.00
11. Invasive species	No	17	85.00
	Yes	3	15.00
	Total	20	100.00
12. Plant diseases	No	14	63.64
	Yes	8	36.36
	Total	22	100.00
13. Coastal erosion	No	20	100.00
	Yes	0	0.00
	Total	20	100.00
14. Riverbank erosion	No	20	100.00
	Yes	0	0.00
	Total	20	100.00
15. Displaced from land	No	20	100.00
	Yes	0	0.00
	Total	20	100.00
16. Other (specify below)	No	20	100.00
	Yes	0	0.00
	Total	20	100.00

18. Black pepper (peppercorns)

Question	Response	Freq.	Percent
1. Flooding	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
2. Extreme heat	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
3. Saltwater inundation (intrusion)	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
4. Lack of water	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
5. Cyclones/ hurricanes	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
6. Heavy rains	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
7. Landslides	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
8. Difficulty predicting when the rainy season will come	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
9. Drought	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
10. Increased threats to crops from pests and disease	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
11. Invasive species	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
12. Plant diseases	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
13. Coastal erosion	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
14. Riverbank erosion	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
15. Displaced from land	No	7	100.00
	Yes	0	0.00
	Total	7	100.00
16. Other (specify below)	No	7	100.00
	Yes	0	0.00
	Total	7	100.00

19. Hot peppers

Question	Response	Freq.	Percent
1. Flooding	No	29	69.05
	Yes	13	30.95
	Total	42	100.00
2. Extreme heat	No	22	47.83
	Yes	24	52.17
	Total	46	100.00
3. Saltwater inundation (intrusion)	No	34	79.07
	Yes	9	20.93
	Total	43	100.00
4. Lack of water	No	36	85.71
	Yes	6	14.29
	Total	42	100.00
5. Cyclones/ hurricanes	No	41	97.62
	Yes	1	2.38
	Total	42	100.00
6. Heavy rains	No	31	72.09
	Yes	12	27.91
	Total	43	100.00
7. Landslides	No	40	93.02
	Yes	3	6.98
	Total	43	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	38	90.48
	Yes	4	9.52
	Total	42	100.00
9. Drought	No	23	51.11
	Yes	22	48.89
	Total	45	100.00
10. Increased threats to crops from pests and disease	No	29	65.91
	Yes	15	34.09
	Total	44	100.00
11. Invasive species	No	40	90.91
	Yes	4	9.09
	Total	44	100.00
12. Plant diseases	No	27	60.00
	Yes	18	40.00
	Total	45	100.00
13. Coastal erosion	No	40	97.56
	Yes	1	2.44
	Total	41	100.00
14. Riverbank erosion	No	41	100.00
	Yes	0	0.00
	Total	41	100.00
15. Displaced from land	No	41	100.00
	Yes	0	0.00
	Total	41	100.00
16. Other (specify below)	No	41	100.00
	Yes	0	0.00
	Total	41	100.00

20. Sakau (Kava)

Question	Response	Freq.	Percent
1. Flooding	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
2. Extreme heat	No	6	60.00
	Yes	4	40.00
	Total	10	100.00
3. Saltwater inundation (intrusion)	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
4. Lack of water	No	8	80.00
	Yes	2	20.00
	Total	10	100.00
5. Cyclones/ hurricanes	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
6. Heavy rains	No	8	80.00
	Yes	2	20.00
	Total	10	100.00
7. Landslides	No	10	100.00
	Yes	0	0.00
	Total	10	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
9. Drought	No	8	80.00
	Yes	2	20.00
	Total	10	100.00
10. Increased threats to crops from pests and disease	No	8	80.00
	Yes	2	20.00
	Total	10	100.00
11. Invasive species	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
12. Plant diseases	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
13. Coastal erosion	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
14. Riverbank erosion	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
15. Displaced from land	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
16. Other (specify below)	No	10	100.00
	Yes	0	0.00
	Total	10	100.00

6. RAISING LIVESTOCK AND POULTRY

Q6	Resp.	Freq.	Percent
Q6.1 Are you raising livestock and/or poultry?	No	23	15.44
	Yes	126	84.56
	Total	149	100.00
Q6.2 Do you have access to adequate land for rearing livestock and/or poultry?	No	37	28.68
	Yes	92	71.32
	Total	129	100.00
Q6.3 Do you feel it is enough?	Yes	91	70.54
	No	38	29.46
	Total	129	100.00
Q6.4 Do you want more land?	No	88	68.22
	Yes	41	31.78
	Total	129	100.00
Q6.5 Is the land you have access to shared (including family members)?	No	8	6.20
	Yes	121	93.80
	Total	129	100.00

Q6.6 What kind of animals/livestock do you raise or keep? Multiple response item

Q6.6.1 - Q6.6.7	Responses	Freq.	Percent
1. Chickens	No	46	40.71
	Yes	67	59.29
	Total	113	100.00
2. Pigs	No	9	7.14
	Yes	117	92.86
	Total	126	100.00
3. Goats	No	97	98.98
	Yes	1	1.02
	Total	98	100.00
4. Dogs	No	33	30.00
	Yes	77	70.00
	Total	110	100.00
5. Deer	No	95	100.00
	Yes	0	0
	Total	95	100.00
6. Bovine	No	96	100.00
	Yes	0	0
	Total	96	100.00
7. Other	No	93	93.94
	Yes	6	6.06
	Total	99	100.00

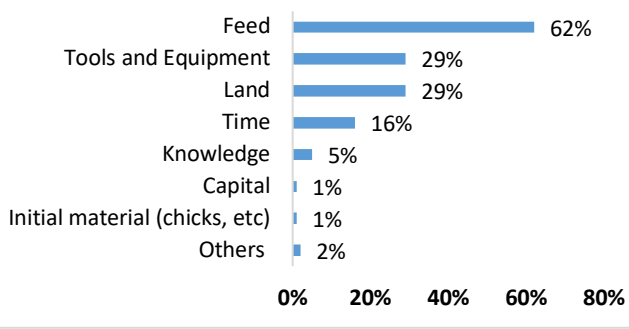
Q6.7 In the last 10 years, have you noticed a change in raising animals?

Responses	Freq.	Percent
No	56	44.44
Yes	49	38.89
Stayed the same	21	16.67
Total	126	100.00

Q6.8 If yes, please explain:

Q6.9	Resp.	Freq.	%
Would you like to raise livestock/poultry commercially?	No	30	37.97
	Yes	49	62.03
	Total	79	100.0

Q6.10 What do you feel is the main obstacle to your raising livestock/poultry production?
Multiple response item.



7. MARINE FOOD SOURCES

Q7.1 Question	Responses	Freq.	Percent
Q7.1.1 Do you harvest marine or freshwater fish/organisms ?	No	37	24.83
	Yes	112	75.17
	Total	149	100.00
Q7.1.2 In terms of access to marine resources, do you feel:	It is enough	68	60.71
	Not enough	44	39.29
	Total	112	100.00

Q7.2. How often do you fish or collect food from this location?

Q7.2.1 Mangrove

Particulars	Frequency	Percent
Once a day	6	6.67
Several times a week	16	17.78
Once a week	9	10.00
Once a month	9	10.00
Once every three months or more	7	7.78
Never	43	47.78
Total	90	100.00

Inner Reef (lagoon)

Particulars	Frequency	Percent
Once a day	16	14.68
Several times a week	50	45.87
Once a week	18	16.51
Once a month	8	7.34
Once every three months or more	6	5.50
Never	11	10.09
Total	109	100.00

Outer Reef

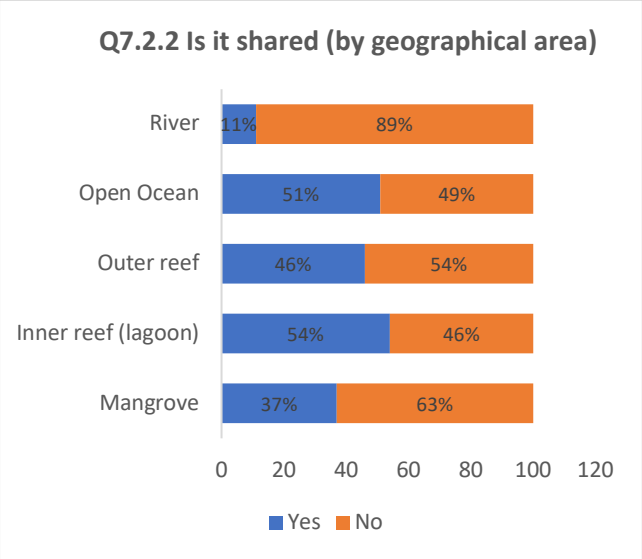
Particulars	Frequency	Percent
Once a day	9	9.28
Several times a week	31	31.96
Once a week	9	9.28
Once a month	11	11.34
Once every three months or more	6	6.19
Never	31	31.96
Total	97	100.00

Open Ocean

Particulars	Frequency	Percent
Once a day	9	9.89
Several times a week	28	30.77
Once a week	12	13.19
Once a month	8	8.79
Once every three months or more	5	5.49
Never	29	31.87
Total	91	100.00

River

Particulars	Frequency	Percent
Once a day	2	2.67
Several times a week	0	0
Once a week	0	0
Once a month	0	0
Once every three months or more	0	0
Never	73	97.33
Total	75	100.00



Q7.2.3 In the last 10 years, have these food sources (aquatic species):

Q7.2.4 Mangrove

Particulars	Frequency	Percent
Increased in number	14	29.79
Decreased in number	29	61.70
Stayed the same	4	8.51
Total	47	100.00

Q7.2.5 Inner reef (lagoon)

Particulars	Frequency	Percent
Increased in number	21	23.33
Decreased in number	58	64.44
Stayed the same	11	12.22
Total	90	100.00

Q7.2.6 Outer reef

Particulars	Frequency	Percent
Increased in number	13	20.97
Decreased in number	39	62.90
Stayed the same	10	16.13
Total	62	100.00

Q7.2.7 Open Ocean

Particulars	Frequency	Percent
Increased in number	12	18.75
Decreased in number	39	60.94
Stayed the same	13	20.31
Total	64	100.00

Q7.2.8 River

Particulars	Frequency	Percent
Increased in number	1	20.00
Decreased in number	4	80.00
Stayed the same	0	0
Total	5	100.00

8. BARRIERS TO FOOD PRODUCTION

Q8.1	Responses	Freq.	Percent
Would you grow/fish/ harvest more food or raise more livestock if you could?	No	29	19.59
	Yes	119	80.41
	Total	148	100.00

Q8.2 If yes, what barriers are preventing you?

Question	Resp.	Freq.	Percent
1. No barrier	No	73	75.26
	Yes	24	24.74
	Total	97	100.00
2. Lack of production resources/tools (greenhouses, tractors, aquaculture)	No	37	35.58
	Yes	67	64.42
	Total	104	100.00
3. Lack of the source of finance	No	60	62.50
	Yes	36	37.50
	Total	96	100.00
4. No land or ocean available	No	75	81.52
	Yes	17	18.48
	Total	92	100.00

Question	Responses	Freq.	Percent
5. Lack of management skills	No	62	67.39
	Yes	30	32.61
	Total	92	100.00
6. Difficulty getting to the land or sea	No	77	86.52
	Yes	12	13.48
	Total	89	100.00
7. Lack of the market to sell the produce	No	79	89.77
	Yes	9	10.23
	Total	88	100.00
8. Lack of ways to keep my foods fresh	No	66	66.67
	Yes	33	33.33
	Total	99	100.00
9. Lack of ways to process and dry the foods	No	79	89.77
	Yes	9	10.23
	Total	88	100.00
10. Lack of storage to hold and keep food for home use and/or sale (refrigeration)	No	67	72.04
	Yes	26	27.96
	Total	93	100.00
11.Lack of new tech & infrastructure	No	83	91.21
	Yes	8	8.79
	Total	91	100.00
12. Transportation to market	No	77	86.52
	Yes	12	13.48
	Total	89	100.00
13. Disease or pest infestation	No	74	79.57
	Yes	19	20.43
	Total	93	100.00
14. Permit/ regulation issues	No	84	96.55
	Yes	3	3.45
	Total	87	100.00
15. Weather issues	No	49	50.52
	Yes	48	49.48
	Total	97	100.00
16. Labor	No	68	71.58
	Yes	27	28.42
	Total	95	100.00
17. Time	No	48	50.00
	Yes	48	50.00
	Total	96	100.00
18. Other	No	85	97.70
	Yes	2	2.30
	Total	87	100.00

Q8.2.1 Climate change is causing a lot of problems for my farm/fishing.

Particulars	Freq.	Percent
Strongly disagree	3	2.01
Disagree	7	4.70
Neither agree nor disagree	16	10.74
Agree	64	42.95
Strongly agree	59	39.60
Total	149	100.00

8.2.2 Climate change is making it harder for me to grow crops/fish/harvest.

Particulars	Freq.	Percent
Strongly disagree	3	2.03
Disagree	8	5.41
Neither agree nor disagree	17	11.49
Agree	65	43.92
Strongly agree	55	37.16
Total	148	100.00

Q8.2.3 Climate change is making it harder for me to raise livestock.

Particulars	Freq.	Percent
Strongly disagree	5	3.42
Disagree	19	13.01
Neither agree nor disagree	33	22.60
Agree	49	33.56
Strongly agree	40	27.40
Total	146	100.00

Q8.2.4 Climate change is causing a lot of extreme weather.

Particulars	Freq.	Percent
Strongly disagree	3	2.05
Disagree	2	1.37
Neither agree nor disagree	14	9.59
Agree	67	45.89
Strongly agree	60	41.10
Total	146	100.00

Q8.2.5 I might have to stop farming because of climate change.

Particulars	Freq.	Percent
Strongly disagree	31	21.09
Disagree	26	17.69
Neither agree nor disagree	25	17.01
Agree	32	21.77
Strongly agree	33	22.45
Total	147	100.00

Q8.2.6 Climate change has caused me to make a lot of changes on my farm.

Particulars	Freq.	Percent
Strongly disagree	8	5.48
Disagree	17	11.64
Neither agree nor disagree	40	27.40
Agree	41	28.08
Strongly agree	40	27.40
Total	146	100.00

Q8.2.7 Climate change is the biggest problem facing my farm right now.

Particulars	Freq.	Percent
Strongly disagree	7	4.79
Disagree	9	6.16
Neither agree nor disagree	36	24.66
Agree	47	32.19
Strongly agree	47	32.19
Total	146	100.00

Q8.3.1	Responses	Freq.	Percent
Has a change in climate impacted your access to clean fresh water?	No	51	34.46
	Yes	97	65.54
	Total	148	100.00

Q8.4.1	Responses	Freq.	Percent
Have you changed crop types (including marine) in the past 10 years?	No	65	61.90
	Yes	40	38.10
	Total	105	100.00

Q8.4.2	Responses	Freq.	Percent
Was climate change an important reason for changing crop types?	No	21	44.68
	Yes	26	55.32
	Total	47	100.00

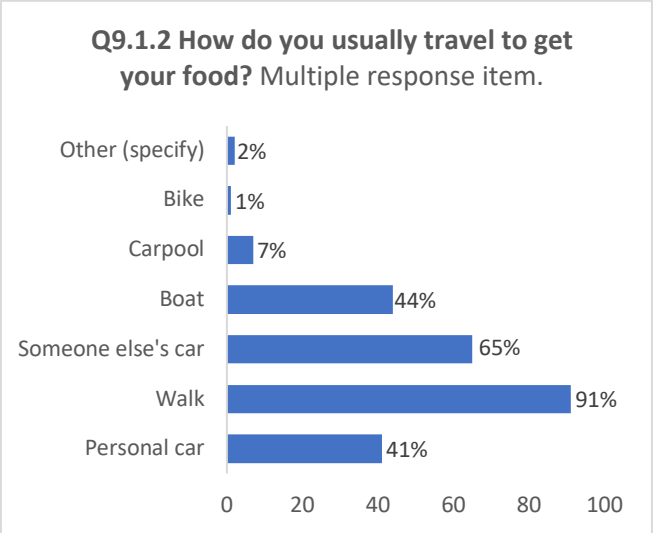
Q8.4.4	Responses	Freq.	Percent
Have you changed/adapted any of your farming practices (including fishing) in the past 10 years?	No	70	69.31
	Yes	31	30.69
	Total	101	100.00

Q8.4.5	Responses	Freq.	Percent
Was climate change an important reason for changing/ adapting your farming practices (including fishing)?	No	13	33.33
	Yes	26	66.67
	Total	39	100.00

9. DIET AND FOOD ACCESS, AVAILABILITY AND AFFORDABILITY

Q9.1.1 Where do you get most of your food?

Question	Responses	Freq.	Percent
1.Wild places such as forests, freshwater, rivers, and/or the ocean	No	66	54.55
	Yes	55	45.45
	Total	121	100.00
2.Cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	49	34.27
	Yes	94	65.73
	Total	143	100.00
3.Informal markets such as street vendors and kiosks	No	60	49.59
	Yes	61	50.41
	Total	121	100.00
4.Formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	64	47.41
	Yes	71	52.59
	Total	135	100.00
5.Supplemental food assistance such as government food rations, food from churches, schools, and community organizations.	No	99	90.00
	Yes	11	10.00
	Total	110	100.00
6.Relatives and extended families	No	57	42.86
	Yes	76	57.14
	Total	133	100.00
7. Other	No	107	98.17
	Yes	2	1.83
	Total	109	100.00



Q9.1.3 How long does it take you to reach the location where you get a majority of the food that you produce/harvest?

Particulars	Freq.	Percent
1. Not much time	47	31.33
2. 5-30 minutes	43	28.67
3. 30-45 minutes	35	23.33
4, More than 45 minutes	25	16.67
Total	150	100.00

Q9.1.4 How long does it take you to reach the location where you get a majority of the food that you're purchase?

Particulars	Freq.	Percent
1. Not much time	28	18.92
2. 5-30 minutes	30	20.27
3. 30-45 minutes	45	30.41
4, More than 45 minutes	45	30.41
Total	148	100.00

Q9.1.6 What barriers (if any) prevent you from attaining healthy, nutritious food?

Question	Responses	Freq.	Percent
1. None	No	60	48.39
	Yes	64	51.61
	Total	124	100.00
2. Too far to walk, and do not have other means of transportation	No	96	82.76
	Yes	20	17.24
	Total	116	100.00
3. Health problems interfere with ability to walk or harvest crops (including marine)	No	89	80.18
	Yes	22	19.82
	Total	111	100.00
4. Lack of assistance from relatives or extended families	No	92	76.67
	Yes	28	23.33
	Total	120	100.00
5. Affordability	No	54	43.55
	Yes	70	56.45
	Total	124	100.00
6. Availability	No	55	45.08
	Yes	67	54.92
	Total	122	100.00
7. Other	No	103	95.37
	Yes	5	4.63
	Total	108	100.00

Q9.2.1 (I/we) were worried (I/we) wouldn't have enough healthy and nutritious food to eat.

Particulars	Freq.	Percent
1. Never	25	17.36
2.Rarely (only 1 or 2 months)	41	28.47
3.Sometimes (some months, but not every month)	60	41.67
4. Often (almost every month or more)	18	12.50
Total	144	100.00

Q9.2.2 (I/we) couldn't afford to eat healthy and nutritious food.

Particulars	Freq.	Percent
1. Never	29	19.86
2.Rarely (only 1 or 2 months)	36	24.66
3.Sometimes (some months, but not every month)	68	46.58
4. Often (almost every month or more)	13	8.90
Total	146	100.00

Q9.2.3 (I/we) couldn't afford to eat the foods (I/we) prefer and had to eat different types of foods.

Particulars	Freq.	Percent
1. Never	25	17.12
2.Rarely (only 1 or 2 months)	43	29.45
3.Sometimes (some months, but not every month)	60	41.10
4. Often (almost every month or more)	18	12.33
Total	146	100.00

Q9.2.4 (I/we) skipped meals because there wasn't enough money for food.

Particulars	Freq.	Percent
1. Never	41	28.08
2.Rarely (only 1 or 2 months)	45	30.82
3.Sometimes (some months, but not every month)	56	38.36
4. Often (almost every month or more)	4	2.74
Total	146	100.00

Q9.2.5 (I/we) ate less than preferred because there wasn't enough money for food.

Particulars	Freq.	Percent
1. Never	33	22.60
2.Rarely (only 1 or 2 months)	43	29.45
3.Sometimes (some months, but not every month)	62	42.47
4. Often (almost every month or more)	8	5.48
Total	146	100.00

Q9.2.6 (I/we) were hungry because there wasn't enough money for food.

Particulars	Freq.	Percent
1. Never	35	23.97
2.Rarely (only 1 or 2 months)	45	30.82
3.Sometimes (some months, but not every month)	61	41.78
4. Often (almost every month or more)	5	3.42
Total	146	100.00

Q9.2.7 (I/we) went a whole day without eating.

Particulars	Freq.	Percent
1. Never	90	61.64
2.Rarely (only 1 or 2 months)	32	21.92
3.Sometimes (some months, but not every month)	22	15.07
4. Often (almost every month or more)	2	1.37
Total	146	100.00

For each food, write the answers in each column according to the numbers specified in the table header. If a food is NOT consumed (9.1.1), you may skip the other questions in that row.

Q9.3 (1-40) Consumption Frequency

1. Rice

Particulars	Freq.	Percent
Never	6	4.00
1-4 times a week	28	18.67
5-7 times a week	18	12.00
Multiple times a day	98	65.33
Total	150	100.00

2. Taro

Particulars	Freq.	Percent
Never	7	4.70
1-4 times a week	92	61.74
5-7 times a week	27	18.12
Multiple times a day	23	15.44
Total	149	100.00

3. Breadfruit

Particulars	Freq.	Percent
Never	3	2.01
1-4 times a week	92	61.74
5-7 times a week	29	19.46
Multiple times a day	25	16.78
Total	149	100.00

4. Banana

Particulars	Freq.	Percent
Never	3	2.00
1-4 times a week	75	50.00
5-7 times a week	37	24.67
Multiple times a day	35	23.33
Total	150	100.00

5. Coconut

Particulars	Freq.	Percent
Never	7	4.90
1-4 times a week	92	64.34
5-7 times a week	28	19.58
Multiple times a day	16	11.19
Total	143	100.00

6. Copra

Particulars	Freq.	Percent
Never	33	24.26
1-4 times a week	84	61.76
5-7 times a week	9	6.62
Multiple times a day	10	7.35
Total	136	100.00

7. Yam

Particulars	Freq.	Percent
Never	74	63.79
1-4 times a week	37	31.90
5-7 times a week	2	1.72
Multiple times a day	3	2.59
Total	116	100.00

8. Sweet potatoes

Particulars	Freq.	Percent
Never	25	19.53
1-4 times a week	84	65.63
5-7 times a week	13	10.16
Multiple times a day	6	4.69
Total	128	100.00

9. Tapioca

Particulars	Freq.	Percent
Never	22	16.54
1-4 times a week	81	60.90
5-7 times a week	18	13.53
Multiple times a day	12	9.02
Total	133	100.00

10. Soursop

Particulars	Freq.	Percent
Never	21	16.54
1-4 times a week	81	63.78
5-7 times a week	20	15.75
Multiple times a day	5	3.94
Total	127	100.00

11. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Never	27	20.61
1-4 times a week	73	55.73
5-7 times a week	23	17.56
Multiple times a day	8	6.11
Total	131	100.00

12. Imported vegetables fresh

Particulars	Freq.	Percent
Never	41	31.06
1-4 times a week	73	55.30
5-7 times a week	12	9.09
Multiple times a day	6	4.55
Total	132	100.00

13. Canned/processed vegetables

Particulars	Freq.	Percent
Never	56	45.53
1-4 times a week	53	43.09
5-7 times a week	10	8.13
Multiple times a day	4	3.25
Total	123	100.00

14. Local fresh fruits

Particulars	Freq.	Percent
Never	14	10.29
1-4 times a week	85	62.50
5-7 times a week	26	19.12
Multiple times a day	11	8.09
Total	136	100.00

15. Imported fresh fruits

Particulars	Freq.	Percent
Never	34	26.36
1-4 times a week	76	58.91
5-7 times a week	13	10.08
Multiple times a day	6	4.65
Total	129	100.00

16. Canned/processed fruits

Particulars	Freq.	Percent
Never	52	41.60
1-4 times a week	61	48.80
5-7 times a week	8	6.40
Multiple times a day	4	3.20
Total	125	100.00

17. Local citrus

Particulars	Freq.	Percent
Never	68	56.67
1-4 times a week	43	35.83
5-7 times a week	4	3.33
Multiple times a day	5	4.17
Total	120	100.00

18. Imported citrus

Particulars	Freq.	Percent
Never	78	66.10
1-4 times a week	33	27.97
5-7 times a week	5	4.24
Multiple times a day	2	1.69
Total	118	100.00

19. Open Ocean fish

Particulars	Freq.	Percent
Never	7	5.04
1-4 times a week	67	48.20
5-7 times a week	39	28.06
Multiple times a day	26	18.71
Total	139	100.00

20. Reef fish

Particulars	Freq.	Percent
Never	7	4.90
1-4 times a week	66	46.15
5-7 times a week	42	29.37
Multiple times a day	28	19.58
Total	143	100.00

21. Sea cucumbers

Particulars	Freq.	Percent
Never	19	13.29
1-4 times a week	95	66.43
5-7 times a week	19	13.29
Multiple times a day	10	6.99
Total	143	100.00

22. Clams/oysters

Particulars	Freq.	Percent
Never	24	17.02
1-4 times a week	96	68.09
5-7 times a week	11	7.80
Multiple times a day	10	7.09
Total	141	100.00

23. Crustaceans such as shrimp, lobster, mangrove crabs

Particulars	Freq.	Percent
Never	26	18.71
1-4 times a week	94	67.63
5-7 times a week	11	7.91
Multiple times a day	8	5.76
Total	139	100.00

24. Octopus and squid

Particulars	Freq.	Percent
Never	18	12.59
1-4 times a week	101	70.63
5-7 times a week	13	9.09
Multiple times a day	11	7.69
Total	143	100.00

25. Meat and meat products: fresh/local

Particulars	Freq.	Percent
Never	17	12.06
1-4 times a week	80	56.74
5-7 times a week	24	17.02
Multiple times a day	20	14.18
Total	141	100.00

26. Meat and meat products: processed

Particulars	Freq.	Percent
Never	34	24.46
1-4 times a week	85	61.15
5-7 times a week	15	10.79
Multiple times a day	5	3.60
Total	139	100.00

27. Dairy (milk, cheese, yogurt)

Particulars	Freq.	Percent
Never	36	23.08
1-4 times a week	84	53.85
5-7 times a week	28	17.95
Multiple times a day	8	5.13
Total	156	100.00

28. Eggs

Particulars	Freq.	Percent
Never	34	24.46
1-4 times a week	85	61.15
5-7 times a week	15	10.79
Multiple times a day	5	3.60
Total	139	100.00

29. Black pepper

Particulars	Freq.	Percent
Never	70	57.85
1-4 times a week	46	38.02
5-7 times a week	5	4.13
Multiple times a day	0	0.00
Total	121	100.00

30. Hot peppers

Particulars	Freq.	Percent
Never	27	21.43
1-4 times a week	63	50.00
5-7 times a week	28	22.22
Multiple times a day	8	6.35
Total	126	100.00

31. Sodas

Particulars	Freq.	Percent
Never	25	17.73
1-4 times a week	88	62.41
5-7 times a week	19	13.48
Multiple times a day	9	6.38
Total	141	100.00

32. Candies, cakes, cookies, sugary foods

Particulars	Freq.	Percent
Never	23	16.08
1-4 times a week	84	58.74
5-7 times a week	25	17.48
Multiple times a day	11	7.69
Total	143	100.00

33. Coffee and Tea

Particulars	Freq.	Percent
Never	7	4.90
1-4 times a week	66	46.15
5-7 times a week	25	17.48
Multiple times a day	45	31.47
Total	143	100.00

34. Bread, crackers, tiscuit

Particulars	Freq.	Percent
Never	10	6.99
1-4 times a week	74	51.75
5-7 times a week	27	18.88
Multiple times a day	32	22.38
Total	143	100.00

35. Pasta and ramen noodles

Particulars	Freq.	Percent
Never	20	14.39
1-4 times a week	72	51.80
5-7 times a week	24	17.27
Multiple times a day	23	16.55
Total	139	100.00

36. Boxed cereal

Particulars	Freq.	Percent
Never	64	50.00
1-4 times a week	50	39.06
5-7 times a week	11	8.59
Multiple times a day	3	2.34
Total	128	100.00

37. Sakau (Kava)

Particulars	Freq.	Percent
Never	105	87.50
1-4 times a week	15	12.50
5-7 times a week	0	0.00
Multiple times a day	0	0.00
Total	120	100.00

38. Imported juice

Particulars	Freq.	Percent
Never	37	27.82
1-4 times a week	71	53.38
5-7 times a week	18	13.53
Multiple times a day	7	5.26
Total	133	100.00

39. Imported coconut milk

Particulars	Freq.	Percent
Never	79	62.20
1-4 times a week	42	33.07
5-7 times a week	4	3.15
Multiple times a day	2	1.57
Total	127	100.00

40. Other

Particulars	Freq.	Percent
Never	0	0.00
1-4 times a week	9	100.00
5-7 times a week	0	0.00
Multiple times a day	0	0.00
Total	9	100.00

Q9.3.2 (1-40) Is this a favorite food?

Question	Responses	Frequency	Percent
1. Rice	No	86	58.90
	Yes	60	41.10
	Total	146	100.00
2. Taro	No	19	13.01
	Yes	127	86.99
	Total	146	100.00
3. Breadfruit	No	6	4.03
	Yes	143	95.97
	Total	149	100.00
4. Banana	No	11	7.33
	Yes	139	92.67
	Total	150	100.00
5. Coconut	No	9	6.34
	Yes	133	93.66
	Total	142	100.00
6. Copra (coconut product)	No	33	28.45
	Yes	83	71.55
	Total	116	100.00
7. Yam	No	60	65.22
	Yes	32	34.78
	Total	92	100.00
8. Sweet potatoes	No	43	34.40
	Yes	82	65.60
	Total	125	100.00
9. Tapioca	No	37	28.91
	Yes	91	71.09
	Total	128	100.00
10. Soursop	No	44	36.36
	Yes	77	63.64
	Total	121	100.00
11. Locally grown/collected fresh vegetables	No	33	27.27
	Yes	88	72.73
	Total	121	100.00
12. Imported fresh vegetables	No	56	50.91
	Yes	54	49.09
	Total	110	100.00
13. Vegetables: Canned/ processed	No	64	65.31
	Yes	34	34.69
	Total	98	100.00
14. Local fresh fruits	No	27	21.26
	Yes	100	78.74
	Total	127	100.00
15. Imported fresh fruits	No	61	54.95
	Yes	50	45.05
	Total	111	100.00
16. Fruits: Canned/ processed	No	68	67.33
	Yes	33	32.67
	Total	101	100.00
17. Local citrus	No	53	60.23
	Yes	35	39.77
	Total	88	100.00
18. Imported citrus	No	68	80.00
	Yes	17	20.00
	Total	85	100.00
19. Open Ocean fish	No	7	5.22
	Yes	127	94.78
	Total	134	100.00
20. Reef fish	No	5	3.62
	Yes	133	96.38
	Total	138	100.00
21. Sea cucumbers	No	27	19.85
	Yes	109	80.15
	Total	136	100.00
22. Clams/ oysters	No	26	20.31
	Yes	102	79.69
	Total	128	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	24	18.18
	Yes	108	81.82
	Total	132	100.00
24. Octopus and squid	No	19	14.29
	Yes	114	85.71
	Total	133	100.00
25. Meat and meat products: fresh/ local	No	28	21.37
	Yes	103	78.63
	Total	131	100.00
26. Meat and meat products: processed	No	54	42.52
	Yes	73	57.48
	Total	127	100.00
27. Dairy (milk, cheese, yogurt)	No	72	66.06
	Yes	37	33.94
	Total	109	100.00

Question	Responses	Freq.	Percent
28. Eggs	No	57	45.97
	Yes	67	54.03
	Total	124	100.00
29. Black pepper	No	65	72.22
	Yes	25	27.78
	Total	90	100.00
30. Hot peppers	No	47	40.17
	Yes	70	59.83
	Total	117	100.00
31. Sodas	No	67	51.94
	Yes	62	48.06
	Total	129	100.00
32. Candies, cakes, cookies, sugary foods	No	64	48.85
	Yes	67	51.15
	Total	131	100.00
33. Coffee and tea	No	41	29.50
	Yes	98	70.50
	Total	139	100.00
34. Bread, crackers, biscuit	No	37	27.41
	Yes	98	72.59
	Total	135	100.00
35. Pasta and ramen noodles	No	66	51.16
	Yes	63	48.84
	Total	129	100.00
36. Boxed cereal	No	71	71.72
	Yes	28	28.28
	Total	99	100.00
37. Sakau (Kava)	No	66	86.84
	Yes	10	13.16
	Total	76	100.00
38. Imported juice	No	66	56.41
	Yes	51	43.59
	Total	117	100.00
39. Imported coconut milk	No	77	77.78
	Yes	22	22.22
	Total	99	100.00
40. Other	No	21	87.50
	Yes	3	12.50
	Total	24	100.00

Q9.3.3 (1-40) Is there often a shortage:

Question	Responses	Freq.	Percent
1. Rice	No	56	38.10
	Yes	91	61.90
	Total	147	100.00
2. Taro	No	54	37.24
	Yes	91	62.76
	Total	145	100.00
3. Breadfruit	No	41	27.52
	Yes	108	72.48
	Total	149	100.00
4. Banana	No	58	38.67
	Yes	92	61.33
	Total	150	100.00
5. Coconut	No	86	60.99
	Yes	55	39.01
	Total	141	100.00
6. Copra (coconut product)	No	78	66.67
	Yes	39	33.33
	Total	117	100.00
7. Yam	No	47	56.63
	Yes	36	43.37
	Total	83	100.00
8. Sweet potatoes	No	55	45.83
	Yes	65	54.17
	Total	120	100.00
9. Tapioca	No	51	41.13
	Yes	73	58.87
	Total	124	100.00
10. Soursop	No	62	52.10
	Yes	57	47.90
	Total	119	100.00
11. Locally grown/collected fresh vegetables	No	55	44.35
	Yes	69	55.65
	Total	124	100.00
12. Imported fresh vegetables	No	48	44.86
	Yes	59	55.14
	Total	107	100.00
13. Vegetables: Canned/ processed	No	61	65.59
	Yes	32	34.41
	Total	93	100.00
14. Local fresh fruits	No	53	41.41
	Yes	75	58.59
	Total	128	100.00
15. Imported fresh fruits	No	50	45.87
	Yes	59	54.13
	Total	109	100.00
16. Fruits: Canned/ processed	No	61	63.54
	Yes	35	36.46
	Total	96	100.00
17. Local citrus	No	46	52.87
	Yes	41	47.13
	Total	87	100.00
18. Imported citrus	No	44	54.32
	Yes	37	45.68
	Total	81	100.00
19. Open Ocean fish	No	63	47.37
	Yes	70	52.63
	Total	133	100.00
20. Reef fish	No	67	48.91
	Yes	70	51.09
	Total	137	100.00
21. Sea cucumbers	No	77	56.62
	Yes	59	43.38
	Total	136	100.00

Question	Responses	Freq.	Percent
22. Clams/ oysters	No	66	51.97
	Yes	61	48.03
	Total	127	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	66	51.16
	Yes	63	48.84
	Total	129	100.00
24. Octopus and squid	No	66	50.00
	Yes	66	50.00
	Total	132	100.00
25. Meat and meat products: fresh/ local	No	59	44.70
	Yes	73	55.30
	Total	132	100.00
26. Meat and meat products: processed	No	56	43.41
	Yes	73	56.59
	Total	129	100.00
27. Dairy (milk, cheese, yogurt)	No	53	50.00
	Yes	53	50.00
	Total	106	100.00
28. Eggs	No	45	36.59
	Yes	78	63.41
	Total	123	100.00
29. Black pepper	No	50	58.82
	Yes	35	41.18
	Total	85	100.00
30. Hot peppers	No	65	55.08
	Yes	53	44.92
	Total	118	100.00
31. Sodas	No	66	51.16
	Yes	63	48.84
	Total	129	100.00
32. Candies, cakes, cookies, sugary foods	No	58	43.94
	Yes	74	56.06
	Total	132	100.00
33. Coffee and tea	No	57	41.01
	Yes	82	58.99
	Total	139	100.00
34. Bread, crackers, biscuit	No	55	40.74
	Yes	80	59.26
	Total	135	100.00
35. Pasta and ramen noodles	No	60	46.88
	Yes	68	53.13
	Total	128	100.00
36. Boxed cereal	No	61	64.21
	Yes	34	35.79
	Total	95	100.00
37. Sakau (Kava)	No	53	75.71
	Yes	17	24.29
	Total	70	100.00
38. Imported juice	No	62	53.91
	Yes	53	46.09
	Total	115	100.00
39. Imported coconut milk	No	63	67.02
	Yes	31	32.98
	Total	94	100.00
40. Other	No	13	100.00
	Yes	0	0.00
	Total	13	100.00

Q9.3.5 Has a changing climate impacted the availability of this food?

Question	Responses	Freq.	Percent
1. Rice	No	61	43.26
	Yes	80	56.74
	Total	141	100.00
2. Taro	No	41	29.29
	Yes	99	70.71
	Total	140	100.00
3. Breadfruit	No	44	30.34
	Yes	101	69.66
	Total	145	100.00
4. Banana	No	49	33.79
	Yes	96	66.21
	Total	145	100.00
5. Coconut	No	69	51.11
	Yes	66	48.89
	Total	135	100.00
6. Copra (coconut product)	No	66	59.46
	Yes	45	40.54
	Total	111	100.00
7. Yam	No	42	54.55
	Yes	35	45.45
	Total	77	100.00
8. Sweet potatoes	No	49	43.36
	Yes	64	56.64
	Total	113	100.00
9. Tapioca	No	53	44.17
	Yes	67	55.83
	Total	120	100.00
10. Soursop	No	56	49.12
	Yes	58	50.88
	Total	114	100.00
11. Locally grown/collected fresh vegetables	No	44	37.61
	Yes	73	62.39
	Total	117	100.00
12. Imported fresh vegetables	No	42	41.58
	Yes	59	58.42
	Total	101	100.00
13. Vegetables: Canned/ processed	No	52	57.78
	Yes	38	42.22
	Total	90	100.00

Question	Responses	Freq.	Percent
14. Local fresh fruits	No	49	40.50
	Yes	72	59.50
	Total	121	100.00
15. Imported fresh fruits	No	45	42.86
	Yes	60	57.14
	Total	105	100.00
16. Fruits: Canned/ processed	No	51	56.04
	Yes	40	43.96
	Total	91	100.00
17. Local citrus	No	46	58.97
	Yes	32	41.03
	Total	78	100.00
18. Imported citrus	No	47	64.38
	Yes	26	35.62
	Total	73	100.00
19. Open Ocean fish	No	43	34.40
	Yes	82	65.60
	Total	125	100.00
20. Reef fish	No	48	36.92
	Yes	82	63.08
	Total	130	100.00
21. Sea cucumbers	No	49	38.89
	Yes	77	61.11
	Total	126	100.00
22. Clams/ oysters	No	43	35.54
	Yes	78	64.46
	Total	121	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	41	33.88
	Yes	80	66.12
	Total	121	100.00
24. Octopus and squid	No	43	34.13
	Yes	83	65.87
	Total	126	100.00
25. Meat and meat products: fresh/ local	No	54	42.52
	Yes	73	57.48
	Total	127	100.00
26. Meat and meat products: processed	No	46	37.70
	Yes	76	62.30
	Total	122	100.00
27. Dairy (milk, cheese, yogurt)	No	44	44.00
	Yes	56	56.00
	Total	100	100.00
25. Meat and meat products: fresh/ local	No	54	42.52
	Yes	73	57.48
	Total	127	100.00

Question	Responses	Freq.	Percent
28. Eggs	No	46	39.32
	Yes	71	60.68
	Total	117	100.00
29. Black pepper	No	46	56.79
	Yes	35	43.21
	Total	81	100.00
30. Hot peppers	No	52	46.85
	Yes	59	53.15
	Total	111	100.00
31. Sodas	No	53	44.54
	Yes	66	55.46
	Total	119	100.00
32. Candies, cakes, cookies, sugary foods	No	52	42.28
	Yes	71	57.72
	Total	123	100.00
33. Coffee and tea	No	52	40.31
	Yes	77	59.69
	Total	129	100.00
34. Bread, crackers, biscuit	No	51	39.53
	Yes	78	60.47
	Total	129	100.00
35. Pasta and ramen noodles	No	49	41.18
	Yes	70	58.82
	Total	119	100.00
36. Boxed cereal	No	49	55.06
	Yes	40	44.94
	Total	89	100.00
37. Sakau (Kava)	No	47	73.44
	Yes	17	26.56
	Total	64	100.00
38. Imported juice	No	44	41.12
	Yes	63	58.88
	Total	107	100.00
39. Imported coconut milk	No	43	53.09
	Yes	38	46.91
	Total	81	100.00
40. Other	No	12	75.00
	Yes	4	25.00
	Total	16	100.00

Q9.3.6 Has a changing climate impacted the affordability of this food?

Question	Responses	Freq.	Percent
1. Rice	No	48	33.33
	Yes	96	66.67
	Total	144	100.00
2. Taro	No	45	31.91
	Yes	96	68.09
	Total	141	100.00

Q9.3.6 Has a changing climate impacted the affordability of this food?

Question	Resp.	Freq.	Percent
3. Breadfruit	No	48	32.88
	Yes	98	67.12
	Total	146	100.00
4. Banana	No	51	35.17
	Yes	94	64.83
	Total	145	100.00
5. Coconut	No	77	56.62
	Yes	59	43.38
	Total	136	100.00
6. Copra (coconut product)	No	74	66.67
	Yes	37	33.33
	Total	111	100.00
7. Yam	No	48	63.16
	Yes	28	36.84
	Total	76	100.00
8. Sweet Potatoes	No	53	46.49
	Yes	61	53.51
	Total	114	100.00
9. Tapioca	No	58	48.33
	Yes	62	51.67
	Total	120	100.00
10. Soursop	No	59	52.21
	Yes	54	47.79
	Total	113	100.00
11. Locally grown/collected fresh vegetables	No	49	41.18
	Yes	70	58.82
	Total	119	100.00
12. Imported fresh vegetables	No	39	37.86
	Yes	64	62.14
	Total	103	100.00
13. Vegetables: Canned/ processed	No	49	55.68
	Yes	39	44.32
	Total	88	100.00
14. Local fresh fruits	No	52	42.62
	Yes	70	57.38
	Total	122	100.00
15.Imported fresh fruits	No	42	40.78
	Yes	61	59.22
	Total	103	100.00
16. Fruits: Canned/ processed	No	48	54.55
	Yes	40	45.45
	Total	88	100.00
17. Local citrus	No	47	58.02
	Yes	34	41.98
	Total	81	100.00
18. Imported citrus	No	44	58.67
	Yes	31	41.33
	Total	75	100.00
19. Open Ocean fish	No	42	33.60
	Yes	83	66.40
	Total	125	100.00
20. Reef fish	No	48	37.21
	Yes	81	62.79
	Total	129	100.00
21. Sea cucumbers	No	55	44.00
	Yes	70	56.00
	Total	125	100.00
22. Clams/ oysters	No	47	39.17
	Yes	73	60.83
	Total	120	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	46	37.70
	Yes	76	62.30
	Total	122	100.00
24. Octopus and squid	No	48	38.10
	Yes	78	61.90
	Total	126	100.00
25. Meat and meat products: fresh/ local	No	51	40.80
	Yes	74	59.20
	Total	125	100.00
26. Meat and meat products: processed	No	48	39.67
	Yes	73	60.33
	Total	121	100.00
27. Dairy (milk, cheese, yogurt)	No	44	43.56
	Yes	57	56.44
	Total	101	100.00
28. Eggs	No	45	38.79
	Yes	71	61.21
	Total	116	100.00
29. Black pepper	No	49	57.65
	Yes	36	42.35
	Total	85	100.00
30. Hot peppers	No	57	51.82
	Yes	53	48.18
	Total	110	100.00
31. Sodas	No	56	46.67
	Yes	64	53.33
	Total	120	100.00
32. Candies, cakes, cookies, sugary foods	No	56	44.44
	Yes	70	55.56
	Total	126	100.00
33. Coffee and tea	No	57	43.85
	Yes	73	56.15
	Total	130	100.00
34. Bread, crackers, biscuit	No	54	41.22
	Yes	77	58.78
	Total	131	100.00
35. Pasta and ramen noodles	No	52	42.62
	Yes	70	57.38
	Total	122	100.00

Question	Responses	Freq.	Percent
36. Boxed cereal	No	49	53.85
	Yes	42	46.15
	Total	91	100.00
37. Sakau (Kava)	No	49	74.24
	Yes	17	25.76
	Total	66	100.00
38. Imported juice	No	50	45.45
	Yes	60	54.55
	Total	110	100.00
39. Imported coconut milk	No	47	54.02
	Yes	40	45.98
	Total	87	100.00
40. Other	No	16	80.00
	Yes	4	20.00
	Total	20	100.00

Q9.4.2	Resp.	Freq.	Percent
Due to climate change, have the places you get food from (e.g., wild places, cultivated places, informal markets) changed?	No	78	53.79
	Yes	67	46.21
	Total	145	100.00

Q9.4.3 If yes, where are you getting more food from?

Question	Resp.	Freq.	Percent
1. More from wild places such as forests, freshwater, rivers, and/or the ocean	No	27	50.94
	Yes	26	49.06
	Total	53	100.00
2. More from cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	17	29.82
	Yes	40	70.18
	Total	57	100.00
3. More from informal markets such as street vendors and kiosks	No	34	60.71
	Yes	22	39.29
	Total	56	100.00
4. More from formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	30	49.18
	Yes	31	50.82
	Total	61	100.00
5. More from supplemental food assistance (government food rations, food from churches, schools, and community organizations)	No	46	95.83
	Yes	2	4.17
	Total	48	100.00
6. More from relatives and extended families	No	28	50.00
	Yes	28	50.00
	Total	56	100.00
7. More from other	No	43	95.56
	Yes	2	4.44
	Total	45	100.00

Question	Resp.	Freq.	Percent
Q9.4.4 If yes, is it more difficult or less difficult to access foods?	More difficult	39	59.09
	Less difficult	27	40.91
	Total	66	100.00
Q9.4.5 Are you concerned with how climate change will impact the foods that you eat?	No	21	14.38
	Yes	125	85.62
	Total	146	100.00

Q9.4.6 If yes: why? Is it because you feel climate change will impact:

Question	Responses	Freq.	Percent
1. Food availability	No	3	2.52
	Yes	116	97.48
	Total	119	100.00
2. Food affordability	No	20	16.67
	Yes	100	83.33
	Total	120	100.00
3. Food quality	No	14	12.50
	Yes	98	87.50
	Total	112	100.00
4. Food safety	No	16	14.04
	Yes	98	85.96
	Total	114	100.00
5. Other	No	89	96.74
	Yes	3	3.26
	Total	92	100.00

10. IMPACT OF COVID 19

Question	Resp.	Freq.	%
Q10.1 During the COVID 19 pandemic, did your consumption of local foods change?	No	78	53.06
	Yes	69	46.94
	Total	147	100.00
Q10.2 If yes, how did it change?	Increase	37	51.39
	Decrease	31	43.06
	Stay the same	4	5.56
	Total	72	100.00
Q10.3 During the COVID 19 pandemic, did your production of local foods change?	No	86	59.72
	Yes	58	40.28
	Total	144	100.00
Q10.4 If yes, how did it change?	Increase	14	23.33
	Decrease	44	73.33
	Stay the same	2	3.33
	Total	60	100.00
Q10.5 During the COVID 19 pandemic, did demand for local food change?	No	77	52.74
	Yes	69	47.26
	Total	146	100.00

Q10.6 If yes, did it: 1.Increased for local consumption	No	13	22.03
	Yes	46	77.97
	Total	59	100.00
2. Decreased local consumption	No	35	60.34
	Yes	23	39.66
	Total	58	100.00
3. Increased for export	No	45	91.84
	Yes	4	8.16
	Total	49	100.00
4. Decreased for export	No	42	85.71
	Yes	7	14.29
	Total	49	100.00
5. Stayed the same	No	46	93.88
	Yes	3	6.12
	Total	49	100.00
Q10.7 During COVID-19, have you sent your food products overseas (both commercial and to family members)?	No	122	85.92
	Yes	20	14.08
	Total	142	100.00

Q10.8 If yes, which crops were in most demand?

Question	Responses	Freq.	Percent
1. Swamp taro	No	6	35.29
	Yes	11	64.71
	Total	17	100.00
2. Land taro	No	11	78.57
	Yes	3	21.43
	Total	14	100.00
3. Breadfruit	No	2	12.50
	Yes	14	87.50
	Total	16	100.00
4. Betelnut	No	13	92.86
	Yes	1	7.14
	Total	14	100.00
5. Banana	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
6. Coconut	No	13	92.86
	Yes	1	7.14
	Total	14	100.00
7. Copra (coconut product)	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
8. Yam	No	13	100.00
	Yes	0	0
	Total	13	100.00
9. Sweet potatoes	No	13	100.00
	Yes	0	0
	Total	13	100.00
10. Tapioca	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
11. Soursop	No	13	100.00
	Yes	0	0
	Total	13	100.00
12. Locally grown/ collected vegetables	No	13	100.00
	Yes	0	0
	Total	13	100.00
13. Imported vegetables	No	13	100.00
	Yes	0	0
	Total	13	100.00
14. Locally grown/ collected fruits	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
15. Imported fruits	No	13	100.00
	Yes	0	0
	Total	13	100.00
16. Citrus	No	13	100.00
	Yes	0	0
	Total	13	100.00
17. Black pepper	No	12	92.31
	Yes	1	7.69
	Total	13	100.00
18. Hot peppers	No	13	100.00
	Yes	0	0
	Total	13	100.00
19. Sakau (Kava)	No	13	100.00
	Yes	0	0
	Total	13	100.00
20. Other	No	7	46.67
	Yes	8	53.33
	Total	15	100.00

11. PERCEPTION, PREFERENCE AND ATTITUDES

Q11.1a What do you consider to be healthy and nutritious?

Question	Resp.	Freq.	Percent
1.Fresh vegetables	No	4	2.76
	Yes	141	97.24
	Total	145	100.00
2.Processed vegetables	No	83	73.45
	Yes	30	26.55
	Total	113	100.00
3.Fresh fruit	No	8	5.67
	Yes	133	94.33
	Total	141	100.00
4.Processed fruit	No	85	75.22
	Yes	28	24.78
	Total	113	100.00
5.Fresh fish/ seafood	No	9	6.38
	Yes	132	93.62
	Total	141	100.00
6.Processed fish/seafood	No	86	76.79
	Yes	26	23.21
	Total	112	100.00
7.Fresh meat	No	27	20.93
	Yes	102	79.07
	Total	129	100.00

Question	Resp.	Freq.	Percent
8. Processed meat	No	91	81.25
	Yes	21	18.75
	Total	112	100.00
9. Bread, crackers, biscuit	No	80	70.80
	Yes	33	29.20
	Total	113	100.00
10. Pasta and ramen noodles	No	91	84.26
	Yes	17	15.74
	Total	108	100.00
11. Dairy	No	84	72.41
	Yes	32	27.59
	Total	116	100.00
12. Eggs	No	63	52.50
	Yes	57	47.50
	Total	120	100.00
13. Coconut milk	No	56	46.28
	Yes	65	53.72
	Total	121	100.00
14. Candies, cakes, cookies, sugary foods	No	100	94.34
	Yes	6	5.66
	Total	106	100.00
15. Boxed cereal	No	102	94.44
	Yes	6	5.56
	Total	108	100.00
16. Soda	No	103	99.04
	Yes	1	0.96
	Total	104	100.00
17. Sakau (Kava)	No	101	95.28
	Yes	5	4.72
	Total	106	100.00
18. Coffee and tea	No	92	82.88
	Yes	19	17.12
	Total	111	100.00

Q11.1b What percentage of your diet is imported food?

Particulars	Frequency	Percent
Less than 25%	43	29.66
25-50%	45	31.03
50-75%	50	34.48
75-100%	7	4.83
Total	145	100.00

Question	Responses	Frequency	Percent
Q11.2 Do you feel your diet is healthy and nutritious?	No	40	27.40
	Yes	106	72.60
	Total	146	100.00

Question	Resp.	Freq.	Percent
Q11.3 Does your diet impact your health?	No	42	28.38
	Yes, I feel healthy	74	50.00
	Yes, I feel unhealthy	32	21.62
	Total	148	100.00
Q11.4 Would you be interested in consuming more locally sourced seafood and marine fish daily if they were more available and affordable?	No	6	4.14
	Yes	139	95.86
	Total	145	100.00
Q11.5 Would you be interested in consuming more locally sourced meat and meat products daily if they were more available and affordable?	No	8	5.44
	Yes	139	94.56
	Total	147	100.00
Q11.6 Would you be interested in replacing imported rice with local starch crops such as taro and breadfruit if they are more available and affordable?	No	18	12.24
	Yes	129	87.76
	Total	147	100.00
Q11.7 Would you be interested in consuming more locally produced coconut milk products daily if they were more available and affordable?	No	7	4.76
	Yes	140	95.24
	Total	147	100.00
Q11.8 Would you be willing to replace imported milk products with coconut milk products for cooking?	No	11	7.53
	Yes	135	92.47
	Total	146	100.00
Q11.9 Would you be interested in consuming more locally produced vegetables daily if they were more available and affordable?	No	3	2.04
	Yes	144	97.96
	Total	147	100.00

Question	Responses	Freq.	Percent
Q11.10 Would you be interested in consuming more locally produced fruits daily if they were more available and affordable?	No	2	1.38
	Yes	143	98.62
	Total	145	100.00
Q11.11 If you knew any of these locally produced foods were healthier than imported and/or processed foods, would you be more willing to buy these food items?	No	25	17.48
	Yes	118	82.52
	Total	143	100.00

Q11.12 If not, why do you find imported and/or processed foods preferable?

Question	Responses	Frequency	Percent
1.More convenient	No	16	51.61
	Yes	15	48.39
	Total	31	100.00
2.Less work to prepare	No	1	3.13
	Yes	31	96.88
	Total	32	100.00
3.Tastes better	No	18	78.26
	Yes	5	21.74
	Total	23	100.00
4.More affordable	No	20	76.92
	Yes	6	23.08
	Total	26	100.00
5.More available	No	13	43.33
	Yes	17	56.67
	Total	30	100.00
6.Higher status	No	21	91.30
	Yes	2	8.70
	Total	23	100.00
7.Other	No	20	86.96
	Yes	3	13.04
	Total	23	100.00

12. ADAPTATION AND RESILIENCE QUESTIONS

Q12.2 What solutions and/or resources do you feel can assist you with long term local food production goals?

Question	Responses	Freq.	Percent
1. Agriculture training	No	24	17.39
	Yes	114	82.61
	Total	138	100.00
2. Tools	No	17	12.59
	Yes	118	87.41
	Total	135	100.00
3. Greenhouses and aquaculture	No	5	55.56
	Yes	4	44.44
	Total	9	100.00
4. Climate resilience crops	No	65	51.18
	Yes	62	48.82
	Total	127	100.00
5. Disease resistant animals/ chickens	No	91	82.73
	Yes	19	17.27
	Total	110	100.00
6. Affordable feed	No	81	69.83
	Yes	35	30.17
	Total	116	100.00
7. Refrigeration	No	85	77.27
	Yes	25	22.73
	Total	110	100.00
8. Access to market	No	98	88.29
	Yes	13	11.71
	Total	111	100.00
9. Transportation	No	83	69.75
	Yes	36	30.25
	Total	119	100.00
10. Post-harvest handling (drying and cooling for long term storage)	No	83	74.11
	Yes	29	25.89
	Total	112	100.00
11. Financial credit	No	93	85.32
	Yes	16	14.68
	Total	109	100.00
12. Veterinary doctor	No	103	97.17
	Yes	3	2.83
	Total	106	100.00
13. Other	No	95	92.23
	Yes	8	7.77
	Total	103	100.00

CHUUK OPEN-ENDED HOUSEHOLD SURVEY

Below are the main statements provided by the respondents in the open-ended survey.

Q3.3.5 If yes, which behavioral changes?

1) "Due to flooding, it is difficult to keep seedlings growing or stay in place."

Q6.8 In the last ten years, have you noticed a change in raising animals (if yes, please explain):

1) "Feeding costs rose, and the animals are skinnier than before."
2) "Feeding is more expensive, demand to buy is more than usual, price is higher."
3) "Difficult to get food. It is hard to find shady areas."

Q8.3.2 How has a change in climate impacted your access to clean, fresh water?

1) "Much heat is affecting the water flow."
2) "During high tide, salt water gets mixed with fresh water. During heavy rain, some sewage system leaks out."
3) "Due to extreme heat, the freshwater is not how it used to be. It seems like there are small particles inside."

Q8.4.3 What crops did you use to grow, and what crops do you grow now?

1) "Growing food crops like soft taro and cabbage became difficult and slow. Before it was easy, they used to grow well and fast."
2) "I used to grow cucumber, eggplants, and watermelon, but I stopped due to no seeds or seedlings."
3) "I used to grow watermelon, cucumber, and leafy greens, but now I grow hot peppers, soursop, and papayas because watermelon, cucumbers, and leafy greens are too sensitive to the temperature and climate change."

Q8.4.6 How did you change/adapt your farming practices (including fishing) over the last ten years?

1) "Farming: I have to find more shady areas far away from usual places. Fishing: hard to catch due to hot weather and high sea level rise."
2) "For farming, I used to plant my crops into the soil, but now I grow my crops from planting basins in order for me to take good care of the plants and crops."
3) "I farm in places that are easily accessible to water and where it is not easy to reach by sea rise."
4) "I partnered with other people in farming and fishing to afford the high fuel cost."

Q8.4.7 Have you or your household done anything else to become more food secure in response to climate change?

1) "Planting trees such as hibiscus around taro patch to help protect from saltwater inundation."
2) "Add salt to fish and dry it under the sun daily until fish is dried. We cut the breadfruit into small pieces and conserve them under the ground for future use after a couple of months."
3) "Yes, we elevate the areas where we grow the crops and in shady areas."
4) "Applied food security grants to obtain more efficient and proper tools to do farming amid climate change. Attend workshops to obtain information or how to tackle climate adversity."

Q9.1.5 How do you define healthy, nutritious food?

1) "Food I grow on my farm and catch from fishing."
2) "Food that gives the body strength, protects from illnesses, and body-building."
3) "Food that gives energy, smartness, and prevents sickness."
4) "Healthy nutritious food is the local food, and fish or other marines. Foods that give you the energy to feel strong and healthy."
5) "I called it rainbow color and fresh."
6) "I eat whatever food is available."

Q9.4.4 If yes, is accessing foods more difficult or less difficult? If more difficult, why?

1) "More consumers, less land, inflation, and climate change."
2) "Not enough money."
3) "Not enough available."
4) "Affordability if there is none available in the farm."

Q12.1 What have you done to adapt your local food production or harvesting because of a changing climate?

1) "Clean my crops to ensure no invasive plants and other pesticides are destroying them."
2) "Learn more about climate change resilience crops and planting."
3) "There is too much heat, so I water my plants, mulching, and protect them from animals and people."
4) "Use raise beds for my crops and mulching."
5) "Grow taro in higher places to avoid the high rise of sea level." - Chuuk
6) "Intercropping."
7) "Planting more climate resilience crops and learning about adaptation and mitigation programs for food security."

Q12.3 Is there anything else you would like us to know regarding your experience with food production, food security, climate change, or COVID-19? 1) "A lot can be done and planted on the farm, but people are just too busy doing other stuff, and some of the new generations now do not like to farm/plant. We depend more on imported food because it is easier to prepare. I really hope we can help." 2) "Heavy rainfall affects our plants and their growth; heat and mud affect their growth; it is difficult to go fishing because of lack of materials and supplies, boat, and engine." 3) "Just want to share that our local plant medicines can help with the outbreak of COVID-19 virus." 4) "I need assistance in teaching me how to grow crops in a garden." 5) "I would like to know more about how to save crops from sea level rise. We need more education on climate change to be familiar and know what to expect from climate change." 6) "I love farming because I get to provide for my family, which is everything to me."	7) "Very important to continue to farm or plant local food crops because they helped people very much during the Pandemic (COVID-19)." 8) "I want to ask to provide experts in farming to teach, especially for the youths because they do not know how to farm." 9) "We need to be more educated about climate change to adapt correctly." 10) "If you can help us or teach us how to plant crops safely without saltwater inundation." 11) "It is important to have many trainings on food security because we are now experiencing climate change, and we need to be ready." 12) "Problem with personal freshwater, discoloration, and debris all the time." 13) "The climate change kills some of my crops." 14) "There should be awareness on how to garden and to preserve food to prepare for the impacts of climate change."

CHUUK COMMERCIAL SURVEY

Q1.1 Gender of the sample respondents

Particulars	Frequency	Percent
Male	4	100.00
Female	0	0.00
Total	4	100.00

Particulars	Mean
Q1.2 Average number of people that are children (0-13 years)	1.00
Q1.3 Average number of people in the family	4.25

Q1.4 In general, would you say your health is?

Particulars	Frequency	Percent
Excellent	1	25.00
Very good	1	25.00
Good	0	0.00
Fair	2	50.00
Poor	0	0.00
Total	4	100.00

Q2.3.1. Which crops, animals/poultry and/or fish/seafood/clams have you tried to grow that did not work or that you did not continue to grow?

Particulars	Frequency	Percent
Avocado	1	25.00
Rabbit fish	1	25.00
Dragon fruit	1	25.00
Vanilla orchid	1	25.00
Total	4	100.00

Q2.3.1.1 Why did you stop growing it?

Particulars	Frequency	Percent
Low Yield	2	33.33
Low Price	0	0.00
Low Demand	0	0.00
Seed Problem	0	0.00
Lack of production technologies	2	33.33
Others	2	33.33
Total	6	100.00

Q3 Ownership

Q3.2 Please indicate other assets you own or access to:

Question	Responses	Freq.	Percent
Radio	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
Television	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Bicycle	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
Motor vehicle	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Landline phone	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Mobile phone	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Tractor	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
Farm tools	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Wheelbarrow	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Electricity in house?	No	0	0.00
	Yes	4	100.00
	Total	4	100.00

Q4.1 Which Food crops do you grow?

Particulars	Frequency	Percent
Cabbage	2	12.50
Citrus	1	6.25
Cucumber	2	12.50
Eggplant	2	12.50
Hot pepper	1	6.25
Kosraean apple	1	6.25
Mango	1	6.25
Okra	1	6.25
Pomegranate	1	6.25
Sour sop	1	6.25

Q1.1 Gender of the sample respondents

Particulars	Frequency	Percent
Male	1	7.14
Female	13	92.86
Total	14	100.00

Particulars	Mean
Q1.2 Average number of people that are children (0-13 years)	1.50
Q1.3 Average number of people in the family	6.20

Q1.4 In general, would you say your health is?

Particulars	Frequency	Percent
Excellent	0	0.00
Very good	3	23.08
Good	8	61.54
Fair	2	15.38
Poor	0	0.00
Total	13	100.00

Q2.3.1 Which crops, animals/poultry and/or fish/seafood/clams have you tried to grow that did not work or that you did not continue to grow?

Particulars	Frequency	Percent
Breadfruit	1	9.09
Clams	1	9.09
Corn	1	9.09
Cucumber	2	18.18
Head Cabbage	1	9.09
Kava	1	9.09
Melon	1	9.09
Taro	1	9.09
Watermelon	1	9.09
Winter squash	1	9.09
Total	11	100.00

Q2.3.1.1 Why did you stop growing it?

Particulars	Frequency	Percent
Low Yield	0	0.00
Low Price	0	0.00
Low Demand	0	0.00
Seed Problem	13	72.22
Lack of production technologies	3	16.67
Others	2	11.11
Total	18	100.00

Q2.3.2 Which crops/marine products would you like to grow but are not yet growing?

Particulars	Frequency	Percent
Cabbage	1	33.33
Egg plant	1	33.33
Grabs	1	33.33
Total	3	100.00

Q2.3.2.1 Why are you not growing it?

Particulars	Frequency	Percent
Low price	0	0.00
Low price	0	0.00
Low demand	0	0.00
Seed problem	0	0.00
Lack of production technologies	3	42.86
Others	3	42.86
Total	1	14.29

Q3 Ownership of livestock

Livestock type	No of respondents	Average number
Chicken	11	22.63
Pigs	11	3.28
Goats	2	4
Cattle	0	0.00
Ducks	0	0.00
Others (specify)	0	0.00

Q4.1 Which Food crops do you grow?

Particulars	Freq.	Percent
Banana	9	12.5
Beans	5	6.94
Breadfruit	4	5.56
Coconut	2	2.78
Cucumber	10	13.89
Eggplant	8	11.11
Okra	1	1.39
Papaya	2	2.78
Potato	5	6.94
Squash	3	4.17
Tapioca	8	11.11
Taro	8	11.11
Watermelon	5	6.95
Water spinach	1	1.39
Yam	1	1.39
Total	72	100.00

Q4.2 Why the vegetable is grown and preferred?

Particulars	Frequency	Percent
Good prices	37	51.39
Contract with partner	0	0.00
Production experience	6	8.33
Available market	1	1.39
Opportunity to earn extra income	8	11.11
Cultural reasons for IVs	0	0.00
Home consumption	20	27.78
Other	0	0.00
Total	72	100.00

Q4.4.1 What are the important technology why you have never used or stopped to use practices you are aware of?

Particulars	Freq.	Percent
Improved seed varieties	1	7.14
Bedding	2	14.29
Type (raised beds, growing in pots)	0	0.00
Production systems (*e.g.,* spacing (within and between rows))	1	7.14
Crop Rotation	0	0.00
Hydroponics	1	7.14
Packaging/Labeling	2	14.29
Woodchipper	3	21.43
Fertilizers	0	0.00
Compost	1	7.14
Pesticides	0	0.00
Irrigation	0	0.00
Weeding	1	7.14
Cooling/Drying processing	2	14.29
Marketing	0	0.00
Total	14	100.00

Q4.4.2 What are the important reasons why you have never used or stopped to use practices you are aware of?

Particulars	Frequency	Percent
Lack of requisite materials	9	64.29
Labor demand is high	3	21.43
Requires more money	1	7.14
Told by other farmers that is not effective in increasing yields	1	7.14
Total	14	100.00

Q4.8 Do you have a water collection system?

Particulars	Frequency	Percent
No	2	14.29
Tank	0	0.00
Bucket	7	50.00
Container	3	21.43
Other	2	14.29
Total	14	100.00

Q4.9 Do you have problems with excessive rainfall?

Particulars	Frequency	Percent
No	6	42.86
Yes	8	57.14
Total	14	100.00

Q4.10 How do you reduce crop and animal damage from excessive rains and runoff?

Particulars	Frequency	Percent
Make ditch at the side of my plants	5	55.56
Plant in a protected area	1	11.11
Grow crops in higher areas	3	33.33
Total	9	100.00

Q4.11 How have production costs for growing foods changed over the past 5 years?

Particulars	Frequency	Percent
Increased	4	30.77
Decreased	1	7.69
No change	5	38.46
Do not know	3	23.08
Total	13	100.00

Q4.12 What were the major changes (for increased or decreased costs?):

Particulars	Freq.	Percent
Increase in fuel price to transport harvest to market	1	25.00
Increase in Fuel Price; Increase in demand for crops from markets & buyers	1	25.00
Increase in fuel price to transport to market	1	25.00
Labor costs (migration)	1	25.00
Total	4	100.00

Q5.2 Are any of your food crops stored immediately after harvest?

Particulars	Frequency	Percent
No	1	8.33
Yes	11	91.67
Total	12	100.00

Q5.4 How do you harvest your food crops?

Particulars	Freq.	Percent
Just cut a bunch of plant from top	8	73.33
Just cut a bunch of leaves from side shoots	1	6.67
Strip and harvest leaves only	0	6.67
Pull the plant out and sell entire plant	0	6.67
Other	4	6.67
Total	13	100.00

Q6.1 Who are your main trading partner(s)?

Particulars	Frequency	Percent
Direct to consumers	1	3.45
Brokers	0	0.00
Direct to supermarkets	5	17.24
Roadside stands	4	13.79
Retailers	9	31.03
Wholesalers	0	0.00
Neighbors	4	13.79
Friends	4	13.79
Family relatives	2	6.90
Total	29	100.00

Q6.2 How frequently does your nearest market meet?

Particulars	Frequency	Percent
Daily	0	0.00
Weekly	1	7.14
Twice a week	11	78.57
Thrice a week	0	0.00
Other	2	14.29
Total	14	100.00

Q6.3 How are your harvested crops normally packaged during transport?

Particulars	Frequency	Percent
Plastic bags/sacks	6	46.15
Plastic containers	3	23.08
Others	4	30.77
Total	13	100.00

Q6.4 Are you often aware of crop prices before you decide to sell?

Particulars	Frequency	Percent
No	5	41.67
Yes	7	58.33
Total	12	100.00

Q6.5 Who fixes or determines the prices of each crop you sold?

Particulars	Frequency	Percent
N/A	0	0
Self	2	15.38
Buyer	6	46.15
Negotiation	4	30.77
Other	1	7.69
Total	13	100.00

Q6.7 If prices were not fixed by you, how do you determine them?

Particulars	Frequency	Percent
I use prices in neighboring markets	5	50.00
I use cost of production	5	50.00
Total	10	100.00

Q6.8 When do you start checking prices prior to harvesting of produce?

Particulars	Frequency	Percent
Less than 3 days before	2	15.38
A week before	6	46.15
2 weeks before	1	7.69
Not at all	4	30.77
Total	13	100.00

Q6.9 How have the food crop prices changed over the past 5 years?

Particulars	Frequency	Percent
Increased	8	61.54
Decreased	3	23.08
No change	2	15.38
Total	13	100.00

Q6.10 Do you get paid at time of selling food crops?

Particulars	Frequency	Percent
No	3	23.08
Yes	10	76.92
Total	13	100.00

Q6.11 Are there any differences between the production and sale of the different food crops?

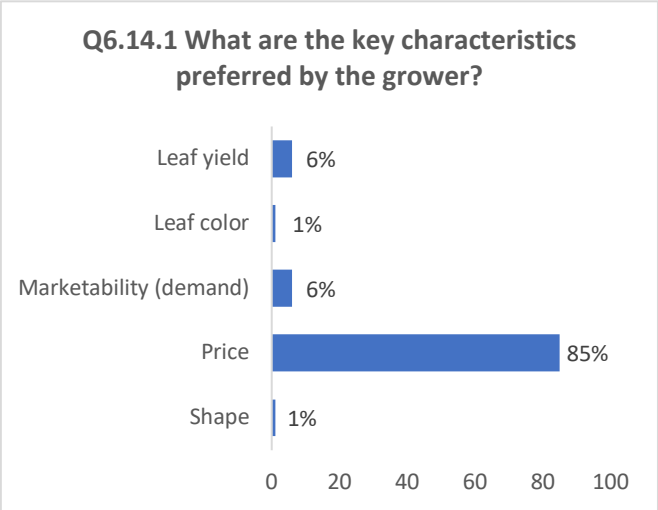
Particulars	Frequency	Percent
No	1	7.69
Yes	12	92.31
Total	13	100.00

Q6.12 Which one do you believe would allow you as a grower and producer to receive a higher price or a premium if improved?

Particulars	Frequency	Percent
Hygiene	11	84.62
Organically produced	2	15.38
Total	13	100.00

Q6.14 What are food crops buyers looking in your farm?

Particulars	Frequency	Percent
Banana	9	14.06
Beans	5	7.81
Breadfruit	1	1.57
breadfruit	1	1.56
Coconut	3	4.68
Cucumber	12	18.75
Eggplant	8	12.50
Okra	1	1.56
Papaya	1	1.56
Potato	4	6.25
Squash	3	4.69
Tapioca	6	9.38
Taro	3	4.69
water spinach	1	1.56
Watermelon	5	7.82
Yam	1	1.56
Total	64	100.00



Q6.14.2 What are the key characteristics preferred by buyers?

Particulars	Frequency	Percent
Leaf size	1	1.47
Marketability (demand)	48	70.59
Price	11	16.18
Appearance	2	2.94
Freshness	6	8.82
Total	68	100.00

Q7.2 Has anyone in your operation accessed agricultural extension services. If yes indicate the source of the advice and main messages:

Question	Resp.	Freq.	Percent
Seed or fingerlings production technology, methods, or practices	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
Management technologies	No	9	75.00
	Yes	3	25.00
	Total	12	100.00
Varieties	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
Disease and pest control	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
Basic business management and income generation	No	9	75.00
	Yes	3	25.00
	Total	12	100.00
Ways and methods to increase commercial index	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
Marketing	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
Nutrition and health	No	8	66.67
	Yes	4	33.33
	Total	12	100.00
Value-addition/processing methods	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
Others (specify)	No	6	100.00
	Yes	0	0.00
	Total	6	100.00

Q7.3 What type of training and assistance do you need, and would you like to receive?

Particulars	Freq.	Percent
Agriculture trainings	4	36.36
Climate resilient farming techniques	1	9.09
Disease & Pest Control Training	1	9.09
The training could be done by agriculture	1	9.09
Varieties/Marketing/Ways & methods to start a good garden	1	9.09
Fingerling production technology, methods, or practices	1	9.09
Seed production technology methods & practices & Varieties	1	9.09
Training for nutrition and health	1	9.09
Total	11	100.00

Q7.4 Do you or any of your commercial partners/ members belong to inside community / outside community groups or associations?

Particulars	Frequency	Percent
No	5	38.46
Yes	8	61.54
Total	13	100.00

Q7.5 what is the nature of the groups/associations?

Particulars	Frequency	Percent
NGO	1	12.5
Farmer groups	2	25.0
Religious	1	12.5
Community	2	25.0
Social welfare	2	25.0
Total	8	100.0

Q8 Do you have any financial constraints in farming?

Particulars	Frequency	Percent
No	8	72.73
Yes	3	27.27
Total	11	100.00

Q9.1 Do you know any providers of financial credit services for agricultural activities?

Particulars	Frequency	Percent
No	14	100.00
Yes	0	0.00
Total	14	100.00

Q9.2 Have any of your household members ever applied for credit either in cash or kind?

Particulars	Frequency	Percent
No	13	92.86
Yes	1	7.14
Total	14	100.00

Q9.4 Have you ever-obtained credit in the past two years?

Particulars	Frequency	Percent
No	11	78.57
Yes	3	21.43
Total	14	100.00

Q10 Constraints in food crop farming

Q10.1 List the important constraints to farming and rank them (for plants and animals and poultry).

Question	Responses	Frequency	Percent
Socioeconomic			
Lack of seed or plant materials	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
Lack of improved seed	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
High prices of improved seed	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
Poor quality of seed	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
Unavailability of credit to buy seed	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
High prices of improved seed	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
High price of fertilizer	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
Lack of credit to buy fertilizer	No	3	37.50
	Yes	5	62.50
	Total	8	100.00
Poor access to markets and information	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
Poor vegetable leaf market prices	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
Food taboos	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
Small land sizes	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
Too many sellers but a few buyers	No	6	75.00
	Yes	2	25.00
	Total	8	100.00

Question	Responses	Freq.	Percent
Poor vegetable leaf market prices	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
Food taboos	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
Small land sizes	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
Too many sellers but a few buyers	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
Poor infrastructure	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
Lack of labor	No	2	25.00
	Yes	6	75.00
	Total	8	100.00
Lack of land	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
Better prices for other vegetables	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
Need to give attention to my major food crops (e.g., taro)	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
Other	No	0	0.00
	Yes	7	100.00
	Total	7	100.00
Biophysical			
Drought	No	1	12.50
	Yes	7	87.50
	Total	8	100.00
Floods	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
Pests	No	2	25.00
	Yes	6	75.00
	Total	8	100.00
Diseases	No	3	37.50
	Yes	5	62.50
	Total	8	100.00
Soil fertility	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
Other	No	0	0.00
	Yes	7	100.00
	Total	7	100.00
Do you know have or use a water collection system?	No	5	62.50
	Yes	3	37.50
	Total	8	100.00
Do you now use irrigation?	No	6	85.71
	Yes	1	14.29
	Total	7	100.00
Across how many months of the year are you able to and do grow IVs and other vegetables?	No	6	85.71
	Yes	1	14.29
	Total	7	100.00

Q10.2 List the important constraints to farming and rank them (for aquaculture, fisheries, and marine products).

Question	Responses	Freq.	Percent
Socioeconomic			
1. Lack seafood, sea animals and fish in waters	No	4	30.77
	Yes	9	69.23
	Total	13	100.00
2. Lack of facilities to raise, incubate, grow seafood	No	1	7.69
	Yes	12	92.31
	Total	13	100.00
3. Technical expertise lacking	No	5	38.46
	Yes	8	61.54
	Total	13	100.00
4. Lack of water transport	No	4	30.77
	Yes	9	69.23
	Total	13	100.00
5. Unavailability of credit to support your business/operation	No	5	38.46
	Yes	8	61.54
	Total	13	100.00
6. High input costs (including fuel)	No	3	23.08
	Yes	10	76.92
	Total	13	100.00
7. Lack of starting animals, fish, and crustaceans	No	7	53.85
	Yes	6	46.15
	Total	13	100.00
8. Difficulty to access to markets	No	2	15.38
	Yes	11	84.62
	Total	13	100.00
9. Lack of cold storage and coolers	No	5	38.46
	Yes	8	61.54
	Total	13	100.00
10. Lack of dryers/smokers	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
11. Not sufficient access to water area to make it commercially	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
12. Local market too competitive	No	2	15.38
	Yes	11	84.62
	Total	13	100.00
13. Competition from larger international commercial fishing boats	No	8	66.67
	Yes	4	33.33
	Total	12	100.00

Question	Resp.	Freq.	Percent
14. Lack of labor to assist	No	9	69.23
	Yes	4	30.77
	Total	13	100.00
15. Poor infrastructure	No	8	61.54
	Yes	5	38.46
	Total	13	100.00
16. Difficulty to access input supplies	No	7	58.33
	Yes	5	41.67
	Total	12	100.00
17. Other	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
Biophysical			
18. Storms	No	5	100.00
	Yes	0	0.00
	Total	5	100.00
19. Floods	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
20. Pests	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
21. Diseases	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
22. Erosion	No	13	100.00
	Yes	0	0.00
	Total	13	100.00
23. Theft and security	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
24. Do you know have or use a water collection system?	No	11	84.62
	Yes	2	15.38
	Total	13	100.00

Q10.3 Did you notice any changes in the following weather parameters in the past?

Question	Resp.	Changes in the weather parameters		Affecting agriculture?	
		Freq	%	Freq	%
1. More frequent drought	No	5	41.67	5	41.67
	Yes	7	58.33	7	58.33
	Total	12	100.00	12	100.00
2. Delayed on-set rainfall	No	3	25.00	5	41.67
	Yes	9	75.00	7	58.33
	Total	12	100.00	12	100.00
3. Erratic rainfall pattern	No	4	33.33	5	41.67
	Yes	8	66.67	7	58.33
	Total	12	100.00	12	100.00
4. Too much rain	No	6	50.00	8	66.67
	Yes	6	50.00	4	33.33
	Total	12	100.00	12	100.00
5. Low rain	No	5	45.45	5	45.45
	Yes	6	54.55	6	54.55
	Total	11	100.00	11	100.00
6. Higher temperature	No	4	36.36	6	54.55
	Yes	7	63.64	5	45.45
	Total	11	100.00	11	100.00
7. Earlier on – set of rainfall	No	5	45.45	7	63.64
	Yes	6	54.55	4	36.36
	Total	11	100.00	11	100.00
8. Others	No	5	100.00	5	100.00
	Yes	0	0.00	0	0.00
	Total	5	100.00	5	100.00

Q10.4 Did you face any damage due to any climate factor? If yes due to what?

1. Decline in yield

Crop Name	Particulars	1. Decline in yield		
		No	Yes	Total
Banana	Response	4	4	8
	Per cent	50.00	50.00	100.00
Beans	Response	3	1	4
	Per cent	75.00	25.00	100.00
Breadfruit	Response	2	0	2
	Per cent	100.00	0.00	100.00
Coconut	Response	2	0	2
	Per cent	100.00	0.00	100.00
Cucumber	Response	6	3	9
	Per cent	66.67	33.33	100.00
Eggplant	Response	6	1	7
	Per cent	85.71	14.29	100.00
Okra	Response	0	1	1
	Per cent	0.00	100.00	100.00
Papaya	Response	2	0	2
	Per cent	100.00	0.00	100.00
Potato	Response	2	2	4
	Per cent	50.00	50.00	100.00
Squash	Response	0	2	2
	Per cent	0.00	100.00	100.00
Tapioca	Response	4	3	7
	Per cent	57.14	42.86	100.00
Taro	Response	7	1	8
	Per cent	87.50	12.50	100.00
Watermelon	Response	4	1	5
	Per cent	80.00	20.00	100.00
Yam	Response	1	0	1
	Per cent	100.00	0.00	100.00
Total	Response	43	19	62
	Per cent	69.35	30.65	100.00

2. Increase in yield

Crop Name	Particulars	2. Increase in yield		
		No	Yes	Total
Banana	Response	8	0	8
	Per cent	100.00	0.00	100.00
Beans	Response	4	0	4
	Per cent	100.00	0.00	100.00
Breadfruit	Response	0	1	1
	Per cent	0.00	100.00	100.00
Coconut	Response	0	1	1
	Per cent	0.00	100.00	100.00
Cucumber	Response	9	0	9
	Per cent	100.00	0.00	100.00
Eggplant	Response	7	0	7
	Per cent	100.00	0.00	100.00
Okra	Response	1	0	1
	Per cent	100.00	0.00	100.00
Papaya	Response	2	0	2
	Per cent	100.00	0.00	100.00
Potato	Response	4	0	4
	Per cent	100.00	0.00	100.00
Squash	Response	2	0	2
	Per cent	100.00	0.00	100.00
Tapioca	Response	7	0	7
	Per cent	100.00	0.00	100.00
Taro	Response	7	1	8
	Per cent	87.50	12.50	100.00
Waterme-lon	Response	5	0	5
	Per cent	100.00	0.00	100.00
Yam	Response	1	0	1
	Per cent	100.00	0.00	100.00
Total	Response	57	3	60
	Per cent	95.00	5.00	100.00

3. Pests and diseases

Crop Name	Particulars	3. Pests and diseases		
		No	Yes	Total
Banana	Response	6	2	8
	Per cent	75.00	25.00	100.00
Beans	Response	3	1	4
	Per cent	75.00	25.00	100.00
Breadfruit	Response	2	0	2
	Per cent	100.00	0.00	100.00
Coconut	Response	2	0	2
	Per cent	100.00	0.00	100.00
Cucumber	Response	8	1	9
	Per cent	88.89	11.11	100.00
Eggplant	Response	7	0	7
	Per cent	100.00	0.00	100.00
Okra	Response	0	1	1
	Per cent	0.00	100.00	100.00
Papaya	Response	2	0	2
	Per cent	100.00	0.00	100.00
Potato	Response	3	1	4
	Per cent	75.00	25.00	100.00
Squash	Response	2	0	2
	Per cent	100.00	0.00	100.00
Tapioca	Response	5	2	7
	Per cent	71.43	28.57	100.00
Taro	Response	7	1	8
	Per cent	87.50	12.50	100.00
Watermelon	Response	4	1	5
	Per cent	80.00	20.00	100.00
Yam	Response	1	0	1
	Per cent	100.00	0.00	100.00
Total	Response	52	10	62
	Per cent	83.87	16.13	100.00

4. Weed regime

Crop Name	Particulars	4. Weed regime		
		No	Yes	Total
Banana	Response	6	2	8
	Per cent	75.00	25.00	100.00
Beans	Response	3	1	4
	Per cent	75.00	25.00	100.00
Breadfruit	Response	2	0	2
	Per cent	100.00	0.00	100.00
Coconut	Response	2	0	2
	Per cent	100.00	0.00	100.00
Cucumber	Response	7	2	9
	Per cent	77.78	22.22	100.00
Eggplant	Response	6	1	7
	Per cent	85.71	14.29	100.00
Okra	Response	1	0	1
	Per cent	100.00	0.00	100.00
Papaya	Response	2	0	2
	Per cent	100.00	0.00	100.00
Potato	Response	3	1	4
	Per cent	75.00	25.00	100.00
Squash	Response	1	1	2
	Per cent	50.00	50.00	100.00
Tapioca	Response	5	2	7
	Per cent	71.43	28.57	100.00
Taro	Response	7	1	8
	Per cent	87.50	12.50	100.00
Watermelon	Response	4	1	5
	Per cent	80.00	20.00	100.00

Crop Name	Particulars	4. Weed regime		
		No	Yes	Total
Yam	Response	1	0	1
	Per cent	100.00	0.00	100.00
Total	Response	50	12	62
	Per cent	80.65	19.35	100.00
	Per cent	1	0	1

Q10.5 Did you take any action against crop loss due to climate?

Particulars	Frequency	Percent
No	8	72.73
Yes	3	27.27
Total	11	100.00

Q10.5.1 And if so, please list actions taken:

Question	Responses	Actions taken	
		Freq.	Percent
1. Started growing new crop	No	3	50.00
	Yes	3	50.00
	Total	6	100.00
2. Adopted drought tolerant	No	3	50.00
	Yes	3	50.00
	Total	6	100.00
3. Moved focus from crop to livestock production	No	6	100.00
	Yes	0	0.00
	Total	6	100.00
4. Started non-farm activities	No	6	100.00
	Yes	0	0.00
	Total	6	100.00
5. Started using new land management practices	No	3	50.00
	Yes	3	50.00
	Total	6	100.00
6. Did nothing	No	5	83.33
	Yes	1	16.67
	Total	6	100.00
7. Others	No	3	100.00
	Yes	0	0.00
	Total	3	100.00

Q11 Commercial Farming Background

1. Gender

Particulars	Frequency	Percent
Female	0	0.00
Male	12	100.00
Total	12	100.00

2. Highest level of education

Particulars	Frequency	Percent
Primary	3	27.27
Secondary	7	63.64
College	1	9.09
Total	11	100.00

3. Informal education

Particulars	Frequency	Percent
None	7	70.00
Adult Education	0	0.00
Training in food crop production	3	30.00
Total	10	100.00

Q11.2 What are the main sources of your farm labor?

Particulars	Frequency	Percent
Household	8	72.73
Extended family	3	27.27
Total	11	100.00

Q11.6 Are you able to save any money for unexpected expenses?

Particulars	Frequency	Percent
No	5	50.00
Yes	5	50.00
Total	10	100.00

Q12.1 Do you see any change in the environment that is impacting your farming and food production?

Particulars	Frequency	Percent
No	8	61.54
Yes	5	38.46
Total	13	100.00

CHUUK FOCUS GROUP DISCUSSION

Community Group: UFO Youth Farming	Community Group: CBDC Farming
Moderator: What is your goal as a farmer/fisherman over the next five years? Work hard to improve and increase access to funds from the Government and other sources. **Moderator**: **Do you see any change in the environment that is impacting your fishing and food production? If so, what?** Yes, there are changes. On the land, the topsoil for farming is not as good anymore because of erosion. Farmers keep using the same areas to farm and plant the same crops every time. When farmers plant breadfruit or banana in these areas, they can also plant cucumber, Chinese cabbage, or other plants that can be changed and replaced every time so that the farming space does not decrease too much because of planting coconut and breadfruit. **Moderator**: **Will the next generation have it easier, harder, or the same to maintaining life and culture?** It cannot be easier or maintained because of the many changes to our places, people, and culture. If they are going to try to maintain the life and culture, then it will be very difficult to do so. **Moderator: How do you want to improve your business?** Seek funding from the Government and other sources. **Moderator: What resources would be helpful to help improve your business?** Farming tools and equipment, a tractor is needed to make digging the soil easier and more efficient, and there will be no need for many people to do the digging (manpower). **Moderator: What are the greatest limitations or obstacles to growing your business/making more money?** There is no budget for operations and capital. **Moderator: What type of public policies should be put in place that would strengthen or expand your business?** A law promoting eating local food first should be strengthened. **Moderator: How does climate change affect your business? How do you think it will in the future?** With farming, too much rain is not good for the plants and the soil. This is also the same when there is too much sun; the soil and plants are also affected. **Moderator: What are the most important trainings you need to improve your production and farm?** Training on farming should include knowing which plants are good to plant during which times of the year, how much fruit the plants would bear, and how to make the product sellable.	**Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?** 1) The plan for the next 5 years is to have all our lands filled with plants we can eat and gardens of all kinds of food. 2) There will be food for my family and my relatives. 3) Our youth and children will know how to farm and eat local food. 4) The lands that are covered with other kinds of plants will be filled with food crops. 5) It will be easier for our children to farm if they know all that is involved with farming. **Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?** Yes, there are many changes. The rainy season is not when it is supposed to be anymore. High tides no longer happen during the months of high tides. The season for when crops should be bearing fruit, like breadfruit, is out of sync. **Moderator**: **Will the next generation have it easier, harder, or the same to maintaining life and culture?** Our children must put effort into learning how to farm to maintain the same life and culture we have. **Moderator: How do you want to improve your business?** I need to continue learning from those who know more about farming, for example, the Department of Agriculture, Chuuk Women's Council, and the Small Business Development Center. **Moderator: What resources would be helpful to help improve your business?** We are considering the Department of Agriculture, Chuuk Women's Council, and Small Business Development Center. **Moderator: What are the greatest limitations or obstacles to growing your business/making more money?** At the moment, the produce from our gardens is not being sold. **Moderator: What type of public policies should be put in place that would strengthen or expand your business?** Really don't know. **Moderator: How does climate change affect your business? How do you think it will in the future?** Saltwater intrusion into the taro patches has caused the taro not to be edible and tasty anymore. Heavy rainfall has killed our taro and caused sedimentation in our gardens.

Moderator: What are the most important trainings you need to improve your production and farm?
There are many forms to learn about farming. There is a need to learn about saltwater-resistant taro. We need to learn how to prevent heavy rainfall in our garden areas. There is also a need to learn which plants to plant and cultivate during which months.

Community Group: ReSouth Remedy Fishing

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?
Each of the members of our fishing group will be skilled in fishing. They will help their family, people, and markets by providing and selling fish.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?
1) There is a need to care for the fish and their breeding grounds in the mangroves, shore reefs, and small atolls. 2) Freighting fish outside Chuuk by the markets has no limits, and selling fish has no limits.
Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**
There needs to be laws in place and strengthened by the Government and people. There needs to be education and awareness so that we learn about the different problems that affect our bodies, the riches available outside of Chuuk, the overharvesting of fish, and how to fish.
Moderator: How do you want to improve your business?
1) limiting excessive fishing that causes waste; 2) we need to understand our current situation; 3) we need to understand how to operate a business; 4) we must abide by the laws.
Moderator: What resources would be helpful to help improve your business?
We should have help from the Small Business Development Center. Tools and supplies must be provided so that fishing activities can continue.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
There is a funding limit, laws prohibit some of our work, and insufficient learning for the workers and those supervising.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
Taxes must be specific to the type of work and based on the size of fishing grounds, limitations, and costs.
Moderator: How does climate change affect your business? How do you think it will in the future?
The seasons do not match what we know and understand from the past. For example, the windy season, the dry season, the rainy season, and the calm seas season are not like the years before.

Moderator: What are the most important trainings you need to improve your production and farm?
We need to learn about our resources. We need to learn about and have awareness of relevant laws. We need to learn about the problems in the atmosphere, in the wind, and under the sea. We need to learn how to sell. We need to learn how to fish and expand on the different fishing methods.

Community Group: Women's Group Farming

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?
The goal to increase our gardens and create a market that will support our families today and in the future.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?
1) The wind; 2) Drought that has killed plants because of the heat; 3) Heavy rainfall creates problems and makes our gardens go bad.
Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**
There is no more culture with this current generation of people. So, it is going to be hard for them to understand the culture.
Moderator: How do you want to improve your business?
We should take good care of the work and profit from the money we make to make our business bigger.
Moderator: What resources would be helpful to help improve your business?
We have to take good care of our gardens so that the product can be sold and can help the business.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
Charges to the businesses, taking items from the business for consumption and not replacing the items, theft, and burglary.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
The policy on paying for a business license must be strengthened. All must pay for a business license because the reality is that some do not pay, yet they are still operating a business.
Moderator: How does climate change affect your business? How do you think it will in the future?
This climate change affects our business because of strong winds. No one will go anywhere, the food will go bad, and there will be no more customers. For sure, businesses will be affected by climate change.
Moderator: What are the most important trainings you need to improve your production and farm?
There needs to be training on business and farming and on the different kinds of soil that are good for planting.

Community Group: UFO Youth Fishing **Moderator: What is your goal as a farmer/fisherman over the next five years?** To provide new tools and equipment that are good for present and future situations. **Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what? Yes,** We can see that some marine organisms on the reefs no longer exist (extinct or endangered). The reefs are dying, and this decreases fish's food and home. This is also the same with our mangroves. Until today, people destroy the mangroves to sell, and there are fewer areas for fish to breed and fewer homes for the birds and marine life. **Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?** It cannot be easier because of the current life we are living now. And it is also difficult to try to maintain the life and culture that we have now in the future. **Moderator: How do you want to improve your business?** Provide new tools and equipment that is good and relevant to our lives today and in the future.	**Moderator: What resources would be helpful to help improve your business?** We need those with the skills and knowledge for new and improved technology. If we plan to invest in marine life, then we will need the tools and equipment, the people who will lead the work, and we will need funding. **Moderator: What are the greatest limitations or obstacles to growing your business/making more money?** We need people with the skills and knowledge to move the work (business), for example, in management and financing. **Moderator: What type of public policies should be put in place that would strengthen or expand your business?** There should be a law and penalty for those who do not sell fish or do not prioritize selling fish in their businesses. **Moderator: How does climate change affect your business? How do you think it will in the future?** When the winds are strong, then it makes it difficult to fish.

APPENDIX 3.3 KOSRAE

HOUSEHOLD SURVEY

2. DEMOGRAPHIC AND LIVELIHOOD INFORMATION

Q2.1 Gender of the sample respondents

Particulars	Frequency	Percent
Male	141	94.00
Female	9	6.00
Total	150	100.00

Particulars	Mean
Q2.2 Respondent's age (years)	49.47
Q2.3 Number of people in the family	6.09

Q2.4 The livelihoods sources for your household
Multiple response item

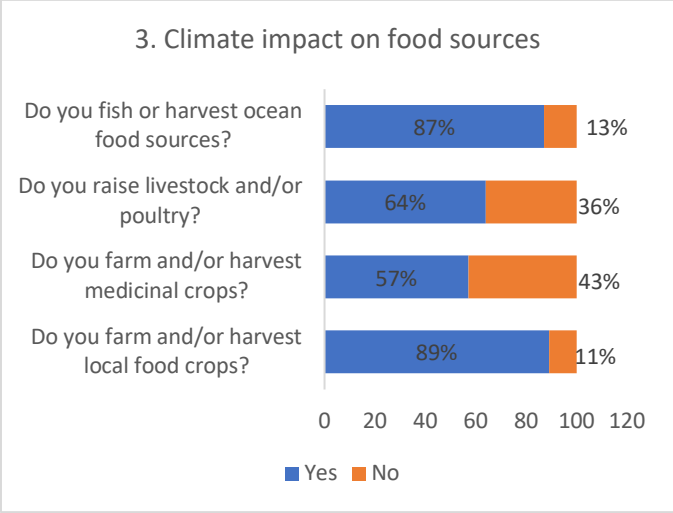
Particulars	Frequency	Percent
Subsistence living - growing food for household consumption	110	86.61
Growing Crops	121	90.98
Raising livestock	82	71.30
Fishing	124	91.18
Paid work in agriculture	10	13.51
Salaried government employment (non-agriculture)	61	58.65
Salaried private employment (non-agriculture)	21	26.25
Salaries NGO employment	12	16.22
Remittances	4	5.71
Social Security	34	38.64
Government transfers/NGO support	3	4.41
Other	10	13.51

Q2.5 Respondent's highest level of education

Particulars	Frequency	Percent
Traditional/Non-Formal	0	0
Incomplete primary school	2	1.36
Completed primary (Elementary) school	2	1.36
Incomplete secondary school	13	8.84
Completed secondary (High) school	42	28.57
Incomplete higher education	32	21.77
Completed higher education (*i.e.,* COM-FSM)	44	29.93
Completed graduate studies	12	8.16
Total	147	100.00

3. CLIMATE IMPACT ON FOOD SOURCES

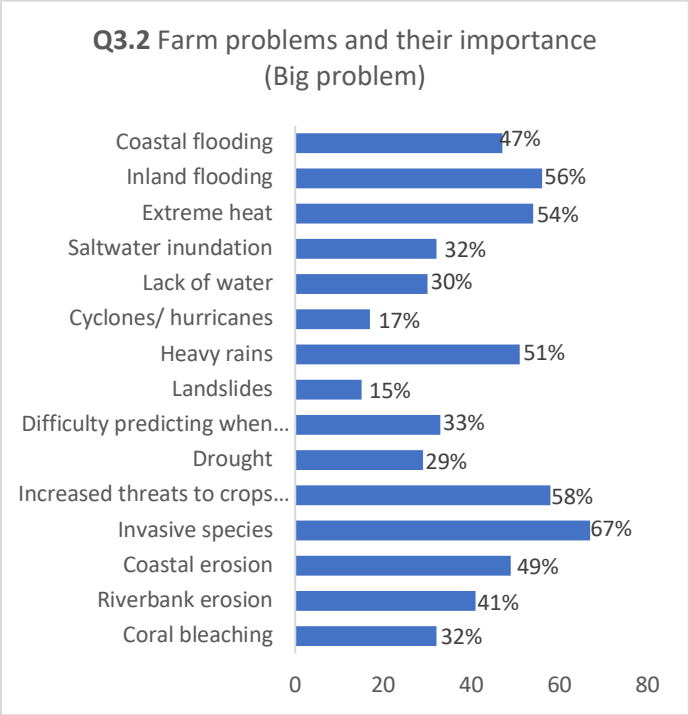
Q3.1.1 Do you farm and/or harvest local food crops?
Q3.1.2 Do you farm and/or harvest medicinal crops?
Q3.1.3 Do you raise livestock and/or poultry?
Q3.1.4 Do you fish or harvest ocean food sources?



Q3.2 Farm problems and their importance

Problem	Response	Frequency	Percent
Q3.2.1 Coastal flooding	Not a problem	37	24.67
	Little problem	43	28.67
	Big problem	70	46.67
	Total	150	100.00
Q3.2.2 Inland flooding	Not a problem	21	14.09
	Little problem	44	29.53
	Big problem	84	56.38
	Total	149	100.00

Problem	Response	Freq.	Percent
Q3.2.3 Extreme heat	Not a problem	15	10.00
	Little problem	54	36.00
	Big problem	81	54.00
	Total	150	100.00
Q3.2.4 Saltwater inundation	Not a problem	49	32.67
	Little problem	53	35.33
	Big problem	48	32.00
	Total	150	100.00
Q3.2.5 Lack of water	Not a problem	53	35.57
	Little problem	52	34.90
	Big problem	44	29.53
	Total	149	100.00
Q3.2.6 Cyclones/ hurricanes	Not a problem	73	61.86
	Little problem	25	21.19
	Big problem	20	16.95
	Total	118	100.00
Q3.2.7 Heavy rains	Not a problem	25	16.67
	Little problem	48	32.00
	Big problem	77	51.33
	Total	150	100.00
Q3.2.8 Landslides	Not a problem	92	61.33
	Little problem	36	24.00
	Big problem	22	14.67
	Total	150	100.00
Q3.2.9 Unpredicta-bility of the rainy season	Not a problem	39	26.35
	Little problem	60	40.54
	Big problem	49	33.11
	Total	148	100.00
Q3.2.10 Drought	Not a problem	60	49.18
	Little problem	27	22.13
	Big problem	35	28.69
	Total	122	100.00
Q3.2.11 Increased threats to crops from pests and disease	Not a problem	17	11.33
	Little problem	46	30.67
	Big problem	87	58.00
	Total	150	100.00
Q3.2.12 Invasive species	Not a problem	15	10.00
	Little problem	34	22.67
	Big problem	101	67.33
	Total	150	100.00
Q3.2.13 Coastal erosion	Not a problem	40	26.67
	Little problem	36	24.00
	Big problem	74	49.33
	Total	150	100.00
Q3.2.14 Riverbank erosion	Not a problem	44	29.33
	Little problem	44	29.33
	Big problem	62	41.33
	Total	150	100.00
Q3.2.15 Coral bleaching	Not a problem	68	45.64
	Little problem	34	22.82
	Big problem	47	31.54
	Total	149	100.00



Q3.3.1 In the last ten years, have you noticed any change in the average temperature over a long period?

Particulars	Frequency	Percent
Mean temperature increased	130	86.67
Mean temperature decreased	1	0.67
Yes, more erratic	9	6.00
No, no change	2	1.33
Not sure	8	5.33
Total	150	100.00

Q3.3.2 In the last ten years, have you noticed any changes in the average rainfall over a long period?

Particulars	Frequency	Percent
Yes, mean rainfall increased	107	71.33
Yes, mean rainfall decreased	7	4.67
Yes, more erratic	13	8.67
No, no change	9	6.00
Not sure	14	9.33
Total	150	100.00

Q3.3.3 In the last ten years, has the start of the rainy season changed?

Particulars	Frequency	Percent
Yes, the rainy season starts later	23	15.54
Yes, the rainy season starts earlier	20	13.51
Yes, more erratic	38	25.68
No, no change	10	6.76
Not sure	57	38.51
Total	148	100.00

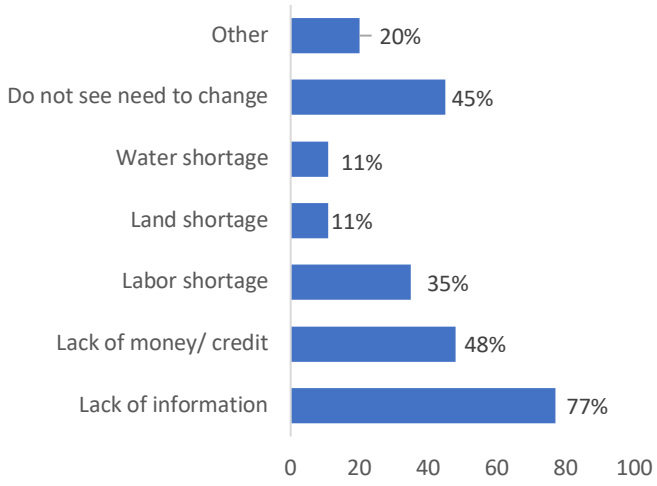
Q3.3.4 If yes (from Q3.3.2 to 3.3.4), have you adjusted your farming (including marine)?

Particulars	Frequency	Percent
No	62	45.93
Yes	73	54.07
Total	135	100.00

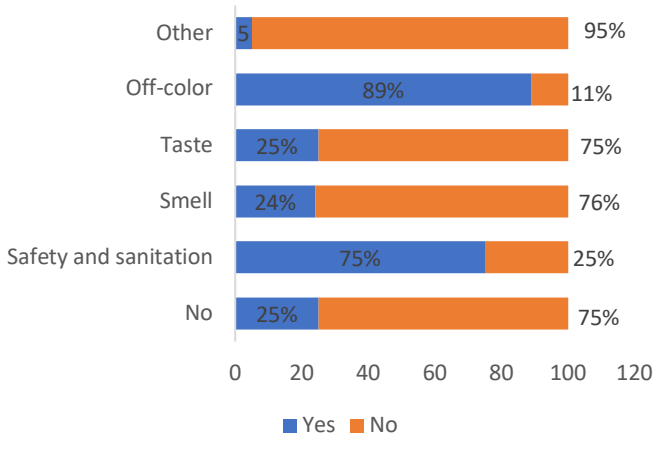
Q3.3.5 If yes, which behavioral changes? Multiple response item.

Question	Response	Freq.	Percent
1. Changed crop types	No	17	35.42
	Yes	31	64.58
	Total	48	100.00
2. Changed crop varieties	No	18	36.00
	Yes	32	64.00
	Total	50	100.00
3. Built a water harvesting scheme	No	22	46.81
	Yes	25	53.19
	Total	47	100.00
4. Implemented soil conservation techniques (to prevent erosion or soil contamination)	No	20	40.00
	Yes	30	60.00
	Total	50	100.00
5. Planted trees	No	19	40.43
	Yes	28	59.57
	Total	47	100.00
6. Irrigation	No	14	26.92
	Yes	38	73.08
	Total	52	100.00
7. Included/ augmented livestock herding	No	30	83.33
	Yes	6	16.67
	Total	36	100.00
8. Migration	No	24	63.16
	Yes	14	36.84
	Total	38	100.00
9. Found an off-farm job	No	33	89.19
	Yes	4	10.81
	Total	37	100.00
10. Leased the land	No	33	94.29
	Yes	2	5.71
	Total	35	100.00
11. Put crops under protected structures	No	17	32.69
	Yes	35	67.31
	Total	52	100.00
12. Changed harvested fish species	No	29	72.50
	Yes	11	27.50
	Total	40	100.00
13. Changed harvested fishing location	No	25	59.52
	Yes	17	40.48
	Total	42	100.00
14. Others	No	31	83.78
	Yes	6	16.22
	Total	37	100.00

Q3.3.6 If no, why? Multiple response item.



Q3.3.7 Have you experienced any issues with water quality? Multiple response item.



4. LOCAL FOOD PRODUCTION AND CLIMATE CHANGE

Q4.1 Do you grow and/or harvest food crops (including marine organisms)?

Particulars	Frequency	Percent
No	12	8.00
Yes	138	92.00
Total	150	100.00

Q4.2 Why do you grow and/or harvest food crops? Multiple response item.

Question	Responses	Frequency	Percent
1. Family consumption	No	0	0
	Yes	137	100.00
	Total	137	100.00
2. For sale	No	30	27.03
	Yes	81	72.97
	Total	111	100.00
3. Traditional exchange	No	48	53.93
	Yes	41	46.07
	Total	89	100.00
4. Other	No	69	95.83
	Yes	3	4.17
	Total	72	100.00

Q4.3 How would you describe the food production and/or harvesting that you do? Multiple response item.

Question	Response	Freq.	Percent
1. I raise livestock to feed my own family	No	22	19.13
	Yes	93	80.87
	Total	115	100.00
2. I raise livestock to sell livestock products at market	No	43	42.16
	Yes	59	57.84
	Total	102	100.00
3. Agroforestry (define this in colloquial terms for respondents)	No	62	77.50
	Yes	18	22.50
	Total	80	100.00
4. I collect products from the forest for my family	No	12	9.52
	Yes	114	90.48
	Total	126	100.00
5. I collect products from the forest to sell at market	No	42	44.68
	Yes	52	55.32
	Total	94	100.00
6. I fish and collect marine food for my family	No	14	10.69
	Yes	117	89.31
	Total	131	100.00
7. I fish and collect marine food to sell at the market	No	31	30.10
	Yes	72	69.90
	Total	103	100.00
8. I fish and collect marine products to send to my family/friends outside of the FSM?	No	45	45.45
	Yes	54	54.55
	Total	99	100.00
9. Other	No	67	95.71
	Yes	3	4.29
	Total	70	100.00

5. AGRICULTURE, FARMING, AND AGROFORESTRY

Q5.1	Response	Freq.	Percent
1. Do you have adequate access to land for growing and/or harvesting crops?	No	13	8.78
	Yes	135	91.22
	Total	148	100.00
2. Do you feel:	It is enough	106	71.14
	Not enough	43	28.86
	Total	149	100.00
3. Do you want more land?	No	58	38.93
	Yes	91	61.07
	Total	149	100.00
4. Is the land you have for growing and harvesting crops shared? (Including family members)?	No	53	36.05
	Yes	94	63.95
	Total	147	100.00

For the following questions:

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.1), you may skip the other questions in that row.

Q5.2.1 (1-28) Do you grow and/or harvest this food?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	23	15.44
	Yes	126	84.56
	Total	149	100.00
2. Land/soft taro	No	28	19.18
	Yes	118	80.82
	Total	146	100.00
3. Breadfruit	No	14	9.46
	Yes	134	90.54
	Total	148	100.00
4. Banana	No	9	6.04
	Yes	140	93.96
	Total	149	100.00
5. Coconut	No	15	10.14
	Yes	133	89.86
	Total	148	100.00
6. Copra (coconut product)	No	20	14.39
	Yes	119	85.61
	Total	139	100.00
7. Yam	No	83	58.87
	Yes	58	41.13
	Total	141	100.00
8. Mango	No	41	28.87
	Yes	101	71.13
	Total	142	100.00
9. Pineapple	No	60	41.96
	Yes	83	58.04
	Total	143	100.00
10. Limes/lemons	No	24	16.33
	Yes	123	83.67
	Total	147	100.00
11. Sweet Potatoes	No	81	59.56
	Yes	55	40.44
	Total	136	100.00
12. Tapioca	No	62	43.36
	Yes	81	56.64
	Total	143	100.00
13. Papaya	No	49	34.75
	Yes	92	65.25
	Total	141	100.00
14. Locally grown/ collected fresh vegetables	No	72	56.69
	Yes	55	43.31
	Total	127	100.00
15. Locally grown/ collected fruits	No	55	65.48
	Yes	29	34.52
	Total	84	100.00
16. Soursop	No	77	57.89
	Yes	56	42.11
	Total	133	100.00
17. Black Pepper	No	120	93.75
	Yes	8	6.25
	Total	128	100.00
18. Hot peppers	No	57	40.43
	Yes	84	59.57
	Total	141	100.00
19. Sakau (Kava)	No	90	68.18
	Yes	42	31.82
	Total	132	100.00
20. Sugar cane	No	82	59.85
	Yes	55	40.15
	Total	137	100.00
21. Betel Leaf	No	98	74.24
	Yes	34	25.76
	Total	132	100.00
22. Durian (football plant)	No	121	94.53
	Yes	7	5.47
	Total	128	100.00
23. Cacao	No	124	96.88
	Yes	4	3.13
	Total	128	100.00
24. Chestnut	No	115	89.15
	Yes	14	10.85
	Total	129	100.00
25. Betelnut	No	34	24.64
	Yes	104	75.36
	Total	138	100.00
26. Tangerine/ Orange	No	47	33.10
	Yes	95	66.90
	Total	142	100.00
27. Medicinal crops (example: Noni)	No	54	39.71
	Yes	82	60.29
	Total	136	100.00
28. If others, list them here:	No	7	50.00
	Yes	7	50.00
	Total	14	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.2), you may skip the other questions in that row.

Q5.2.2 (1-28) How often do you harvest from the garden, agroforest, and/or patch?

1. Swamp taro or hard taro

Particulars	Freq.	Percent
Several times a week	13	10.40
Once a week	23	18.40
Every other week	21	16.80
Once a month	64	51.20
Never	4	3.20
Total	125	100.00

2. Land taro or soft taro

Particulars	Freq.	Percent
Several times a week	14	11.86
Once a week	19	16.10
Every other week	25	21.19
Once a month	58	49.15
Never	2	1.69
Total	118	100.00

3. Breadfruit

Particulars	Freq.	Percent
Several times a week	21	16.03
Once a week	45	34.35
Every other week	22	16.79
Once a month	41	31.30
Never	2	1.53
Total	131	100.00

4. Banana

Particulars	Freq.	Percent
Several times a week	38	27.74
Once a week	45	32.85
Every other week	23	16.79
Once a month	30	21.90
Never	1	0.73
Total	137	100.00

5. Coconut

Particulars	Freq.	Percent
Several times a week	29	22.48
Once a week	40	31.01
Every other week	21	16.28
Once a month	35	27.13
Never	4	3.10
Total	129	100.00

6. Copra

Particulars	Freq.	Percent
Several times a week	25	21.93
Once a week	37	32.46
Every other week	21	18.42
Once a month	28	24.56
Never	3	2.63
Total	114	100.00

7. Yam

Particulars	Freq.	Percent
Several times a week	2	3.39
Once a week	8	13.56
Every other week	7	11.86
Once a month	29	49.15
Never	13	22.03
Total	59	100.00

8. Mango

Particulars	Freq.	Percent
Several times a week	6	6.32
Once a week	12	12.63
Every other week	6	6.32
Once a month	53	55.79
Never	18	18.95
Total	95	100.00

9. Pineapple

Particulars	Freq.	Percent
Several times a week	2	2.41
Once a week	11	13.25
Every other week	10	12.05
Once a month	46	55.42
Never	14	16.87
Total	83	100.00

10. Limes/lemon

Particulars	Freq.	Percent
Several times a week	34	28.33
Once a week	35	29.17
Every other week	19	15.83
Once a month	23	19.17
Never	9	7.50
Total	120	100.00

11. Sweet Potatoes

Particulars	Freq.	Percent
Several times a week	2	3.64
Once a week	9	16.36
Every other week	4	7.27
Once a month	26	47.27
Never	14	25.45
Total	55	100.00

12. Tapioca

Particulars	Freq.	Percent
Several times a week	5	6.17
Once a week	11	13.58
Every other week	13	16.05
Once a month	43	53.09
Never	9	11.11
Total	81	100.00

13. Papaya

Particulars	Freq.	Percent
Several times a week	9	10.23
Once a week	13	14.77
Every other week	20	22.73
Once a month	38	43.18
Never	8	9.09
Total	88	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Several times a week	17	30.91
Once a week	11	20.00
Every other week	9	16.36
Once a month	13	23.64
Never	5	9.09
Total	55	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Several times a week	2	6.06
Once a week	7	21.21
Every other week	4	12.12
Once a month	16	48.48
Never	4	12.12
Total	33	100.00

16. Soursop

Particulars	Freq.	Percent
Several times a week	2	3.57
Once a week	2	3.57
Every other week	1	1.79
Once a month	39	69.64
Never	12	21.43
Total	56	100.00

17. Black pepper

Particulars	Freq.	Percent
Several times a week	2	18.18
Once a week	2	18.18
Every other week	0	0
Once a month	4	36.36
Never	3	27.27
Total	11	100.00

18. Hot pepper

Particulars	Freq.	Percent
Several times a week	29	37.18
Once a week	18	23.08
Every other week	12	15.38
Once a month	13	16.67
Never	6	7.69
Total	78	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Several times a week	1	2.27
Once a week	3	6.82
Every other week	0	0
Once a month	18	40.91
Never	22	50.00
Total	44	100.00

20. Sugar cane

Particulars	Freq.	Percent
Several times a week	3	5.45
Once a week	4	7.27
Every other week	3	5.45
Once a month	37	67.27
Never	8	14.55
Total	55	100.00

21. Betel leaf

Particulars	Freq.	Percent
Several times a week	6	16.67
Once a week	6	16.67
Every other week	5	13.89
Once a month	11	30.56
Never	8	22.22
Total	36	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Several times a week	2	20.00
Once a week	1	10.00
Every other week	1	10.00
Once a month	1	10.00
Never	5	50.00
Total	10	100.00

23. Cacao

Particulars	Freq.	Percent
Several times a week	0	0
Once a week	1	12.50
Every other week	0	0
Once a month	2	25.00
Never	5	62.50
Total	8	100.00

24. Chestnut

Particulars	Freq.	Percent
Several times a week	1	6.25
Once a week	1	6.25
Every other week	0	0
Once a month	6	37.50
Never	8	50.00
Total	16	100.00

25. Betelnut

Particulars	Freq.	Percent
Several times a week	11	11.34
Once a week	7	7.22
Every other week	14	14.43
Once a month	47	48.45
Never	18	18.56
Total	97	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Several times a week	11	11.83
Once a week	17	18.28
Every other week	18	19.35
Once a month	40	43.01
Never	7	7.53
Total	93	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Several times a week	11	14.10
Once a week	8	10.26
Every other week	9	11.54
Once a month	42	53.85
Never	8	10.26
Total	78	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Several times a week	1	14.29
Once a week	4	57.14
Every other week	0	0
Once a month	1	14.29
Never	1	14.29
Total	7	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.3), you may skip the other questions in that row.

Q5.2.3 (1-28) Over the course of a year, how much do you harvest for each crop?

1. Swamp taro or hard taro

Particulars	Frequency	Percent
Crop not ready for harvest	4	3.20
Small quantity (<50 lbs)	40	32.00
Medium quantity (50-100 lbs)	47	37.60
Large quantity (>100 lbs)	34	27.20
Total	125	100.00

2. Land taro or soft taro

Particulars	Frequency	Percent
Crop not ready for harvest	2	1.68
Small quantity (<50 lbs)	41	34.45
Medium quantity (50-100 lbs)	47	39.50
Large quantity (>100 lbs)	29	24.37
Total	119	100.00

3. Breadfruit

Particulars	Freq.	Percent
Crop not ready for harvest	2	1.53
Small quantity (<50 lbs)	35	26.72
Medium quantity (50-100 lbs)	52	39.69
Large quantity (>100 lbs)	42	32.06
Total	131	100.00

4. Banana

Particulars	Freq.	Percent
Crop not ready for harvest	2	1.46
Small quantity (<50 lbs)	44	32.12
Medium quantity (50-100 lbs)	44	32.12
Large quantity (>100 lbs)	47	34.31
Total	137	100.00

5. Coconut

Particulars	Freq.	Percent
Crop not ready for harvest	5	3.85
Small quantity (<50 lbs)	37	28.46
Medium quantity (50-100 lbs)	49	37.69
Large quantity (>100 lbs)	39	30.00
Total	130	100.00

6. Copra

Particulars	Freq.	Percent
Crop not ready for harvest	4	3.57
Small quantity (<50 lbs)	25	22.32
Medium quantity (50-100 lbs)	44	39.29
Large quantity (>100 lbs)	39	34.82
Total	112	100.00

7. Yam

Particulars	Freq.	Percent
Crop not ready for harvest	12	20.34
Small quantity (<50 lbs)	33	55.93
Medium quantity (50-100 lbs)	11	18.64
Large quantity (>100 lbs)	3	5.08
Total	59	100.00

8. Mango

Particulars	Freq.	Percent
Crop not ready for harvest	15	15.63
Small quantity (<50 lbs)	40	41.67
Medium quantity (50-100 lbs)	28	29.17
Large quantity (>100 lbs)	13	13.54
Total	96	100.00

9. Pineapple

Particulars	Freq.	Percent
Crop not ready for harvest	11	13.25
Small quantity (<50 lbs)	45	54.22
Medium quantity (50-100 lbs)	23	27.71
Large quantity (>100 lbs)	4	4.82
Total	83	100.00

10. Limes/lemons

Particulars	Freq.	Percent
Crop not ready for harvest	8	7.08
Small quantity (<50 lbs)	52	46.02
Medium quantity (50-100 lbs)	45	39.82
Large quantity (>100 lbs)	8	7.08
Total	113	100.00

11. Sweet potatoes

Particulars	Freq.	Percent
Crop not ready for harvest	15	26.32
Small quantity (<50 lbs)	30	52.63
Medium quantity (50-100 lbs)	8	14.04
Large quantity (>100 lbs)	4	7.02
Total	57	100.00

12. Tapioca

Particulars	Freq.	Percent
Crop not ready for harvest	9	11.25
Small quantity (<50 lbs)	38	47.50
Medium quantity (50-100 lbs)	25	31.25
Large quantity (>100 lbs)	8	10.00
Total	80	100.00

13. Papaya

Particulars	Freq.	Percent
Crop not ready for harvest	6	7.06
Small quantity (<50 lbs)	42	49.41
Medium quantity (50-100 lbs)	25	29.41
Large quantity (>100 lbs)	12	14.12
Total	85	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Crop not ready for harvest	9	16.36
Small quantity (<50 lbs)	26	47.27
Medium quantity (50-100 lbs)	11	20.00
Large quantity (>100 lbs)	9	16.36
Total	55	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Crop not ready for harvest	9	25.00
Small quantity (<50 lbs)	16	44.44
Medium quantity (50-100 lbs)	8	22.22
Large quantity (>100 lbs)	3	8.33
Total	36	100.00

16. Soursop

Particulars	Freq.	Percent
Crop not ready for harvest	10	19.61
Small quantity (<50 lbs)	26	50.98
Medium quantity (50-100 lbs)	13	25.49
Large quantity (>100 lbs)	2	3.92
Total	51	100.00

17. Black Pepper

Particulars	Freq.	Percent
Crop not ready for harvest	7	46.67
Small quantity (<50 lbs)	7	46.67
Medium quantity (50-100 lbs)	1	6.67
Large quantity (>100 lbs)	0	0
Total	15	100.00

18. Hot peppers

Particulars	Freq.	Percent
Crop not ready for harvest	9	11.11
Small quantity (<50 lbs)	53	65.43
Medium quantity (50-100 lbs)	12	14.81
Large quantity (>100 lbs)	7	8.64
Total	81	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Crop not ready for harvest	18	46.15
Small quantity (<50 lbs)	13	33.33
Medium quantity (50-100 lbs)	2	5.13
Large quantity (>100 lbs)	6	15.38
Total	39	100.00

20. Sugar cane

Particulars	Freq.	Percent
Crop not ready for harvest	12	21.43
Small quantity (<50 lbs)	24	42.86
Medium quantity (50-100 lbs)	14	25.00
Large quantity (>100 lbs)	6	10.71
Total	56	100.00

21. Betel leaf

Particulars	Freq.	Percent
Crop not ready for harvest	8	24.24
Small quantity (<50 lbs)	15	45.45
Medium quantity (50-100 lbs)	6	18.18
Large quantity (>100 lbs)	4	12.12
Total	33	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Crop not ready for harvest	9	64.29
Small quantity (<50 lbs)	4	28.57
Medium quantity (50-100 lbs)	1	7.14
Large quantity (>100 lbs)	0	0
Total	14	100.00

23. Cacao

Particulars	Freq.	Percent
Crop not ready for harvest	9	69.23
Small quantity (<50 lbs)	3	23.08
Medium quantity (50-100 lbs)	1	7.69
Large quantity (>100 lbs)	0	0
Total	13	100.00

24. Chestnut

Particulars	Freq.	Percent
Crop not ready for harvest	11	55.00
Small quantity (<50 lbs)	5	25.00
Medium quantity (50-100 lbs)	3	15.00
Large quantity (>100 lbs)	1	5.00
Total	20	100.00

25. Betelnut

Particulars	Freq.	Percent
Crop not ready for harvest	13	14.29
Small quantity (<50 lbs)	31	34.07
Medium quantity (50-100 lbs)	37	40.66
Large quantity (>100 lbs)	10	10.99
Total	91	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Crop not ready for harvest	8	8.70
Small quantity (<50 lbs)	41	44.57
Medium quantity (50-100 lbs)	31	33.70
Large quantity (>100 lbs)	12	13.04
Total	92	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Crop not ready for harvest	9	11.39
Small quantity (<50 lbs)	40	50.63
Medium quantity (50-100 lbs)	25	31.65
Large quantity (>100 lbs)	5	6.33
Total	79	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Crop not ready for harvest	5	71.43
Small quantity (<50 lbs)	1	14.29
Medium quantity (50-100 lbs)	0	0
Large quantity (>100 lbs)	1	14.29
Total	7	100.00

Q5.2.4 (1-28) Over the course of one year, how many plants do you have in your field?

Variable	Obs.	Mean	Min	Max
1. Swamp taro or hard taro	123	655.187	2067.264	10
2. Land taro or soft taro	118	362.314	1843.17	7
3. Breadfruit	131	25.359	63.266	1
4. Banana	137	114.803	170.417	2
5. Coconut	129	64.752	113.553	2
6. Copra (coconut product)	110	60.827	104.096	1
7. Yam	51	20.902	33.717	1
8. Mango	98	6.673	11.738	1
9. Pineapple	81	36	500	1
10. Limes/ lemons	120	13.392	33.363	1
11. Sweet potatoes	53	24.566	33.629	1
12. Tapioca	80	51.938	92.911	1
13. Papaya	88	17.08	31.506	1
14. Locally grown/collected vegetables	51	35.902	52.125	1
15. Locally grown/collected fruits	30	11.2	16.61	2
16. Soursop	54	4.778	5.046	1
17. Black Pepper	9	15.556	14.723	4
18. Hot peppers	76	18.579	61.469	1
19. Sakau (Kava)	40	98.475	206.14	3
20. Sugar cane	52	26.865	28.207	2
21. Betel Leaf	31	24.419	89.451	1
22. Durian (football plant)	9	3.667	3.24	1
23. Cacao	4	30.5	47.191	1
24. Chestnut	11	7.273	14.346	1
25. Betelnut	99	24.596	33.146	1
26. Tangerine/ Orange	93	7.71	13.337	1
27. Medicinal crops	78	23.192	48.483	1
28. Others	3	3.333	2.517	1

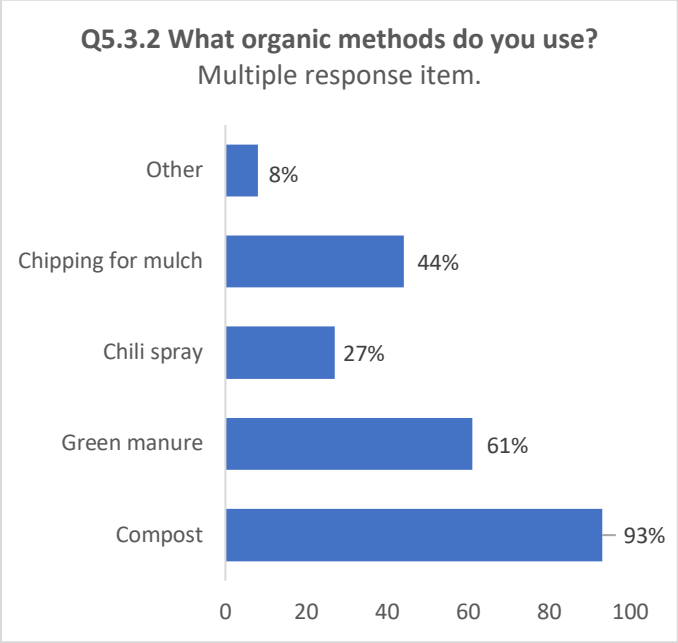
Q5.2.5 (1-28) Is there ever crop loss (0=no, 1=yes)?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	58	46.03
	Yes	68	53.97
	Total	126	100.00
2. Land/soft taro	No	53	44.54
	Yes	66	55.46
	Total	119	100.00
3. Breadfruit	No	65	48.15
	Yes	70	51.85
	Total	135	100.00
4. Banana	No	71	52.99
	Yes	63	47.01
	Total	134	100.00
5. Coconut	No	93	73.23
	Yes	34	26.77
	Total	127	100.00
6. Copra (coconut product)	No	80	72.07
	Yes	31	27.93
	Total	111	100.00

Question	Response	Freq.	Percent
7. Yam	No	57	78.08
	Yes	16	21.92
	Total	73	100.00
8. Mango	No	71	70.30
	Yes	30	29.70
	Total	101	100.00
9. Pineapple	No	59	64.13
	Yes	33	35.87
	Total	92	100.00
10. Limes/lemons	No	43	36.44
	Yes	75	63.56
	Total	118	100.00
11. Sweet Potatoes	No	55	75.34
	Yes	18	24.66
	Total	73	100.00
12. Tapioca	No	60	65.22
	Yes	32	34.78
	Total	92	100.00
13. Papaya	No	53	54.64
	Yes	44	45.36
	Total	97	100.00
14. Locally grown/collected fresh vegetables	No	32	45.71
	Yes	38	54.29
	Total	70	100.00
15. Locally grown/ collected fruits	No	40	78.43
	Yes	11	21.57
	Total	51	100.00
16. Soursop	No	52	80.00
	Yes	13	20.00
	Total	65	100.00
17. Black Pepper	No	32	84.21
	Yes	6	15.79
	Total	38	100.00
18. Hot peppers	No	43	48.31
	Yes	46	51.69
	Total	89	100.00
19. Sakau (Kava)	No	46	76.67
	Yes	14	23.33
	Total	60	100.00
20. Sugar cane	No	50	71.43
	Yes	20	28.57
	Total	70	100.00
21. Betel Leaf	No	43	81.13
	Yes	10	18.87
	Total	53	100.00
22. Durian (football plant)	No	35	97.22
	Yes	1	2.78
	Total	36	100.00
23. Cacao	No	34	94.44
	Yes	2	5.56
	Total	36	100.00

Question	Responses	Freq.	Percent
24. Chestnut	No	38	95.00
	Yes	2	5.00
	Total	40	100.00
25. Betelnut	No	60	58.82
	Yes	42	41.18
	Total	102	100.00
26. Tangerine/ Orange	No	51	51.00
	Yes	49	49.00
	Total	100	100.00
27. Medicinal crops (example: Noni)	No	61	67.78
	Yes	29	32.22
	Total	90	100.00
28. If others, list them here:	No	10	100.00
	Yes	0	0
	Total	10	100.00

Question	Responses	Freq.	Percent
Q5.3.1 Do you practice organic agriculture, by which we mean using natural plants, compost, and waste from animals and poultry as soil amendments or repelling insects and diseases	No	64	43.54
	Yes	83	56.46
	Total	147	100.00



Question	Responses	Freq.	Percent
Q5.3.3 Has your ability to grow food been affected by a change in climate?	No	31	20.95
	Yes	117	79.05
	Total	148	100.00
Q5.3.4 Has a change in climate impacted your crop yield?	No	33	22.30
	Yes	115	77.70
	Total	148	100.00

Q5.3.5 If yes, which crops are the most affected by climate?

Question	Responses	Freq.	Percent
1. Swamp taro	No	30	35.71
	Yes	54	64.29
	Total	84	100.00
2. Land taro	No	33	40.74
	Yes	48	59.26
	Total	81	100.00
3. Breadfruit	No	35	40.70
	Yes	51	59.30
	Total	86	100.00
4. Betelnut	No	45	57.69
	Yes	33	42.31
	Total	78	100.00
5. Banana	No	32	39.51
	Yes	49	60.49
	Total	81	100.00
6. Coconut	No	49	70.00
	Yes	21	30.00
	Total	70	100.00
7. Copra (coconut product)	No	52	75.36
	Yes	17	24.64
	Total	69	100.00
8. Yam	No	51	80.95
	Yes	12	19.05
	Total	63	100.00
9. Sweet potatoes	No	43	69.35
	Yes	19	30.65
	Total	62	100.00
10. Tapioca	No	47	75.81
	Yes	15	24.19
	Total	62	100.00
11. Imported vegetables	No	55	84.62
	Yes	10	15.38
	Total	65	100.00
12. Locally grown/ collected vegetables	No	41	48.81
	Yes	43	51.19
	Total	84	100.00
13. Papaya	No	43	58.11
	Yes	31	41.89
	Total	74	100.00
14. Locally grown/ collected fruits	No	52	78.79
	Yes	14	21.21
	Total	66	100.00
15. Imported fruits	No	57	93.44
	Yes	4	6.56
	Total	61	100.00
16. Citrus	No	28	32.18
	Yes	59	67.82
	Total	87	100.00
17. Black pepper (peppercorns)	No	54	88.52
	Yes	7	11.48
	Total	61	100.00
18. Hot peppers	No	32	42.11
	Yes	44	57.89
	Total	76	100.00
19. Sakau (Kava)	No	49	76.56
	Yes	15	23.44
	Total	64	100.00
20. Other (specify)	No	55	91.67
	Yes	5	8.33
	Total	60	100.00

Q5.3.6 If yes, how did climate contribute to your crop loss?

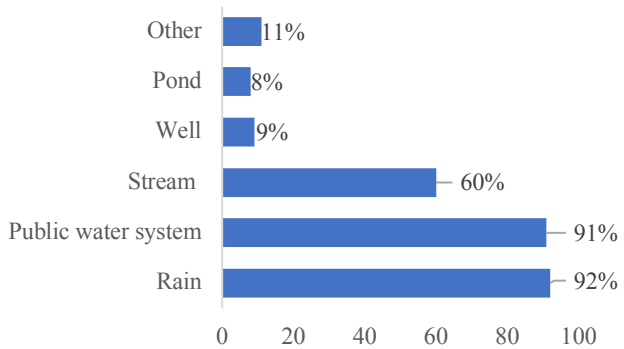
Question	Response	Freq.	Percent
1. Flooding	No	26	27.96
	Yes	67	72.04
	Total	93	100.00
2. Extreme heat	No	9	8.49
	Yes	97	91.51
	Total	106	100.00
3. Saltwater inundation (intrusion)	No	41	53.25
	Yes	36	46.75
	Total	77	100.00
4. Lack of water	No	38	49.35
	Yes	39	50.65
	Total	77	100.00
5. Cyclones/ hurricanes	No	53	88.33
	Yes	7	11.67
	Total	60	100.00
6. Heavy rains	No	16	15.69
	Yes	86	84.31
	Total	102	100.00
7. Landslides	No	49	76.56
	Yes	15	23.44
	Total	64	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	45	60.81
	Yes	29	39.19
	Total	74	100.00
9. Drought	No	45	66.18
	Yes	23	33.82
	Total	68	100.00
10. Increased threats to crops from pests and disease	No	23	24.73
	Yes	70	75.27
	Total	93	100.00
11. Invasive species	No	18	18.00
	Yes	82	82.00
	Total	100	100.00
12. Plant diseases	No	17	16.04
	Yes	89	83.96
	Total	106	100.00
13. Coastal erosion	No	46	66.67
	Yes	23	33.33
	Total	69	100.00
14. Riverbank erosion	No	44	60.27
	Yes	29	39.73
	Total	73	100.00
15. Displaced from land	No	49	79.03
	Yes	13	20.97
	Total	62	100.00
16. Other (specify)	No	59	100.00
	Yes	0	0
	Total	59	100.00

Q5.3.7 Do you have access to enough water for crop production?

Responses	Frequency	Percent
All the time	64	44.14
Some of the time	80	55.17
None of the time	1	0.69
Total	145	100.00

Q5.3.8 Where does the water for your crops come from? Multiple response item.



Q5.4 For each crop, write the answers in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.4.1), you may skip the other questions in that row.

Q5.4.1 (1-20) Do you grow this crop?

Question	Responses	Frequency	Percent
1. Swamp/ hard taro	No	24	16.55
	Yes	121	83.45
	Total	145	100.00
2. Land/ soft taro	No	27	19.01
	Yes	115	80.99
	Total	142	100.00
3. Breadfruit	No	13	9.09
	Yes	130	90.91
	Total	143	100.00
4. Betelnut	No	32	23.36
	Yes	105	76.64
	Total	137	100.00
5. Banana	No	9	6.25
	Yes	135	93.75
	Total	144	100.00
6. Coconut	No	15	10.56
	Yes	127	89.44
	Total	142	100.00
7. Copra (coconut product)	No	20	15.04
	Yes	113	84.96
	Total	133	100.00
8. Yam	No	77	59.69
	Yes	52	40.31
	Total	129	100.00
9. Sweet Potatoes	No	79	61.72
	Yes	49	38.28
	Total	128	100.00
10. Tapioca	No	57	42.54
	Yes	77	57.46
	Total	134	100.00
11. Soursop	No	73	57.94
	Yes	53	42.06
	Total	126	100.00
12. Locally grown/ collected fresh vegetables	No	70	52.63
	Yes	63	47.37
	Total	133	100.00
13. Imported fresh vegetables	No	109	91.60
	Yes	10	8.40
	Total	119	100.00
14. Locally grown/ collected fruits	No	61	49.19
	Yes	63	50.81
15. Imported fruits	No	124	100.00
	Yes	113	94.96
	Total	6	5.04

Question	Response	Freq.	Percent
16. Lime/Lemon	No	24	17.14
	Yes	116	82.86
	Total	140	100.00
17. Tangerine	No	43	30.94
	Yes	96	69.06
	Total	139	100.00
18. Black pepper (peppercorns)	No	117	92.86
	Yes	9	7.14
	Total	126	100.00
19. Hot peppers	No	51	38.06
	Yes	83	61.94
	Total	134	100.00
20. Sakau (Kava)	No	87	70.73
	Yes	36	29.27
	Total	123	100.00

Q5.4.2 (1-20) Do you experience crop loss?

Question	Response	Freq.	Percent
1. Swamp/hard taro	No	57	45.60
	Yes	68	54.40
	Total	125	100.00
2. Land/soft taro	No	53	43.80
	Yes	68	56.20
	Total	121	100.00
3. Breadfruit	No	53	41.09
	Yes	76	58.91
	Total	129	100.00
4. Betelnut	No	59	51.30
	Yes	56	48.70
	Total	115	100.00
5. Banana	No	68	52.31
	Yes	62	47.69
	Total	130	100.00
6. Coconut	No	88	72.13
	Yes	34	27.87
	Total	122	100.00
7. Copra (coconut product)	No	88	75.86
	Yes	28	24.14
	Total	116	100.00
8. Yam	No	74	79.57
	Yes	19	20.43
	Total	93	100.00
9. Sweet Potatoes	No	71	76.34
	Yes	22	23.66
	Total	93	100.00
10. Tapioca	No	66	64.08
	Yes	37	35.92
	Total	103	100.00
11. Soursop	No	72	83.72
	Yes	14	16.28
	Total	86	100.00
12. Locally grown/ collected fresh vegetables	No	48	48.98
	Yes	50	51.02
	Total	98	100.00
13. Imported fresh vegetables	No	63	92.65
	Yes	5	7.35
	Total	68	100.00
14. Locally grown/ collected fruits	No	63	67.02
	Yes	31	32.98
	Total	94	100.00
15. Imported fruits	No	65	97.01
	Yes	2	2.99
	Total	67	100.00
16. Lime/lemon	No	37	30.83
	Yes	83	69.17
	Total	120	100.00
17. Tangerine	No	59	52.21
	Yes	54	47.79
	Total	113	100.00
18. Black pepper (peppercorns)	No	63	90.00
	Yes	7	10.00
	Total	70	100.00
19. Hot peppers	No	43	41.75
	Yes	60	58.25
	Total	103	100.00
20. Sakau (Kava)	No	63	75.00
	Yes	21	25.00
	Total	84	100.00

Q5.4.3 (1-20) If you observe crop loss due to climate change, what is the cause? Indicate all that apply.

1. Swamp/hard taro

Question	Responses	Freq.	Percent
1. Flooding	No	7	12.07
	Yes	51	87.93
	Total	58	100.00
2. Extreme heat	No	14	25.45
	Yes	41	74.55
	Total	55	100.00
3. Saltwater inundation (intrusion)	No	23	50.00
	Yes	23	50.00
	Total	46	100.00
4. Lack of water	No	32	76.19
	Yes	10	23.81
	Total	42	100.00
5. Cyclones/ hurricanes	No	34	85.00
	Yes	6	15.00
	Total	40	100.00
6. Heavy rains	No	17	32.08
	Yes	36	67.92
	Total	53	100.00
7. Landslides	No	36	90.00
	Yes	4	10.00
	Total	40	100.00

Question	Resp.	Freq.	Percent
8. Unpredictability of the rainy season	No	35	85.37
	Yes	6	14.63
	Total	41	100.00
9. Drought	No	28	66.67
	Yes	14	33.33
	Total	42	100.00
10. Increased threats to crops from pests and disease	No	26	60.47
	Yes	17	39.53
	Total	43	100.00
11. Invasive species	No	26	54.17
	Yes	22	45.83
	Total	48	100.00
12. Plant diseases	No	23	48.94
	Yes	24	51.06
	Total	47	100.00
13. Coastal erosion	No	36	90.00
	Yes	4	10.00
	Total	40	100.00
14. Riverbank erosion	No	32	71.11
	Yes	13	28.89
	Total	45	100.00
15. Displaced from land	No	35	85.37
	Yes	6	14.63
	Total	41	100.00
16. Other (specify below)	No	31	88.57
	Yes	4	11.43
	Total	35	100.00

2. Land/soft taro

Question	Response	Freq.	Percent
1. Flooding	No	8	15.09
	Yes	45	84.91
	Total	53	100.00
2. Extreme heat	No	12	22.22
	Yes	42	77.78
	Total	54	100.00
3. Saltwater inundation (intrusion)	No	21	51.22
	Yes	20	48.78
	Total	41	100.00
4. Lack of water	No	30	78.95
	Yes	8	21.05
	Total	38	100.00
5. Cyclones/ hurricanes	No	30	90.91
	Yes	3	9.09
	Total	33	100.00
6. Heavy rains	No	19	35.85
	Yes	34	64.15
	Total	53	100.00
7. Landslides	No	31	86.11
	Yes	5	13.89
	Total	36	100.00
8. Difficulty predicting when the rainy season will come	No	30	83.33
	Yes	6	16.67
	Total	36	100.00
9. Drought	No	26	70.27
	Yes	11	29.73
	Total	37	100.00
10. Increased threats to crops from pests/disease	No	25	60.98
	Yes	16	39.02
	Total	41	100.00
11. Invasive species	No	26	54.17
	Yes	22	45.83
	Total	48	100.00
12. Plant diseases	No	21	45.65
	Yes	25	54.35
	Total	46	100.00
13. Coastal erosion	No	32	94.12
	Yes	2	5.88
	Total	34	100.00
14. Riverbank erosion	No	30	69.77
	Yes	13	30.23
	Total	43	100.00
15. Displaced from land	No	32	88.89
	Yes	4	11.11
	Total	36	100.00
16. Other (specify below)	No	29	85.29
	Yes	5	14.71
	Total	34	100.00

3. Breadfruit

Question	Responses	Freq.	Percent
1. Flooding	No	28	54.90
	Yes	23	45.10
	Total	51	100.00
2. Extreme heat	No	12	19.05
	Yes	51	80.95
	Total	63	100.00
3. Saltwater inundation	No	30	63.83
	Yes	17	36.17
	Total	47	100.00
4. Lack of water	No	33	75.00
	Yes	11	25.00
	Total	44	100.00
5. Cyclones/ hurricanes	No	32	80.00
	Yes	8	20.00
	Total	40	100.00
6. Heavy rains	No	22	38.60
	Yes	35	61.40
	Total	57	100.00
7. Landslides	No	36	85.71
	Yes	6	14.29
	Total	42	100.00

Question	Responses	Freq.	Percent
8. Unpredictability of the rainy season	No	35	83.33
	Yes	7	16.67
	Total	42	100.00
9. Drought	No	26	56.52
	Yes	20	43.48
	Total	46	100.00
10. Increased threats to crops from pests and disease	No	25	52.08
	Yes	23	47.92
	Total	48	100.00
11. Invasive species	No	34	70.83
	Yes	14	29.17
	Total	48	100.00
12. Plant diseases	No	26	50.98
	Yes	25	49.02
	Total	51	100.00
13. Coastal erosion	No	36	92.31
	Yes	3	7.69
	Total	39	100.00
14. Riverbank erosion	No	35	83.33
	Yes	7	16.67
	Total	42	100.00
15. Displaced from land	No	36	97.30
	Yes	1	2.70
	Total	37	100.00
16. Other (specify below)	No	36	97.30
	Yes	1	2.70
	Total	37	100.00

4. Betelnut

Question	Responses	Freq.	Percent
1. Flooding	No	22	62.86
	Yes	13	37.14
	Total	35	100.00
2. Extreme heat	No	8	15.69
	Yes	43	84.31
	Total	51	100.00
3. Saltwater inundation	No	23	79.31
	Yes	6	20.69
	Total	29	100.00
4. Lack of water	No	20	50.00
	Yes	20	50.00
	Total	40	100.00
5. Cyclones/ hurricanes	No	25	89.29
	Yes	3	10.71
	Total	28	100.00
6. Heavy rains	No	17	43.59
	Yes	22	56.41
	Total	39	100.00
7. Landslides	No	24	82.76
	Yes	5	17.24
	Total	29	100.00

Question	Responses	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	26	86.67
	Yes	4	13.33
	Total	30	100.00
9. Drought	No	18	51.43
	Yes	17	48.57
	Total	35	100.00
10. Increased threats to crops from pests and disease	No	17	50.00
	Yes	17	50.00
	Total	34	100.00
11. Invasive species	No	22	62.86
	Yes	13	37.14
	Total	35	100.00
12. Plant diseases	No	17	44.74
	Yes	21	55.26
	Total	38	100.00
13. Coastal erosion	No	23	88.46
	Yes	3	11.54
	Total	26	100.00
14. Riverbank erosion	No	24	85.71
	Yes	4	14.29
	Total	28	100.00
15. Displaced from land	No	23	92.00
	Yes	2	8.00
	Total	25	100.00
16. Other (specify below)	No	21	91.30
	Yes	2	8.70
	Total	23	100.00

5. Banana

Question	Response	Freq.	Percent
1. Flooding	No	14	31.11
	Yes	31	68.89
	Total	45	100.00
2. Extreme heat	No	5	9.43
	Yes	48	90.57
	Total	53	100.00
3. Saltwater inundation (intrusion)	No	23	58.97
	Yes	16	41.03
	Total	39	100.00
4. Lack of water	No	26	65.00
	Yes	14	35.00
	Total	40	100.00
5. Cyclones/ hurricanes	No	29	87.88
	Yes	4	12.12
	Total	33	100.00
6. Heavy rains	No	14	28.57
	Yes	35	71.43
	Total	49	100.00
7. Landslides	No	28	77.78
	Yes	8	22.22
	Total	36	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	29	80.56
	Yes	7	19.44
	Total	36	100.00
9. Drought	No	24	63.16
	Yes	14	36.84
	Total	38	100.00
10. Increased threats to crops from pests and disease	No	21	48.84
	Yes	22	51.16
	Total	43	100.00
11. Invasive species	No	28	62.22
	Yes	17	37.78
	Total	45	100.00
12. Plant diseases	No	19	43.18
	Yes	25	56.82
	Total	44	100.00
13. Coastal erosion	No	30	93.75
	Yes	2	6.25
	Total	32	100.00
14. Riverbank erosion	No	28	77.78
	Yes	8	22.22
	Total	36	100.00
15. Displaced from land	No	30	85.71
	Yes	5	14.29
	Total	35	100.00
16. Other (specify below)	No	31	100.00
	Yes	0	0
	Total	31	100.00

6. Coconut

Question	Responses	Freq.	Percent
1. Flooding	No	10	37.04
	Yes	17	62.96
	Total	27	100.00
2. Extreme heat	No	10	31.25
	Yes	22	68.75
	Total	32	100.00
3. Saltwater inundation (intrusion)	No	15	71.43
	Yes	6	28.57
	Total	21	100.00
4. Lack of water	No	16	66.67
	Yes	8	33.33
	Total	24	100.00
5. Cyclones/ hurricanes	No	18	94.74
	Yes	1	5.26
	Total	19	100.00
6. Heavy rains	No	12	42.86
	Yes	16	57.14
	Total	28	100.00
7. Landslides	No	19	90.48
	Yes	2	9.52
	Total	21	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	18	78.26
	Yes	5	21.74
	Total	23	100.00
9. Drought	No	15	65.22
	Yes	8	34.78
	Total	23	100.00
10. Increased threats to crops from pests and disease	No	16	57.14
	Yes	12	42.86
	Total	28	100.00
11. Invasive species	No	17	58.62
	Yes	12	41.38
	Total	29	100.00
12. Plant diseases	No	14	48.28
	Yes	15	51.72
	Total	29	100.00
13. Coastal erosion	No	17	80.95
	Yes	4	19.05
	Total	21	100.00
14. Riverbank erosion	No	17	73.91
	Yes	6	26.09
	Total	23	100.00
15. Displaced from land	No	19	90.48
	Yes	2	9.52
	Total	21	100.00
16. Other (specify below)	No	19	95.00
	Yes	1	5.00
	Total	20	100.00

7. Copra (coconut product)

Question	Response	Freq.	Percent
1. Flooding	No	6	35.29
	Yes	11	64.71
	Total	17	100.00
2. Extreme heat	No	4	15.38
	Yes	22	84.62
	Total	26	100.00
3. Saltwater inundation (intrusion)	No	10	71.43
	Yes	4	28.57
	Total	14	100.00
4. Lack of water	No	8	50.00
	Yes	8	50.00
	Total	16	100.00
5. Cyclones/ hurricanes	No	11	84.62
	Yes	2	15.38
	Total	13	100.00
6. Heavy rains	No	7	35.00
	Yes	13	65.00
	Total	20	100.00
7. Landslides	No	10	76.92
	Yes	3	23.08
	Total	13	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	11	73.33
	Yes	4	26.67
	Total	15	100.00
9. Drought	No	9	60.00
	Yes	6	40.00
	Total	15	100.00
10. Increased threats to crops from pests and disease	No	11	57.89
	Yes	8	42.11
	Total	19	100.00
11. Invasive species	No	11	55.00
	Yes	9	45.00
	Total	20	100.00
12. Plant diseases	No	10	50.00
	Yes	10	50.00
	Total	20	100.00
13. Coastal erosion	No	11	78.57
	Yes	3	21.43
	Total	14	100.00
14. Riverbank erosion	No	10	66.67
	Yes	5	33.33
	Total	15	100.00
15. Displaced from land	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
16. Other (specify below)	No	11	91.67
	Yes	1	8.33
	Total	12	100.00

8. Yam

Question	Response	Freq.	Percent
1. Flooding	No	4	26.67
	Yes	11	73.33
	Total	15	100.00
2. Extreme heat	No	4	23.53
	Yes	13	76.47
	Total	17	100.00
3. Saltwater inundation (intrusion)	No	10	83.33
	Yes	2	16.67
	Total	12	100.00
4. Lack of water	No	9	64.29
	Yes	5	35.71
	Total	14	100.00
5. Cyclones/ hurricanes	No	11	100.00
	Yes	0	0
	Total	11	100.00
6. Heavy rains	No	5	33.33
	Yes	10	66.67
	Total	15	100.00
7. Landslides	No	7	46.67
	Yes	8	53.33
	Total	15	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	10	76.92
	Yes	3	23.08
	Total	13	100.00
9. Drought	No	7	58.33
	Yes	5	41.67
	Total	12	100.00
10. Increased threats to crops from pests and disease	No	8	57.14
	Yes	6	42.86
	Total	14	100.00
11. Invasive species	No	9	60.00
	Yes	6	40.00
	Total	15	100.00
12. Plant diseases	No	8	47.06
	Yes	9	52.94
	Total	17	100.00
13. Coastal erosion	No	11	100.00
	Yes	0	0
	Total	11	100.00
14. Riverbank erosion	No	10	76.92
	Yes	3	23.08
	Total	13	100.00
15. Displaced from land	No	10	76.92
	Yes	3	23.08
	Total	13	100.00
16. Other (specify below)	No	11	100.00
	Yes	0	0
	Total	11	100.00

9. Sweet potatoes

Question	Response	Freq.	Percent
1. Flooding	No	7	38.89
	Yes	11	61.11
	Total	18	100.00
2. Extreme heat	No	4	23.53
	Yes	13	76.47
	Total	17	100.00
3. Saltwater inundation (intrusion)	No	11	64.71
	Yes	6	35.29
	Total	17	100.00
4. Lack of water	No	12	70.59
	Yes	5	29.41
	Total	17	100.00
5. Cyclones/ hurricanes	No	14	100.00
	Yes	0	0
	Total	14	100.00
6. Heavy rains	No	7	41.18
	Yes	10	58.82
	Total	17	100.00
7. Landslides	No	13	86.67
	Yes	2	13.33
	Total	15	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	13	92.86
	Yes	1	7.14
	Total	14	100.00
9. Drought	No	12	80.00
	Yes	3	20.00
	Total	15	100.00
10. Increased threats to crops from pests and disease	No	10	62.50
	Yes	6	37.50
	Total	16	100.00
11. Invasive species	No	11	64.71
	Yes	6	35.29
	Total	17	100.00
12. Plant diseases	No	8	47.06
	Yes	9	52.94
	Total	17	100.00
13. Coastal erosion	No	14	100.00
	Yes	0	0
	Total	14	100.00
14. Riverbank erosion	No	14	93.33
	Yes	1	6.67
	Total	15	100.00
15. Displaced from land	No	13	92.86
	Yes	1	7.14
	Total	14	100.00
16. Other (specify below)	No	13	100.00
	Yes	0	0
	Total	13	100.00

10. Tapioca

Question	Response	Freq.	Percent
1. Flooding	No	15	51.72
	Yes	14	48.28
	Total	29	100.00
2. Extreme heat	No	7	21.88
	Yes	25	78.13
	Total	32	100.00
3. Saltwater inundation (intrusion)	No	20	86.96
	Yes	3	13.04
	Total	23	100.00
4. Lack of water	No	19	73.08
	Yes	7	26.92
	Total	26	100.00
5. Cyclones/ hurricanes	No	21	91.30
	Yes	2	8.70
	Total	23	100.00
6. Heavy rains	No	12	40.00
	Yes	18	60.00
	Total	30	100.00
7. Landslides	No	17	65.38
	Yes	9	34.62
	Total	26	100.00
8. Difficulty predicting when the rainy season will come	No	20	80.00
	Yes	5	20.00
	Total	25	100.00
9. Drought	No	16	66.67
	Yes	8	33.33
	Total	24	100.00
10. Increased threats to crops from pests and disease	No	16	66.67
	Yes	8	33.33
	Total	24	100.00
11. Invasive species	No	18	62.07
	Yes	11	37.93
	Total	29	100.00
12. Plant diseases	No	15	53.57
	Yes	13	46.43
	Total	28	100.00
13. Coastal erosion	No	22	95.65
	Yes	1	4.35
	Total	23	100.00
14. Riverbank erosion	No	20	76.92
	Yes	6	23.08
	Total	26	100.00
15. Displaced from land	No	20	86.96
	Yes	3	13.04
	Total	23	100.00
16. Other (specify below)	No	18	81.82
	Yes	4	18.18
	Total	22	100.00

11. Soursop

Question	Responses	Freq.	Percent
1. Flooding	No	5	38.46
	Yes	8	61.54
	Total	13	100.00
2. Extreme heat	No	4	26.67
	Yes	11	73.33
	Total	15	100.00
3. Saltwater inundation (intrusion)	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
4. Lack of water	No	8	57.14
	Yes	6	42.86
	Total	14	100.00
5. Cyclones/ hurricanes	No	8	88.89
	Yes	1	11.11
	Total	9	100.00
6. Heavy rains	No	6	42.86
	Yes	8	57.14
	Total	14	100.00
7. Landslides	No	7	70.00
	Yes	3	30.00
	Total	10	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	8	66.67
	Yes	4	33.33
	Total	12	100.00
9. Drought	No	8	88.89
	Yes	1	11.11
	Total	9	100.00
10. Increased threats to crops from pests and disease	No	6	46.15
	Yes	7	53.85
	Total	13	100.00
11. Invasive species	No	8	61.54
	Yes	5	38.46
	Total	13	100.00
12. Plant diseases	No	5	38.46
	Yes	8	61.54
	Total	13	100.00
13. Coastal erosion	No	8	100.00
	Yes	0	0
	Total	8	100.00
14. Riverbank erosion	No	7	63.64
	Yes	4	36.36
	Total	11	100.00
15. Displaced from land	No	8	80.00
	Yes	2	20.00
	Total	10	100.00
16. Other (specify below)	No	8	100.00
	Yes	0	0
	Total	8	100.00

12. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	14	45.16
	Yes	17	54.84
	Total	31	100.00
2. Extreme heat	No	5	11.36
	Yes	39	88.64
	Total	44	100.00
3. Saltwater inundation (intrusion)	No	19	67.86
	Yes	9	32.14
	Total	28	100.00
4. Lack of water	No	16	59.26
	Yes	11	40.74
	Total	27	100.00
5. Cyclones/ hurricanes	No	19	79.17
	Yes	5	20.83
	Total	24	100.00
6. Heavy rains	No	10	27.03
	Yes	27	72.97
	Total	37	100.00
7. Landslides	No	23	95.83
	Yes	1	4.17
	Total	24	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	21	84.00
	Yes	4	16.00
	Total	25	100.00
9. Drought	No	18	72.00
	Yes	7	28.00
	Total	25	100.00
10. Increased threats to crops from pests and disease	No	12	31.58
	Yes	26	68.42
	Total	38	100.00
11. Invasive species	No	13	36.11
	Yes	23	63.89
	Total	36	100.00
12. Plant diseases	No	7	17.50
	Yes	33	82.50
	Total	40	100.00
13. Coastal erosion	No	22	91.67
	Yes	2	8.33
	Total	24	100.00
14. Riverbank erosion	No	23	92.00
	Yes	2	8.00
	Total	25	100.00
15. Displaced from land	No	23	100.00
	Yes	0	0
	Total	23	100.00
16. Other (specify below)	No	23	100.00
	Yes	0	0
	Total	23	100.00

13. Imported vegetables

Question	Response	Freq.	Percent
1. Flooding	No	3	50.00
	Yes	3	50.00
	Total	6	100.00
2. Extreme heat	No	4	40.00
	Yes	6	60.00
	Total	10	100.00
3. Saltwater inundation (intrusion)	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
4. Lack of water	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
5. Cyclones/ hurricanes	No	4	100.00
	Yes	0	0
	Total	4	100.00
6. Heavy rains	No	4	44.44
	Yes	5	55.56
	Total	9	100.00
7. Landslides	No	4	80.00
	Yes	1	20.00
	Total	5	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
9. Drought	No	4	100.00
	Yes	0	0
	Total	4	100.00
10. Increased threats to crops from pests and disease	No	4	44.44
	Yes	5	55.56
	Total	9	100.00
11. Invasive species	No	4	40.00
	Yes	6	60.00
	Total	10	100.00
12. Plant diseases	No	4	40.00
	Yes	6	60.00
	Total	10	100.00
13. Coastal erosion	No	4	100.00
	Yes	0	0
	Total	4	100.00
14. Riverbank erosion	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
15. Displaced from land	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
16. Other (specify below)	No	4	80.00
	Yes	1	20.00
	Total	5	100.00

14. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	17	62.96
	Yes	10	37.04
	Total	27	100.00
2. Extreme heat	No	7	23.33
	Yes	23	76.67
	Total	30	100.00
3. Saltwater inundation (intrusion)	No	19	76.00
	Yes	6	24.00
	Total	25	100.00
4. Lack of water	No	19	76.00
	Yes	6	24.00
	Total	25	100.00
5. Cyclones/ hurricanes	No	20	90.91
	Yes	2	9.09
	Total	22	100.00
6. Heavy rains	No	13	46.43
	Yes	15	53.57
	Total	28	100.00
7. Landslides	No	17	62.96
	Yes	10	37.04
	Total	27	100.00
8. Difficulty predicting when the rainy season will come	No	20	90.91
	Yes	2	9.09
	Total	22	100.00
9. Drought	No	21	87.50
	Yes	3	12.50
	Total	24	100.00
10. Increased threats to crops from pests and disease	No	19	82.61
	Yes	4	17.39
	Total	23	100.00
11. Invasive species	No	13	43.33
	Yes	17	56.67
	Total	30	100.00
12. Plant diseases	No	13	44.83
	Yes	16	55.17
	Total	29	100.00
13. Coastal erosion	No	9	29.03
	Yes	22	70.97
	Total	31	100.00
14. Riverbank erosion	No	22	95.65
	Yes	1	4.35
	Total	23	100.00
15. Displaced from land	No	22	91.67
	Yes	2	8.33
	Total	24	100.00
16. Other (specify below)	No	22	100.00
	Yes	0	0
	Total	22	100.00

15. Imported fruits

Question	Response	Freq.	Percent
1. Flooding	No	5	83.33
	Yes	1	16.67
	Total	6	100.00
2. Extreme heat	No	4	57.14
	Yes	3	42.86
	Total	7	100.00
3. Saltwater inundation (intrusion)	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
4. Lack of water	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
5. Cyclones/ hurricanes	No	4	100.00
	Yes	0	0
	Total	4	100.00
6. Heavy rains	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
7. Landslides	No	4	80.00
	Yes	1	20.00
	Total	5	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
9.Drought	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
10.Increased threats to crops from pests and disease	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
11.Invasive species	No	4	57.14
	Yes	3	42.86
	Total	7	100.00
12. Plant diseases	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
13. Coastal erosion	No	4	100.00
	Yes	0	0
	Total	4	100.00
14. Riverbank erosion	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
15. Displaced from land	No	4	80.00
	Yes	1	20.00
	Total	5	100.00
16. Other (specify below)	No	5	100.00
	Yes	0	0
	Total	5	100.00

16. Lime/lemon

Question	Response	Freq.	Percent
1. Flooding	No	31	64.58
	Yes	17	35.42
	Total	48	100.00
2. Extreme heat	No	19	33.93
	Yes	37	66.07
	Total	56	100.00
3. Saltwater inundation (intrusion)	No	33	70.21
	Yes	14	29.79
	Total	47	100.00
4. Lack of water	No	36	83.72
	Yes	7	16.28
	Total	43	100.00
5. Cyclones/ hurricanes	No	36	90.00
	Yes	4	10.00
	Total	40	100.00
6. Heavy rains	No	26	54.17
	Yes	22	45.83
	Total	48	100.00
7. Landslides	No	37	86.05
	Yes	6	13.95
	Total	43	100.00
8. Difficulty predicting when the rainy season will come	No	38	86.36
	Yes	6	13.64
	Total	44	100.00
9. Drought	No	30	68.18
	Yes	14	31.82
	Total	44	100.00
10. Increased threats to crops from pests and disease	No	17	24.64
	Yes	52	75.36
	Total	69	100.00
11. Invasive species	No	24	35.82
	Yes	43	64.18
	Total	67	100.00
12. Plant diseases	No	10	13.89
	Yes	62	86.11
	Total	72	100.00
13. Coastal erosion	No	38	95.00
	Yes	2	5.00
	Total	40	100.00
14. Riverbank erosion	No	36	81.82
	Yes	8	18.18
	Total	44	100.00
15. Displaced from land	No	36	90.00
	Yes	4	10.00
	Total	40	100.00
16. Other (specify below)	No	38	97.44
	Yes	1	2.56
	Total	39	100.00

17. Tangerine

Question	Response	Freq.	Percent
1. Flooding	No	25	69.44
	Yes	11	30.56
	Total	36	100.00
2. Extreme heat	No	14	35.90
	Yes	25	64.10
	Total	39	100.00
3. Saltwater inundation (intrusion)	No	25	78.13
	Yes	7	21.88
	Total	32	100.00
4. Lack of water	No	27	84.38
	Yes	5	15.63
	Total	32	100.00
5. Cyclones/ hurricanes	No	28	96.55
	Yes	1	3.45
	Total	29	100.00
6. Heavy rains	No	20	52.63
	Yes	18	47.37
	Total	38	100.00
7. Landslides	No	27	84.38
	Yes	5	15.63
	Total	32	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	28	84.85
	Yes	5	15.15
	Total	33	100.00
9.Drought	No	23	71.88
	Yes	9	28.13
	Total	32	100.00
10.Increased threats to crops from pests and disease	No	15	34.09
	Yes	29	65.91
	Total	44	100.00
11.Invasive species	No	20	48.78
	Yes	21	51.22
	Total	41	100.00
12. Plant diseases	No	7	15.56
	Yes	38	84.44
	Total	45	100.00
13. Coastal erosion	No	29	93.55
	Yes	2	6.45
	Total	31	100.00
14. Riverbank erosion	No	28	84.85
	Yes	5	15.15
	Total	33	100.00
15. Displaced from land	No	29	93.55
	Yes	2	6.45
	Total	31	100.00
16. Other (specify below)	No	29	96.67
	Yes	1	3.33
	Total	30	100.00

18. Black pepper (peppercorns)

Question	Response	Freq.	Percent
1. Flooding	No	5	55.56
	Yes	4	44.44
	Total	9	100.00
2. Extreme heat	No	4	33.33
	Yes	8	66.67
	Total	12	100.00
3. Saltwater inundation (intrusion)	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
4. Lack of water	No	6	66.67
	Yes	3	33.33
	Total	9	100.00
5. Cyclones/ hurricanes	No	7	100.00
	Yes	0	0
	Total	7	100.00
6. Heavy rains	No	6	54.55
	Yes	5	45.45
	Total	11	100.00
7. Landslides	No	7	100.00
	Yes	0	0
	Total	7	100.00
8. Difficulty predicting when the rainy season will come	No	7	100.00
	Yes	0	0
	Total	7	100.00
9. Drought	No	5	71.43
	Yes	2	28.57
	Total	7	100.00
10. Increased threats to crops from pests and disease	No	6	54.55
	Yes	5	45.45
	Total	11	100.00
11. Invasive species	No	5	45.45
	Yes	6	54.55
	Total	11	100.00
12. Plant diseases	No	5	41.67
	Yes	7	58.33
	Total	12	100.00
13. Coastal erosion	No	7	100.00
	Yes	0	0
	Total	7	100.00
14. Riverbank erosion	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
15. Displaced from land	No	7	100.00
	Yes	0	0
	Total	7	100.00
16. Other (specify below)	No	8	88.89
	Yes	1	11.11
	Total	9	100.00

19. Hot peppers

Question	Response	Freq.	Percent
1. Flooding	No	20	55.56
	Yes	16	44.44
	Total	36	100.00
2. Extreme heat	No	7	12.50
	Yes	49	87.50
	Total	56	100.00
3. Saltwater inundation (intrusion)	No	26	81.25
	Yes	6	18.75
	Total	32	100.00
4. Lack of water	No	26	68.42
	Yes	12	31.58
	Total	38	100.00
5. Cyclones/ hurricanes	No	26	89.66
	Yes	3	10.34
	Total	29	100.00
6. Heavy rains	No	17	42.50
	Yes	23	57.50
	Total	40	100.00
7. Landslides	No	28	90.32
	Yes	3	9.68
	Total	31	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	28	87.50
	Yes	4	12.50
	Total	32	100.00
9.Drought	No	22	61.11
	Yes	14	38.89
	Total	36	100.00
10.Increased threats to crops from pests and disease	No	15	32.61
	Yes	31	67.39
	Total	46	100.00
11.Invasive species	No	15	29.41
	Yes	36	70.59
	Total	51	100.00
12. Plant diseases	No	10	21.28
	Yes	37	78.72
	Total	47	100.00
13. Coastal erosion	No	28	100.00
	Yes	0	0
	Total	28	100.00
14. Riverbank erosion	No	28	90.32
	Yes	3	9.68
	Total	31	100.00
15. Displaced from land	No	28	93.33
	Yes	2	6.67
	Total	30	100.00
16. Other (specify below)	No	26	96.30
	Yes	1	3.70
	Total	27	100.00

20. Sakau (Kava)

Question	Response	Freq.	Percent
1. Flooding	No	14	77.78
	Yes	4	22.22
	Total	18	100.00
2. Extreme heat	No	8	40.00
	Yes	12	60.00
	Total	20	100.00
3. Saltwater inundation (intrusion)	No	16	94.12
	Yes	1	5.88
	Total	17	100.00
4. Lack of water	No	13	76.47
	Yes	4	23.53
	Total	17	100.00
5. Cyclones/ hurricanes	No	16	100.00
	Yes	0	0
	Total	16	100.00
6. Heavy rains	No	15	75.00
	Yes	5	25.00
	Total	20	100.00
7. Landslides	No	16	94.12
	Yes	1	5.88
	Total	17	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	16	88.89
	Yes	2	11.11
	Total	18	100.00
9. Drought	No	14	82.35
	Yes	3	17.65
	Total	17	100.00
10. Increased threats to crops from pests and disease	No	13	65.00
	Yes	7	35.00
	Total	20	100.00
11. Invasive species	No	10	45.45
	Yes	12	54.55
	Total	22	100.00
12. Plant diseases	No	8	36.36
	Yes	14	63.64
	Total	22	100.00
13. Coastal erosion	No	16	94.12
	Yes	1	5.88
	Total	17	100.00
14. Riverbank erosion	No	16	88.89
	Yes	2	11.11
	Total	18	100.00
15. Displaced from land	No	16	94.12
	Yes	1	5.88
	Total	17	100.00
16. Other (specify below)	No	16	94.12
	Yes	1	5.88
	Total	17	100.00

6. RAISING LIVESTOCK AND POULTRY

Q6	Responses	Frequency	Percent
Q6.1 Are you raising livestock and/or poultry?	No	53	35.81
	Yes	95	64.19
	Total	148	100.00
Q6.2 Do you have access to adequate land for rearing livestock and/or poultry?	No	9	8.91
	Yes	92	91.09
	Total	101	100.00
Q6.3 Do you feel it is enough?	Yes	75	75.76
	No	24	24.24
	Total	99	100.00
Q6.4 Do you want more land?	No	43	43.88
	Yes	55	56.12
	Total	98	100.00
Q6.5 Is the land you have access to shared (including family members)?	No	30	30.61
	Yes	68	69.39
	Total	98	100.00

Q6.6 What kind of animals/livestock do you raise or keep? Multiple response item.

Q6.6.1 - Q6.6.7	Responses	Freq.	Percent
1. Chickens	No	34	45.33
	Yes	41	54.67
	Total	75	100.00
2. Pigs	No	5	5.26
	Yes	90	94.74
	Total	95	100.00
3. Goats	No	51	100.00
	Yes	0	0
	Total	51	100.00
4. Dogs	No	38	57.58
	Yes	28	42.42
	Total	66	100.00
5. Deer	No	51	100.00
	Yes	0	0
	Total	51	100.00
6. Bovine	No	51	100.00
	Yes	0	0
	Total	51	100.00
7. Other	No	50	100.00
	Yes	0	0
	Total	50	100.00

Q6.7 In the last ten years, have you noticed a change in raising animals?

Responses	Freq.	Percent
No	41	44.57
Yes	12	13.04
Stayed the same	39	42.39
Total	92	100.00

Q6.8 If yes, please explain:

Q6.9	Responses	Frequency	Percent
Would you like to raise livestock/ poultry commercially?	No	18	20.69
	Yes	69	79.31
	Total	87	100.00

Q6.10 What do you feel is the main obstacle to your raising livestock/poultry production?

Particulars	Freq.	Percent
1. Land	42	20.90
2. Tools and Equipment	43	21.39
3. Feed	33	16.42
4. Capital	38	18.91
5. Knowledge	6	2.99
6. Initial material	8	3.98
7. Marketing	5	2.49
8. Veterinary doctor - absence	3	1.49
9. Time	18	8.96
10. Other	5	2.49
Total	201	100.00

7. MARINE FOOD SOURCES

Q7.1 Questions	Responses	Frequency	Percent
Q7.1.1 Do you harvest marine or freshwater fish/organisms?	No	24	16.33
	Yes	123	83.67
	Total	147	100.00
Q7.1.2 In terms of access to marine resources, do you feel:	It is enough	99	79.20
	Not enough	26	20.80
	Total	125	100.00

Q7.2. How often do you fish or collect food from this location?

Q7.2.1 Mangrove

Particulars	Frequency	Percent
Once a day	9	8.18
Several times a week	18	16.36
Once a week	11	10.00
Once a month	31	28.18
Once every three months or more	15	13.64
Never	26	23.64
Total	110	100.00

Inner Reef (lagoon)

Particulars	Frequency	Percent
Once a day	4	3.39
Several times a week	50	42.37
Once a week	18	15.25
Once a month	31	26.27
Once every three months or more	12	10.17
Never	3	2.54
Total	118	100.00

Outer reef

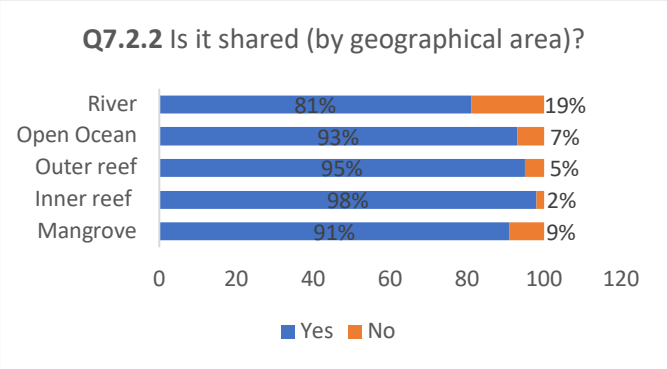
Particulars	Frequency	Percent
Once a day	3	2.65
Several times a week	52	46.02
Once a week	16	14.16
Once a month	24	21.24
Once every three months or more	6	5.31
Never	12	10.62
Total	113	100.00

Open Ocean

Particulars	Frequency	Percent
Once a day	6	5.36
Several times a week	38	33.93
Once a week	20	17.86
Once a month	13	11.61
Once every three months or more	14	12.50
Never	21	18.75
Total	112	100.00

River

Particulars	Frequency	Percent
Once a day	4	4.08
Several times a week	10	10.20
Once a week	6	6.12
Once a month	21	21.43
Once every three months or more	11	11.22
Never	46	46.94
Total	98	100.00



Q7.2.3 In the last ten years, have these food sources (aquatic species):
Q7.2.4 Mangrove

Particulars	Frequency	Percent
Increased in number	2	2.33
Decreased in number	52	60.47
Stayed the same	32	37.21
Total	86	100.00

Q7.2.5 Inner reef (lagoon)

Particulars	Frequency	Percent
Increased in number	10	8.85
Decreased in number	75	66.37
Stayed the same	28	24.78
Total	113	100.00

Q7.2.6 Outer reef

Particulars	Frequency	Percent
Increased in number	4	3.88
Decreased in number	74	71.84
Stayed the same	25	24.27
Total	103	100.00

Q7.2.7 Open Ocean

Particulars	Frequency	Percent
Increased in number	1	1.08
Decreased in number	71	76.34
Stayed the same	21	22.58
Total	93	100.00

Q7.2.8 River

Particulars	Frequency	Percent
Increased in number	1	1.79
Decreased in number	32	57.14
Stayed the same	23	41.07
Total	56	100.00

8. BARRIERS TO FOOD PRODUCTION

Q8.1	Resp.	Freq.	Percent
Would you grow/fish/harvest more food or raise more livestock if you could?	No	15	10.14
	Yes	133	89.86
	Total	148	100.00

Q8.1.2 If yes, what barriers are preventing you from doing so?

Question	Resp.	Freq.	Percent
No barrier	No	48	64.00
	Yes	27	36.00
	Total	75	100.00
Lack of production resources/tools (greenhouses, tractors, aquaculture, etc.)	No	13	12.87
	Yes	88	87.13
	Total	101	100.00
Lack of the source of finance	No	8	8.08
	Yes	91	91.92
	Total	99	100.00
No land or ocean is available	No	42	59.15
	Yes	29	40.85
	Total	71	100.00

Question	Responses	Freq.	Percent
Difficulty getting to the land or sea	No	24	27.59
	Yes	63	72.41
	Total	87	100.00
Lack of the market to sell the produce	No	44	62.86
	Yes	26	37.14
	Total	70	100.00
Lack of ways to keep my food fresh	No	34	45.95
	Yes	40	54.05
	Total	74	100.00
Lack of ways to process and dry the foods	No	29	38.16
	Yes	47	61.84
	Total	76	100.00
Lack of storage to hold and keep food for home use and/or sale (refrigeration)	No	31	42.47
	Yes	42	57.53
	Total	73	100.00
Lack of new tech & infrastructure	No	26	31.33
	Yes	57	68.67
	Total	83	100.00
Transportation to market	No	25	29.07
	Yes	61	70.93
	Total	86	100.00
Disease or pest infestation	No	41	59.42
	Yes	28	40.58
	Total	69	100.00
Permit/regulation issues	No	24	30.00
	Yes	56	70.00
	Total	80	100.00
Weather issues	No	41	58.57
	Yes	29	41.43
	Total	70	100.00
Labor	No	34	41.98
	Yes	47	58.02
	Total	81	100.00
Time	No	25	29.07
	Yes	61	70.93
	Total	86	100.00
Other	No	26	29.55
	Yes	62	70.45
	Total	88	100.00

Q8.2.1 Climate change is causing a lot of problems for my farm/fishing.

Particulars	Freq.	Percent
Strongly disagree	2	1.34
Disagree	7	4.70
Neither agree nor disagree	9	6.04
Agree	74	49.66
Strongly agree	57	38.26
Total	149	100.00

8.2.2 Climate change is making it harder for me to grow crops/fish/harvest.

Particulars	Freq.	Percent
Strongly disagree	2	1.34
Disagree	11	7.38
Neither agree nor disagree	16	10.74
Agree	71	47.65
Strongly agree	49	32.89
Total	149	100.00

Q8.2.3 Climate change is making it harder for me to raise livestock.

Particulars	Freq.	Percent
Strongly disagree	3	2.03
Disagree	19	12.84
Neither agree nor disagree	39	26.35
Agree	51	34.46
Strongly agree	36	24.32
Total	148	100.00

Q8.2.4 Climate change is causing a lot of extreme weather.

Particulars	Freq.	Percent
Strongly disagree	1	0.67
Disagree	3	2.01
Neither agree nor disagree	10	6.71
Agree	75	50.34
Strongly agree	60	40.27
Total	149	100.00

Q8.2.5 I might have to stop farming because of climate change.

Particulars	Freq.	Percent
Strongly disagree	19	12.75
Disagree	42	28.19
Neither agree nor disagree	22	14.77
Agree	30	20.13
Strongly agree	36	24.16
Total	149	100.00

Q8.2.6 Climate change has caused me to make a lot of changes on my farm.

Particulars	Freq.	Percent
Strongly disagree	1	0.67
Disagree	18	12.08
Neither agree nor disagree	25	16.78
Agree	61	40.94
Strongly agree	44	29.53
Total	149	100.00

Q8.2.7 Climate change has caused me to make a lot of changes on my farm.

Particulars	Freq.	Percent
Strongly disagree	5	3.36
Disagree	20	13.42
Neither agree nor disagree	28	18.79
Agree	54	36.24
Strongly agree	42	28.19
Total	149	100.00

Q8.3.1 Has a change in climate impacted your access to clean, fresh water?

Question	Responses	Freq.	Percent
Has a change in climate impacted your access to clean, fresh water?	No	101	70.63
	Yes	42	29.37
	Total	143	100.00

Question	Resp.	Freq.	Percent
Q8.4.1 Have you changed/adapted any farming practices (including fishing) in the past ten years?	No	42	73.68
	Yes	15	26.32
	Total	57	100.00

Question	Resp.	Freq.	Percent
Q8.4.2 Was climate change an important reason for changing crop types?	No	4	23.53
	Yes	13	76.47
	Total	17	100.00

Question	Resp.	Freq.	Percent
Q8.4.3 Have you changed/adapted any farming practices (including fishing) in the past ten years?	No	36	64.29
	Yes	20	35.71
	Total	56	100.00

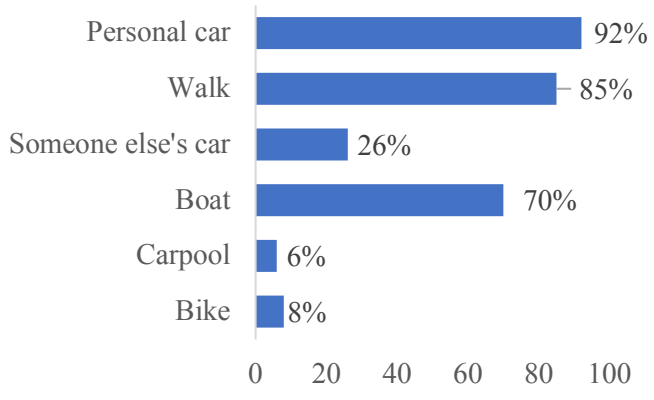
Question	Resp.	Freq.	Percent
Q8.4.4 Was climate change an important reason for changing/adapting your farming practices (including fishing)?	No	6	25.00
	Yes	18	75.00
	Total	24	100.00

9. DIET AND FOOD ACCESS, AVAILABILITY, AND AFFORDABILITY

Q9.1.1 where do you get most of your food?

Question	Responses	Freq.	Percent
Wild places such as forests, freshwater, rivers, and/or the ocean	No	7	5.04
	Yes	132	94.96
	Total	139	100.00
Cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	21	16.67
	Yes	105	83.33
	Total	126	100.00
Informal markets such as street vendors and kiosks	No	59	56.73
	Yes	45	43.27
	Total	104	100.00
Formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	30	23.81
	Yes	96	76.19
	Total	126	100.00
Supplemental food assistance such as government food rations, food from churches, schools, and community organizations.	No	71	87.65
	Yes	10	12.35
	Total	81	100.00
Relatives and extended families	No	36	32.73
	Yes	74	67.27
	Total	110	100.00
Other	No	75	96.15
	Yes	3	3.85
	Total	78	100.00

Q9.1.2 How do you usually travel to get your food?
Multiple response item.



Q9.1.3 How long does it take you to reach where you get most of the food you produce or harvest?

Particulars	Freq.	Percent
Not much time	47	31.33
5-30 minutes	52	34.67
30-45 minutes	33	22.00
More than 45 minutes	18	12.00
Total	150	100.00

Q9.1.4 How long does it take you to reach the location where you get the majority of the food that you purchase?

Particulars	Freq.	Percent
Not much time	38	25.33
5-30 minutes	51	34.00
30-45 minutes	39	26.00
More than 45 minutes	22	14.67
Total	150	100.00

Q9.1.6 What barriers (if any) prevent you from attaining healthy, nutritious food?

Question	Responses	Freq.	Percent
None	No	36	32.14
	Yes	76	67.86
	Total	112	100.00
Too far to walk, and do not have other means of transportation	No	42	67.74
	Yes	20	32.26
	Total	62	100.00
Health problems interfere with the ability to walk or harvest crops (including marine)	No	47	78.33
	Yes	13	21.67
	Total	60	100.00
Lack of assistance from relatives or extended families	No	49	84.48
	Yes	9	15.52
	Total	58	100.00
Affordability	No	36	47.37
	Yes	40	52.63
	Total	76	100.00
Availability	No	24	29.63
	Yes	57	70.37
	Total	81	100.00
Other	No	52	86.67
	Yes	8	13.33
	Total	60	100.00

Q9.2.1 (I/we) were worried that (I/we) would not have enough healthy and nutritious food to eat.

Particulars	Freq.	Percent
Never	48	32.65
Rarely (only 1 or 2 months)	45	30.61
Sometimes (some months, but not every month)	44	29.93
Often (almost every month or more)	10	6.80
Total	147	100.00

Q9.2.2 (I/we) could not afford healthy and nutritious food.

Particulars	Freq.	Percent
Never	55	37.16
Rarely (only 1 or 2 months)	46	31.08
Sometimes (some months, but not every month)	42	28.38
Often (almost every month or more)	5	3.38
Total	148	100.00

Q9.2.3 (I/we) could not afford to eat the preferred foods, and (I/we) had to eat different foods.

Particulars	Freq.	Percent
Never	39	26.53
Rarely (only 1 or 2 months)	51	34.69
Sometimes (some months, but not every month)	47	31.97
Often (almost every month or more)	10	6.80
Total	147	100.00

Q9.2.4 (I/we) skipped meals because there was not enough money for food.

Particulars	Freq.	Percent
Never	79	53.38
Rarely (only 1 or 2 months)	37	25.00
Sometimes (some months, but not every month)	28	18.92
Often (almost every month or more)	4	2.70
Total	148	100.00

Q9.2.5 (I/we) ate less than preferred because there was not enough money for food.

Particulars	Freq.	Percent
Never	64	43.24
Rarely (only 1 or 2 months)	50	33.78
Sometimes (some months, but not every month)	27	18.24
Often (almost every month or more)	7	4.73
Total	148	100.00

Q9.2.6 (I/we) were hungry because there was not enough money for food.

Particulars	Freq.	Percent
Never	92	62.16
Rarely (only 1 or 2 months)	30	20.27
Sometimes (some months, but not every month)	22	14.86
Often (almost every month or more)	4	2.70
Total	148	100.00

Q9.2.7 (I/we) went a whole day without eating.

Particulars	Freq.	Percent
Never	119	80.41
Rarely (only 1 or 2 months)	14	9.46
Sometimes (some months, but not every month)	14	9.46
Often (almost every month or more)	1	0.68
Total	148	100.00

For each food, write the answers in each column according to the numbers specified in the table header. You may skip the other questions in that row if the food is NOT consumed (9.1.1).

Q9.3 (1 – 40) Consumption Frequency

1. Rice

Particulars	Freq.	Percent
Never	1	0.68
1-4 times a week	21	14.19
5-7 times a week	24	16.22
Multiple times a day	102	68.92
Total	148	100.00

2. Taro

Particulars	Freq.	Percent
Never	4	2.68
1-4 times a week	120	80.54
5-7 times a week	16	10.74
Multiple times a day	9	6.04
Total	149	100.00

3. Breadfruit

Particulars	Freq.	Percent
Never	0	0
1-4 times a week	101	67.79
5-7 times a week	34	22.82
Multiple times a day	14	9.40
Total	149	100.00

4. Banana

Particulars	Freq.	Percent
Never	1	0.67
1-4 times a week	76	51.01
5-7 times a week	50	33.56
Multiple times a day	22	14.77
Total	149	100.00

5. Coconut

Particulars	Freq.	Percent
Never	5	3.45
1-4 times a week	111	76.55
5-7 times a week	16	11.03
Multiple times a day	13	8.97
Total	145	100.00

6. Copra

Particulars	Freq.	Percent
Never	6	4.26
1-4 times a week	104	73.76
5-7 times a week	15	10.64
Multiple times a day	16	11.35
Total	141	100.00

7. Yam

Particulars	Freq.	Percent
Never	40	29.20
1-4 times a week	90	65.69
5-7 times a week	4	2.92
Multiple times a day	3	2.19
Total	137	100.00

8. Sweet potatoes

Particulars	Freq.	Percent
Never	49	36.30
1-4 times a week	79	58.52
5-7 times a week	6	4.44
Multiple times a day	1	0.74
Total	135	100.00

9. Tapioca

Particulars	Freq.	Percent
Never	25	17.73
1-4 times a week	102	72.34
5-7 times a week	11	7.80
Multiple times a day	3	2.13
Total	141	100.00

10. Soursop

Particulars	Freq.	Percent
Never	54	40.91
1-4 times a week	75	56.82
5-7 times a week	2	1.52
Multiple times a day	1	0.76
Total	132	100.00

11. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Never	5	3.57
1-4 times a week	87	62.14
5-7 times a week	36	25.71
Multiple times a day	12	8.57
Total	140	100.00

12. Imported vegetables fresh

Particulars	Freq.	Percent
Never	30	22.39
1-4 times a wee	85	63.43
5-7 times a week	14	10.45
Multiple times a day	5	3.73
Total	134	100.00

13. Canned/processed vegetables

Particulars	Freq.	Percent
Never	32	23.88
1-4 times a week	86	64.18
5-7 times a week	13	9.70
Multiple times a day	3	2.24
Total	134	100.00

14. Local fresh fruits

Particulars	Freq.	Percent
Never	1	0.72
1-4 times a week	85	61.59
5-7 times a week	34	24.64
Multiple times a day	18	13.04
Total	138	100.00

15. Imported fresh fruits

Particulars	Freq.	Percent
Never	25	18.94
1-4 times a week	89	67.42
5-7 times a week	15	11.36
Multiple times a day	3	2.27
Total	132	100.00

16. Canned/processed fruits

Particulars	Freq.	Percent
Never	34	25.56
1-4 times a week	80	60.15
5-7 times a week	16	12.03
Multiple times a day	3	2.26
Total	133	100.00

17. Local citrus

Particulars	Freq.	Percent
Never	4	2.76
1-4 times a week	80	55.17
5-7 times a week	39	26.90
Multiple times a day	22	15.17
Total	145	100.00

18. Imported citrus

Particulars	Freq.	Percent
Never	36	26.87
1-4 times a week	78	58.21
5-7 times a week	17	12.69
Multiple times a day	3	2.24
Total	134	100.00

19. Open Ocean fish

Particulars	Freq.	Percent
Never	0	0
1-4 times a week	45	30.82
5-7 times a week	46	31.51
Multiple times a day	55	37.67
Total	146	100.00

20. Reef fish

Particulars	Freq.	Percent
Never	2	1.38
1-4 times a week	46	31.72
5-7 times a week	40	27.59
Multiple times a day	57	39.31
Total	145	100.00

21. Sea cucumbers

Particulars	Freq.	Percent
Never	94	91.26
1-4 times a week	9	8.74
5-7 times a week	0	0
Multiple times a day	0	0
Total	103	100.00

22. Clams/oysters

Particulars	Freq.	Percent
Never	70	53.44
1-4 times a week	57	43.51
5-7 times a week	1	0.76
Multiple times a day	3	2.29
Total	131	100.00

23. Crustaceans such as shrimp, lobster, mangrove crabs

Particulars	Freq.	Percent
Never	11	7.53
1-4 times a week	99	67.81
5-7 times a week	27	18.49
Multiple times a day	9	6.16
Total	146	100.00

24. Octopus and squid

Particulars	Freq.	Percent
Never	55	39.01
1-4 times a week	77	54.61
5-7 times a week	4	2.84
Multiple times a day	5	3.55
Total	141	100.00

25. Meat and meat products: fresh/local

Particulars	Freq.	Percent
Never	1	0.68
1-4 times a week	97	66.44
5-7 times a week	29	19.86
Multiple times a day	19	13.01
Total	146	100.00

26. Meat and meat products: processed

Particulars	Freq.	Percent
Never	2	1.36
1-4 times a week	68	46.26
5-7 times a week	33	22.45
Multiple times a day	44	29.93
Total	147	100.00

27. Dairy (milk, cheese, yogurt)

Particulars	Freq.	Percent
Never	16	11.43
1-4 times a week	100	71.43
5-7 times a week	16	11.43
Multiple times a day	8	5.71
Total	140	100.00

28. Eggs

Particulars	Freq.	Percent
Never	1	0.68
1-4 times a week	94	63.95
5-7 times a week	37	25.17
Multiple times a day	15	10.20
Total	147	100.00

29. Black pepper

Particulars	Freq.	Percent
Never	23	16.67
1-4 times a week	77	55.80
5-7 times a week	19	13.77
Multiple times a day	19	13.77
Total	138	100.00

30. Hot peppers

Particulars	Freq.	Percent
Never	11	7.59
1-4 times a week,	81	55.86
5-7 times a week	23	15.86
Multiple times a day	30	20.69
Total	145	100.00

31. Sodas

Particulars	Freq.	Percent
Never	7	4.79
1-4 times a week	81	55.48
5-7 times a week	34	23.29
Multiple times a day	24	16.44
Total	146	100.00

32. Candies, cakes, cookies, sugary foods

Particulars	Freq.	Percent
Never	11	7.64
1-4 times a week	90	62.50
5-7 times a week	29	20.14
Multiple times a day	14	9.72
Total	144	100.00

33. Coffee and tea

Particulars	Freq.	Percent
Never	1	0.68
1-4 times a week	44	30.14
5-7 times a week	22	15.07
Multiple times a day	79	54.11
Total	146	100.00

34. Bread, crackers, biscuits

Particulars	Freq.	Percent
Never	2	1.39
1-4 times a week	82	56.94
5-7 times a week	34	23.61
Multiple times a day	26	18.06
Total	144	100.00

35. Pasta and ramen noodles

Particulars	Freq.	Percent
Never	1	0.69
1-4 times a week	80	55.17
5-7 times a week	46	31.72
Multiple times a day	18	12.41
Total	145	100.00

36. Boxed cereal

Particulars	Freq.	Percent
Never	26	19.12
1-4 times a week	81	59.56
5-7 times a week	25	18.38
Multiple times a day	4	2.94
Total	136	100.00

37. Sakau (Kava)

Particulars	Freq.	Percent
Never	112	88.19
1-4 times a week,	15	11.81
5-7 times a week	0	0
Multiple times a day	0	0
Total	127	100.00

38. Imported juice

Particulars	Freq.	Percent
Never	33	23.57
1-4 times a week	92	65.71
5-7 times a week	10	7.14
Multiple times a day	5	3.57
Total	140	100.00

39. Imported coconut milk

Particulars	Freq.	Percent
Never	90	68.70
1-4 times a week,	37	28.24
5-7 times a week	3	2.29
Multiple times a day	1	0.76
Total	131	100.00

40. Other

Particulars	Freq.	Percent
Never	2	66.67
1-4 times a week	1	33.33
5-7 times a week	0	0
Multiple times a day	0	0
Total	3	100.00

Q9.3.2 (1-40) Is this a favorite food?

Question	Responses	Freq.	Percent
1. Rice	No	27	18.62
	Yes	118	81.38
	Total	145	100.00
2. Taro	No	42	28.77
	Yes	104	71.23
	Total	146	100.00
3. Breadfruit	No	18	12.33
	Yes	128	87.67
	Total	146	100.00
4. Banana	No	7	4.79
	Yes	139	95.21
	Total	146	100.00
5. Coconut	No	44	31.21
	Yes	97	68.79
	Total	141	100.00
6. Copra (coconut product)	No	45	32.37
	Yes	94	67.63
	Total	139	100.00
7. Yam	No	45	38.79
	Yes	71	61.21
	Total	116	100.00
8. Sweet potatoes	No	36	33.33
	Yes	72	66.67
	Total	108	100.00
9. Tapioca	No	35	28.46
	Yes	88	71.54
	Total	123	100.00
10. Soursop	No	52	50.00
	Yes	52	50.00
	Total	104	100.00
11. Locally grown/collected fresh vegetables	No	14	10.07
	Yes	125	89.93
	Total	139	100.00
12. Imported vegetables fresh	No	27	23.48
	Yes	88	76.52
	Total	115	100.00
13. Vegetables: Canned/ processed	No	55	47.41
	Yes	61	52.59
	Total	116	100.00
14. Local fresh fruits	No	11	8.03
	Yes	126	91.97
	Total	137	100.00
15. Imported Fresh Fruits	No	25	21.55
	Yes	91	78.45
	Total	116	100.00
16. Fruits: Canned/ processed	No	41	35.96
	Yes	73	64.04
	Total	114	100.00
17. Local citrus	No	17	12.14
	Yes	123	87.86
	Total	140	100.00
18. Imported citrus	No	35	31.82
	Yes	75	68.18
	Total	110	100.00
19. Open Ocean fish	No	9	6.29
	Yes	134	93.71
	Total	143	100.00
20. Reef fish	No	11	7.69
	Yes	132	92.31
	Total	143	100.00
21. Sea cucumbers	No	78	87.64
	Yes	11	12.36
	Total	89	100.00
22. Clams/ oysters	No	47	43.52
	Yes	61	56.48
	Total	108	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	17	12.14
	Yes	123	87.86
	Total	140	100.00
24. Octopus and squid	No	43	34.40
	Yes	82	65.60
	Total	125	100.00
25. Meat and meat products: fresh/local	No	10	7.04
	Yes	132	92.96
	Total	142	100.00
26. Meat and meat products: processed	No	24	16.90
	Yes	118	83.10
	Total	142	100.00
27. Dairy (milk, cheese, yogurt)	No	32	24.81
	Yes	97	75.19
	Total	129	100.00

Question	Responses	Frequency	Percent
28. Eggs	No	12	8.45
	Yes	130	91.55
	Total	142	100.00
29. Black pepper	No	34	26.15
	Yes	96	73.85
	Total	130	100.00
30. Hot peppers	No	27	19.85
	Yes	109	80.15
	Total	136	100.00
31. Sodas	No	37	26.24
	Yes	104	73.76
	Total	141	100.00
32. Candies, cakes, cookies, sugary foods	No	43	31.85
	Yes	92	68.15
	Total	135	100.00
33. Coffee and tea	No	12	8.51
	Yes	129	91.49
	Total	141	100.00
34. Bread, crackers, biscuits	No	25	18.12
	Yes	113	81.88
	Total	138	100.00
35. Pasta and ramen noodles	No	26	18.57
	Yes	114	81.43
	Total	140	100.00
36. Boxed cereal	No	34	27.64
	Yes	89	72.36
	Total	123	100.00
37. Sakau (Kava)	No	69	70.41
	Yes	29	29.59
	Total	98	100.00
38. Imported juice	No	35	28.69
	Yes	87	71.31
	Total	122	100.00
39. Imported coconut milk	No	60	56.60
	Yes	46	43.40
	Total	106	100.00
40. Other	No	5	83.33
	Yes	1	16.67
	Total	6	100.00

Q9.3.3 (1-40) Is there often a shortage:

Question	Responses	Frequency	Percent
1. Rice	No	61	42.36
	Yes	83	57.64
	Total	144	100.00
2. Taro	No	110	76.92
	Yes	33	23.08
	Total	143	100.00
3. Breadfruit	No	76	52.78
	Yes	68	47.22
	Total	144	100.00
4. Banana	No	95	66.43
	Yes	48	33.57
	Total	143	100.00
5. Coconut	No	120	86.96
	Yes	18	13.04
	Total	138	100.00
6. Copra (coconut product)	No	117	86.03
	Yes	19	13.97
	Total	136	100.00
7. Yam	No	85	72.65
	Yes	32	27.35
	Total	117	100.00
8. Sweet Potatoes	No	73	67.59
	Yes	35	32.41
	Total	108	100.00
9. Tapioca	No	88	71.54
	Yes	35	28.46
	Total	123	100.00
10. Soursop	No	77	72.64
	Yes	29	27.36
	Total	106	100.00
11. Locally grown/collected fresh vegetables	No	74	53.62
	Yes	64	46.38
	Total	138	100.00
12. Imported vegetables fresh	No	66	54.55
	Yes	55	45.45
	Total	121	100.00
13. Vegetables: Canned/ processed	No	72	61.02
	Yes	46	38.98
	Total	118	100.00
14. Local fresh fruits	No	79	59.40
	Yes	54	40.60
	Total	133	100.00
15. Imported fresh fruits	No	70	58.82
	Yes	49	41.18
	Total	119	100.00
16. Fruits: Canned/ processed	No	68	58.12
	Yes	49	41.88
	Total	117	100.00
17. Local citrus	No	67	48.20
	Yes	72	51.80
	Total	139	100.00
18. Imported citrus	No	60	51.28
	Yes	57	48.72
	Total	117	100.00
19. Open Ocean fish	No	77	54.61
	Yes	64	45.39
	Total	141	100.00
20. Reef fish	No	75	53.19
	Yes	66	46.81
	Total	141	100.00
21. Sea cucumbers	No	78	82.98
	Yes	16	17.02
	Total	94	100.00

Question	Responses	Freq.	Percent
22. Clams/ oysters	No	71	66.36
	Yes	36	33.64
	Total	107	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	89	63.57
	Yes	51	36.43
	Total	140	100.00
24. Octopus and squid	No	88	71.54
	Yes	35	28.46
	Total	123	100.00
25. Meat and meat products: fresh/ local	No	88	62.86
	Yes	52	37.14
	Total	140	100.00
26. Meat and meat products: processed	No	69	48.94
	Yes	72	51.06
	Total	141	100.00
27. Dairy (milk, cheese, yogurt)	No	69	53.49
	Yes	60	46.51
	Total	129	100.00
28. Eggs	No	63	45.00
	Yes	77	55.00
	Total	140	100.00
29. Black pepper	No	83	64.84
	Yes	45	35.16
	Total	128	100.00
30. Hot peppers	No	84	63.16
	Yes	49	36.84
	Total	133	100.00
31. Sodas	No	93	68.38
	Yes	43	31.62
	Total	136	100.00
32. Candies, cakes, cookies, sugary foods	No	97	72.93
	Yes	36	27.07
	Total	133	100.00
33. Coffee and tea	No	91	65.00
	Yes	49	35.00
	Total	140	100.00
34. Bread, crackers, biscuit	No	93	67.88
	Yes	44	32.12
	Total	137	100.00
35. Pasta and ramen noodles	No	94	67.63
	Yes	45	32.37
	Total	139	100.00
36. Boxed cereal	No	85	68.55
	Yes	39	31.45
	Total	124	100.00
37. Sakau (Kava)	No	80	76.92
	Yes	24	23.08
	Total	104	100.00
38. Imported juice	No	79	63.71
	Yes	45	36.29
	Total	124	100.00
39. Imported coconut milk	No	79	71.82
	Yes	31	28.18
	Total	110	100.00
40. Other	No	11	91.67
	Yes	1	8.33
	Total	12	100.00

Q9.3.5 (1-40) Has a changing climate impacted the availability of this food?

Question	Responses	Freq.	Percent
1. Rice	No	60	56.60
	Yes	46	43.40
	Total	106	100.00
2. Taro	No	47	46.53
	Yes	54	53.47
	Total	101	100.00
3. Breadfruit	No	38	34.55
	Yes	72	65.45
	Total	110	100.00
4. Banana	No	41	39.05
	Yes	64	60.95
	Total	105	100.00
5. Coconut	No	62	60.78
	Yes	40	39.22
	Total	102	100.00
6. Copra (coconut product)	No	62	61.39
	Yes	39	38.61
	Total	101	100.00
7. Yam	No	50	55.56
	Yes	40	44.44
	Total	90	100.00
8. Sweet Potatoes	No	49	58.33
	Yes	35	41.67
	Total	84	100.00
9. Tapioca	No	54	57.45
	Yes	40	42.55
	Total	94	100.00
10. Soursop	No	48	60.00
	Yes	32	40.00
	Total	80	100.00
11. Locally grown/collected fresh vegetables	No	36	33.03
	Yes	73	66.97
	Total	109	100.00
12. Imported vegetables fresh	No	50	54.35
	Yes	42	45.65
	Total	92	100.00
13. Vegetables: Canned/ processed	No	57	61.96
	Yes	35	38.04
	Total	92	100.00
14. Local fresh fruits	No	42	40.38
	Yes	62	59.62
	Total	104	100.00

Question	Responses	Freq.	Percent
15. Imported fresh fruits	No	57	62.64
	Yes	34	37.36
	Total	91	100.00
16. Fruits: Canned/ processed	No	57	60.64
	Yes	37	39.36
	Total	94	100.00
17. Local citrus	No	38	33.63
	Yes	75	66.37
	Total	113	100.00
18. Imported citrus	No	50	54.35
	Yes	42	45.65
	Total	92	100.00
19. Open Ocean fish	No	38	34.23
	Yes	73	65.77
	Total	111	100.00
20. Reef fish	No	36	32.73
	Yes	74	67.27
	Total	110	100.00
21. Sea cucumbers	No	43	59.72
	Yes	29	40.28
	Total	72	100.00
22. Clams/ oysters	No	47	55.95
	Yes	37	44.05
	Total	84	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	51	51.00
	Yes	49	49.00
	Total	100	100.00
24. Octopus and squid	No	54	60.67
	Yes	35	39.33
	Total	89	100.00
25. Meat and meat products: fresh/ local	No	55	53.92
	Yes	47	46.08
	Total	102	100.00
26. Meat and meat products: processed	No	61	57.01
	Yes	46	42.99
	Total	107	100.00
27. Dairy (milk, cheese, yogurt)	No	59	62.77
	Yes	35	37.23
	Total	94	100.00
28. Eggs	No	63	57.80
	Yes	46	42.20
	Total	109	100.00
29. Black pepper	No	61	65.59
	Yes	32	34.41
	Total	93	100.00
30. Hot peppers	No	49	47.57
	Yes	54	52.43
	Total	103	100.00
31. Sodas	No	68	68.00
	Yes	32	32.00
	Total	100	100.00
32. Candies, cakes, cookies, sugary foods	No	66	68.04
	Yes	31	31.96
	Total	97	100.00
33. Coffee and tea	No	70	66.67
	Yes	35	33.33
	Total	105	100.00
34. Bread, crackers, biscuit	No	65	65.00
	Yes	35	35.00
	Total	100	100.00
35. Pasta and ramen noodles	No	67	66.34
	Yes	34	33.66
	Total	101	100.00
36. Boxed cereal	No	61	66.30
	Yes	31	33.70
	Total	92	100.00
37. Sakau (Kava)	No	51	65.38
	Yes	27	34.62
	Total	78	100.00
38. Imported Juice	No	63	67.02
	Yes	31	32.98
	Total	94	100.00
39. Imported coconut milk	No	59	71.08
	Yes	24	28.92
	Total	83	100.00
40. Other	No	10	90.91
	Yes	1	9.09
	Total	11	100.00

Q9.3.6 (1-40) Has a changing climate impacted the affordability of this food?

Question	Responses	Freq.	Percent
1. Rice	No	63	59.43
	Yes	43	40.57
	Total	106	100.00
2. Taro	No	68	66.67
	Yes	34	33.33
	Total	102	100.00
3. Breadfruit	No	68	64.76
	Yes	37	35.24
	Total	105	100.00
4. Banana	No	68	64.76
	Yes	37	35.24
	Total	105	100.00
5. Coconut	No	76	73.79
	Yes	27	26.21
	Total	103	100.00
6. Copra (coconut product)	No	78	76.47
	Yes	24	23.53
	Total	102	100.00
7. Yam	No	64	71.11
	Yes	26	28.89
	Total	90	100.00

Question	Responses	Frequency	Percent
8. Sweet potatoes	No	63	72.41
	Yes	24	27.59
	Total	87	100.00
9. Tapioca	No	69	73.40
	Yes	25	26.60
	Total	94	100.00
10. Soursop	No	65	74.71
	Yes	22	25.29
	Total	87	100.00
11. Locally grown/ collected fresh vegetables	No	60	55.56
	Yes	48	44.44
	Total	108	100.00
12. Imported vegetables fresh	No	62	67.39
	Yes	30	32.61
	Total	92	100.00
13. Vegetables: Canned/ processed	No	63	68.48
	Yes	29	31.52
	Total	92	100.00
14. Local fresh fruits	No	65	63.11
	Yes	38	36.89
	Total	103	100.00
15. Imported fresh fruits	No	65	72.22
	Yes	25	27.78
	Total	90	100.00
16. Fruits: Canned/ processed	No	67	71.28
	Yes	27	28.72
	Total	94	100.00
17. Local citrus	No	57	50.00
	Yes	57	50.00
	Total	114	100.00
18. Imported citrus	No	65	69.15
	Yes	29	30.85
	Total	94	100.00
19. Open Ocean fish	No	59	53.15
	Yes	52	46.85
	Total	111	100.00
20. Reef fish	No	57	51.35
	Yes	54	48.65
	Total	111	100.00
21. Sea cucumbers	No	56	75.68
	Yes	18	24.32
	Total	74	100.00
22. Clams/ oysters	No	59	71.08
	Yes	24	28.92
	Total	83	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	67	67.00
	Yes	33	33.00
	Total	100	100.00
24. Octopus and squid	No	65	73.86
	Yes	23	26.14
	Total	88	100.00

Question	Responses	Freq.	Percent
25. Meat and meat products: fresh/ local	No	65	63.11
	Yes	38	36.89
	Total	103	100.00
26. Meat and meat products: processed	No	68	62.96
	Yes	40	37.04
	Total	108	100.00
27. Dairy (milk, cheese, yogurt)	No	65	67.71
	Yes	31	32.29
	Total	96	100.00
28. Eggs	No	66	60.55
	Yes	43	39.45
	Total	109	100.00
29. Black pepper	No	69	71.88
	Yes	27	28.13
	Total	96	100.00
30. Hot peppers	No	68	63.55
	Yes	39	36.45
	Total	107	100.00
31. Sodas	No	73	71.57
	Yes	29	28.43
	Total	102	100.00
32. Candies, cakes, cookies, sugary foods	No	72	74.23
	Yes	25	25.77
	Total	97	100.00
33. Coffee and tea	No	73	70.19
	Yes	31	29.81
	Total	104	100.00
34. Bread, crackers, biscuits	No	75	74.26
	Yes	26	25.74
	Total	101	100.00
35. Pasta and ramen noodles	No	75	72.82
	Yes	28	27.18
	Total	103	100.00
36. Boxed cereal	No	69	75.00
	Yes	23	25.00
	Total	92	100.00
37. Sakau (Kava)	No	59	75.64
	Yes	19	24.36
	Total	78	100.00
38. Imported juice	No	69	73.40
	Yes	25	26.60
	Total	94	100.00
39. Imported coconut milk	No	66	79.52
	Yes	17	20.48
	Total	83	100.00
40. Other	No	12	80.00
	Yes	3	20.00
	Total	15	100.00

Q9.4.2	Resp.	Freq.	Percent
Due to climate change, have the places you get food from (e.g., wild places, cultivated places, markets) changed?	No	74	50.00
	Yes	74	50.00
	Total	148	100.00

Q9.4.3 If yes, where are you getting more food from?

Question	Resp.	Freq.	Percent
1. More from wild places such as forests, freshwater, rivers, and/or the ocean	No	15	22.39
	Yes	52	77.61
	Total	67	100.00
2. More from cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	19	30.16
	Yes	44	69.84
	Total	63	100.00
3. More from informal markets such as street vendors and kiosks	No	20	37.74
	Yes	33	62.26
	Total	53	100.00
4. More from formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	15	25.42
	Yes	44	74.58
	Total	59	100.00
5. More from supplemental food assistance such as government food rations, food from churches, schools, community organizations, etc.	No	35	85.37
	Yes	6	14.63
	Total	41	100.00
6. More from relatives and extended families	No	25	55.56
	Yes	20	44.44
	Total	45	100.00
7. More from other	No	33	94.29
	Yes	2	5.71
	Total	35	100.00

Question	Responses	Freq.	Percent
Q9.4.4 If yes, is accessing foods more difficult or less?	More difficult	19	26.03
	Less difficult	54	73.97
	Total	73	100.00
Q9.4.5 Are you concerned with how climate change will impact the foods that you eat?	No	34	23.13
	Yes	113	76.87
	Total	147	100.00

Q9.4.6 If yes: why? Is it because you feel climate change will impact:

Question	Responses	Freq.	Percent
Food availability	No	10	9.17
	Yes	99	90.83
	Total	109	100.00
Food affordability	No	23	24.21
	Yes	72	75.79
	Total	95	100.00
Food quality	No	7	6.36
	Yes	103	93.64
	Total	110	100.00
Food safety	No	15	15.00
	Yes	85	85.00
	Total	100	100.00
Other	No	54	100.00
	Yes	0	0
	Total	54	100.00

10. IMPACT OF COVID 19

Question	Responses	Freq.	Percent
Q10.1 During the COVID-19 pandemic, did your consumption of local foods change?	No	107	71.33
	Yes	43	28.67
	Total	150	100.00
Q10.2 If yes, how did it change?	Increase	1	2.27
	Decrease	26	59.09
	Stay the same	17	38.64
	Total	44	100.00
Q10.3 During the COVID-19 pandemic, did your production of local foods change?	No	113	75.84
	Yes	36	24.16
	Total	149	100.00
Q10.4 If yes, how did it change?	Increase	13	37.14
	Decrease	21	60.00
	Stay the same	1	2.86
	Total	35	100.00
Q10.5 During the COVID-19 pandemic, did demand for local food change?	No	98	66.67
	Yes	49	33.33
	Total	147	100.00
Q10.6 If yes, did it… 1. Increased for local consumption	No	6	14.29
	Yes	36	85.71
	Total	42	100.00

2. Decreased local consumption	No	**27**	**75.00**
	Yes	9	25.00
	Total	36	100.00
3. Increased export	No	24	82.76
	Yes	5	17.24
	Total	29	100.00
4. Decreased in export	No	24	72.73
	Yes	9	27.27
	Total	33	100.00
5. Stayed the same	No	27	96.43
	Yes	1	3.57
	Total	28	100.00
Q10.7 During COVID-19, have you sent your food products overseas (both commercial and to family members)?	No	121	83.45
	Yes	24	16.55
	Total	145	100.00

Q10.8 If yes, which crops were in most demand?

Question	Responses	Frequency	Percent
1. Swamp taro	No	2	10.00
	Yes	18	90.00
	Total	20	100.00
2. Land taro	No	3	15.79
	Yes	16	84.21
	Total	19	100.00
3. Breadfruit	No	2	14.29
	Yes	12	85.71
	Total	14	100.00
4. Betelnut	No	9	81.82
	Yes	2	18.18
	Total	11	100.00
5. Banana	No	6	42.86
	Yes	8	57.14
	Total	14	100.00
6. Coconut	No	7	50.00
	Yes	7	50.00
	Total	14	100.00
7. Copra (coconut product)	No	6	50.00
	Yes	6	50.00
	Total	12	100.00
8. Yam	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
9. Sweet potatoes	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
10. Tapioca	No	5	38.46
	Yes	8	61.54
	Total	13	100.00
11. Soursop	No	10	100.00
	Yes	0	0
	Total	10	100.00
12. Locally grown/ collected vegetables	No	9	75.00
	Yes	3	25.00
	Total	12	100.00
13. Imported vegetables	No	10	100.00
	Yes	0	0
	Total	10	100.00
14. Locally grown/ collected fruits	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
15. Imported fruits	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
16. Citrus	No	5	33.33
	Yes	10	66.67
	Total	15	100.00
17. Black pepper	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
18. Hot peppers	No	3	20.00
	Yes	12	80.00
	Total	15	100.00
19. Sakau (Kava)	No	7	63.64
	Yes	4	36.36
	Total	11	100.00
20. Other	No	9	69.23
	Yes	4	30.77
	Total	13	100.00

11. PERCEPTION, PREFERENCE, AND ATTITUDES

Q11.1a What do you consider to be healthy and nutritious?

Question	Responses	Freq.	Percent
1. Fresh vegetables	No	1	0.67
	Yes	148	99.33
	Total	149	100.00
2. Processed vegetables	No	63	67.74
	Yes	30	32.26
	Total	93	100.00
3. Fresh fruit	No	2	1.36
	Yes	145	98.64
	Total	147	100.00
4. Processed fruit	No	65	70.65
	Yes	27	29.35
	Total	92	100.00
5. Fresh fish/ seafood	No	1	0.69
	Yes	143	99.31
	Total	144	100.00
6. Processed fish/ seafood	No	67	73.63
	Yes	24	26.37
	Total	91	100.00
7. Fresh meat	No	5	3.45
	Yes	140	96.55
	Total	145	100.00

Question	Responses	Freq.	Percent
8. Processed meat	No	67	77.91
	Yes	19	22.09
	Total	86	100.00
9. Bread, crackers, biscuit	No	63	73.26
	Yes	23	26.74
	Total	86	100.00
10. Pasta and ramen noodles	No	71	87.65
	Yes	10	12.35
	Total	81	100.00
11. Dairy	No	60	61.22
	Yes	38	38.78
	Total	98	100.00
12. Eggs	No	26	20.47
	Yes	101	79.53
	Total	127	100.00
13. Coconut milk	No	37	31.62
	Yes	80	68.38
	Total	117	100.00
14. Candies, cakes, cookies, sugary foods	No	74	96.10
	Yes	3	3.90
	Total	77	100.00
15. Boxed cereal	No	73	87.95
	Yes	10	12.05
	Total	83	100.00
16. Soda	No	73	96.05
	Yes	3	3.95
	Total	76	100.00
17. Sakau (Kava)	No	73	92.41
	Yes	6	7.59
	Total	79	100.00
18. Coffee, tea	No	54	58.70
	Yes	38	41.30
	Total	92	100.00

Q11.1b What percentage of your diet is imported food?

Particulars	Frequency	Percent
Less than 25%	16	11.03
25-50%	60	41.38
50-75%	58	40.00
75-100%	11	7.59
Total	145	100.00

Question	Responses	Frequency	Percent
Q11.2 Do you feel your diet is healthy and nutritious?	No	78	53.79
	Yes	67	46.21
	Total	145	100.00

Question	Responses	Freq.	Percent
Q11.3 Does your diet impact your health?	No	19	12.84
	Yes, I feel healthy	63	42.57
	Yes, I feel unhealthy	66	44.59
	Total	148	100.00
Q11.4 Would you be interested in consuming more locally sourced seafood and marine fish daily if they were more available and affordable?	No	5	3.40
	Yes	142	96.60
	Total	147	100.00
Q11.5 Would you be interested in consuming more locally sourced meat and meat products daily if they were more available and affordable?	No	1	0.67
	Yes	149	99.33
	Total	150	100.00
Q11.6 Would you be interested in replacing imported rice with local starch crops such as taro and breadfruit if they are more available and affordable?	No	24	16.22
	Yes	124	83.78
	Total	148	100.00
Q11.7 Would you be interested in consuming more locally produced coconut milk products daily if they were more available and affordable?	No	5	3.36
	Yes	144	96.64
	Total	149	100.00
Q11.8 Would you be willing to replace imported milk products with coconut milk products for cooking?	No	9	6.04
	Yes	140	93.96
	Total	149	100.00
Q11.9 Would you be interested in consuming more locally produced vegetables daily if they were more available and affordable?	No	3	2.00
	Yes	147	98.00
	Total	150	100.00

Question	Responses	Freq.	Percent
Q11.10 Would you be interested in consuming more locally produced fruits daily if they were more available and affordable?	No	1	0.68
	Yes	147	99.32
	Total	148	100.00
Q11.11 If you knew any of these locally produced foods were healthier than imported and/or processed foods, would you be more willing to buy these food items?	No	6	4.05
	Yes	142	95.95
	Total	148	100.00

Q11.12 If not, why do you find imported and/or processed foods preferable?

Question	Responses	Frequency	Percent
More convenient	No	1	5.00
	Yes	19	95.00
	Total	20	100.00
Less work to prepare	No	0	0
	Yes	9	100.00
	Total	9	100.00
Tastes better	No	0	0
	Yes	7	100.00
	Total	7	100.00
More affordable	No	3	60.00
	Yes	2	40.00
	Total	5	100.00
More available	No	1	14.29
	Yes	6	85.71
	Total	7	100.00
Higher status	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
Other	No	2	66.67
	Yes	1	33.33
	Total	3	100.00

12. ADAPTATION AND RESILIENT QUESTIONS

Q12.2 What solutions and/or resources do you feel can assist you with long-term local food production goals?

Question	Responses	Frequency	Percent
1. Agriculture training	No	12	9.68
	Yes	112	90.32
	Total	124	100.00
2. Tools	No	8	5.88
	Yes	128	94.12
	Total	136	100.00
3. Greenhouses and aquaculture	No	10	7.58
	Yes	122	92.42
	Total	132	100.00
4. Climate resilience crops	No	17	12.88
	Yes	115	87.12
	Total	132	100.00
5. Disease-resistant animals/ chickens	No	20	16.26
	Yes	103	83.74
	Total	123	100.00
6. Affordable feed	No	15	11.90
	Yes	111	88.10
	Total	126	100.00
7. Refrigeration	No	28	24.35
	Yes	87	75.65
	Total	115	100.00
8. Access to market	No	30	27.78
	Yes	78	72.22
	Total	108	100.00
9. Transportation	No	29	26.61
	Yes	80	73.39
	Total	109	100.00
10. Post-harvest handling (drying and cooling for long-term storage)	No	30	26.55
	Yes	83	73.45
	Total	113	100.00
11. Financial credit	No	20	16.39
	Yes	102	83.61
	Total	122	100.00
12. Veterinary doctor	No	37	35.24
	Yes	68	64.76
	Total	105	100.00
13. Other	No	66	95.65
	Yes	3	4.35
	Total	69	100.00

KOSRAE OPEN-ENDED HOUSEHOLD SURVEY

Below are the main statements provided by the respondents in the open-ended survey.

Q3.3.5 If yes, which behavioral changes?

1) "Fish in the morning where there is less sun."
2) "Improving pest control methods."

Q6.8 In the last ten years, have you noticed a change in raising animals (if yes, please explain):

1) "I noticed the increase of predators, especially the lizards. It is very often nowadays. They kill, especially the young ones."
2) "The sun's heat has been so strong over the years that almost every 4 hours, I have to give water to the pigs to drink and cool down. I try to conserve the water, so I schedule time to feed water to the pigs."
4) "Climate change is affecting our pig farming mainly because of its negative impact on the local pig feed [food] supply on the island. Because of climate change, we have limited local food available for our pigs."
5) "Flooding caused by climate change is making it harder for animals to live freely in the wild, so we had to help build homes for them."
6) "My observation is that the population of local chickens on the island is diminishing. I am unsure if it is due to climate change or something they are eating causing them to die."
7) "We are currently paying for water usage, so it is very difficult for pig farmers nowadays."

Q8.3.2 How has a change in climate impacted your access to clean, fresh water?

1) "Due to increasing rainfall, water catchments I utilize have been constantly filled, increasing my access to clean, fresh water."
2) "It has affected our water quality, including during droughts and heavy rains. When there is a landslide and erosion of the river banks, it changes the quality of water in our dam."
3) "We are facing droughts nowadays so we cannot get water for our farms or even the wildlife we have."
4) "It affects our drinking water and the quality of water coming through the main pipeline. When it floods, the flood makes our water dirty and destroys everything in its path, including our farms, gardens, and household water."
5) "It impacts the quality of our freshwater. Saltwater intrusion during high tide and flooding affect our access to clean quality water in Kosrae today."

Q8.4.3 What crops did you use to grow, and what crops do you grow now?

1) "I used to grow cucumber before, but now I grow tomatoes."
2) "The crops I used to plant have been affected by climate change. Therefore, I am now planting other crops that are resilient to climate change."
3) "I am planting the same crops and plants as before, but it is a bit harder to plant food trees nowadays compared to the past."
4) "I do crop rotation. One of the reasons for doing this is because of invasive species. Crops I used to grow on my farm before could not compete with invasive species. So, I try to change to crops that can grow."
5) "I used to grow hard taro on a certain piece of land, but because of climate change, I had to switch to other crops like breadfruit and banana."
6) "I used to grow vegetables before. Nowadays, I grow betel nuts because of climate change."
7) "I used to plant hard and soft taro a lot. Because of saltwater intrusion into my farmland, I had to stop planting soft taro. Now, I only plant hard taro."
8) "I used to plant a lot of tangerines and oranges, but today there are only a few because of the changing climate. The other crop I used to plant is the Kava plant. Climate change affected how well kava plants grow, so I stopped planting it."
9) "Soft taro, tomatoes, chili peppers, and pineapples are the ones that I always changed. Currently, soft taro Kosraean apples, papaya avocados, tomatoes, kangkong tangerines, pineapples, and soursop."
10) "The only crop I changed is the soft taro crop because I use a more climate-resilient crop nowadays. I changed the previous type to a new one because of that: sea level rise and climate change."

Q8.4.6 How did you change/adapt your farming practices (including fishing) over the last ten years?

1) "I usually change or adapt new farming practices for my vegetables. I am using mulching because it covers and protects the crops and roots from heavy rain, erosion, and the sun heat."
2) "Climate change has caused me to temporarily stop farming because of extreme heat and little water."
3) "I started planting on elevated grounds or in bags that can be placed on a higher platform to avoid being destroyed by floods during heavy rain."
4) "For farming, I just changed the location, and for fishing, I changed my fishing time from daytime to nighttime."
5) "For farming, extreme heat has caused huge problems. So, we started utilizing greenhouses, lessening our time for fishing and farming, and we also migrated our farms due to sea level rise."

6) “In terms of my farming activities, due to climate change, I have had to incorporate structural changes including digging trenches and making drainage to release water build up in my land.”
7) “In the past, we used pesticides to control pest infestation on our farm. These pesticides cannot control some of the plant and fruit diseases occurring. So we use other things to control diseases, for example, water.”
8) “Land areas we have used for planting crops in the last ten years need to be fertile, but I lack the necessary equipment. All I can do is clean my land and plant crops.”
9) “In my experience, extreme heat dries up our farming areas. For this reason, we add products to cover up the soil to reduce dryness.”

Q8.4.7 Have you or your household done anything else to become more food secure in response to climate change?

1) “I try to clear and clean my land as much as I can. I try to plant more vegetables while removing invasive species that affect them.”
2) “As for my family and me, we had to extend our farms for more food.”
3) “Because of climate change, I grind my taros and freeze them for future use. With fish, I would cut them into pieces and dry them under the sun so that they could last a bit longer.”
4) “I have had to plant more crops anticipating crop loss due to changes in weather and climate.”
5)“Increased the number of pigs we raise.”
6)“When we have a lot of chili peppers, we would harvest them and preserve them using salt. By preserving the peppers, we can use them whenever we need, for a longer time.”
7) “Me and my family use the process of replanting to help with the issues we face on climate change.”
8) “Started planting my vegetables or crops under the shade and away from the sun’s excessive heat. I plant my crops in my own greenhouse as well.”
9) “We have plants on the island that can help minimize the threats of a commonly known pesticide called white flies by replanting the plants between our farms.”
10) “I started utilizing refrigeration.”

Q9.1.5 How do you define healthy, nutritious food?

1) “Our local foods. The food that we grow up eating.”
2) “Healthy foods help me deal with my diabetes and prevent complications from diabetes so that I can live out the rest of my life.”
3) “I would say taro, breadfruits, and other local crops are good for the body. So these are the kinds of food that are healthy.”
4) “Fish, soft taro, and cabbage.”
5) “Food grown and harvested locally and not imported from elsewhere.”
6) “Good food comes from our home gardens. They are home-grown.”
7) “Healthy nutritious food is any food that is harvested fresh whether in the ocean or on your farm.”
8) “Healthy nutritious foods are vegetables, green vegetables, crops, and citrus fruits unaffected by diseases. For livestock, pigs that are strong and mobile are healthy. Pigs that lie down most of the time are unhealthy. For chicken, domestic or local chickens that roam freely are healthier than those that are in cages.”
9) “Healthy, nutritious local foods include bananas, tangerines, oranges, taro, boiling banana, and vegetables such as cabbage, tomato, and soursop. Those are some healthy, locally grown nutritious foods we can get from our backyard garden.”
10) “I would define healthy foods as fruits, starch, and meat with a glass of milk.”
11) “I would say that the healthiest foods are fish, banana, soft taro, and even hard taro.”
12) “My definition of healthy nutritious food is local food, especially food with much nutrition such as leafy vegetables, soft taro, hard taro, and others.”
13) “Nutritious foods are tapioca, banana, breadfruit, soft taro, and hard taro.”
14) “They are taro, banana, and green vegetables. Food that does not use fertilizer, for example, taro, banana, breadfruit, yams, papaya, and pineapple.”
15) “Food that is good for the body and has many vitamins.”
16) “Food that is healthy for the body, especially food with a high protein concentration.”
17) “Foods with less sugar, salt, and fat.”

Q9.4.4 If yes, is accessing foods more difficult or less difficult? If more difficult, why?
1) Long distance; 2) bad soil for production; 3) less availability and more expensive; 4) fewer fishing spots; 5) sea level rises.

Q12.1 What have you done to adapt your local food production or harvesting because of a changing climate?

1) “Because of climate change, we build an irrigation system to provide water to our farms.”
2) “In terms of food production and harvesting, we promote home gardening or small-scale farming more now because they can withstand the weather and invasive species can be managed better.”
3) “Increased the usage of compost materials.”
“Nowadays, I fish pelagic fish more than reef fish because the reef fish population is decreasing.”
4) “Adjustment I do is I use mulching for my crops to cool them, and I harvest in the morning when there is not much heat.”
5) “Climate change has affected the amount of food we harvest, so I began cultivating more and using more fertilizers to increase food production.”

6) “Because of climate change, the soil in our farms is being degraded. So, I have been improving it by mixing it with sand and other rich soils.”
7) “Because of climate change, we have tried to plant more crops as we know that not all of the crops we grow will survive.”
8) “Because of flooding, we are planting vegetables in bags and placing them on elevated platforms.”
9) “Due to climate change, we see an increase in rainfall. To sustain my farm, I installed drainage systems to drain excess water.”
10) “Due to extreme heat, I started using a greenhouse.”
11) “Due to extreme heat, we have to find ways to preserve our catch.”
12) “During drought or when farmlands are dried up, root crops are severely affected. Thus, what we do is we have to harvest all of them before they are affected.”
13) “For vegetables, when extreme heat from the sun is experienced, we can put them under a shade or a shady area. We can use coconut palms to create the shades. And when the sea level rises, we can relocate, for example, soft taro from taro patches that are affected by saltwater intrusion to more suitable areas.”
14) “I clear additional lands for farming to replace farmlands that have been affected by climate change.”
15) “I decreased the number of crops on my farm because I do not want to lose them to climate change.”
16) “I do not grow my crops under direct sunlight or rain. I plant them in my greenhouse.”
17) “I inspect the food crops and plants I grow and try to care for the weak ones. I trim and prune them. I also inspect and remove snails and whiteflies that cause damage to my plants.”
18) “I make my organic fertilizer to feed my crops and look for different types of seeds to try”
19) “I mix dead leaves into the soils to add more nutrients.”
20) “I only grow crops that meet my family’s needs and save as much land as possible if I need to change crop types based on the issues caused by climate change.”
21) “I rotate and change farm sites as necessary.”
22) “I try to clear my lands to dry up a bit and reduce the water build-up.”
23) “I use refrigeration to store and preserve my food.”
24) “I use the replanting technique for weak crops.”
25) “I plant enormous trees to shade the area and prevent landslides.”
26) “There are obvious changes in the kinds of fishing methods used today compared to the past due to climate change. The tide today is higher. We used to be able to get our needs from certain areas of the reef, but now with the increase in sea level, we cannot access these areas.”
27) “To avoid impacts of climate change, I try to plant my crops and vegetables along river banks or near wetlands. I dig up wells or install irrigation systems to provide water where the soil is dry. In areas where sea level or coastal flooding can be problematic, I put my plants on elevated platforms, not the ground.”
28) “Limiting the consumption of locally grown products based on what we have.”
29) “Some of the things I do for my fishing is only to harvest big fishes and not stay locked in one spot. Instead, I move around more.”
30) “Use more compost on my plant to help the root structure of my crops.”
31) “We build sea walls around it to block the current from entering our farms.”
32) “We seek help from the department of resources & economic affairs (DREA) & Kosrae Island Resource Management Authority (KIRMA).”

Q12.3 Is there anything else you would like us to know regarding your experience with food production, food security, climate change, or COVID-19?

1) “Having the proper equipment will be very helpful in increasing and maintaining our farming areas.”
2) “I think the increased costs of many things, including fuel, affect our food production efforts. So we need price control.”
3) “A possible solution is to raise more awareness on climate change. We should take before and after pictures of our island and post them on social media or where the message can be delivered.”
4) “As I went through the survey with you, I noticed that the questionnaires addressed farmers’ challenges in food production. It would be great if all the resources mentioned on the last page or the previous question are available to us.”
5) “Based on my experiences, if we have sources or budget to help develop our land and what we need, we can definitely make our farms better.”
6) Climate change has transformed the nature and condition of our land so much. Our coconut, taro, and banana farms have all been destroyed from over-flooding. Everyone complains about the flooding problem. We are hoping that our drainage system can be improved. The municipal government has helped but the state government has not helped much.”
7) “Food production is very important for us in Kosrae. Because of climate change, we see a lot of changes. Crops and local food that our livestock feed on are not growing normally anymore. We need support to improve our drainage to address the flooding problem and water storage for farming both crops and livestock. We need support to develop infrastructures, support farming, and food security in Kosrae.”
8) “I am sure the Department of Resources and Economic Affairs (DREA) has plans that address food security during COVID-19. I believe that DREA has plans to lease government lands for farming, local food production, and raising livestock. I support the effort of the government to lease out public lands to private citizens for food production.”

9) “I think farmers would be thrilled if they are given some form of monetary assistance to support their food production efforts as well as their livelihood.” 10) “I think the most important thing for this food security project is for farmers to have better access to their farms (farm roads).” 11) I would need better storage and a bigger container to contain and preserve food from my farm. I am currently doing small-scale farming, enough to feed one or two families. However, if I decide to go big, I need better storage. I also need equipment to help clear my land for farming.” 12) “Low production on food farms, and we should establish more market businesses to sell our products.” 13) “As a part-time farmer and a full-time agriculture extension agent, I’ve been experiencing many problems with projects that are coming in for COVID-19 and climate change because many people didn’t benefit from those projects, especially Kosraeans. Most of the projects were never even completed, meaning the money or financial assistance never came into being, but the other states got theirs. Probably our problem is our leaders from the national government.”	14) “One thing I would like to raise a concern about – because it is causing harm for us fishermen – are those Chinese vessels anchored here causing pollution in our waters and making the fish migrate.” 15) “Theft of agricultural products is happening in our community. Thus it is hard to take care of our products sometimes.” 16) “We can agree that problems with food security are linked to climate change. So, the ultimate need is funding to support projects that address these issues and problems. Today, we highly depend on local food to ensure food security.” 17) “Today when I go out trolling, it is tough to catch fish. This is because foreign fishing boats are fishing close to our waters and also because of the changing climate. We need a fish aggregation device to help improve our catch.” 18) “We need to grow more root crops like taro, soft taro, and vegetables. And produce more fresh crops.”

KOSRAE COMMERCIAL SURVEY

Q1.1 Gender of the sample respondents

Particulars	Frequency	Percent
Male	4	100.00
Female	0	0.00
Total	4	100.00

Particulars	Mean
Q1.2 Average number of people that are children (0-13 years)	1.00
Q1.3 Average number of people in the family	4.25

Q1.4 In general, would you say your health is?

Particulars	Frequency	Percent
Excellent	1	25.00
Very good	1	25.00
Good	0	0.00
Fair	2	50.00
Poor	0	0.00
Total	4	100.00

Q2.3.1. Which crops, animals/poultry and/or fish/seafood/clams have you tried to grow that did not work or that you did not continue to grow?

Particulars	Frequency	Percent
Avocado	1	25.00
Rabbit fish	1	25.00
Dragon fruit	1	25.00
Vanilla orchid	1	25.00
Total	4	100.00

Q2.3.1.1 Why did you stop growing it?

Particulars	Frequency	Percent
Low Yield	2	33.33
Low Price	0	0.00
Low Demand	0	0.00
Seed Problem	0	0.00
Lack of production technologies	2	33.33
Others	2	33.33
Total	6	100.00

Q3 Ownership

Q3.2 Please indicate other assets you own or access to:

Question	Responses	Freq.	Percent
Radio	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
Television	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Bicycle	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
Motor vehicle	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Landline phone	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Mobile phone	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Tractor	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
Farm tools	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Wheelbarrow	No	0	0.00
	Yes	4	100.00
	Total	4	100.00
Electricity in house?	No	0	0.00
	Yes	4	100.00
	Total	4	100.00

Q4.1 Which Food crops do you grow?

Particulars	Frequency	Percent
Cabbage	2	12.50
Citrus	1	6.25
Cucumber	2	12.50
Eggplant	2	12.50
Hot pepper	1	6.25
Kosraean apple	1	6.25
Mango	1	6.25
Okra	1	6.25
Pomegranate	1	6.25
Sour sop	1	6.25

Particulars	Freq.	Percent
Tapioca	1	6.25
Taro	1	6.25
Others	1	6.25
Total	16	100.00

Q4.2 Why is the vegetable grown and preferred?

Particulars	Frequency	Percent
Good prices	8	50.00
Contract with partner	0	0.00
Production experience	5	31.25
Available market	2	12.50
Opportunity to earn extra income	1	6.25
Cultural reasons for IVs	0	0.00
Home consumption	0	0.00
Other	0	0.00
Total	16	100.00

Q4.8 Do you have a water collection system?

Particulars	Frequency	Percent
No	1	14.29
Tank	3	42.86
Bucket	1	14.29
Container	2	28.57
Other	0	0.00
Total	7	100.00

Q4.9 Do you have problems with excessive rainfall?

Particulars	Frequency	Percent
No	1	2.500
Yes	3	75.00
Total	4	100.00

Q4.10 How do you reduce crop and animal damage from excessive rains and runoff?

Particulars	Frequency	Percent
Digging drainage	2	66.67
Erosion	1	33.33
Design, crop selection	3	100.00
Total	2	66.67

Q4.11 How have production costs for growing foods changed over the past five years?

Particulars	Frequency	Percent
Increased	3	75.00
No change	1	25.00
Total	4	100.00

Q4.12 What were the major changes (for increased or decreased costs)?

Particulars	Freq.	Percent
Fuel cost increases; need fuel to get to the farm site	1	50.00
Price of materials increase	1	50.00
Planting materials	2	100.00
Inflation	1	50.00
Total	1	50.00

Q5.2 Are any of your food crops stored immediately after harvest?

Particulars	Frequency	Percent
No	1	33.3
Yes	2	66.7
Total	3	100.0

Q5.4 How do you harvest your food crops?

Particulars	Freq.	Percent
Just cut a bunch of plants from top	1	33.3
Just cut a bunch of leaves from side shoots	1	33.3
Strip and harvest leaves only	0	0.00
Pull the plant out and sell the entire plant	1	33.3
Total	3	100.00

Q6.1 Who are your main trading partner(s)?

Particulars	Frequency	Percent
Direct to consumers	2	18.18
Brokers	0	0.00
Direct to Supermarkets	0	0.00
Roadside Stands	0	0.00
Retailers	4	36.36
Wholesalers	0	0.00
Neighbors	1	9.09
Friends	2	18.18
Family Relatives	2	18.18
Total	11	100.00

Q6.2 How frequently does your nearest market meet?

Particulars	Frequency	Percent
Daily	0	0.00
Weekly	2	50.00
Thrice a week	1	25.00
Other	1	25.00
Total	4	100.00

Q6.3 How are your harvested crops normally packaged during transport?

Particulars	Frequency	Percent
Plastic bags/sacks	2	50.00
Plastic containers	2	50.00
Others	4	100.00
Total	2	50.00

Q6.4 Are you often aware of crop prices before you decide to sell?

Particulars	Frequency	Percent
No	1	33.3
Yes	2	66.7
Total	3	100.0

Q6.5 Who fixes or determines the prices of each crop you sell?

Particulars	Frequency	Percent
N/A	2	50.00
Self	2	50.00
Buyer	4	100.00
Total	2	50.00

Q6.7 If prices were not fixed by you, how do you determine them?

Particulars	Frequency	Percent
N/A	1	25.50
I use published prices in the newspapers	0	100.00
I use the cost of production	3	75.50
Total	4	100.00

Q6.8 When do you start checking prices prior to harvesting produce?

Particulars	Frequency	Percent
Less than 3 days before	1	25.00
A week before	0	0.00
One monthly before	0	0.00
Not at all	3	75.50
Total	4	100.00

Q6.9 How have the food crop prices changed over the past five years?

Particulars	Frequency	Percent
No change	2	50.00
Decreased	1	25.00
Increased	1	25.00
Total	4	100.00

Q6.10 Do you get paid at the time of selling food crops?

Particulars	Frequency	Percent
No	1	33.33
Yes	2	66.67
Total	3	100.00

Q6.11 Are there any differences between the production and sale of the different food crops?

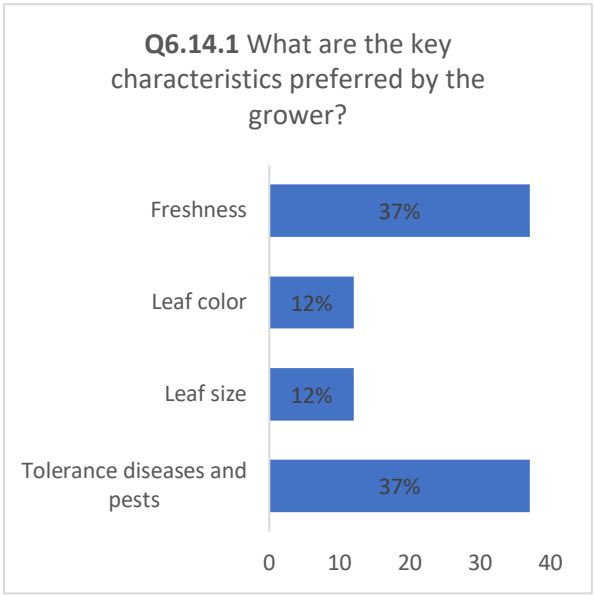
Particulars	Frequency	Percent
No	0	0.00
Yes	4	100.00
Total	4	100.00

Q6.12 Which one do you believe would allow you as a grower and producer to receive a higher price or a premium if improved?

Particulars	Frequency	Percent
Hygiene	1	33.33
Healthy	0	0.00
Taste	1	33.33
Organically produced	1	33.33
Total	3	100.00

Q6.14 What are food crops buyers looking for on your farm?

Particulars	Frequency	Percent
Cabbage	1	33.33
Cucumber	1	33.33
Eggplant	1	33.33
Total	3	100.00



Q6.14.2 What are the key characteristics preferred by the buyers?

Particulars	Frequency	Percent
Diseases and pests free	3	37.50
Leaf size	1	12.50
Leaf color	1	12.50
Freshness	3	37.50
Total	8	100.00

Q7.3 What type of training and assistance do you need, and would you like to receive?

Particulars	Freq.	Percent
Management skills	1	25.00
Marina operator	1	25.00
Soil testing lab	1	25.00
Source of vegetable seeds	1	25.00
Total	13	100.00

Q7.4 Do you, or any of your commercial partners, belong to inside or outside communities, groups, or associations?

Particulars	Frequency	Percent
No	0	50.00
Yes	1	50.00
Total	2	100.00

Q7.5 what is the nature of the groups/associations?

Particulars	Frequency	Percent
NGO	1	25.00
Farmer groups	1	25.00
Religious	1	25.00
Community	1	25.00
Total	4	100.00

Q8 Do you have any financial constraints in farming?

Particulars	Frequency	Percent
No	0	0.00
Yes	1	100.00
Total	1	100.00

Q9.1 Do you know any providers of financial credit services for agricultural activities?

Particulars	Frequency	Percent
No	2	66.67
Yes	1	33.33
Total	3	100.00

Q9.2 Have any of your household members ever applied for credit either in cash or kind?

Particulars	Frequency	Percent
No	3	100.00
Yes	0	0.00
Total	3	100.00

Q9.4 Have you ever obtained credit in the past two years?

Particulars	Frequency	Percent
No	2	66.67
Yes	1	33.33
Total	3	100.00

Q10 Constraints in food crop farming

Q10.1 List the important constraints to farming and rank them (for plants and animals and poultry).

Question	Responses	Freq.	Percent
Socioeconomic			
1. Lack of seed or plant materials	No	1	33.33
	Yes	2	66.67
	Total	3	100.00
2. Lack of improved seed	No	1	33.33
	Yes	2	66.67
	Total	3	100.00
3. High prices of improved seed	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
4. Poor quality of seed	No	0	0.00
	Yes	2	100.00
	Total	2	100.00
5. Unavailability of credit to buy seed	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
6. High prices of improved seed	No	0	0.00
	Yes	3	100.00
	Total	3	100.00
7. High price of fertilizer	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
8. Lack of credit to buy fertilizer	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
9. Poor access to markets and information	No	1	33.33
	Yes	2	66.67
	Total	3	100.00

Question	Responses	Freq.	Percent
10. Poor vegetable leaf market prices	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
11. Food taboos	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
12. Small land sizes	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
13. Too many sellers but a few buyers	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
14. Poor infrastructure	No	0	0.00
	Yes	1	100.00
	Total	1	100.00
15. Lack of labor	No	2	66.67
	Yes	1	33.33
	Total	3	100.00
16. Poor vegetable leaf market prices	No	1	33.33
	Yes	2	66.67
	Total	3	100.00
17. Lack of land	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
18. Better prices for other vegetables	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
19. Need to give attention to my major food crops	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
20. Other	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
Biophysical			
21. Drought	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
22. Floods	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
23. Pests	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
24. Diseases	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
25. Soil fertility	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
26. Other	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
27. Do you know, have, or use a water collection system?	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
28. Do you now use irrigation?	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
29. Across how many months of the year are you able to and do grow IVs and other vegetables?	No	2	100.00
	Yes	0	0.00
	Total	2	100.00

Q10.2 List the important constraints to farming and rank them (for aquaculture, fisheries, and marine products).

Question	Responses	Freq	Percent
Socioeconomic			
1. Lack of seafood, sea animals, and fish in waters	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
2. Lack of facilities to raise, incubate, and grow seafood	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
3. Technical expertise lacking	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
4. Lack of water transport	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
5. Unavailability of credit to support your business/ operation	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
6. High input costs (including fuel)	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
7. Lack of starting animals, fish, and crustaceans	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
8. Difficulty accessing markets	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
9. Lack of cold storage and coolers	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
10. Lack of dryers/ smokers	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
11. Not sufficient access to water area to make it commercially	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
12. Local market is too competitive	No	2	100.00
	Yes	0	0.00
	Total	2	100.00

Question	Resp.	Freq.	Percent
13. Competition from larger international commercial fishing boats	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
14. Lack of labor to assist	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
15. Poor infrastructure	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
16. Difficulty to access input supplies	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
17. Other	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
Biophysical			
18. Storms	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
19. Floods	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
20. Pests	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
21. Diseases	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
22. Erosion	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
23. Theft and security	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
24. Others	No	1	50.00
	Yes	1	50.00
	Total		100.00

Q10.3 Did you notice any changes in the following weather parameters in the past?

Question	Resp	Changes in the weather parameters		Affecting agriculture?	
		Freq	%	Freq	%
1. More frequent drought	No	2	100.0	1	100.0
	Yes	0	0.00	0	0.00
	Tot.	2	100.0	1	100.0
2.Delayed on-set rainfall	No	2	100.0	1	100.0
	Yes	0	0.00	0	0.00
	Tot.	2	100.0	1	100.0
3.Erratic rainfall pattern	No	0	0.00	0	0.00
	Yes	2	100.0	2	100.0
	Tot.	2	100.0	2	100.0
4. Too much rain	No	0	0.00	0	0.00
	Yes	3	100.00	3	10.00
	Tot.	3	100.00	3	100.0
5. Low rain	No	2	100.00	1	100.0
	Yes	0	0.00	0	0.00
	Tot.	2	100.00	1	100.0
6. Higher temperature	No	1	33.33	1	33.33
	Yes	2	66.33	2	66.33
	Tot.	3	100.00	3	100.0
7. Earlier on set of rainfall	No	2	100.00	1	100.0
	Yes	0	0.00	0	0.00
	Tot.	2	100.00	1	100.0
8. Others	No	2	66.67	1	50.00
	Yes	1	33.33	1	50.00
	Tot.	3	100.00	2	100.0

Q10.4 Did you face any damage due to any climate factor? If yes due to what?

1. Decline in yield

Crop name	Particulars	1. Decline in yield		
		No	Yes	Total
Cabbage	Response	0	1	1
	Per cent	0.00	100.00	100.00
Vegetables	Response	0	1	1
	Per cent	0.00	100.00	100.00
Hot pepper	Response	0	1	1
	Per cent	0.00	100.00	100.00
Eggplant	Response	0	1	1
	Per cent	0.00	100.00	100.00
Cucumber	Response	0	1	1
	Per cent	0.00	100.00	100.00
Vegetables	Response	0	2	2
	Per cent	0.00	100.00	100.00
Total	Response	0	7	7
	Per cent	0.00	100.00	100.00

2. Increase in yield

Crop name	Particulars	2. Increase in yield		
		No	Yes	Total
Vegetables	Response	2	0	2
	Per cent	100.00	0.00	100.00
Total	Response	2	0	2
	Per cent	100.00	0.00	100.00

3. Pests and diseases

Crop name	Particulars	3. Pests and diseases		
		No	Yes	Total
Cabbage	Response	0	1	1
	Per cent	0.00	100.00	100.00
Vegetables	Response	0	1	1
	Per cent	0.00	100.00	100.00
Hot pepper	Response	0	1	1
	Per cent	0.00	100.00	100.00
Eggplant	Response	0	1	1
	Per cent	0.00	100.00	100.00
Cucumber	Response	0	1	1
	Per cent	0.00	100.00	100.00
Vegetables	Response	2	0	2
	Per cent	100.00	0.00	100.00
Total	Response	2	5	7
	Per cent	28.57	71.43	100.00

4. Weed regime

Crop name	Particulars	4. Weed regime		
		No	Yes	Total
Vegetables	Response	1	1	2
	Per cent	50.00	50.00	100.00
Total	Response	1	1	2
	Per cent	50.00	50.00	100.00

Q10.5 Did you take any action against crop loss due to climate?

Particulars	Frequency	Percent
No	1	25.00
Yes	3	75.00
Total	4	100.00

Q10.6 And if so, please list actions taken:

Question	Responses	Actions taken	
		Freq	Percent
Started growing new crop	No	1	100.00
	Yes	0	0.00
	Total	1	100.00
Adopted drought tolerant	No	0	0.00
	Yes	1	100.00
	Total	1	100.00
Moved focus from crop to livestock production	No	1	100.00
	Yes	0	0.00
	Total	1	100.00
Started non-farm activities	No	1	100.00
	Yes	0	0.00
	Total	1	100.00
Started using new land management practices	No	0	0.00
	Yes	2	100.00
	Total	2	100.00
Did nothing	No	1	100.00
	Yes	0	0.00
	Total	1	100.00
Others	No	1	50.00
	Yes	1	50.00
	Total	2	100.00

Q11 Commercial Farming Background

1. Gender

Particulars	Frequency	Percent
Female	0	0.00
Male	1	100.00
Total	1	100.00

2. Highest level of education

Particulars	Frequency	Percent
Primary	0	0.00
Secondary	0	0.00
College	1	100.00
Total	1	100.00

3. Informal education

Particulars	Frequency	Percent
None	1	100.00
Adult Education	0	0.00
Training in food crop production	0	0.00
Total	1	100.00

Q11.2 What are the main sources of your farm labor?

Particulars	Frequency	Percent
Household	0	0.00
Hired	2	100.00
Total	2	100.00

Q11.6 Are you able to save any money for unexpected expenses?

Particulars	Frequency	Percent
No	2	50.00
Yes	2	50.00
Total	4	100.00

Q12.1 Do you see any change in the environment that is impacting your farming and food production?

Particulars	Frequency	Percent
No	3	75.00
Yes	1	25.00
Total	4	100.00

Community Group: Fishers Focus Group

Moderator: What is your goal as a farmer/fisherman over the next five years?

- I have hopes for youths today to lessen their reliance on imported goods and make use of what we have in our surroundings since they are much healthier. In terms of farming, it would be good to have everyone do gardening and farming activities to earn some money and put food on the table. Regarding fishing, I hope we can set up a fish sanctuary where fish can congregate and eventually spill out to other areas for us to catch. We need to put some balance in order to ensure that the fish population is protected and not wiped out, as we will continue to need them for our subsistent use.

Moderator: What do you think about existing MPAs in Kosrae?

- The MPAs are good, but they are near shore and on the reef flats. We should set up protected areas outside the reefs or in the open water.
- I agree with what was said. I like trolling and bottom fishing. I think it would be very helpful to have more FADs for all villages, not just to avoid traveling far to fish. It would also be helpful to make FADs from local products available to us for no or little cost, just like they do in Fiji, Tonga, and even the Philippines. We can use coconut palm leaves or driftwood for FADs instead of buying them from overseas. I hope to see FADs all over the island in the next five years so that we can catch more fish. I also think we should find ways to build reef fish habitats as sanctuaries. In terms of the existing MPAs, I can say that they work. The MPA in my village of Lelu has been in existence for about two or so years now, and we can already see that the fish population is growing. My hope as a fisherman is that some MPAs are protected permanently instead of the temporary closure of five years.
- In addition to what has been shared earlier by my two colleagues, I also think that it is harder to find fish in some fishing grounds because of the increased sedimentation and marine debris in these areas. The fish do not want to live in habitats that are polluted or dirty. So the goal is to clean our reefs so fish can return, and therefore fishing will become easier. In the outer reef, I am starting to see a crown of thorns (COTs) again. I hope that we can put in place some control and eradication measures now to slow down or eliminate the COTs.
- I also want to add that we lost so many of the mooring buoys that were installed around Kosrae's reef at one time. Without these buoys, anchors are thrown into the reefs. There are ongoing efforts in my village to teach our youth about different types of fishing and ways of preserving fish so they can be used for a longer period of time. The goal is to train youth to know how to fish and how to preserve them for longer use.
- I agree that our coral reefs are being damaged by debris and sedimentation. I also notice that with increased rainfall, there's more fresh water entering and affecting our reefs. I hope that we can organize our communities to help clean our coral reef ecosystem by removing all marine debris.

Moderator: **Do you see any change in the environment that is impacting your fishing and food production? If so, what?**

- My comment is similar to an earlier comment about marine debris in our fishing grounds, but my concern is specific to pollution in the marine environment due to discarded plastics. There are times when I find plastics in fish or even turtles. I often wonder why we continue to use plastics on the island when there's a law banning certain plastic products in Kosrae. We need to lessen the use of plastics and enforce the law against dumping plastics and trash in the environment. This includes dumping empty oil containers in the open ocean by fishermen.
- My only observation is that all channels in the reefs around Kosrae are in bad condition. This is caused, I think, by the use of laundry detergents and Clorox. When these chemicals come in contact with the corals, the corals die, and this can be observed in our reefs along with other marine debris like used tires and plastics. The population has been increasing along with the use of washing machines and laundry detergents. Unfortunately, these chemicals go straight into the ocean. We need to find ways to contain them from freely entering our waters.
- I agree that we are blessed with much water, and I spoke about how excessive water runoff can affect our reefs. What we can do is make sure our water faucets are closed so that unnecessary water leakage does not occur. We must consider using septic tanks to contain excessive water runoff and detergents from destroying our reefs.
- I agree with all the issues raised by my colleagues, but what we need to also focus on is the awareness-raising aspect. We need to teach our children and everyone else to be responsible for our environment and to know that the state of our environment reflects who we are as a people. When you have a sense of ownership and responsibility toward your environment, your island is clean. So, it is up to each one of us.

Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**

- I think it would be harder than it is today for the next generation to maintain their lives and culture. There are many new ideas being introduced to our children which can influence and change the way they live in the future.
- It could be easier, and it could also be harder. It depends on how we, as parents, prepare our children to have a better and easier life in the future. We need to teach our children customs and traditions.

- I agree with the previous statement that our children's future depends entirely on how we prepare them today. If we do not lead by example today, then it will be very hard for the next generations. So, we need to have educational programs to help prepare our children for the future.
- I also agree that educating and preparing our children today is important. But, I also think that we, as adults and decision makers in the family, need education as well. We must ensure we know how best to care for our environment before properly passing on the knowledge to our kids.

Moderator: **How do you want to improve your food production/fishing?**

- We need to ensure that the enforcement of relevant environmental laws is effective. Policies that have to do with improving our fishing practices will be very helpful. Today, we have them; the problem is most of us never follow them.
- It will be very helpful if fishermen learn not to fish too much in one particular area but rather to change fishing grounds regularly to not chase away the fish into the deeper waters. As fishermen, we also need to avoid taking too much off the reefs at once. We need to be mindful that others also need fish, not just us. Doing this will not be easy, but we need to start somewhere.
- I have always tried to compare a farmer to a fisherman. When a farmer decides to grow, for example, livestock such as pigs, he or she has to build a pen and raise the pigs in the pen. As a fisherman, I have been hoping to build my own fish pond where I can raise fish. I know that if I am able to successfully build and operate it, then a lot of people will try to do the same and raise their own fish for consumption. Since the law requires seasoning harvesting of turtles from the wild, if I have my own farm, I can raise and harvest turtles from the farm anytime.
- I agree with what was said earlier. We all know that fish are very smart. If we continue to fish in the same area for a long period, the fish will run away and find other habitats. So, we have to be responsible fishermen. I also think we need to implement laws that require seasonal harvesting for high-demand food fish in Kosrae. To prevent overfishing, having seasonal fishing laws, or anything related to it will be helpful.
- I want to add to the discussion on fish farming. I think the government should sustain the fish farm project that started in Kosrae a few years back. The fisheries division helped set up rabbit fish farms for local families to manage. There is one in Tafunsak, two in Lelu, and one in Utwe. We need to expand this kind of project and build more. I know many people interested in doing fish farming, but the government ran out of funding to continue the project. The government has to make sure a project like this can sustain itself.

Moderator: What resources would be helpful to help improve your food production or fishing and/or selling of fish?

- Unfortunately, many fish caught and sold in the markets are juvenile fish. I became quite concerned when I encountered a cooler full of juvenile unicorn fish at a market once. Unsustainable nearshore fishing is causing our fish to move to deeper water. We need to make and enforce laws that ban harvesting small-sized fish.
- Funding is definitely a resource we need. We need funds to strengthen aquaculture activities in Kosrae as they do in Palau. In Palau, they do hatchery and rearing of fish as well as turtles. We need to do the same here in Kosrae.

Moderator: What are the greatest obstacles to fishing and selling fish for income?

- The fuel cost and fishing gear and supplies have increased significantly. These prices seem to increase every time there is a new shipment of supplies into Kosrae. In the past, I could afford to fill up three fuel tanks when going out trolling. Today, I can only afford one tank.
- I agree that oil and fuel costs are too high.
- I agree with what they said about fuel cost. But, I also think that the fact that we harvest small fish today can also create limitations and an obstacle in the future in terms of fishing for good-sized fish. If you catch a small fish, let it go.

Moderator: What public policies should be implemented to strengthen or expand fishing activities for consumption and earning income?

- I think a policy should require mesh size for gill nets. Today we import gillnets with a mesh size of about 1 to 2cm, and these nets can catch small fish. These sizes of gillnets should be banned from being imported to Kosrae. Those that are about an inch or more are better.
- I agree, but not just gillnets. We should also control the size of lift nets.
- Yes, I agree. The use of these fishing nets with small mesh size should be banned and the government should also ban their importation into Kosrae.
- I also agree, but I think we should really look at the enforcement side of it. We have laws in place to protect our resources. We need to strengthen the enforcement of our existing laws and start prosecuting offenders so that others will avoid breaking the same laws and learn to comply with them.
- I agree. I think offenders should be cited for breaking these policies/laws and pay the appropriate penalties or face appropriate consequences.

n: I think we should put in place a policy or a law that delineates areas where fishing boats can travel, especially outside the reef flats. This is to prevent potential accidents and collisions with spear fishermen. I came close to being hit by a boat once, and I think this is a serious issue we need to address now. Boats should travel further down when going to troll to avoid such an accident.

Moderator: How does Climate Change affect fishing? How do you think it will be in the future?

- Let me address this question first. At one time, the ocean and coral reefs in Kosrae were very clean, and the underwater visibility was exceptional. Today, we see many changes because of erosion caused by climate change. Our coastline is eroding, and the ocean current has intensified over the years, causing many reef changes. I think the situation will get worse in the future.
- I agree with []. The ocean currents are very strong nowadays because of climate change. There is also more rain now than before. The changes we see today are really affecting our fishing, and I think it will continue to worsen.
- I do not know if climate change contributes to seeing new species of mammals in our waters. Some fishermen have recently sighted what looks like Killer Whales in our territorial waters. We have never seen these whales in our waters before, but now we are seeing them.
- I can only think of a positive outcome due to climate change, which is good. I participated in a meeting in Palau some years ago, and one of the reports presented in that meeting indicated that because of climate change, the temperature of the ocean water is changing. And with this change, pelagic fish such as tuna and skip jacks were expected to migrate into the waters of Micronesia. So, perhaps climate change would not really affect trolling. But, when it comes to nearshore, we are impacted greatly. With increasing heat from the sun, small fish on our reef flats are dying. We need to seek expert advice to help us prepare for and adapt to the impacts of climate change.
- As stated before, excessive freshwater runoff into the ocean due to climate change impacts the reefs and, therefore, our fishing. In some parts of the world, they recycle excess water from flowing directly into the marine environment. At times, we experience water shortages. Thus, recycling excess water can help provide water for household use.

Moderator: What is the most important training you need to improve your production and farm?

- I think we need training on local fishing knowledge and techniques to improve our fishing efforts. In the past, fishermen would only fish when the time was right. They knew when to catch certain fish at a certain time. They used the moon-phased calendar to predict which fishing is best and what kinds of fish you can catch each night when fishing is good.
- I think we need training in preservation techniques for fish products and recipes to help our young generation enjoy eating fish.
- I think we also need the training to identify when each species of food fish or marine organism, such as crabs, are spawning to protect them from being harvested during spawning seasons.
- We also need the training to differentiate between male and female fish. This way, we can be more selective and only catch the male fish, leaving the female fish to reproduce more.
- We need training on making local FADS (fish aggregation device) that use only local materials available on the island.

Community Group: Youth Focus Group

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?

Hiroshi: As a fisherman, my goal for the next 5 years based on the question raised, is to strengthen fish market on the island. To see a growth in exporting produce and at the same time lower the consumption of imported foods. I would like to see more people getting their food from our ocean than store. This is my opinion and this I what I think is best to do.

- We have an existing development plan; the goal is to use crops we already have on island to produce different kinds of cooking recipes or expand knowledge in their product development. Another goal is for youth to recognize the importance of farming, change mindset that farming is for the unfortunate but to see farming as a career goal. Last goal is for this farmer to find projects to strengthen their farm. This is what comes to my mind after listening to this question.
- In five years from today, my personal goal as a fisher & farmer is to have a store front to avoid shortage in produce. Aside from that, we hope to start our export to sister islands by then with both fishing and farming products.
- My goal over the next five years is to strengthen what we already have and expand.
- My response will be regarding farming. UYG has its own farming department. Among many goals that we have today, one issue is the shortage of produce. It is very hard to find fruits or vegetables available all the time. In this case, it is our goal to teach more of our youths to be able to plant on their own.

Moderator: Do you see any changes in the environment that is impacting your fishing, farming, and food production?

- Based on our experience in farming, one issue we face today is invasive species, such as the Giant African Snail and White Flies, that harm our crops. This issue is still new to us; the generations before never got to experience it. Another environmental change is salinity from sea level rise. Not every plant can tolerate salinity, so we notice the impact it has on our farm. We see a smaller number of bananas and more. Not just with our bananas, we've often experienced saltwater inundation in other locations. These two things are the only things that come to my mind now.

- For fishers, one of the main changes is overfishing. This is a dilemma. And so is unlawful littering to our reefs. Mining; land and coastal erosion cause fish or marine organism to extinct. Sometimes ago, I used to help this office with marine related projects where we pick up trash in our marine areas. This is a problem created by the same people using our ocean. The coral that our fish depend on for habitat got destroyed as well. Even with the existing laws for this issue, I still see people breaking them. This is why we experience erosion. We contribute to the cause of all these. We have seen a change in the number of species in our ocean, because we destroyed what they rely on. As for farmers, we cause our own problems. For example, you grow while someone else harvest. This is something that almost everyone has to deal with. Okay, these are my observation and experience and sorry for going off topic but it has to be said.
- aside from sea level rise, is there a natural cause? For example, channel blockage from deforestation, where you can access only through kayaking but not by boat. I've seen pictures on some channels today and the change in it. This is the same channel we used to go through using big boats. Because of natural causes like sea level rise and strong winds, trees are making it inaccessible. So this is why I think the natural cause is one environmental change that is a challenge to farmers who travel by boat.
- I still remember way back when we used to go to the mangrove and fish. Because of deforestation, we can hardly catch fish today. Sometimes I came across dead fish or even crabs because they have nowhere to live. This might be from overharvesting or unlawful tree cutting. But yeah, this is my experience.

Moderator: Will the next generation have it easier, harder, or the same maintaining life and culture?

- It will only worsen if we don't act or step in now.
- To add to what he just said, I think it can be both. It can get easier and harder. It depends on us today, and if we step in to fix it, it will improve. If we don't conserve our environment, then it won't be easier for the next generation.

Moderator: **How do you want to improve your food production?**

- I think law enforcement should be more serious than they are now.
- I think we should encourage promotional awareness programs for the environment that have been proven to be effective. This will correlate to what was mentioned in the earlier discussion regarding law enforcement.
- Continue awareness programs to strengthen the conservation and aquaculture to expand. For agriculture, we should also strengthen the usage of greenhouses and relocate to upper lands if possible. Advise farmers to manage their farms and make them sustainable and effective.
- In addition to the previous answers, one problem today is dealing with invasive species like Trochus and Crown of Thorn. I heard how effective it was. It's been a while since we stopped doing it. I think we should do it again, and there should be programs ready to fund it.
- I will focus on fishing for this question. One effective thing to do is to be proactive, go out in the water, and fix it by hand. Another thing is for houses located by the beach to build fish ponds and even crab ponds.

Moderator: What resources would be helpful to help improve the business?

- One issue we have as fishermen is that we only have a few markets to sell products. It is very discouraging. There are times when I do not sell a single fish. This is due to a shortage in the market. This is one reason why people rely more on exported goods than going fish/farm and selling or throwing them. Therefore, we need to build more markets.
- I'll speak for both fishing and farming. We really need more assistance with equipment, especially the members of UYG in farming. Today we supply farmers and fishers with seedlings and also training from master fishermen, even farmers, to pass on to our youths. We have a trap net for crab and fish available to individuals interested in either fishing or farming. With that being said, we came across individuals who showed interest in learning while using them. We encourage our people to use bigger size nets to avoid overfishing. These are some improvements that I think will be very helpful.
- Aside from equipment and selling, I think capacity training for youth is a good way to help better improve our farming and fishing. For example, you catch a fish and use every part of that fish instead of just using some and then putting the rest to waste. Similarly, for farming, we train these youth on how to plant crops, cook its product and then make seeds on their own, like a recycling process. One problem we experience here on the island is the shortage of seeds. It is either none or stick to the ones that we prefer the least. So if we do this capacity training, we can use every part of a cabbage from planting, cooking, eating, extracting, and replanting the seeds. Nothing goes to waste.
- In addition to what I mentioned earlier, one successful activity we are conducting today is training young fishermen. Our organization conducts fishing training for our members and individuals interested in participating. This knowledge transfer training is still ongoing and very effective. We focus more on our youth to take part in this training.

Moderator: **What are the greatest limitations to growing your business or making more money?**

- One common obstacle from my own experience is transportation. Even with the desire to go out and fish, we don't because there's no boat to use.
- Aside from what he just said, I'd say equipment. Put them all together; shortages of tools and equipment are an obstacle.

- Some of the greatest obstacles we encountered are policies/restrictions from our government. One example is you make appointment for an equipment to clear drainage, you have to go through a very long process to get it done. Since most clearance require CT owners to sign off on it. With that, most CTs requires signatures from people living abroad, and go through the process of acquiring signature on behalf of the deceased, even if our lands are flooded. I really think there should be waive rights for situations like this. This is why I think it should be improved.
- Time management is also an obstacle as a woman because there are too many responsibilities to be done daily. Most of us hold more than one responsibility in the government community, family, and more. We also own very small portions of land, and it's always a struggle to use it wisely. Not everybody is not the same. This is why we should teach our children to be very smart in managing their time wisely. Of course, they can do more than a hundred things in one day. But for me, this is an obstacle that I have always had to deal with. Of course, there are times when I just want to relax.

Moderator: **What type of public policies should be put in place that would strengthen or expand your business?**

- Despite my interest in farming, I'd like to focus my response on fishing. I know there are existing laws governing our marine space, but they are still ineffective. I really think strengthening these laws and making some changes where necessary. I remember the beginning of our UBR, it was very active at first, but lately, they've been slacking, which gives fishers easier access to these restricted areas. I find it very exciting to see the outcomes from this MPA, from the size of the fishes and how tame they became. So maybe reorganizing this group will be a very good thing to do now. This is coming from my own observation and experience.
- this may go against my work, but this is my honest opinion. I know our marine space is controlled by the state government. I think the law needs to change to allow our municipal government to control and manage marine space. People in the communities are more aware of what is happening in our village.

Moderator: How does climate change affect your food production? How do you think it will be in the future?

- Sea level rise, high tide where most plants don't tolerate salinity, and it also damages home gardening. I feel that the impact of climate change in the future will worsen.
- I agree that sea level rise and saltwater intrusion are currently affecting our farms. With the increase in sea level rise, it would be unlikely that people could continue to do home gardening in the future.

Moderator: What is the most important training you need to improve your production and farm?

- We need training for search and rescue operations and fishing safety. This will help lessen our dependence on imported goods. Most time, we tend to rely more on import rather than what we already have available in our backyards. Why paying for it when we can grow it. When we start farming, we can see many positive outcomes like our farming. Sea level rise is also a problem that makes it difficult for fishermen to tell the right time to do a certain type of fishing. I think sea level rise is an issue as well.
- We need training on preparing fish for consumption and other purposes. We need to learn to make use of every part of the fish. We also need trainings on fish hatching and rearing as they do at the aquaculture center. I think we need to have the aquaculture center (MMME) in Kosrae train our youth to spawn fish, clams, and others. In terms of fruit and vegetable farming, we need training on how to use seeds from fruits and vegetables on our farm to make new seedlings. This will prevent us from relying on imported seeds all the time.
- Let me also add that we will need training to learn various ways and techniques for food preservation. This is important for ensuring that extra food supplies are not wasted. Food availability will also ensure that fishermen are not out fishing daily to provide food for the family.
- In addition to the different trainings mentioned earlier, I think we also need training to control and manage marine invasive species such as Crown of Thorns, catfish, and others in our waters today.

Community Group: Women Focus Group

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?

- In five years, my goal in regard to farming is to see better access to the road to and from the farm, especially for farmers who live far from their gardens. This same problem is with our farming supplies. If this project aims to improve these issues, then I think all these will help us solve the issues that I just addressed.
- From my perspective, coming from a Women in Farming leader, we experience too many issues today. But one thing that I think can help us is to learn to produce our own seeds. We've been experiencing a shortage of seeds on the island. We often order seeds from offshore. We really need to teach our people to be able to grow fruits and vegetables until it's big enough to cook, either for family consumption or for sale. Selling these goods offshore will bring many positive outcomes since nobody has been doing any exports lately. We rely too much on imports. Our goal is to get as much assistance as possible from programs in our government. From planting these vegetables to cooking them and replanting the seeds. This same process can be used for value-added products and a lot more. With the excess amount of copra on the island, we can improvise. Another goal I have is to use local products to produce virgin oil to cook and body oil. So, these two sum up my goal, hoping that funding will be available sooner than later. This will make it easier for us to sell it to our people or even our sister islands.
- Thank you, since I haven't really been farming lately, I will not share my opinion out of experience. But I have been seeing how home gardening is a very effective practice that we have today. Even growing simple vegetables that we see in markets. It would be great if we could encourage women to do it.

save money, generate income, or even see it a better way to contribute to our daily live needs.

- I've been listening to the previous speakers and agree with them all. As a farmer, my family and I already experience the excitement in exporting goods from our own farm until new invasive species were introduced to our island. This issue is among many problems that we overcame while farming. It was very discouraging eve with the high hopes to expand our business. Everything else is perfect until these species were introduced. We should at least try and either destroy or adapting to these species. With the demand we were getting from our buyers, we never once could provide enough. Raising awareness to our people, especially our farmers, will be a good way to start. It will be very helpful to fix this sooner than later. One other thing is to try scraping seeds from veggies that we buy from store, because it's one thing I've been successful in doing.
- I've been listening to the previous speakers and agree with them all. Recently, I became a member of Women in Farming and have been hoping to start my own home garden. I have been making space outside my house, getting seeds and will soon give farming a try. Any advice on how to start my garden is surely appreciated. I am glad to learn that we can make our own seeds from the veggies we consume every day. I would want to see myself as a successful home gardener in five years, able to grow my own food.

Moderator: Do you see any changes in the environment that is impacting your fishing, farming, and food production?

- I know we all experience climate change. DREA's equipment has been bringing invasive species to our farms. Another problem we have as fisherwomen is that our fishing grounds in the nearshore have been turned into marine protected areas. This change is also a problem to most fisherwomen as we cannot fish in deep waters. These two things popped into my mind when listening to this question.
- Climate change is a problem. Today, we experience salinity overflows in our garden, damaging our produce. Invasive species are also an environmental change, our vegetables grow up nice and fruitful, but when it gets to a certain size, they suddenly die or get damaged. This is from invasive species. Overproducing is also a problem we currently have. One cause for overproducing is less demand. Today, our youths show no interest in gardening or fishing but are eager to relocate abroad.
- I agree with what they said about the change in our environment. But it is our duty as citizens to work together and fix the problems we see. One thing that comes to my mind is burning waste, which impacts
- Since I don't fish or farm, I can only share my experience as someone selling local produce. I have experienced a shortage in supplies due to a labor shortage. Most people generally buy healthy local food in the market when they are required to prepare lunch take-outs for special occasions in Kosrae.
- We are all aware of the issues with fishing and farming based on our shared opinion. One of the controversial issues we experience with our youths is that we choose not to eat or use our locally-produced food. We rather get food from a store. This could be from less awareness being done to our people. It's in our hands to change that impact on our ability to farm. Our lifestyle doesn't align with the issues that we currently have.
- Since my husband and I can't fish and haven't started farming, I can only share what I see. Due to declining demand, I've seen a lot of good produce going to waste from my family's store. Since demand goes down, our farmers feel discouraged. We mentioned earlier that it's right to grow produce like cucumber, but it is also a problem when nobody buys them, and it becomes a waste. But other times, we don't have enough, which is also a problem. This same thing happens to fishermen. Sometimes it's hard to find, while other times, we overfish.
- I hope this survey process has a part where our ideas can become actions. On the discussion that was brought to my attention about overproducing, we can store it and try value added. I've experienced this same problem with shortage and overproducing. If there is ever funding for food preservation projects, it will really help. One example would be kimchee preparation, which can create a source of income for the supplier. As I mentioned earlier, this value-added process can also be used in oil making. This will lessen our need for imported cooking oil. Such a program will be very helpful in preserving and creating jobs simultaneously.

Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**

- If we don't fix it now, then it'll get worse. It depends on how we deal with it today. So, we have to act now and fix it today for a better future. Otherwise, all of our problems will get worse for future generations.
- In line with what was just mentioned, the problem is with our youths today. They don't want to be part of the cause. But it is our responsibility to make it a priority to change their mindset.

Moderator: **How do you want to improve your food production?**

- I think that food preservation, food processing, and value-added are important practices. This will produce more opportunities, like jobs for processing.

The way I see it, some of the problems we see today are global in nature and probably out of our control. We can only mitigate problems like erosion by replanting trees that are no longer in place to help secure soil from eroding. Even to this day, some bigger countries still use factories that were proven to be a huge cause of air pollution that led to sea level rise. I know they tried to adjust by decreasing the use of smoke. Even from afar, we can still help fix it by focusing on the little things, like teaching our kids to get their needs from farming rather than buying from stores. It might not make a big visible difference, but it is a step forward. It will also help us individually by living a healthier lifestyle which prevents illness, like diabetes etc. these unhealthy lifestyles can lead to serious health issues. Kids nowadays would rather use their vote and not get their hands dirty. As mothers, it is up to us to make a change before it is too late. This topic interests me because I just mentioned some very serious problems. But for sure, if we fix it today, we will have a chance to fix it before it is too late.

Moderator: What resources would be helpful to help improve the business?

- We need everything, including funding, equipment, training, and technical support.
- I also think that we need consistent supplies of seedlings for our farms. In terms of fishing, I think that we need better equipment so that we can improve our catch. We also need a processing plant to process local food into value-added products. In terms of dry-litter piggery, we need the equipment (chipper) to provide wood chips. Without the woodchips, the dry-litter piggery is not functional. So, we need this equipment to be readily available to us.
- For those of us whose farms are located far from home, we need better access roads. When it is difficult to travel on access roads because of the poor condition, we become discouraged.

Moderator: **What are the greatest limitations to growing your business or making more money?**

- I think what was stated earlier applies to this question. Limited funding is our number one issue.
- The limited time also prevents me from attending to my farming full-time.
- Lack of commitment due to limited knowledge and desire for farming.
- Limited farmland is also an issue.
- The lack of a public market or a farmers' market that is centralized in one area for farmers to sell their produce. It would be nice to have a place that will always buy and sell goods and produce from the farmers. This would be easier for farmers when they want to sell their products. Farmers will not have to deal with private businesses to sell on their behalf.
- It would be nice to have a one-in-all center that houses a public market, processing center, packaging, and a labeling place.
- She reminded me of an issue we use to have. Limited demand for fish because we can't afford to buy it. My family and I recently got introduced to online sale. With the help of Facebook, we have been able to make sales in less than 30 seconds. This should encourage all of us to use.

Moderator: **What type of public policies should be put in place that would strengthen or expand your business?**

- To limit or just stop import produce that we can grow locally. Just like they discontinued the use of plastic products. So, stop imports and buy from farmers on the island.
- We can maybe implement new laws to have seasonal and rotational planting and harvesting of certain fruits and vegetables just like KIRMA did with turtle and pigeon harvesting. Or a better way would be to assign groups to plant until harvest certain fruits and veggies and rotate until everyone can have a chance to plant and harvest. This will give us an idea of the best time to plant certain fruits or vegetables.
- As a member and leader of Women in Farming, we have been trying to do just that. To study which fruit is best for which month and which soil type is good for them. We just gave our members seedlings and hope to find out soon.
- Another thing we just learned is to have a built list to always know how many bags to sell and avoid over-harvesting. So, if I plan to sell tomatoes tomorrow, I will know tonight how many bags I'm selling based on what we have on our farm.
- Some soil testing exists to help us know which soil is good for certain fruits and vegetables.
- Maybe we can make it mandatory for all families to grow something. Even one fruit, just something. I attended a meeting last night with GCF. We learned the same thing we are covering now. Food preservation, recipes farming, fishing. They even share that they are ready to start their export with our sister islands. Women in Farming is part of this export project. I think we should start making more laws relating to food security.
- Strengthening projects to deal with the invasive species already on the island. Even laws to prevent ships from bringing more invasive species.

Moderator: How does climate change affect your business? How do you think it will be in the future?

- Saltwater inundation, erosion, and inland flooding are issues. I believe all these will be worse. But it will be helpful if we learn how to be climate change resilient. Some countries, like Africa, can still plant taro in salt water. I think it will be helpful to start learning ways to adapt to climate change since we cannot stop it. We should think about how to improve our farms with the existing of climate change. Another thing I noticed today is the taste of fish. They don't taste like before. This if obviously from climate change.

Moderator: What is the most important training you need to improve your production and farm?

- We need to have learning exchanges with farmers in neighboring islands and countries. I would say training in soil testing and hydroponics, food processing, and seedling production are important trainings for all.
- I also think basic training for first-time farmers is important. And for dry-litter piggery farmers, we need the training to use the wood chipper.
- I also want training in composting and in making local pig feed and fertilizer.

Community Group: Farmers Focus Group

Moderator: What is your goal as a farmer over the next five years?

- To improve and expand my farm to earn more and provide for my family. I will work hard to make my farm better than before. Now that I know we have support, I will make sure to improve my farm. I also would want to have better access to farm equipment to help support my farming activities.
- My goal is also to access more farm equipment and supplies to support my farming. I also want to expand my local produce market to bring in more money and help provide for people from my village. I also raise and sell pigs. I would also like programs like this helping to provide pig feed for livestock.
- I do livestock, vegetable, and crop farming and share the same concerns that previous speakers raised. Regarding crop and vegetable farming, we need to make sure farm equipment and supplies are available to support farmers. In addition, we also have a shortage of laborers and workers on the island. We need people to attend to our farms on a full-time basis in order to sustain the operation. Farm equipment, seeds, and even deworming tablets for pigs, tillage equipment, and chippers that were once available from the Agriculture office are no longer available to support farmers. My goal for the next few years is to increase food production in Kosrae and make farming sustainable. I am sure most farmers will agree that we should look at the local markets and extend and supply neighboring markets in the Marshalls, Nauru, Kiribati, and other neighboring islands.
- I have similar goals. I want to plant more crops and vegetables on my farm to earn some income and for family consumption.
- I am a pig farmer, and I am sure I can speak for most pig farmers in Kosrae. The resources available for us to support our piggery farms are clearly inadequate. My hope as a livestock farmer is that resources and financial assistance from the government are available to support livestock farming and production of local livestock products to ensure food security for our people and earn income from export.
- Some time ago, I applied for food security funding support from the government to improve my piggery project, but I was not selected. With this invite, I am excited to know that there may be a possibility for other support toward piggery farms in the near future. My goal is that we prioritize livestock production and provide assistance to all farmers on the island.
- My goal is to expand my crop and vegetable farm to support my family. We should not be relying on imported crops and vegetables. We have fertile soil, and if we put our hearts into it, we can start and maintain a farm for the family. I am also aware that the government is giving out government lands to private citizens for farming purposes. I have limited land to farm. The hope is to get a piece of the government land to support my farming in the future.
- I have been farming crops and vegetables for a long time now. I sell them to earn income and provide for family consumption. I think we need to start looking at expanding our farms to ensure consistent crops and vegetable supply in the local market and for export. I also hope that equipment and supplies to support food production is available for us. I also hope that we promote the use of dry-litter piggery in Kosrae.
- I support farming. I have a market in my village that sells local produce. I hope that vegetables, crop farming, and local food production are strengthened to meet the local demands first, then we look at exporting.

Moderator: Do you see any changes in the environment that is impacting your fishing, farming, and food production?

- Years ago, the Livestock division under the Agriculture office provided a lot of support and services for our piggery farms, including deworming tablets and others. Today, these programs have been discontinued; therefore, we see that the health and condition of our livestock are not the same.
- The obvious change I see in my village is that the tide is getting higher each year, and saltwater inundation is becoming very common. These impact farm areas and kill food trees that are not resilient to salt water. The weather is also affecting farms and food production. Our drainage system is also blocked, causing excess water to flood farmlands.
- I would say that the infestation of invasive species, both weed, and snails, in the environment is greatly impacting my farm.
- Let me also add to the discussion on invasive species. We also see new diseases in our citrus fruits as well as new termites that live underground, which affect our root crops, such as tapioca. I also noticed that some of the best farmlands in Kosrae are currently flooded and cannot be farmed anymore.
- I noticed that when we farm in the same area for a while, the amount and condition of the crops and vegetables change. We need assistance to ensure we maintain soil fertility in our farms.

- Let me also add that development projects that are happening on the island are changing the nature of our land too. The drainage system is blocked in some areas because of sedimentation from these developments. With a blocked drainage system, excess water remains and affects the farmlands and farm production.

Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**

- It is already harder for today's generation. I think it would be even harder for the next generation. As parents, we know that most of our young kids are complacent and show little to no interest in learning about the importance of farming. Thus, we need to teach them and get them excited about farming and their lives.
- I share the same sentiments as them. It will be worse for the next generation if we continue to see this trend. When I was growing up, I remember being amazed at the agricultural production level at that time. Compared to the production level today, there is very little we can show for. Unfortunately, it is true that our kids today show no interest in farming or food production. As parents, we need to continue to stress the importance of being responsible for their lives and having the will and desire to ensure a better future for themselves.
- It is hard to predict what the future holds for our children, but if we set the right course for them today, they may be able to have an easier and more successful future. So, the success of programs like these today will determine whether our kids gain the interest to engage in farming or food production.
- I think that one way to ensure that the next generation will have it easier is if they learn about culture, farming, and food production, that this becomes part of the regular school curriculum. That way, children will learn to prepare for the future.
- Sorry, let me stress again that we need to start teaching children our culture and way of life today. We were taught in school to weave local baskets and containers and learned about other important local skills and traditions. Today, learning about our customs and traditions is no longer part of the curriculum. We need to make sure these things are taught in school to help prepare our children for the future.

Moderator: How do you want to improve your food production?

- I think technical expertise should be provided through government and non-government programs to help improve our farming and food production. We also need support from the government, such as with equipment being readily available for people who want to engage in food production.
- We need to find effective ways to teach farming to our families and others who are interested. I also think that to improve my farming and production; governmental farm equipment should be made available for my use even if my farm is located in a remote area.
- Another way to help farmers who want to export their products is for the government to provide a cold storage facility to store produce for export. There may be a program offered by the college to provide technical skills for farmers, but I do not think the program is effective. We should look into improving it so that it can serve its purpose.
- I would think that if the government provides farm lots and equipment to support farming, food production would improve. Another way to improve farming is to have available fertile soils and fertilizers for farmers who may not have big farmlands to cultivate.

Moderator: What food resources would be helpful to improve food production?

- I think equipment is the number one resource that we need to improve our food production. I also buy and transport soil to my farm, but it costs me money to do so. The government should investigate the possibility of providing fertile soils and equipment to farmers and gardeners who may need them.
- The government should restart the deworming project for the pigs. The government should allocate some funds for it.
- Pig feed is what I need. If the government can help subsidize or bring cheaper pig feed to the island, it would help significantly.
- I have a dry-litter piggery (DLP,) but I am struggling to operate this DLP because of the limitation of wood chips. I need a woodchipper, or at least I need to have access to one.
- I also think that we need affordable pig feed on the island. The price of pig feed is high, and most of us cannot continue to afford it. I think the Price Control Commission should do their part in preventing businesses from practicing price gouging.
- I agree about high prices. I was in Pohnpei recently, and I observed that their prices are also high. So, this is a much wider problem that we may not be able to control. Some places in our region produce and use local pig feed. This help to lower the cost of pig feed for farmers on these islands. If we can do the same, this will take care of the price problem we face today.

Moderator: **What are the greatest limitations to growing your business or making more money?**

- The current laws and requirements can pose obstacles for some farmers. When there are too many government requirements, it discourages people from engaging in development. I also think that law enforcement is inconsistent across the board.
- I would say that the impacts of climate change are a big concern for me as a farmer. Increased rainfall causes overflooding and damage to our farmlands.
- I also think that excessive heat from the sun is also an obstacle. Some fruit crops and vegetables cannot tolerate excessive heat.
- Invasive species are also an obstacle. Invasive can take over your farm if you don't pay close attention to it, and it could be quite discouraging when you lose your cr-

ops and vegetables. I think that this is a serious problem that the Agriculture Office needs to address.

Moderator: **What type of public policies should be put in place that would strengthen or expand your business?**

- The State and National Government should prioritize funding to support farming, and all policies of the State should promote local food production.
- Since dry-litter piggery is environmentally safe and its by-products are used as natural fertilizers for farms, I think the government should devise a policy that offers incentives to farmers who convert their piggeries into dry-litter.
- I think that we should have an equipment use policy that clearly defines that equipment donated to or purchased by the government for farming purposes should be used solely for farm development and not for other infrastructure projects by the government.

Moderator: How does climate change affect your business? How do you think it will be in the future?

- Heavy rains are affecting my farm greatly and damaging my crops. I see this mainly with my cucumbers. When it rains consistently, the cucumbers do not produce much. I think the problem will continue. I do not think the rain will slow down anytime soon.
- I think the two main climate change-related problems affecting our crops and vegetable farming are excessive rain and saltwater intrusion.
- I want to repeat that flooding is a main problem in food production. Inland flooding is a problem in Malem, and it will continue as we have little control over climate change.

Moderator: What is the most important training you need to improve your production and farm?

- I would like the government to help bring experts to teach us about farming. For instance, if there are experts out there that know about growing cucumbers, the government should bring that person to teach those interested in it.
- I agree that we need experts to come in and train farm owners and laborers on the techniques necessary to maintain and sustain a farm.
- I am more interested in training for farmers to be able to identify rich and fertile soils for farming as well as the right mixes of sand, soil, and fertilizer for our farms.
- The Agriculture Extension program should have a regular training schedule to help offer training and support to farmers in the communities. But training on quality control is important.
- We need training in packaging, storing, handling, marketing, and others.

APPENDIX 3.4 POHNPEI

HOUSEHOLD SURVEY

2. DEMOGRAPHIC AND LIVELIHOOD INFORMATION

Q2.1 Gender of the sample Respondents

Particulars	Frequency	Percent
Male	127	79.38
Female	33	20.63
Total	160	100.00

Particulars	Mean
Q2.2 Respondent's age (years)	47.03
Q2.3 Number of people in the family	6.95

Q2.4 The livelihoods sources for your household
Multiple response item

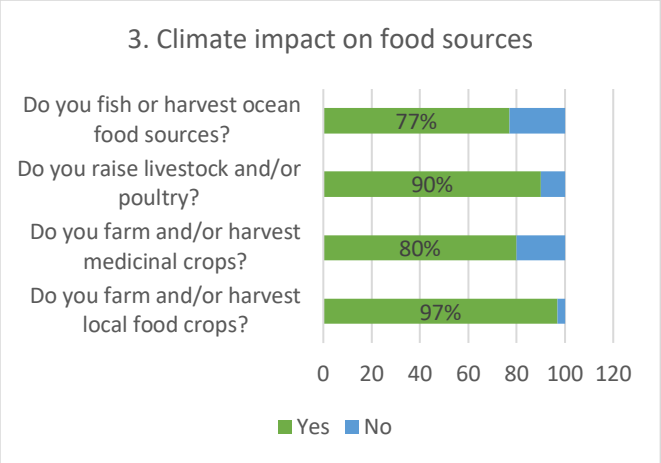
Particulars	Frequency	Percent
Subsistence living - growing food for household consumption	147	92.45
Growing Crops	134	85.35
Raising livestock	115	72.33
Fishing	94	59.12
Paid work in agriculture	8	5.03
Salaried government employment (non-agriculture)	41	25.79
Salaried private employment (non-agriculture)	36	22.64
Salaries NGO employment	3	1.89
Remittances	16	10.06
Social Security	28	17.61
Government transfers/NGO support	3	1.89
Other	8	5.00

Q2.5 Respondent's highest level of education

Particulars	Frequency	Percent
Traditional/Non-Formal	6	3.82
Incomplete primary school	26	16.56
Completed primary (Elementary) school	21	13.38
Incomplete secondary school	16	10.19
Completed secondary (High) school	22	14.01
Incomplete higher education	31	19.75
Completed higher education (*i.e.,* COM-FSM)	34	21.66
Completed graduate studies	1	0.64
Total	157	100.00

3. CLIMATE IMPACT ON FOOD SOURCES

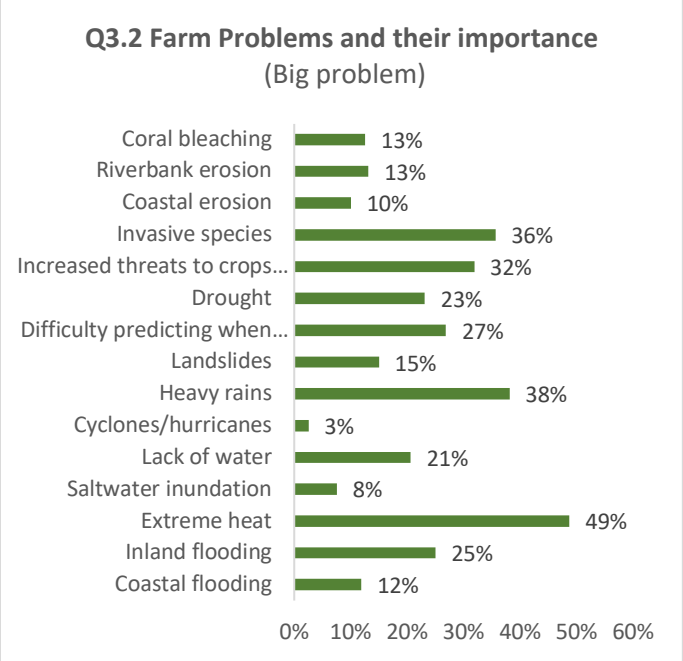
Q3.1.1 Do you farm and/or harvest local food crops?
Q3.1.2 Do you farm and/or harvest medicinal crops?
Q3.1.3 Do you raise livestock and/or poultry?
Q3.1.4 Do you fish or harvest ocean food sources?



Q3.2 Farm problems and their importance

Problem	Response	Frequency	Percent
Q3.2.1 Coastal flooding	Not a problem	112	70.00
	Little problem	29	18.13
	Big problem	19	11.88
	Total	160	100.00
Q3.2.2 Inland flooding	Not a problem	76	47.50
	Little problem	44	27.50
	Big problem	40	25.00
	Total	160	100.00

Problem	Response	Freq.	Percent
Q3.2.3 Extreme heat	Not a problem	21	13.13
	Little problem	61	38.13
	Big problem	78	48.75
	Total	160	100.00
Q3.2.4 Saltwater inundation	Not a problem	130	81.76
	Little problem	17	10.69
	Big problem	12	7.55
	Total	159	100.00
Q3.2.5 Lack of water	Not a problem	83	51.88
	Little problem	44	27.50
	Big problem	33	20.63
	Total	160	100.00
Q3.2.6 Cyclones/ hurricanes	Not a problem	142	89.87
	Little problem	12	7.59
	Big problem	4	2.53
	Total	158	100.00
Q3.2.7 Heavy rains	Not a problem	38	23.75
	Little problem	61	38.13
	Big problem	61	38.13
	Total	160	100.00
Q3.2.8 Landslides	Not a problem	106	66.25
	Little problem	30	18.75
	Big problem	24	15.00
	Total	160	100.00
Q3.2.9 Difficulty predicting when the rainy season will come	Not a problem	74	46.25
	Little problem	43	26.88
	Big problem	43	26.88
	Total	160	100.00
Q3.2.10 Drought	Not a problem	68	42.50
	Little problem	55	34.38
	Big problem	37	23.13
	Total	160	100.00
Q3.2.11 Increased threats to crops from pests and disease	Not a problem	49	30.63
	Little problem	60	37.50
	Big problem	51	31.87
	Total	160	100.00
Q3.2.12 Invasive species	Not a problem	56	35.00
	Little problem	47	29.38
	Big problem	57	35.63
	Total	160	100.00
Q3.2.13 Coastal erosion	Not a problem	120	75.00
	Little problem	24	15.00
	Big problem	16	10.00
	Total	160	100.00
Q3.2.14 Riverbank erosion	Not a problem	105	65.63
	Little problem	34	21.25
	Big problem	21	13.13
	Total	160	100.00
Q3.2.15 Coral bleaching	Not a problem	101	63.52
	Little problem	38	23.90
	Big problem	20	12.58
	Total	159	100.00



Q3.3.1 In the last 10 years, have you noticed any change in the average temperature over a long period?

Particulars	Frequency	Percent
Mean temperature increased	126	78.75
Mean temperature decreased	9	5.63
Yes, more erratic	14	8.75
No, no change	11	6.88
Not sure	0	0
Total	160	100.00

Q3.3.2 In the last 10 years, have you noticed any changes in the average rainfall over a long period?

Particulars	Frequency	Percent
Yes, mean rainfall increased	98	61.25
Yes, mean rainfall decreased	11	6.88
Yes, more erratic	33	20.63
No, no change	18	11.25
Not sure	0	0
Total	160	100.00

Q.3.3.3 In the last 10 years, has the start of the rainy season changed?

Particulars	Frequency	Percent
Yes, the rainy season starts later	28	17.50
Yes, the rainy season starts earlier	63	39.38
Yes, more erratic	46	28.75
No, no change	23	14.37
Not sure	0	0
Total	160	100.00

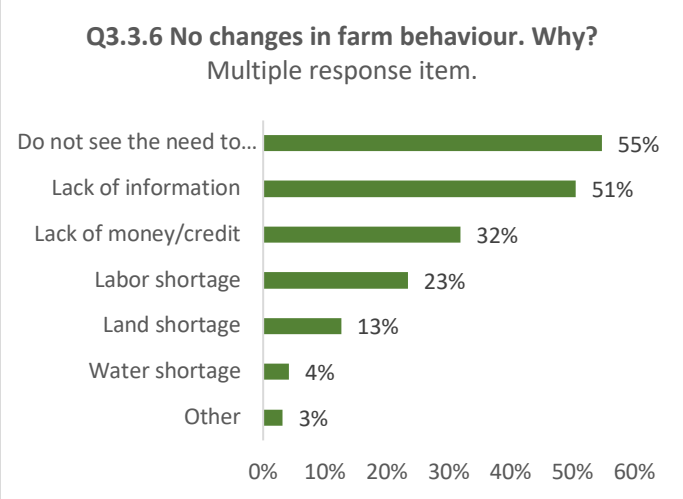
Q3.3.4 If yes (from Q3.3.2 to 3.3.4), have you made any adjustments in your farming (including marine)?

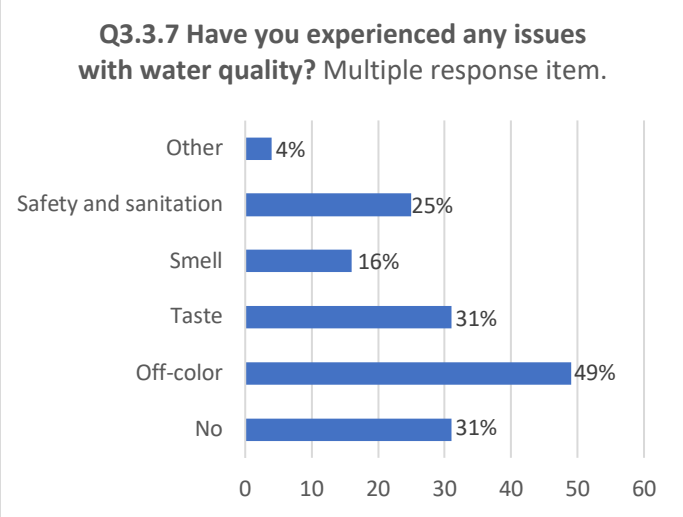
Particulars	Frequency	Percent
No	103	64.38
Yes	57	35.63
Total	160	100.00

Q3.3.5 If yes, which behavioral changes? Multiple response item.

Question	Response	Freq.	Percent
1. Changed crop types	No	30	53.57
	Yes	26	46.43
	Total	56	100.00
2. Changed crop varieties	No	36	64.29
	Yes	20	35.71
	Total	56	100.00
3. Built a water harvesting scheme	No	43	76.79
	Yes	13	23.21
	Total	56	100.00
4. Implemented soil conservation techniques (to prevent erosion or soil contamination)	No	32	58.93
	Yes	23	41.07
	Total	56	100.00
5. Planted trees	No	29	51.79
	Yes	27	48.21
	Total	56	100.00
6. Irrigation	No	52	92.86
	Yes	4	7.14
	Total	56	100.00
7. Included/ augmented livestock herding	No	53	92.98
	Yes	3	5.26
	Total	57	100.00
8. Migration	No	55	98.21
	Yes	1	1.79
	Total	56	100.00
9. Found an off-farm job	No	54	96.43
	Yes	2	3.57
	Total	56	100.00
10. Leased the land	No	56	100.00
	Yes	0	0
	Total	56	100.00
11. Put crops under protected structures	No	48	85.71
	Yes	8	14.29
	Total	56	100.00
12. Changed harvested fish species	No	52	92.86
	Yes	4	7.14
	Total	56	100.00
13. Changed harvested fishing location	No	48	85.71
	Yes	8	14.29
	Total	56	100.00
14. Others	No	50	90.91
	Yes	5	9.09
	Total	55	100.00

Q3.3.6 If no, why? Multiple response item.





4. LOCAL FOOD PRODUCTION AND CLIMATE CHANGE

Q4.1 Do you grow and/or harvest food crops (including marine organisms)?

Particulars	Frequency	Percent
No	14	8.75
Yes	146	91.25
Total	160	100.00

Q4.2 Why do you grow and/or harvest food crops? Multiple response item.

Question	Responses	Frequency	Percent
Family consumption	No	2	1.36
	Yes	145	98.64
	Total	147	100.00
For sale	No	58	39.46
	Yes	89	60.54
	Total	147	100.00
Traditional exchange	No	28	19.05
	Yes	119	80.95
	Total	147	100.00
Other	No	141	96.58
	Yes	5	3.42
	Total	146	100.00

Q4.3 How would you describe the food production and/or harvesting that you do? Multiple response item.

Question	Response	Freq.	Percent
1. I raise livestock to feed my own family	No	22	14.97
	Yes	125	85.03
	Total	147	100.00
2. I raise livestock to sell livestock products at market	No	89	60.54
	Yes	58	39.46
	Total	147	100.00
3. Agroforestry (define this in colloquial terms for respondents)	No	53	36.05
	Yes	94	63.95
	Total	147	100.00
4. I collect products from the forest for my family	No	67	45.58
	Yes	80	54.42
	Total	147	100.00
5. I collect products from the forest to sell at market	No	122	82.99
	Yes	25	17.01
	Total	147	100.00
6. I fish and collect marine food for my family	No	66	44.90
	Yes	81	55.10
	Total	147	100.00
7. I fish and collect marine food to sell at the market	No	116	78.91
	Yes	31	21.09
	Total	147	100.00
8. I fish and collect marine products to send to my family/friends outside of the FSM?	No	139	94.56
	Yes	8	5.44
	Total	147	100.00
9. Other	No	129	97.73
	Yes	3	2.27
	Total	132	100.00

5. AGRICULTURE, FARMING, AND AGROFORESTRY

Q5.1	Response	Freq.	Percent
1. Do you have adequate access to land for growing and/or harvesting crops?	No	35	21.88
	Yes	125	78.13
	Total	160	100.00
2. Do you feel:	It is enough	115	71.88
	Not enough	45	28.13
	Total	160	100.00
3. Do you want more land?	No	85	53.46
	Yes	74	46.54
	Total	159	100.00
4. Is the land you have for growing and harvesting crops shared? (Including family members)?	No	33	20.75
	Yes	126	79.25
	Total	159	100.00

For the following questions:

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.1), you may skip the other questions in that row.

Q5.2.1 (1-28) Do you grow and/or harvest this food?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	27	16.88
	Yes	133	83.13
	Total	160	100.00
2. Land/soft taro	No	33	20.63
	Yes	127	79.38
	Total	160	100.00
3. Breadfruit	No	2	1.25
	Yes	158	98.75
	Total	160	100.00
4. Banana	No	1	0.63
	Yes	159	99.38
	Total	160	100.00
5. Coconut	No	5	3.13
	Yes	155	96.88
	Total	160	100.00
6. Copra (coconut product)	No	82	51.25
	Yes	78	48.75
	Total	160	100.00
7. Yam	No	22	13.75
	Yes	138	86.25
	Total	160	100.00
8. Mango	No	44	27.50
	Yes	116	72.50
	Total	160	100.00
9. Pineapple	No	59	36.88
	Yes	101	63.13
	Total	160	100.00
10. Limes/ lemons	No	26	16.25
	Yes	134	83.75
	Total	160	100.00
11. Sweet potatoes	No	142	89.31
	Yes	17	10.69
	Total	159	100.00
12. Tapioca	No	89	55.63
	Yes	71	44.38
	Total	160	100.00
13. Papaya	No	59	37.11
	Yes	100	62.89
	Total	159	100.00
14. Locally grown/ collected fresh vegetables	No	106	66.25
	Yes	54	33.75
	Total	160	100.00
15. Locally grown/ collected fruits	No	95	59.38
	Yes	65	40.63
	Total	160	100.00
16. Soursop	No	57	35.63
	Yes	103	64.38
	Total	160	100.00
17. Black Pepper	No	141	88.68
	Yes	18	11.32
	Total	159	100.00
18. Hot peppers	No	78	48.75
	Yes	82	51.25
	Total	160	100.00
19. Sakau (Kava)	No	27	16.88
	Yes	133	83.13
	Total	160	100.00
20. Sugar cane	No	74	46.25
	Yes	86	53.75
	Total	160	100.00
21. Betel leaf	No	108	67.50
	Yes	52	32.50
	Total	160	100.00
22. Durian (football plant)	No	151	94.38
	Yes	9	5.63
	Total	160	100.00
23. Cacao	No	140	87.50
	Yes	20	12.50
	Total	160	100.00
24. Chestnut	No	118	73.75
	Yes	42	26.25
	Total	160	100.00
25. Betelnut	No	38	23.75
	Yes	122	76.25
	Total	160	100.00
26. Tangerine/ Orange	No	138	86.25
	Yes	22	13.75
	Total	160	100.00
27. Medicinal crops (example: Noni)	No	43	26.88
	Yes	117	73.13
	Total	160	100.00
28. If others, list them here:	No	145	91.19
	Yes	14	8.81
	Total	159	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.2), you may skip the other questions in that row.

Q5.2.2 (1-28) How often do you harvest from the garden, agroforest and/or patch?

1. Swamp taro or hard taro

Particulars	Freq.	Percent
Several times a week	17	12.78
Once a week	18	13.53
Every other week	14	10.53
Once a month	76	57.14
Never	8	6.02
Total	133	100.00

2. Land taro or soft taro

Particulars	Freq.	Percent
Several times a week	14	10.85
Once a week	19	14.73
Every other week	18	13.95
Once a month	69	53.49
Never	9	6.98
Total	129	100.00

3. Breadfruit

Particulars	Freq.	Percent
Several times a week	46	29.68
Once a week	30	19.35
Every other week	21	13.55
Once a month	56	36.13
Never	2	1.29
Total	155	100.00

4. Banana

Particulars	Freq.	Percent
Several times a week	56	35.90
Once a week	39	25.00
Every other week	29	18.59
Once a month	32	20.51
Never	0	0
Total	156	100.00

5. Coconut

Particulars	Freq.	Percent
Several times a week	81	53.64
Once a week	20	13.25
Every other week	17	11.26
Once a month	31	20.53
Never	2	1.32
Total	151	100.00

6. Copra

Particulars	Freq.	Percent
Several times a week	50	61.73
Once a week	13	16.05
Every other week	5	6.17
Once a month	6	7.41
Never	7	8.64
Total	81	100.00

7. Yam

Particulars	Freq.	Percent
Several times a week	22	16.42
Once a week	10	7.46
Every other week	12	8.96
Once a month	81	60.45
Never	9	6.72
Total	134	100.00

8. Mango

Particulars	Freq.	Percent
Several times a week	40	34.19
Once a week	6	5.13
Every other week	3	2.56
Once a month	58	49.57
Never	10	8.55
Total	117	100.00

9. Pineapple

Particulars	Freq.	Percent
Several times a week	14	13.86
Once a week	13	12.87
Every other week	15	14.85
Once a month	52	51.49
Never	7	6.93
Total	101	100.00

10. Limes/lemon

Particulars	Freq.	Percent
Several times a week	82	61.65
Once a week	24	18.05
Every other week	10	7.52
Once a month	14	10.53
Never	3	2.26
Total	133	100.00

11. Sweet Potatoes

Particulars	Freq.	Percent
Several times a week	2	8.70
Once a week	1	4.35
Every other week	3	13.04
Once a month	5	21.74
Never	12	52.17
Total	23	100.00

12. Tapioca

Particulars	Freq.	Percent
Several times a week	6	7.79
Once a week	7	9.09
Every other week	16	20.78
Once a month	38	49.35
Never	10	12.99
Total	77	100.00

13. Papaya

Particulars	Freq.	Percent
Several times a week	20	18.18
Once a week	26	23.64
Every other week	20	18.18
Once a month	38	34.55
Never	6	5.45
Total	110	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Several times a week	26	45.61
Once a week	8	14.04
Every other week	6	10.53
Once a month	8	14.04
Never	9	15.79
Total	57	100.00

15. Locally grown/collected Fruits

Particulars	Freq.	Percent
Several times a week	18	26.47
Once a week	10	14.71
Every other week	8	11.76
Once a month	25	36.76
Never	7	10.29
Total	68	100.00

16. Soursop

Particulars	Freq.	Percent
Several times a week	11	10.28
Once a week	7	6.54
Every other week	12	11.21
Once a month	68	63.55
Never	9	8.41
Total	107	100.00

17. Black pepper

Particulars	Freq.	Percent
Several times a week	4	13.79
Once a week	5	17.24
Every other week	1	3.45
Once a month	7	24.14
Never	12	41.38
Total	29	100.00

18. Hot pepper

Particulars	Freq.	Percent
Several times a week	55	62.50
Once a week	11	12.50
Every other week	4	4.55
Once a month	8	9.09
Never	10	11.36
Total	88	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Several times a week	33	24.63
Once a week	23	17.16
Every other week	22	16.42
Once a month	49	36.57
Never	7	5.22
Total	134	100.00

20. Sugar cane

Particulars	Freq.	Percent
Several times a week	9	10.47
Once a week	12	13.95
Every other week	13	15.12
Once a month	39	45.35
Never	13	15.12
Total	86	100.00

21. Betel leaf

Particulars	Freq.	Percent
Several times a week	29	49.15
Once a week	5	8.47
Every other week	6	10.17
Once a month	7	11.86
Never	12	20.34
Total	59	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Several times a week	1	6.67
Once a week	2	13.33
Every other week	o	o
Once a month	2	13.33
Never	10	66.67
Total	15	100.00

23. Cacao

Particulars	Freq.	Percent
Several times a week	2	6.67
Once a week	3	10.00
Every other week	0	0
Once a month	10	33.33
Never	15	50.00
Total	30	100.00

24. Chestnut

Particulars	Freq.	Percent
Several times a week	7	14.29
Once a week	2	4.08
Every other week	2	4.08
Once a month	25	51.02
Never	13	26.53
Total	49	100.00

25. Betelnut

Particulars	Freq.	Percent
Several times a week	54	43.90
Once a week	22	17.89
Every other week	15	12.20
Once a month	23	18.70
Never	7	5.69
Total	123	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Several times a week	4	12.12
Once a week	1	3.03
Every other week	6	18.18
Once a month	7	21.21
Never	15	45.45
Total	33	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Several times a week	25	21.37
Once a week	22	18.80
Every other week	14	11.97
Once a month	50	42.74
Never	6	5.13
Total	117	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Several times a week	3	21.43
Once a week	1	7.14
Every other week	5	35.71
Once a month	3	21.43
Never	2	14.29
Total	14	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.3), you may skip the other questions in that row.

Q5.2.3 (1-28) Over the course of a year, how much do you harvest for each crop?

1. Swamp taro or hard taro

Particulars	Frequency	Percent
Crop not ready for harvest	5	3.70
Small quantity (<50 lbs)	61	45.19
Medium quantity (50-100 lbs)	43	31.85
Large quantity (>100 lbs)	26	19.26
Total	135	100.00

2. Land taro or soft taro

Particulars	Frequency	Percent
Crop not ready for harvest	8	6.35
Small quantity (<50 lbs)	59	46.83
Medium quantity (50-100 lbs)	38	30.16
Large quantity (>100 lbs)	21	16.67
Total	126	100.00

3. Breadfruit

Particulars	Freq.	Percent
Crop not ready for harvest	6	3.85
Small quantity (<50 lbs)	47	30.13
Medium quantity (50-100 lbs)	44	28.21
Large quantity (>100 lbs)	59	37.82
Total	156	100.00

4. Banana

Particulars	Freq.	Percent
Crop not ready for harvest	1	0.63
Small quantity (<50 lbs)	57	35.85
Medium quantity (50-100 lbs)	46	28.93
Large quantity (>100 lbs)	55	34.59
Total	159	100.00

5. Coconut

Particulars	Freq.	Percent
Crop not ready for harvest	3	1.95
Small quantity (<50 lbs)	45	29.22
Medium quantity (50-100 lbs)	60	38.96
Large quantity (>100 lbs)	46	29.87
Total	154	100.00

6. Copra

Particulars	Freq.	Percent
Crop not ready for harvest	7	8.64
Small quantity (<50 lbs)	8	9.88
Medium quantity (50-100 lbs)	31	38.27
Large quantity (>100 lbs)	35	43.21
Total	81	100.00

7. Yam

Particulars	Freq.	Percent
Crop not ready for harvest	11	8.21
Small quantity (<50 lbs)	37	27.61
Medium quantity (50-100 lbs)	44	32.84
Large quantity (>100 lbs)	42	31.34
Total	134	100.00

8. Mango

Particulars	Freq.	Percent
Crop not ready for harvest	13	11.30
Small quantity (<50 lbs)	30	26.09
Medium quantity (50-100 lbs)	51	44.35
Large quantity (>100 lbs)	21	18.26
Total	115	100.00

9. Pineapple

Particulars	Freq.	Percent
Crop not ready for harvest	13	13.00
Small quantity (<50 lbs)	56	56.00
Medium quantity (50-100 lbs)	25	25.00
Large quantity (>100 lbs)	6	6.00
Total	100	100.00

10. Limes/lemons

Particulars	Freq.	Percent
Crop not ready for harvest	5	3.79
Small quantity (<50 lbs)	70	53.03
Medium quantity (50-100 lbs)	44	33.33
Large quantity (>100 lbs)	13	9.85
Total	132	100.00

11. Sweet potatoes

Particulars	Freq.	Percent
Crop not ready for harvest	10	47.62
Small quantity (<50 lbs)	3	14.29
Medium quantity (50-100 lbs)	4	19.05
Large quantity (>100 lbs)	4	19.05
Total	21	100.00

12. Tapioca

Particulars	Freq.	Percent
Crop not ready for harvest	15	19.74
Small quantity (<50 lbs)	27	35.53
Medium quantity (50-100 lbs)	25	32.89
Large quantity (>100 lbs)	9	11.84
Total	76	100.00

13. Papaya

Particulars	Freq.	Percent
Crop not ready for harvest	8	7.69
Small quantity (<50 lbs)	57	54.81
Medium quantity (50-100 lbs)	31	29.81
Large quantity (>100 lbs)	8	7.69
Total	104	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Crop not ready for harvest	11	19.30
Small quantity (<50 lbs)	23	40.35
Medium quantity (50-100 lbs)	15	26.32
Large quantity (>100 lbs)	8	14.04
Total	57	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Crop not ready for harvest	10	14.49
Small quantity (<50 lbs)	30	43.48
Medium quantity (50-100 lbs)	21	30.43
Large quantity (>100 lbs)	8	11.59
Total	69	100.00

16. Soursop

Particulars	Freq.	Percent
Crop not ready for harvest	7	6.80
Small quantity (<50 lbs)	67	65.05
Medium quantity (50-100 lbs)	24	23.30
Large quantity (>100 lbs)	5	4.85
Total	103	100.00

17. Black Pepper

Particulars	Freq.	Percent
Crop not ready for harvest	11	45.83
Small quantity (<50 lbs)	11	45.83
Medium quantity (50-100 lbs)	1	4.17
Large quantity (>100 lbs)	1	4.17
Total	24	100.00

18. Hot peppers

Particulars	Freq.	Percent
Crop not ready for harvest	9	10.34
Small quantity (<50 lbs)	61	70.11
Medium quantity (50-100 lbs)	15	17.24
Large quantity (>100 lbs)	2	2.30
Total	87	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Crop not ready for harvest	9	6.98
Small quantity (<50 lbs)	34	26.36
Medium quantity (50-100 lbs)	34	26.36
Large quantity (>100 lbs)	52	40.31
Total	129	100.00

20. Sugar cane

Particulars	Freq.	Percent
Crop not ready for harvest	15	17.65
Small quantity (<50 lbs)	37	43.53
Medium quantity (50-100 lbs)	21	24.71
Large quantity (>100 lbs)	12	14.12
Total	85	100.00

21. Betel Leaf

Particulars	Freq.	Percent
Crop not ready for harvest	9	16.36
Small quantity (<50 lbs)	32	58.18
Medium quantity (50-100 lbs)	12	21.82
Large quantity (>100 lbs)	2	3.64
Total	55	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Crop not ready for harvest	9	56.25
Small quantity (<50 lbs)	4	25.00
Medium quantity (50-100 lbs)	3	18.75
Large quantity (>100 lbs)	0	0
Total	16	100.00

23. Cacao

Particulars	Freq.	Percent
Crop not ready for harvest	13	46.43
Small quantity (<50 lbs)	11	39.29
Medium quantity (50-100 lbs)	3	10.71
Large quantity (>100 lbs)	1	3.57
Total	28	100.00

24. Chestnut

Particulars	Freq.	Percent
Crop not ready for harvest	13	26.53
Small quantity (<50 lbs)	21	42.86
Medium quantity (50-100 lbs)	14	28.57
Large quantity (>100 lbs)	1	2.04
Total	49	100.00

25. Betelnut

Particulars	Freq.	Percent
Crop not ready for harvest	6	5.08
Small quantity (<50 lbs)	39	33.05
Medium quantity (50-100 lbs)	29	24.58
Large quantity (>100 lbs)	44	37.29
Total	118	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Crop not ready for harvest	10	32.26
Small quantity (<50 lbs)	11	35.48
Medium quantity (50-100 lbs)	8	25.81
Large quantity (>100 lbs)	2	6.45
Total	31	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Crop not ready for harvest	5	4.27
Small quantity (<50 lbs)	71	60.68
Medium quantity (50-100 lbs)	38	32.48
Large quantity (>100 lbs)	3	2.56
Total	117	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Crop not ready for harvest	5	33.33
Small quantity (<50 lbs)	7	46.67
Medium quantity (50-100 lbs)	2	13.33
Large quantity (>100 lbs)	1	6.67
Total	15	100.00

Q5.2.4 (1-28) Over the course of one year, how many plants do you have in your field?

Variable	Obs.	Mean	Min	Max
1. Swamp taro or hard taro	128	475.6328	5	5000
2. Land taro or soft taro	123	170.537	2	2000
3. Breadfruit	150	34.333	1	200
4. Banana	156	127.808	1	2500
5. Coconut	151	86.927	1	1500
6. Copra (coconut product)	64	612.125	1	30000
7. Yam	151	86.927	1	1500
8. Mango	64	612.125	1	30000
9. Pineapple	132	28.174	1	250
10. Limes/ lemons	113	10.796	0	100
11. Sweet Potatoes	93	99.688	2	6000
12. Tapioca	125	15.176	1	650
13. Papaya	10	97.6	2	600
14. Locally grown/collected vegetables	66	71.136	1	500
15. Locally grown/collected fruits	94	20.255	1	250
16. Soursop	47	56.574	1	1000
17. Black Pepper	57	30.404	1	1000
18. Hot peppers	97	7.278	1	50
19. Sakau (Kava)	12	36.583	1	300
20. Sugar cane	79	36.241	1	1000
21. Betel Leaf	125	254.28	1	10000
22. Durian (football plant)	73	33.37	1	500
23. Cacao	48	26.292	1	1000
24. Chestnut	6	9.167	1	30
25. Betelnut	20	3.5	0	15
26. Tangerine/ Orange	39	5.359	1	45
27. Medicinal crops	116	57.853	1	3000
28. Others	18	9.944	1	50

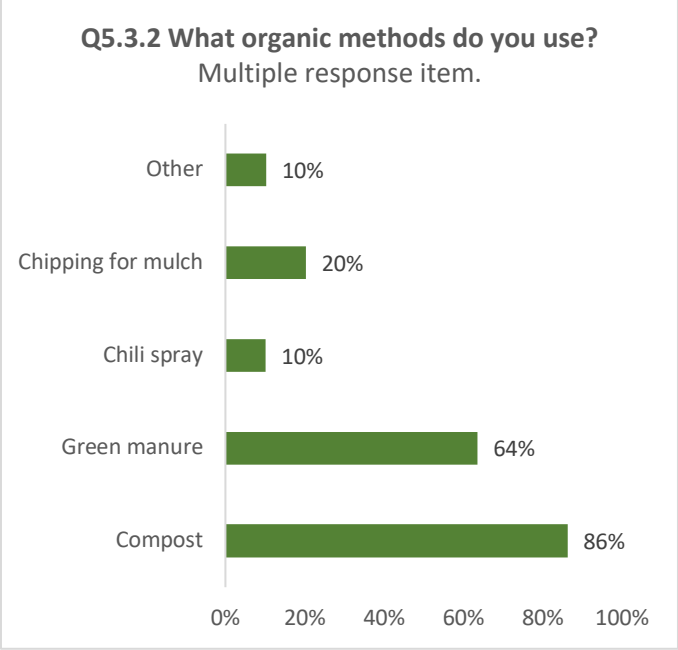
Q5.2.5 (1-28) Is there ever crop loss (0=no, 1=yes)?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	82	64.57
	Yes	45	35.43
	Total	127	100.00
2. Land/soft taro	No	75	61.98
	Yes	46	38.02
	Total	121	100.00
3. Breadfruit	No	80	54.79
	Yes	66	45.21
	Total	146	100.00
4. Banana	No	99	66.44
	Yes	50	33.56
	Total	149	100.00
5. Coconut	No	98	67.12
	Yes	48	32.88
	Total	146	100.00
6. Copra (coconut product)	No	70	80.46
	Yes	17	19.54
	Total	87	100.00

Question	Response	Freq.	Percent
7. Yam	No	79	60.77
	Yes	51	39.23
	Total	130	100.00
8. Mango	No	81	69.83
	Yes	35	30.17
	Total	116	100.00
9. Pineapple	No	74	74.00
	Yes	26	26.00
	Total	100	100.00
10. Limes/ lemons	No	97	73.48
	Yes	35	26.52
	Total	132	100.00
11. Sweet Potatoes	No	26	78.79
	Yes	7	21.21
	Total	33	100.00
12. Tapioca	No	61	77.22
	Yes	18	22.78
	Total	79	100.00
13. Papaya	No	75	69.44
	Yes	33	30.56
	Total	108	100.00
14. Locally grown/collected fresh vegetables	No	50	72.46
	Yes	19	27.54
	Total	69	100.00
15. Locally grown/ collected fruits	No	62	76.54
	Yes	19	23.46
	Total	81	100.00
16. Soursop	No	87	82.86
	Yes	18	17.14
	Total	105	100.00
17. Black pepper	No	33	91.67
	Yes	3	8.33
	Total	36	100.00
18. Hot peppers	No	73	76.84
	Yes	22	23.16
	Total	95	100.00
19. Sakau (Kava)	No	83	65.35
	Yes	44	34.65
	Total	127	100.00
20. Sugar cane	No	68	75.56
	Yes	22	24.44
	Total	90	100.00
21. Betel leaf	No	58	89.23
	Yes	7	10.77
	Total	65	100.00
22. Durian (football plant)	No	25	89.29
	Yes	3	10.71
	Total	28	100.00
23. Cacao	No	32	80.00
	Yes	8	20.00
	Total	40	100.00

Question	Responses	Freq.	Percent
24. Chestnut	No	49	84.48
	Yes	9	15.52
	Total	58	100.00
25. Betelnut	No	83	70.94
	Yes	34	29.06
	Total	117	100.00
26. Tangerine/ orange	No	35	87.50
	Yes	5	12.50
	Total	40	100.00
27. Medicinal crops (example: Noni)	No	96	82.76
	Yes	20	17.24
	Total	116	100.00
28. If others, list them here:	No	18	85.71
	Yes	3	14.29
	Total	21	100.00

Q5.3.1	Responses	Freq.	Percent
Do you practice organic agriculture, by which we mean using natural plants, compost, and waste from animals and poultry as soil amendments or to repel insects and diseases?	No	75	46.88
	Yes	85	53.13
	Total	160	100.00



Question	Responses	Freq.	Percent
Q5.3.3 Has your ability to grow food been affected by a change in climate?	No	40	25.97
	Yes	114	74.03
	Total	154	100.00
Q5.3.4 Has a change in climate impacted your crop yield?	No	45	28.48
	Yes	113	71.52
	Total	158	100.00

Q5.3.5 If yes, which crops are the most affected by climate?

Question	Responses	Freq.	Percent
1. Swamp taro	No	56	50.00
	Yes	56	50.00
	Total	112	100.00
2. Land taro	No	65	58.04
	Yes	47	41.96
	Total	112	100.00
3. Breadfruit	No	28	25.23
	Yes	83	74.77
	Total	111	100.00
4. Betelnut	No	62	56.36
	Yes	48	43.64
	Total	110	100.00
5. Banana	No	58	52.25
	Yes	53	47.75
	Total	111	100.00
6. Coconut	No	54	48.65
	Yes	57	51.35
	Total	111	100.00
7. Copra (coconut product)	No	96	87.27
	Yes	14	12.73
	Total	110	100.00
8. Yam	No	41	35.96
	Yes	73	64.04
	Total	114	100.00
9. Sweet potatoes	No	105	95.45
	Yes	5	4.55
	Total	110	100.00
10. Tapioca	No	84	75.68
	Yes	27	24.32
	Total	111	100.00
11. Imported vegetables	No	98	88.29
	Yes	13	11.71
	Total	111	100.00
12. Locally grown/ collected vegetables	No	93	83.04
	Yes	19	16.96
	Total	112	100.00
13. Papaya	No	85	76.58
	Yes	26	23.42
	Total	111	100.00
14. Locally grown/ collected fruits	No	93	83.04
	Yes	19	16.96
	Total	112	100.00
15. Imported fruits	No	105	95.45
	Yes	5	4.55
	Total	110	100.00
16. Citrus	No	76	69.09
	Yes	34	30.91
	Total	110	100.00
17. Black pepper (peppercorns)	No	101	91.82
	Yes	9	8.18
	Total	110	100.00
18. Hot peppers	No	88	80.00
	Yes	22	20.00
	Total	110	100.00
19. Sakau (Kava)	No	43	38.74
	Yes	68	61.26
	Total	111	100.00
20. Other (specify)	No	110	100.00
	Yes	0	0
	Total	110	100.00

Q5.3.6 If yes, how did climate contribute to your crop loss?

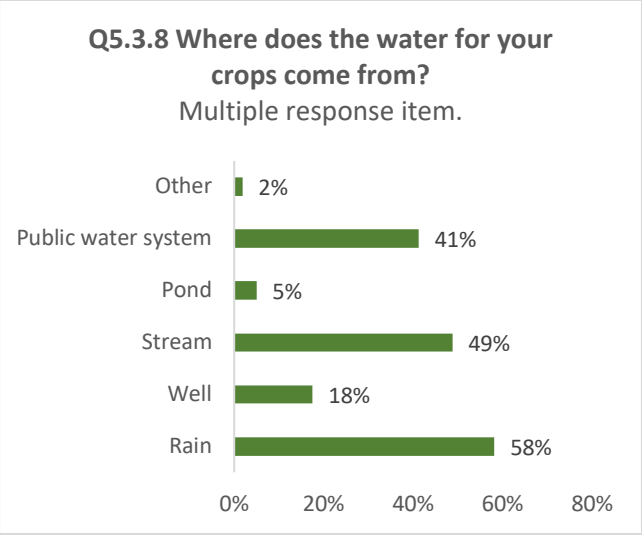
Question	Response	Freq.	Percent
1. Flooding	No	72	64.29
	Yes	40	35.71
	Total	112	100.00
2. Extreme heat	No	15	13.27
	Yes	98	86.73
	Total	113	100.00
3. Saltwater inundation (intrusion)	No	104	94.55
	Yes	6	5.45
	Total	110	100.00
4. Lack of water (etc.)	No	***76***	68.47
	Yes	*35*	31.53
	Total	111	100.00
5. Cyclones/ hurricanes	No	110	100.00
	Yes	0	0
	Total	110	100.00
6. Heavy rains	No	29	25.89
	Yes	83	74.11
	Total	112	100.00
7. Landslides	No	88	78.57
	Yes	24	21.43
	Total	112	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	81	71.68
	Yes	32	28.32
	Total	113	100.00
9. Drought	No	67	59.82
	Yes	45	40.18
	Total	112	100.00
10. Increased threats to crops from pests and disease	No	61	54.46
	Yes	51	45.54
	Total	112	100.00
11. Invasive species	No	70	62.50
	Yes	42	37.50
	Total	112	100.00
12. Plant diseases	No	48	42.86
	Yes	64	57.14
	Total	112	100.00
13. Coastal erosion	No	108	98.18
	Yes	2	1.82
	Total	110	100.00
14. Riverbank erosion	No	106	95.50
	Yes	5	4.50
	Total	111	100.00
15. Displaced from land	No	110	100.00
	Yes	0	0
	Total	110	100.00
16. Other (specify)	No	110	100.00
	Yes	0	0
	Total	110	100.00

Q5.3.7 Do you have access to enough water for crop production?

Responses	Frequency	Percent
All the time	89	55.97
Some of the time	61	38.36
None of the time	9	5.66
Total	159	100.00

Q5.3.8 Where does the water for your crops come from? Multiple response item.



Q5.4 For each crop, write the answers in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.4.1), you may skip the other questions in that row.

Q5.4.1 (1-20) Do you grow this crop?

Question	Responses	Frequency	Percent
1. Swamp/ hard taro	No	28	17.50
	Yes	132	82.50
	Total	160	100.00
2. Land/ soft taro	No	37	23.27
	Yes	122	76.73
	Total	159	100.00
3. Breadfruit	No	9	5.63
	Yes	151	94.38
	Total	160	100.00
4. Betelnut	No	23	14.47
	Yes	136	85.53
	Total	159	100.00
5. Banana	No	6	3.75
	Yes	154	96.25
	Total	160	100.00
6. Coconut	No	13	8.13
	Yes	147	91.88
	Total	160	100.00
7. Copra (coconut product)	No	***90***	56.96
	Yes	*68*	43.04
	Total	158	100.00
8. Yam	No	20	12.50
	Yes	140	87.50
	Total	160	100.00
9. Sweet potatoes	No	138	86.79
	Yes	21	13.21
	Total	159	100.00
10. Tapioca	No	92	57.86
	Yes	67	42.14
	Total	159	100.00
11. Soursop	No	67	42.14
	Yes	92	57.86
	Total	159	100.00
12. Locally grown/ collected fresh vegetables	No	102	63.75
	Yes	58	36.25
	Total	160	100.00
13. Imported fresh vegetables	No	129	80.63
	Yes	31	19.38
	Total	160	100.00
14. Locally grown/ collected fruits	No	94	58.75
	Yes	66	41.25
	Total	160	100.00
15. Imported fruits	No	145	90.63
	Yes	15	9.38
	Total	160	100.00

Question	Response	Freq.	Percent
16. Lime/Lemon	No	43	26.88
	Yes	117	73.13
	Total	160	100.00
17. Tangerine	No	134	83.75
	Yes	26	16.25
	Total	160	100.00
18. Black pepper (peppercorns)	No	142	88.75
	Yes	18	11.25
	Total	160	100.00
19. Hot peppers	No	81	50.63
	Yes	79	49.38
	Total	160	100.00
20. Sakau (Kava)	No	27	16.88
	Yes	133	83.13
	Total	160	100.00

5.4.2 (1-20) Do you experience crop loss?

Question	Response	Freq.	Percent
1. Swamp/hard taro	No	67	50.76
	Yes	65	49.24
	Total	132	100.00
2. Land/soft taro	No	70	56.00
	Yes	55	44.00
	Total	125	100.00
3. Breadfruit	No	***65***	44.52
	Yes	*81*	55.48
	Total	146	100.00
4. Betelnut	No	71	51.82
	Yes	66	48.18
	Total	137	100.00
5. Banana	No	79	54.11
	Yes	67	45.89
	Total	146	100.00
6. Coconut	No	79	55.63
	Yes	63	44.37
	Total	142	100.00
7. Copra (coconut product)	No	61	70.93
	Yes	25	29.07
	Total	86	100.00
8. Yam	No	56	40.00
	Yes	84	60.00
	Total	140	100.00
9. Sweet potatoes	No	37	71.15
	Yes	15	28.85
	Total	52	100.00
10. Tapioca	No	52	63.41
	Yes	30	36.59
	Total	82	100.00
11. Soursop	No	83	79.81
	Yes	21	20.19
	Total	104	100.00
12. Locally grown/ collected fresh vegetables	No	55	67.07
	Yes	27	32.93
	Total	82	100.00
13. Imported fresh vegetables	No	43	71.67
	Yes	17	28.33
	Total	60	100.00
14. Locally grown/ collected fruits	No	68	72.34
	Yes	26	27.66
	Total	94	100.00
15. Imported fruits	No	39	90.70
	Yes	4	9.30
	Total	43	100.00
16. Lime/ lemon	No	78	60.47
	Yes	51	39.53
	Total	129	100.00
17. Tangerine/ orange	No	40	80.00
	Yes	10	20.00
	Total	50	100.00
18.Black pepper (peppercorns)	No	39	86.67
	Yes	6	13.33
	Total	45	100.00
19. Hot peppers	No	73	70.87
	Yes	30	29.13
	Total	103	100.00
20. Sakau (Kava)	No	50	36.50
	Yes	87	63.50
	Total	137	100.00

Q5.4.3 (1-20) If you observe crop loss due to climate change, what is the cause? Indicate all that apply.

1. Swamp/hard taro

Question	Responses	Freq.	Percent
1. Flooding	No	51	71.83
	Yes	20	28.17
	Total	71	100.00
2. Extreme heat	No	30	42.25
	Yes	41	57.75
	Total	71	100.00
3. Saltwater inundation (intrusion)	No	66	94.29
	Yes	4	5.71
	Total	70	100.00
4. Lack of water	No	59	83.10
	Yes	12	16.90
	Total	71	100.00
5. Cyclones/ hurricanes	No	69	98.57
	Yes	1	1.43
	Total	70	100.00
6. Heavy rains	No	46	65.71
	Yes	24	34.29
	Total	70	100.00
7. Landslides	No	65	91.55
	Yes	6	8.45
	Total	71	100.00

Question	Response	Freq.	Percent
8. Unpredictability of the rainy season	No	68	95.77
	Yes	3	4.23
	Total	71	100.00
9.Drought	No	49	68.06
	Yes	23	31.94
	Total	72	100.00
10. Increased threats to crops from pests and disease	No	67	94.37
	Yes	4	5.63
	Total	71	100.00
11. Invasive species	No	60	83.33
	Yes	12	16.67
	Total	72	100.00
12. Plant diseases	No	56	78.87
	Yes	15	21.13
	Total	71	100.00
13. Coastal erosion	No	68	97.14
	Yes	2	2.86
	Total	70	100.00
14. Riverbank erosion	No	67	95.71
	Yes	3	4.29
	Total	70	100.00
15. Displaced from land	No	70	100.00
	Yes	0	0
	Total	70	100.00
16. Other (specify below)	No	70	100.00
	Yes	0	0
	Total	70	100.00

2.Land/soft taro

Question	Response	Freq.	Percent
1. Flooding	No	38	66.67
	Yes	19	33.33
	Total	57	100.00
2. Extreme heat	No	23	40.35
	Yes	34	59.65
	Total	57	100.00
3. Saltwater inundation (intrusion)	No	55	98.21
	Yes	1	1.79
	Total	56	100.00
4. Lack of water	No	46	80.70
	Yes	11	19.30
	Total	57	100.00
5. Cyclones/ hurricanes	No	56	100.00
	Yes	0	0
	Total	56	100.00
6. Heavy rains	No	30	52.63
	Yes	27	47.37
	Total	57	100.00
7. Landslides	No	53	94.64
	Yes	3	5.36
	Total	56	100.00
8. Difficulty predicting when the rainy season will come	No	53	94.64
	Yes	3	5.36
	Total	56	100.00
9.Drought	No	37	64.91
	Yes	20	35.09
	Total	57	100.00
10.Increased threats to crops from pests and disease	No	51	89.47
	Yes	6	10.53
	Total	57	100.00
11.Invasive species	No	49	85.96
	Yes	8	14.04
	Total	57	100.00
12. Plant diseases	No	42	75.00
	Yes	14	25.00
	Total	56	100.00
13. Coastal erosion	No	54	96.43
	Yes	2	3.57
	Total	56	100.00
14. Riverbank erosion	No	53	94.64
	Yes	3	5.36
	Total	56	100.00
15. Displaced from land	No	55	98.21
	Yes	1	1.79
	Total	56	100.00
16. Other (specify below)	No	56	98.25
	Yes	1	1.75
	Total	57	100.00

3.Breadfruit

Question	Responses	Freq.	Percent
1. Flooding	No	74	92.50
	Yes	6	7.50
	Total	80	100.00
2. Extreme heat	No	30	36.59
	Yes	52	63.41
	Total	82	100.00
3. Saltwater inundation	No	80	98.77
	Yes	1	1.23
	Total	81	100.00
4. Lack of water	No	66	81.48
	Yes	15	18.52
	Total	81	100.00
5. Cyclones/ hurricanes	No	81	100.00
	Yes	0	0
	Total	81	100.00
6. Heavy rains	No	36	44.44
	Yes	45	55.56
	Total	81	100.00
7. Landslides	No	78	96.30
	Yes	3	3.70
	Total	81	100.00

Question	Responses	Freq.	Percent
8. Unpredictability of the rainy season	No	77	95.06
	Yes	4	4.94
	Total	81	100.00
9. Drought	No	59	72.84
	Yes	22	27.16
	Total	81	100.00
10. Increased threats to crops from pests and disease	No	62	74.70
	Yes	21	25.30
	Total	83	100.00
11. Invasive species	No	66	79.52
	Yes	17	20.48
	Total	83	100.00
12. Plant diseases	No	51	60.71
	Yes	33	39.29
	Total	84	100.00
13. Coastal erosion	No	79	97.53
	Yes	2	2.47
	Total	81	100.00
14. Riverbank erosion	No	79	97.53
	Yes	2	2.47
	Total	81	100.00
15. Displaced from land	No	80	98.77
	Yes	1	1.23
	Total	81	100.00
16. Other (specify below)	No	79	97.53
	Yes	2	2.47
	Total	81	100.00

4. Betelnut

Question	Responses	Freq.	Percent
1. Flooding	No	64	95.52
	Yes	3	4.48
	Total	67	100.00
2. Extreme heat	No	28	41.79
	Yes	39	58.21
	Total	67	100.00
3. Saltwater inundation	No	65	97.01
	Yes	2	2.99
	Total	67	100.00
4. Lack of water	No	61	91.04
	Yes	6	8.96
	Total	67	100.00
5. Cyclones/ hurricanes	No	65	97.01
	Yes	2	2.99
	Total	67	100.00
6. Heavy rains	No	38	56.72
	Yes	29	43.28
	Total	67	100.00
7. Landslides	No	66	100.00
	Yes	0	0
	Total	66	100.00
8. Difficulty predicting when the rainy season will come	No	63	94.03
	Yes	4	5.97
	Total	67	100.00
9. Drought	No	44	65.67
	Yes	23	34.33
	Total	67	100.00
10.Increased threats to crops from pests and disease	No	55	82.09
	Yes	12	17.91
	Total	67	100.00
11. Invasive species	No	59	88.06
	Yes	8	11.94
	Total	67	100.00
12. Plant diseases	No	44	65.67
	Yes	23	34.33
	Total	67	100.00
13. Coastal erosion	No	65	97.01
	Yes	2	2.99
	Total	67	100.00
14. Riverbank erosion	No	65	97.01
	Yes	2	2.99
	Total	67	100.00
15. Displaced from land	No	66	98.51
	Yes	1	1.49
	Total	67	100.00
16. Other (specify below)	No	66	100.00
	Yes	0	0
	Total	66	100.00

5. Banana

Question	Response	Freq.	Percent
1. Flooding	No	57	89.06
	Yes	7	10.94
	Total	64	100.00
2. Extreme heat	No	27	40.91
	Yes	39	59.09
	Total	66	100.00
3. Saltwater inundation (intrusion)	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
4. Lack of water	No	60	90.91
	Yes	6	9.09
	Total	66	100.00
5. Cyclones/ hurricanes	No	62	93.94
	Yes	4	6.06
	Total	66	100.00
6. Heavy rains	No	36	54.55
	Yes	30	45.45
	Total	66	100.00
7. Landslides	No	61	92.42
	Yes	5	7.58
	Total	66	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	64	95.52
	Yes	3	4.48
	Total	67	100.00
9.Drought	No	49	74.24
	Yes	17	25.76
	Total	66	100.00
10.Increased threats to crops from pests and disease	No	58	86.57
	Yes	9	13.43
	Total	67	100.00
11.Invasive species	No	60	89.55
	Yes	7	10.45
	Total	67	100.00
12. Plant diseases	No	47	69.12
	Yes	21	30.88
	Total	68	100.00
13. Coastal erosion	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
14. Riverbank erosion	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
15. Displaced from land	No	65	98.48
	Yes	1	1.52
	Total	66	100.00
16. Other (specify below)	No	66	98.51
	Yes	1	1.49
	Total	67	100.00

6. Coconut

Question	Responses	Freq.	Percent
1. Flooding	No	62	93.94
	Yes	4	6.06
	Total	66	100.00
2. Extreme heat	No	22	33.33
	Yes	44	66.67
	Total	66	100.00
3. Saltwater inundation (intrusion)	No	65	98.48
	Yes	1	1.52
	Total	66	100.00
4. Lack of water	No	51	77.27
	Yes	15	22.73
	Total	66	100.00
5. Cyclones/ hurricanes	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
6. Heavy rains	No	37	56.06
	Yes	29	43.94
	Total	66	100.00
7. Landslides	No	64	96.97
	Yes	2	3.03
	Total	66	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	66	100.00
	Yes	0	0
	Total	66	100.00
9.Drought	No	41	62.12
	Yes	25	37.88
	Total	66	100.00
10.Increased threats to crops from pests and disease	No	50	75.76
	Yes	16	24.24
	Total	66	100.00
11.Invasive species	No	58	87.88
	Yes	8	12.12
	Total	66	100.00
12. Plant diseases	No	46	69.70
	Yes	20	30.30
	Total	66	100.00
13. Coastal erosion	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
14. Riverbank erosion	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
15. Displaced from land	No	65	98.48
	Yes	1	1.52
	Total	66	100.00
16. Other (specify below)	No	66	100.00
	Yes	0	0
	Total	66	100.00

7. Copra (coconut product)

Question	Response	Freq.	Percent
1. Flooding	No	19	90.48
	Yes	2	9.52
	Total	21	100.00
2. Extreme heat	No	8	36.36
	Yes	14	63.64
	Total	22	100.00
3. Saltwater inundation (intrusion)	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
4. Lack of water	No	19	86.36
	Yes	3	13.64
	Total	22	100.00
5. Cyclones/ hurricanes	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
6. Heavy rains	No	10	45.45
	Yes	12	54.55
	Total	22	100.00
7. Landslides	No	22	100.00
	Yes	0	0
	Total	22	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
9.Drought	No	10	45.45
	Yes	12	54.55
	Total	22	100.00
10.Increased threats to crops from pests and disease	No	18	81.82
	Yes	4	18.18
	Total	22	100.00
11.Invasive species	No	18	81.82
	Yes	4	18.18
	Total	22	100.00
12. Plant diseases	No	14	63.64
	Yes	8	36.36
	Total	22	100.00
13. Coastal erosion	No	20	90.91
	Yes	2	9.09
	Total	22	100.00
14. Riverbank erosion	No	20	90.91
	Yes	2	9.09
	Total	22	100.00
15. Displaced from land	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
16. Other (specify below)	No	22	100.00
	Yes	0	0
	Total	22	100.00

8. Yam

Question	Response	Freq.	Percent
1. Flooding	No	57	74.03
	Yes	20	25.97
	Total	77	100.00
2. Extreme heat	No	**30**	38.96
	Yes	47	61.04
	Total	77	100.00
3. Saltwater inundation (intrusion)	No	74	96.10
	Yes	3	3.90
	Total	77	100.00
4. Lack of water	No	67	85.90
	Yes	11	14.10
	Total	78	100.00
5. Cyclones/ hurricanes	No	74	97.37
	Yes	2	2.63
	Total	76	100.00
6. Heavy rains	No	31	39.74
	Yes	47	60.26
	Total	78	100.00
7. Landslides	No	73	96.05
	Yes	3	3.95
	Total	76	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	66	83.54
	Yes	13	16.46
	Total	79	100.00
9.Drought	No	53	65.43
	Yes	28	34.57
	Total	81	100.00
10. Increased threats to crops from pests and disease	No	64	80.00
	Yes	16	20.00
	Total	80	100.00
11.Invasive species	No	70	89.74
	Yes	8	10.26
	Total	78	100.00
12. Plant diseases	No	50	62.50
	Yes	30	37.50
	Total	80	100.00
13. Coastal erosion	No	74	98.67
	Yes	1	1.33
	Total	75	100.00
14. Riverbank erosion	No	73	96.05
	Yes	3	3.95
	Total	76	100.00
15. Displaced from land	No	75	98.68
	Yes	1	1.32
	Total	76	100.00
16. Other (specify below)	No	75	98.68
	Yes	1	1.32
	Total	76	100.00

9. Sweet potatoes

Question	Response	Freq.	Percent
1. Flooding	No	12	100.00
	Yes	0	0
	Total	12	100.00
2. Extreme heat	No	8	66.67
	Yes	4	33.33
	Total	12	100.00
3. Saltwater inundation (intrusion)	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
4. Lack of water	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
5. Cyclones/ hurricanes	No	12	100.00
	Yes	0	0
	Total	12	100.00
6. Heavy rains	No	6	50.00
	Yes	6	50.00
	Total	12	100.00
7. Landslides	No	12	100.00
	Yes	0	0
	Total	12	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	12	100.00
	Yes	0	0
	Total	12	100.00
9.Drought	No	8	61.54
	Yes	5	38.46
	Total	13	100.00
10.Increased threats to crops from pests and disease	No	10	76.92
	Yes	3	23.08
	Total	13	100.00
11.Invasive species	No	11	91.67
	Yes	1	8.33
	Total	12	100.00
12. Plant diseases	No	10	71.43
	Yes	4	28.57
	Total	14	100.00
13. Coastal erosion	No	12	100.00
	Yes	0	0
	Total	12	100.00
14. Riverbank erosion	No	12	100.00
	Yes	0	0
	Total	12	100.00
15. Displaced from land	No	12	100.00
	Yes	0	0
	Total	12	100.00
16. Other (specify below)	No	11	91.67
	Yes	1	8.33
	Total	12	100.00

10. Tapioca

Question	Response	Freq.	Percent
1. Flooding	No	22	84.62
	Yes	4	15.38
	Total	26	100.00
2. Extreme heat	No	9	33.33
	Yes	18	66.67
	Total	27	100.00
3. Saltwater inundation (intrusion)	No	26	100.00
	Yes	0	0
	Total	26	100.00
4. Lack of water	No	24	92.31
	Yes	2	7.69
	Total	26	100.00
5. Cyclones/ hurricanes	No	26	100.00
	Yes	0	0
	Total	26	100.00
6. Heavy rains	No	18	69.23
	Yes	8	30.77
	Total	26	100.00
7. Landslides	No	23	88.46
	Yes	3	11.54
	Total	26	100.00
8. Difficulty predicting when the rainy season will come	No	26	96.30
	Yes	1	3.70
	Total	27	100.00
9.Drought	No	18	69.23
	Yes	8	30.77
	Total	26	100.00
10.Increased threats to crops from pests and disease	No	23	88.46
	Yes	3	11.54
	Total	26	100.00
11.Invasive species	No	22	81.48
	Yes	5	18.52
	Total	27	100.00
12. Plant diseases	No	21	77.78
	Yes	6	22.22
	Total	27	100.00
13. Coastal erosion	No	26	100.00
	Yes	0	0
	Total	26	100.00
14. Riverbank erosion	No	26	100.00
	Yes	0	0
	Total	26	100.00
15. Displaced from land	No	26	100.00
	Yes	0	0
	Total	26	100.00
16. Other (specify below)	No	25	96.15
	Yes	1	3.85
	Total	26	100.00

11. Soursop

Question	Responses	Freq.	Percent
1. Flooding	No	18	90.00
	Yes	2	10.00
	Total	20	100.00
2. Extreme heat	No	8	42.11
	Yes	11	57.89
	Total	19	100.00
3. Saltwater inundation (intrusion)	No	19	100.00
	Yes	0	0
	Total	19	100.00
4. Lack of water	No	17	89.47
	Yes	2	10.53
	Total	19	100.00
5. Cyclones/ hurricanes	No	19	100.00
	Yes	0	0
	Total	19	100.00
6. Heavy rains	No	11	57.89
	Yes	8	42.11
	Total	19	100.00
7. Landslides	No	19	100.00
	Yes	0	0
	Total	19	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	19	100.00
	Yes	0	0
	Total	19	100.00
9. Drought	No	15	78.95
	Yes	4	21.05
	Total	19	100.00
10.Increased threats to crops from pests and disease	No	17	89.47
	Yes	2	10.53
	Total	19	100.00
11.Invasive species	No	17	89.47
	Yes	2	10.53
	Total	17	89.47
12. Plant diseases	No	11	57.89
	Yes	8	42.11
	Total	19	100.00
13. Coastal erosion	No	17	89.47
	Yes	2	10.53
	Total	19	100.00
14. Riverbank erosion	No	19	100.00
	Yes	0	0
	Total	19	100.00
15. Displaced from land	No	19	100.00
	Yes	0	0
	Total	19	100.00
16. Other (specify below)	No	18	94.74
	Yes	1	5.26
	Total	19	100.00

12. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	22	88.00
	Yes	3	12.00
	Total	25	100.00
2. Extreme heat	No	6	22.22
	Yes	21	77.78
	Total	27	100.00
3. Saltwater inundation (intrusion)	No	25	100.00
	Yes	0	0
	Total	25	100.00
4. Lack of water	No	19	70.37
	Yes	8	29.63
	Total	27	100.00
5. Cyclones/ hurricanes	No	25	100.00
	Yes	0	0
	Total	25	100.00
6. Heavy rains	No	17	68.00
	Yes	8	32.00
	Total	25	100.00
7. Landslides	No	24	100.00
	Yes	0	0
	Total	24	100.00
8. Difficulty predicting when the rainy season will come	No	21	80.77
	Yes	5	19.23
	Total	26	100.00
9.Drought	No	15	60.00
	Yes	10	40.00
	Total	25	100.00
10.Increased threats to crops from pests and disease	No	21	80.77
	Yes	5	19.23
	Total	26	100.00
11.Invasive species	No	19	76.00
	Yes	6	24.00
	Total	25	100.00
12. Plant diseases	No	14	56.00
	Yes	11	44.00
	Total	25	100.00
13. Coastal erosion	No	24	96.00
	Yes	1	4.00
	Total	25	100.00
14. Riverbank erosion	No	25	100.00
	Yes	0	0
	Total	25	100.00
15. Displaced from land	No	25	100.00
	Yes	0	0
	Total	25	100.00
16. Other (specify below)	No	25	100.00
	Yes	0	0
	Total	25	100.00

13. Imported vegetables

Question	Response	Freq.	Percent
1. Flooding	No	15	88.24
	Yes	2	11.76
	Total	17	100.00
2. Extreme heat	No	5	27.78
	Yes	13	72.22
	Total	18	100.00
3. Saltwater inundation (intrusion)	No	17	100.00
	Yes	0	0
	Total	17	100.00
4. Lack of water	No	14	73.68
	Yes	5	26.32
	Total	19	100.00
5. Cyclones/ hurricanes	No	17	100.00
	Yes	0	0
	Total	17	100.00
6. Heavy rains	No	9	50.00
	Yes	9	50.00
	Total	18	100.00
7. Landslides	No	17	100.00
	Yes	0	0
	Total	17	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	14	82.35
	Yes	3	17.65
	Total	17	100.00
9.Drought	No	10	55.56
	Yes	8	44.44
	Total	18	100.00
10.Increased threats to crops from pests and disease	No	16	84.21
	Yes	3	15.79
	Total	19	100.00
11.Invasive species	No	15	83.33
	Yes	3	16.67
	Total	18	100.00
12. Plant diseases	No	9	50.00
	Yes	9	50.00
	Total	18	100.00
13. Coastal erosion	No	16	94.12
	Yes	1	5.88
	Total	17	100.00
14. Riverbank erosion	No	17	100.00
	Yes	0	0
	Total	17	100.00
15. Displaced from land	No	17	100.00
	Yes	0	0
	Total	17	100.00
16. Other (specify below)	No	17	100.00
	Yes	0	0
	Total	17	100.00

14. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	21	91.30
	Yes	2	8.70
	Total	23	100.00
2. Extreme heat	No	8	32.00
	Yes	17	68.00
	Total	25	100.00
3. Saltwater inundation (intrusion)	No	23	100.00
	Yes	0	0
	Total	23	100.00
4. Lack of water	No	20	80.00
	Yes	5	20.00
	Total	25	100.00
5. Cyclones/ hurricanes	No	23	100.00
	Yes	0	0
	Total	23	100.00
6. Heavy rains	No	13	56.52
	Yes	10	43.48
	Total	23	100.00
7. Landslides	No	23	100.00
	Yes	0	0
	Total	23	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	21	87.50
	Yes	3	12.50
	Total	24	100.00
9.Drought	No	15	65.22
	Yes	8	34.78
	Total	23	100.00
10.Increased threats to crops from pests and disease	No	19	79.17
	Yes	5	20.83
	Total	24	100.00
11.Invasive species	No	14	58.33
	Yes	10	41.67
	Total	24	100.00
12. Plant diseases	No	17	70.83
	Yes	7	29.17
	Total	24	100.00
13. Coastal erosion	No	21	91.30
	Yes	2	8.70
	Total	23	100.00
14. Riverbank erosion	No	23	100.00
	Yes	0	0
	Total	23	100.00
15. Displaced from land	No	23	100.00
	Yes	0	0
	Total	23	100.00
16. Other (specify below)	No	23	100.00
	Yes	0	0
	Total	23	100.00

15. Imported fruits

Question	Response	Freq.	Percent
1. Flooding	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
2. Extreme heat	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
3. Saltwater inundation (intrusion)	No	3	100.00
	Yes	0	0
	Total	3	100.00
4. Lack of water	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
5. Cyclones/ hurricanes	No	3	100.00
	Yes	0	0
	Total	3	100.00
6. Heavy rains	No	***1***	33.33
	Yes	*2*	66.67
	Total	3	100.00
7. Landslides	No	3	100.00
	Yes	0	0
	Total	3	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
9. Drought	No	1	33.33
	Yes	2	66.67
	Total	3	100.00
10. Increased threats to crops from pests and disease	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
11. Invasive species	No	2	66.67
	Yes	1	33.33
	Total	3	100.00
12. Plant diseases	No	4	100.00
	Yes	0	0
	Total	4	100.00
13. Coastal erosion	No	3	100.00
	Yes	0	0
	Total	3	100.00
14. Riverbank erosion	No	3	100.00
	Yes	0	0
	Total	3	100.00
15. Displaced from land	No	3	100.00
	Yes	0	0
	Total	3	100.00
16. Other (specify below)	No	3	100.00
	Yes	0	0
	Total	3	100.00

16. Lime/lemon

Question	Response	Freq.	Percent
1. Flooding	No	40	86.96
	Yes	6	13.04
	Total	46	100.00
2. Extreme heat	No	14	29.79
	Yes	33	70.21
	Total	47	100.00
3. Saltwater inundation (intrusion)	No	45	97.83
	Yes	1	2.17
	Total	46	100.00
4. Lack of water	No	32	68.09
	Yes	15	31.91
	Total	47	100.00
5. Cyclones/ hurricanes	No	46	100.00
	Yes	0	0
	Total	46	100.00
6. Heavy rains	No	20	43.48
	Yes	26	56.52
	Total	46	100.00
7. Landslides	No	44	95.65
	Yes	2	4.35
	Total	46	100.00
8. Difficulty predicting when the rainy season will come	No	44	95.65
	Yes	2	4.35
	Total	46	100.00
9.Drought	No	33	71.74
	Yes	13	28.26
	Total	46	100.00
10. Increased threats to crops from pests and disease	No	34	72.34
	Yes	13	27.66
	Total	47	100.00
11. Invasive species	No	36	76.60
	Yes	11	23.40
	Total	47	100.00
12. Plant diseases	No	29	60.42
	Yes	19	39.58
	Total	48	100.00
13. Coastal erosion	No	44	95.65
	Yes	2	4.35
	Total	46	100.00
14. Riverbank erosion	No	44	95.65
	Yes	2	4.35
	Total	46	100.00
15. Displaced from land	No	46	100.00
	Yes	0	0
	Total	46	100.00
16. Other (specify below)	No	45	97.83
	Yes	1	2.17
	Total	46	100.00

17. Tangerine

Question	Response	Freq.	Percent
1. Flooding	No	6	100.00
	Yes	0	0
	Total	6	100.00
2. Extreme heat	No	2	33.33
	Yes	4	66.67
	Total	6	100.00
3. Saltwater inundation (intrusion)	No	6	100.00
	Yes	0	0
	Total	6	100.00
4. Lack of water	No	5	83.33
	Yes	1	16.67
	Total	6	100.00
5. Cyclones/ hurricanes	No	6	100.00
	Yes	0	0
	Total	6	100.00
6. Heavy rains	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
7. Landslides	No	6	100.00
	Yes	0	0
	Total	6	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	6	100.00
	Yes	0	0
	Total	6	100.00
9. Drought	No	5	83.33
	Yes	1	16.67
	Total	6	100.00
10 .Increased threats to crops from pests and disease	No	6	85.71
	Yes	1	14.29
	Total	7	100.00
11. Invasive species	No	6	100.00
	Yes	0	0
	Total	6	100.00
12. Plant diseases	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
13. Coastal erosion	No	6	100.00
	Yes	0	0
	Total	6	100.00
14. Riverbank erosion	No	6	100.00
	Yes	0	0
	Total	6	100.00
15. Displaced from land	No	6	100.00
	Yes	0	0
	Total	6	100.00
16. Other (specify below)	No	5	83.33
	Yes	1	16.67
	Total	6	100.00

18. Black pepper (peppercorns)

Question	Response	Freq.	Percent
1. Flooding	No	6	100.00
	Yes	0	0
	Total	6	100.00
2. Extreme heat	No	2	33.33
	Yes	4	66.67
	Total	6	100.00
3. Saltwater inundation (intrusion)	No	6	100.00
	Yes	0	0
	Total	6	100.00
4. Lack of water	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
5. Cyclones/ hurricanes	No	6	100.00
	Yes	0	0
	Total	6	100.00
6. Heavy rains	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
7. Landslides	No	6	100.00
	Yes	0	0
	Total	6	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	6	100.00
	Yes	0	0
	Total	6	100.00
9. Drought	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
10. Increased threats to crops from pests and disease	No	6	100.00
	Yes	0	0
	Total	6	100.00
11. Invasive species	No	3	50.00
	Yes	3	50.00
	Total	6	100.00
12. Plant diseases	No	4	66.67
	Yes	2	33.33
	Total	6	100.00
13. Coastal erosion	No	6	100.00
	Yes	0	0
	Total	6	100.00
14. Riverbank erosion	No	6	100.00
	Yes	0	0
	Total	6	100.00
15. Displaced from land	No	6	100.00
	Yes	0	0
	Total	6	100.00
16. Other (specify below)	No	6	100.00
	Yes	0	0
	Total	6	100.00

19. Hot peppers

Question	Response	Freq.	Percent
1. Flooding	No	22	84.62
	Yes	4	15.38
	Total	26	100.00
2. Extreme heat	No	***10***	38.46
	Yes	*16*	61.54
	Total	26	100.00
3. Saltwater inundation (intrusion)	No	25	96.15
	Yes	1	3.85
	Total	26	100.00
4. Lack of water	No	23	85.19
	Yes	4	14.81
	Total	27	100.00
5. Cyclones/ hurricanes	No	26	100.00
	Yes	0	0
	Total	26	100.00
6. Heavy rains	No	15	57.69
	Yes	11	42.31
	Total	26	100.00
7. Landslides	No	26	100.00
	Yes	0	0
	Total	26	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	26	96.30
	Yes	1	3.70
	Total	27	100.00
9.Drought	No	18	69.23
	Yes	8	30.77
	Total	26	100.00
10.Increased threats to crops from pests and disease	No	15	55.56
	Yes	12	44.44
	Total	27	100.00
11.Invasive species	No	20	76.92
	Yes	6	23.08
	Total	26	100.00
12. Plant diseases	No	17	62.96
	Yes	10	37.04
	Total	27	100.00
13. Coastal erosion	No	24	92.31
	Yes	2	7.69
	Total	26	100.00
14. Riverbank erosion	No	25	96.15
	Yes	1	3.85
	Total	26	100.00
15. Displaced from land	No	26	100.00
	Yes	0	0
	Total	26	100.00
16. Other (specify below)	No	26	100.00
	Yes	0	0
	Total	26	100.00

Sakau (Kava)

Question	Response	Freq.	Percent
1. Flooding	No	66	78.57
	Yes	18	21.43
	Total	84	100.00
2. Extreme heat	No	20	23.53
	Yes	65	76.47
	Total	85	100.00
3. Saltwater inundation (intrusion)	No	83	98.81
	Yes	1	1.19
	Total	84	100.00
4. Lack of water	No	78	91.76
	Yes	7	8.24
	Total	85	100.00
5. Cyclones/ hurricanes	No	83	98.81
	Yes	1	1.19
	Total	84	100.00
6. Heavy rains	No	52	60.47
	Yes	34	39.53
	Total	86	100.00
7. Landslides	No	71	82.56
	Yes	15	17.44
	Total	86	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	77	90.59
	Yes	8	9.41
	Total	85	100.00
9.Drought	No	53	59.55
	Yes	36	40.45
	Total	89	100.00
10.Increased threats to crops from pests and disease	No	69	81.18
	Yes	16	18.82
	Total	85	100.00
11.Invasive species	No	66	77.65
	Yes	19	22.35
	Total	85	100.00
12. Plant diseases	No	55	63.22
	Yes	32	36.78
	Total	87	100.00
13. Coastal erosion	No	82	97.62
	Yes	2	2.38
	Total	84	100.00
14. Riverbank erosion	No	82	97.62
	Yes	2	2.38
	Total	84	100.00
15. Displaced from land	No	84	100.00
	Yes	0	0
	Total	84	100.00
16. Other (specify below)	No	84	100.00
	Yes	0	0
	Total	84	100.00

6. RAISING LIVESTOCK AND POULTRY

Q6	Responses	Freq.	Percent
Q6.1 Are you raising livestock and/or poultry?	No	17	10.63
	Yes	143	89.38
	Total	160	100.00
Q6.2 Do you have access to adequate land for rearing livestock and/or poultry?	No	32	22.22
	Yes	112	77.78
	Total	144	100.00
Q6.3 Do you feel it is enough?	Yes	108	76.60
	No	33	23.40
	Total	141	100.00
Q6.4 Do you want more land?	No	91	63.19
	Yes	53	36.81
	Total	144	100.00
Q6.5 Is the land you have access to shared (including family members)?	No	26	17.81
	Yes	120	82.19
	Total	146	100.00

Q6.6 What kind of animals/livestock do you raise or keep? Multiple response item

Q6.6.1 - Q6.6.7	Responses	Freq.	Percent
1. Chickens	No	30	20.83
	Yes	114	79.17
	Total	144	100.00
2. Pigs	No	6	4.14
	Yes	139	95.86
	Total	145	100.00
3. Goats	No	136	100.00
	Yes	0	0
	Total	136	100.00
4. Dogs	No	19	13.29
	Yes	124	86.71
	Total	143	100.00
5. Deer	No	135	99.26
	Yes	1	0.74
	Total	136	100.00
6. Bovine	No	136	100.00
	Yes	0	0
	Total	136	100.00
7. Other	No	132	97.06
	Yes	4	2.94
	Total	136	100.00

Q6.7 In the last 10 years, have you noticed a change in raising animals?

Responses	Freq.	Percent
No	61	41.78
Yes	45	30.82
Stayed the same	40	27.40
Total	146	100.00

Q6.8 If yes, please explain:

Q6.9	Responses	Frequency	Percent
Would you like to raise livestock/ poultry commercially?	No	64	42.95
	Yes	85	57.05
	Total	149	100.00

6.10 What do you feel is the main obstacle to your raising livestock/poultry production?

Particulars	Freq.	Percent
1. Land	9	5.66
2.Tools and Equipment	39	24.53
3. Feed	46	28.93
4. Capital	41	25.79
5. Knowledge	8	5.03
6. Initial material	2	1.26
6. Initial material	2	1.26
7. Marketing	2	1.26
8. Veterinary doctors – Absence	2	1.26
9. Time	9	5.66
10. Other	1	0.63

7. MARINE FOOD SOURCES

Q7.1 Question	Responses	Frequency	Percent
Q7.1.1 Do you harvest marine or freshwater fish/organisms?	No	46	29.11
	Yes	112	70.89
	Total	158	100.00
Q7.1.2 In terms of access to marine resources, do you feel:	It is enough	70	61.40
	Not enough	44	38.60
	Total	114	100.00

Q7.2. How often do you fish or collect food from this location?

Q7.2.1 Mangrove

Particulars	Frequency	Percent
Once a day	5	4.31
Several times a week	15	12.93
Once a week	14	12.07
Once a month	22	18.97
Once every three months or more	19	16.38
Never	41	35.34
Total	116	100.00

Inner Reef (lagoon)

Particulars	Frequency	Percent
Once a day	3	2.59
Several times a week	39	33.62
Once a week	24	20.69
Once a month	32	27.59
Once every three months or more	13	11.21
Never	5	4.31
Total	116	100.00

Outer reef

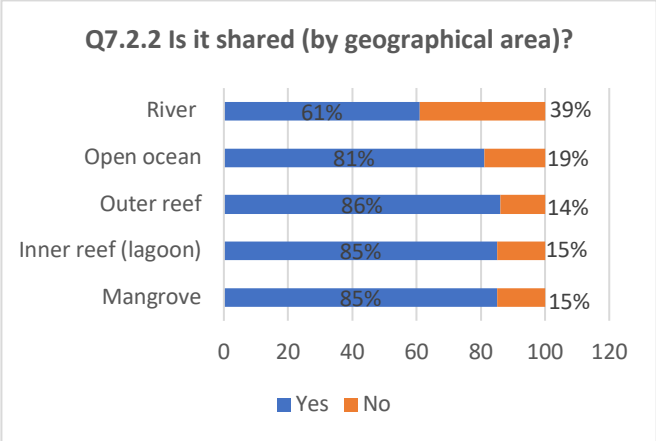
Particulars	Frequency	Percent
Once a day	2	1.75
Several times a week	7	6.14
Once a week	1	0.88
Once a month	6	5.26
Once every three months or more	8	7.02
Never	90	78.95
Total	114	100.00

Open Ocean

Particulars	Frequency	Percent
Once a day	3	2.59
Several times a week	13	11.21
Once a week	15	12.93
Once a month	13	11.21
Once every three months or more	17	14.66
Never	55	47.41
Total	116	100.00

River

Particulars	Frequency	Percent
Once a day	2	1.75
Several times a week	7	6.14
Once a week	1	0.88
Once a month	6	5.26
Once every three months or more	8	7.02
Never	90	78.95
Total	114	100.00



Q7.2.3. In the last 10 years, have these food sources (aquatic species):

Q7.2.4 Mangrove

Particulars	Frequency	Percent
Increased in number	10	11.90
Decreased in number	69	82.14
Stayed the same	5	5.95
Total	84	100.00

Q7.2.5 Inner reef (lagoon)

Particulars	Frequency	Percent
Increased in number	4	3.70
Decreased in number	92	85.19
Stayed the same	12	11.11
Total	108	100.00

Q7.2.6 Outer reef

Particulars	Frequency	Percent
Increased in number	1	1.35
Decreased in number	67	90.54
Stayed the same	6	8.11
Total	74	100.00

Q7.2.7 Open Ocean

Particulars	Frequency	Percent
Increased in number	0	0.00
Decreased in number	57	89.06
Stayed the same	7	10.94
Total	64	100.00

Q7.2.8 River

Particulars	Frequency	Percent
Increased in number	3	10.34
Decreased in number	18	62.07
Stayed the same	8	27.59
Total	29	100.00

8. BARRIERS TO FOOD PRODUCTION

Q8.1	Resp.	Freq.	Percent
Would you grow/fish/ harvest more food or raise more livestock if you could?	No	61	38.85
	Yes	96	61.15
	Total	157	100.00

Q8.2 If yes, what barriers are preventing you?

Question	Resp.	Freq.	Percent
1. No barrier	No	86	89.58
	Yes	10	10.42
	Total	96	100.00
2. Lack of production resources/tools (greenhouses, tractors, aquaculture, etc.)	No	21	21.88
	Yes	75	78.13
	Total	96	100.00
3. Lack of the source of finance	No	28	29.47
	Yes	67	70.53
	Total	95	100.00
4. No land or ocean available	No	75	81.52
	Yes	17	18.48
	Total	92	100.00

Question	Responses	Freq.	Percent
5. Lack of management skills	No	56	58.95
	Yes	39	41.05
	Total	95	100.00
6. Difficulty getting to the land or sea	No	79	85.87
	Yes	*13*	14.13
	Total	92	100.00
7. Lack of the market to sell the produce	No	70	75.27
	Yes	23	24.73
	Total	93	100.00
8. Lack of ways to keep my foods fresh	No	72	76.60
	Yes	22	23.40
	Total	94	100.00
9. Lack of ways to process and dry the foods	No	70	74.47
	Yes	24	25.53
	Total	94	100.00
10. Lack of storage to hold and keep food for home use and/or sale (refrigeration)	No	70	74.47
	Yes	24	25.53
	Total	94	100.00
11.Lack of new tech & infrastructure	No	65	67.71
	Yes	31	32.29
	Total	96	100.00
12. Transportation to market	No	79	84.95
	Yes	14	15.05
	Total	93	100.00
13. Disease or pest infestation	No	70	74.47
	Yes	24	25.53
	Total	94	100.00
14. Permit/ regulation issues	No	79	85.87
	Yes	13	14.13
	Total	92	100.00
15. Weather issues	No	63	66.32
	Yes	32	33.68
	Total	95	100.00
16. Labor	No	51	53.13
	Yes	45	46.88
	Total	96	100.00
17. Time	No	59	62.77
	Yes	35	37.23
	Total	94	100.00
18. Other	No	86	94.51
	Yes	5	5.49
	Total	91	100.00

Q8.2.1 Climate change is causing a lot of problems for my farm/fishing.

Particulars	Freq.	Percent
Strongly disagree	18	11.32
Disagree	7	4.40
Neither agree nor disagree	21	13.21
Agree	64	40.25
Strongly agree	49	30.82
Total	159	100.00

Q8.2.2 Climate change is making it harder for me to grow crops/fish/harvest.

Particulars	Freq.	Percent
Strongly disagree	13	8.13
Disagree	8	5.00
Neither agree nor disagree	27	16.88
Agree	67	41.88
Strongly agree	45	28.13
Total	160	100.00

Q8.2.3 Climate change is making it harder for me to raise livestock.

Particulars	Freq.	Percent
Strongly disagree	16	10.00
Disagree	27	16.88
Neither agree nor disagree	36	22.50
Agree	57	35.63
Strongly agree	24	15.00
Total	160	100.00

Q8.2.4. Climate change is causing a lot of extreme weather.

Particulars	Freq.	Percent
Strongly disagree	14	8.75
Disagree	8	5.00
Neither agree nor disagree	13	8.13
Agree	71	44.38
Strongly agree	54	33.75
Total	160	100.00

Q8.2.5 I might have to stop farming because of climate change.

Particulars	Freq.	Percent
Strongly disagree	30	18.75
Disagree	43	26.88
Neither agree nor disagree	37	23.13
Agree	33	20.63
Strongly agree	17	10.63
Total	160	100.00

Q8.2.6 Climate change has caused me to make a lot of changes on my farm.

Particulars	Freq.	Percent
Strongly disagree	30	18.75
Disagree	43	26.88
Neither agree nor disagree	37	23.13
Agree	33	20.63
Strongly agree	17	10.63
Total	160	100.00

Q8.2.7 Climate change is the biggest problem facing my farm right now.

Particulars	Freq.	Percent
Strongly disagree	15	9.38
Disagree	17	10.63
Neither agree nor disagree	35	21.88
Agree	63	39.38
Strongly agree	30	18.75
Total	160	100.00

Q8.3.1	Responses	Freq.	Percent
Has a change in climate impacted your access to clean fresh water?	No	81	50.63
	Yes	79	49.38
	Total	160	100.00

Q8.4.1	Responses	Freq.	Percent
Have you changed crop types (including marine) in the past 10 years?	No	106	87.60
	Yes	15	12.40
	Total	121	100.00

Q8.4.2	Responses	Freq.	Percent
Was climate change an important reason for changing crop types?	No	12	41.38
	Yes	17	58.62
	Total	29	100.00

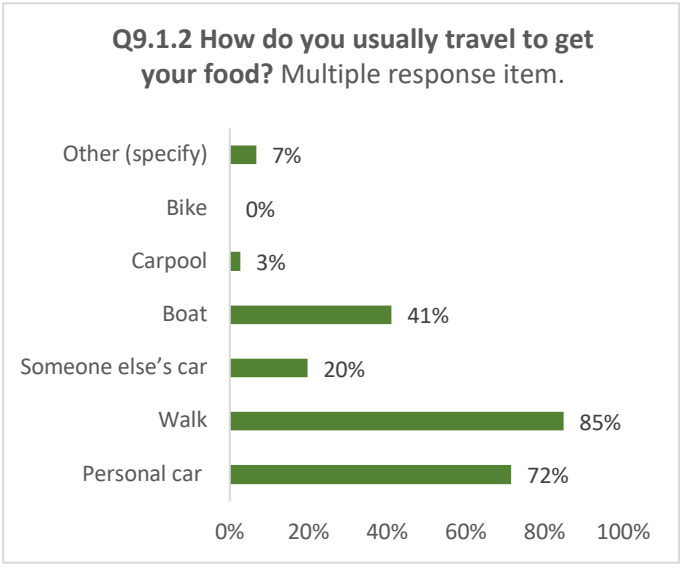
Q8.4.4	Responses	Freq.	Percent
Have you changed/adapted any of your farming practices (including fishing) in the past 10 years?	No	92	77.31
	Yes	27	22.69
	Total	119	100.00

Q8.4.5	Responses	Freq.	Percent
Was climate change an important reason for changing/ adapting your farming practices (including fishing)?	No	25	48.08
	Yes	27	51.92
	Total	52	100.00

9. DIET AND FOOD ACCESS, AVAILABILITY AND AFFORDABILITY

Q9.1.1 where do you get most of your food?

Question	Responses	Freq.	Percent
Wild places such as forests, freshwater, rivers, and/or the ocean	No	34	21.66
	Yes	123	78.34
	Total	157	100.00
Cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	63	40.91
	Yes	91	59.09
	Total	154	100.00
Informal markets such as street vendors and kiosks	No	90	59.60
	Yes	61	40.40
	Total	151	100.00
Formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	52	33.55
	Yes	103	66.45
	Total	155	100.00
Supplemental food assistance such as government food rations, food from churches, schools and community organizations, etc.,	No	138	93.24
	Yes	10	6.76
	Total	148	100.00
Relatives and extended families	No	119	80.95
	Yes	28	19.05
	Total	147	100.00
Other	No	144	97.30
	Yes	4	2.70
	Total	148	100.00



Q9.1.3 How long does it take you to reach the location where you get a majority of the food that you produce/harvest?

Particulars	Freq.	Percent
Not much time	34	21.52
5-30 minutes	59	37.34
30-45 minutes	35	22.15
More than 45 minutes	30	18.99
Total	158	100.00

Q9.1.4 How long does it take you to reach the location where you get a majority of the food that you're purchase?

Particulars	Freq.	Percent
Not much time	30	19.11
5-30 minutes	41	26.11
30-45 minutes	27	17.20
More than 45 minutes	59	37.58
Total	157	100.00

Q9.1.6 What barriers (if any) prevent you from attaining healthy, nutritious food?

Question	Responses	Freq.	Percent
None	No	89	58.94
	Yes	62	41.06
	Total	151	100.00
Too far to walk, and do not have other means of transportation	No	118	78.15
	Yes	33	21.85
	Total	151	100.00
Health problems interfere with ability to walk or harvest crops (including marine)	No	129	85.43
	Yes	22	14.57
	Total	151	100.00
Lack of assistance from relatives or extended families	No	135	87.66
	Yes	19	12.34
	Total	154	100.00
Affordability	No	95	62.91
	Yes	56	37.09
	Total	151	100.00
Availability	No	94	62.67
	Yes	56	37.33
	Total	150	100.00
Other	No	136	91.28
	Yes	13	8.72
	Total	149	100.00

Q9.2.1 (I/we) were worried (I/we) wouldn't have enough healthy and nutritious food to eat.

Particulars	Freq.	Percent
Never	78	49.37
Rarely (only 1 or 2 months)	30	18.99
Sometimes (some months, but not every month)	44	27.85
Often (almost every month or more)	6	3.80
Total	158	100.00

Q9.2.2 (I/we) couldn't afford to eat healthy and nutritious food.

Particulars	Freq.	Percent
Never	87	55.06
Rarely (only 1 or 2 months)	31	19.62
Sometimes (some months, but not every month)	30	18.99
Often (almost every month or more)	10	6.33
Total	158	100.00

Q9.2.3 (I/we) couldn't afford to eat the foods (I/we) prefer and had to eat different types of foods.

Particulars	Freq.	Percent
Never	84	53.16
Rarely (only 1 or 2 months)	32	20.25
Sometimes (some months, but not every month)	34	21.52
Often (almost every month or more)	8	5.06
Total	158	100.00

Q9.2.4 (I/we) skipped meals because there wasn't enough money for food.

Particulars	Freq.	Percent
Never	138	87.90
Rarely (only 1 or 2 months)	8	5.10
Sometimes (some months, but not every month)	9	5.73
Often (almost every month or more)	2	1.27
Total	157	100.00

Q9.2.5 (I/we) ate less than preferred because there wasn't enough money for food.

Particulars	Freq.	Percent
Never	130	82.80
Rarely (only 1 or 2 months)	15	9.55
Sometimes (some months, but not every month)	8	5.10
Often (almost every month or more)	4	2.55
Total	157	100.00

Q9.2.6 (I/we) were hungry because there wasn't enough money for food.

Particulars	Freq.	Percent
Never	142	89.87
Rarely (only 1 or 2 months)	9	5.70
Sometimes (some months, but not every month)	4	2.53
Often (almost every month or more)	3	1.90
Total	158	100.00

Q9.2.7 (I/we) went a whole day without eating.

Particulars	Freq.	Percent
Never	151	97.42
Rarely (only 1 or 2 months)	2	1.29
Sometimes (some months, but not every month)	1	0.65
Often (almost every month or more)	1	0.65
Total	155	100.00

For each food, write the answers in each column according to the numbers specified in the table header. If a food is NOT consumed (9.1.1), you may skip the other questions in that row.

Q9.3 (1-40) Consumption Frequency

1. Rice

Particulars	Freq.	Percent
Never	1	0.63
1-4 times a week	20	12.58
5-7 times a week	12	7.55
Multiple times a day	126	79.25
Total	159	100.00

2. Taro

Particulars	Freq.	Percent
Never	28	35.71
1-4 times a week	104	42.86
5-7 times a week	14	19.05
Multiple times a day	9	5.81
Total	155	100.00

3. Breadfruit

Particulars	Freq.	Percent
Never	7	4.46
1-4 times a week	84	53.50
5-7 times a week	45	28.66
Multiple times a day	21	13.38
Total	157	100.00

4. Banana

Particulars	Freq.	Percent
Never	3	1.90
1-4 times a week	78	49.37
5-7 times a week	39	24.68
Multiple times a day	38	24.05
Total	158	100.00

5. Coconut

Particulars	Freq.	Percent
Never	12	7.69
1-4 times a week	88	56.41
5-7 times a week	27	17.31
Multiple times a day	29	18.59
Total	156	100.00

6. Copra

Particulars	Freq.	Percent
Never	73	48.67
1-4 times a week	38	25.33
5-7 times a week	20	13.33
Multiple times a day	19	12.67
Total	150	100.00

7. Yam

Particulars	Freq.	Percent
Never	13	8.23
1-4 times a week	110	69.62
5-7 times a week	23	14.56
Multiple times a day	12	7.59
Total	158	100.00

8. Sweet potatoes

Particulars	Freq.	Percent
Never	103	67.76
1-4 times a week	39	25.66
5-7 times a week	6	3.95
Multiple times a day	4	2.63
Total	152	100.00

9. Tapioca

Particulars	Freq.	Percent
Never	64	41.29
1-4 times a week	72	46.45
5-7 times a week	13	8.39
Multiple times a day	6	3.87
Total	155	100.00

10. Soursop

Particulars	Freq.	Percent
Never	63	40.65
1-4 times a week	78	50.32
5-7 times a week	11	7.10
Multiple times a day	3	1.94
Total	155	100.00

11. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Never	62	39.49
1-4 times a week	68	43.31
5-7 times a week	15	9.55
Multiple times a day	12	7.64
Total	157	100.00

12. Imported vegetables fresh

Particulars	Freq.	Percent
Never	57	36.08
1-4 times a week	82	51.90
5-7 times a week	10	6.33
Multiple times a day	9	5.70
Total	158	100.00

13. Canned/processed vegetables

Particulars	Freq.	Percent
Never	68	43.59
1-4 times a week	71	45.51
5-7 times a week	12	7.69
Multiple times a day	5	3.21
Total	156	100.00

14. Local fresh fruits

Particulars	Freq.	Percent
Never	35	22.58
1-4 times a week	93	60.00
5-7 times a week	16	10.32
Multiple times a day	11	7.10
Total	155	100.00

15. Imported fresh fruits

Particulars	Freq.	Percent
Never	48	30.97
1-4 times a week	85	54.84
5-7 times a week	19	12.26
Multiple times a day	3	1.94
Total	155	100.00

16. Canned/processed fruits

Particulars	Freq.	Percent
Never	70	44.59
1-4 times a week,	71	45.22
5-7 times a week	13	8.28
Multiple times a day	3	1.91
Total	157	100.00

17. Local citrus

Particulars	Freq.	Percent
Never	43	27.56
1-4 times a week	64	41.03
5-7 times a week	22	14.10
Multiple times a day	27	17.31
Total	156	100.00

18. Imported citrus

Particulars	Freq.	Percent
Never	88	57.52
1-4 times a week	47	30.72
5-7 times a week	11	7.19
Multiple times a day	7	4.58
Total	153	100.00

19. Open Ocean fish

Particulars	Freq.	Percent
Never	20	12.74
1-4 times a week	94	59.87
5-7 times a week	33	21.02
Multiple times a day	10	6.37
Total	157	100.00

20. Reef fish

Particulars	Freq.	Percent
Never	15	9.55
1-4 times a week	79	50.32
5-7 times a week	47	29.94
Multiple times a day	16	10.19
Total	157	100.00

21. Sea cucumbers

Particulars	Freq.	Percent
Never	74	47.44
1-4 times a week	71	45.51
5-7 times a week	8	5.13
Multiple times a day	3	1.92
Total	156	100.00

22. Clams/oysters

Particulars	Freq.	Percent
Never	56	35.90
1-4 times a week	83	53.21
5-7 times a week	13	8.33
Multiple times a day	4	2.56
Total	156	100.00

23. Crustaceans such as shrimp, lobster, mangrove crabs

Particulars	Freq.	Percent
Never	35	22.44
1-4 times a week,	95	60.90
5-7 times a week	21	13.46
Multiple times a day	5	3.21
Total	156	100.00

24. Octopus and squid

Particulars	Freq.	Percent
Never	47	30.13
1-4 times a week	95	60.90
5-7 times a week	12	7.69
Multiple times a day	2	1.28
Total	156	100.00

25. Meat and meat products: fresh/local

Particulars	Freq.	Percent
Never	22	14.01
1-4 times a week	97	61.78
5-7 times a week	26	16.56
Multiple times a day	12	7.64
Total	157	100.00

26. Meat and meat products: processed

Particulars	Freq.	Percent
Never	32	20.51
1-4 times a week	72	46.15
5-7 times a week	39	25.00
Multiple times a day	13	8.33
Total	156	100.00

27. Dairy (milk, cheese, yogurt)

Particulars	Freq.	Percent
Never	36	23.08
1-4 times a week	84	53.85
5-7 times a week	28	17.95
Multiple times a day	8	5.13
Total	156	100.00

28. Eggs

Particulars	Freq.	Percent
Never	12	7.64
1-4 times a week	97	61.78
5-7 times a week	40	25.48
Multiple times a day	8	5.10
Total	157	100.00

29. Black Pepper

Particulars	Freq.	Percent
Never	66	42.31
1-4 times a week	64	41.03
5-7 times a week	17	10.90
Multiple times a day	9	5.77
Total	156	100.00

30. Hot peppers

Particulars	Freq.	Percent
Never	42	26.92
1-4 times a week	55	35.26
5-7 times a week	24	15.38
Multiple times a day	35	22.44
Total	156	100.00

31. Sodas

Particulars	Freq.	Percent
Never	23	14.74
1-4 times a week	91	58.33
5-7 times a week	24	15.38
Multiple times a day	18	11.54
Total	156	100.00

32. Candies, Cakes, Cookies, Sugary foods

Particulars	Freq.	Percent
Never	30	18.87
1-4 times a week	92	57.86
5-7 times a week	20	12.58
Multiple times a day	17	10.69
Total	159	100.00

33. Coffee and Tea

Particulars	Freq.	Percent
Never	19	12.03
1-4 times a week	65	41.14
5-7 times a week	38	24.05
Multiple times a day	36	22.78
Total	158	100.00

34. Bread, Crackers, Biscuit

Particulars	Freq.	Percent
Never	25	15.82
1-4 times a week	77	48.73
5-7 times a week	33	20.89
Multiple times a day	23	14.56
Total	158	100.00

35. Pasta and Ramen noodles

Particulars	Freq.	Percent
Never	28	17.72
1-4 times a week	60	37.97
5-7 times a week	34	21.52
Multiple times a day	36	22.78
Total	158	100.00

36. Boxed cereal

Particulars	Freq.	Percent
Never	46	30.07
1-4 times a week	74	48.37
5-7 times a week	22	14.38
Multiple times a day	11	7.19
Total	153	100.00

37. Sakau (Kava)

Particulars	Freq.	Percent
Never	30	19.35
1-4 times a week	62	40.00
5-7 times a week	41	26.45
Multiple times a day	22	14.19
Total	155	100.00

38. Imported Juice

Particulars	Freq.	Percent
Never	46	29.30
1-4 times a week	83	52.87
5-7 times a week	18	11.46
Multiple times a day	10	6.37
Total	157	100.00

39. Imported coconut milk

Particulars	Freq.	Percent
Never	107	69.03
1-4 times a week	32	20.65
5-7 times a week	11	7.10
Multiple times a day	5	3.23
Total	155	100.00

40. Other

Particulars	Freq.	Percent
Never	33	84.62
1-4 times a week	6	15.38
5-7 times a week	0	0.00
Multiple times a day	0	0.00
Total	39	100.00

Q9.3.2 (1-40) Is this a favorite food?

Question	Responses	Freq.	Percent
1. Rice	No	34	21.38
	Yes	125	78.62
	Total	159	100.00
2. Taro	No	38	26.95
	Yes	103	73.05
	Total	141	100.00
3. Breadfruit	No	14	9.09
	Yes	140	90.91
	Total	154	100.00
4. Banana	No	11	6.96
	Yes	147	93.04
	Total	158	100.00
5. Coconut	No	16	10.60
	Yes	135	89.40
	Total	151	100.00
6. Copra (coconut product)	No	31	31.31
	Yes	68	68.69
	Total	99	100.00
7. Yam	No	9	5.81
	Yes	146	94.19
	Total	155	100.00
8. Sweet potatoes	No	51	55.43
	Yes	41	44.57
	Total	92	100.00
9. Tapioca	No	34	28.57
	Yes	85	71.43
	Total	119	100.00
10. Soursop	No	23	19.33
	Yes	96	80.67
	Total	119	100.00
11. Locally grown/collected fresh vegetables	No	27	21.43
	Yes	99	78.57
	Total	126	100.00
12. Imported Vegetables Fresh	No	36	27.48
	Yes	95	72.52
	Total	131	100.00
13. Vegetables: Canned/ processed	No	55	44.72
	Yes	68	55.28
	Total	123	100.00
14. Local fresh fruits	No	12	8.63
	Yes	127	91.37
	Total	139	100.00
15. Imported Fresh Fruits	No	34	25.95
	Yes	97	74.05
	Total	131	100.00
16. Fruits: Canned/ processed	No	50	40.98
	Yes	72	59.02
	Total	122	100.00
17. Local citrus	No	21	15.79
	Yes	112	84.21
	Total	133	100.00
18. Imported citrus	No	49	44.14
	Yes	62	55.86
	Total	111	100.00
19. Open Ocean fish	No	16	10.81
	Yes	132	89.19
	Total	148	100.00
20. Reef fish	No	11	7.24
	Yes	141	92.76
	Total	152	100.00
21. Sea cucumbers	No	35	30.70
	Yes	79	69.30
	Total	114	100.00
22. Clams/ oysters	No	27	21.43
	Yes	99	78.57
	Total	126	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	12	8.63
	Yes	127	91.37
	Total	139	100.00
24. Octopus and squid	No	31	23.31
	Yes	102	76.69
	Total	133	100.00
25. Meat and meat products: fresh/ local	No	19	13.10
	Yes	126	86.90
	Total	145	100.00
26. Meat and meat products: processed	No	46	32.17
	Yes	97	67.83
	Total	143	100.00
27. Dairy (milk, cheese, yogurt)	No	34	25.56
	Yes	99	74.44
	Total	133	100.00

Question	Responses	Frequency	Percent
28. Eggs	No	15	9.87
	Yes	137	90.13
	Total	152	100.00
29. Black Pepper	No	30	25.86
	Yes	86	74.14
	Total	116	100.00
30. Hot peppers	No	28	21.21
	Yes	104	78.79
	Total	132	100.00
31. Sodas	No	51	35.42
	Yes	93	64.58
	Total	144	100.00
32. Candies, cakes, cookies, sugary foods	No	56	40.29
	Yes	83	59.71
	Total	139	100.00
33. Coffee and tea	No	25	17.36
	Yes	119	82.64
	Total	144	100.00
34. Bread, crackers, biscuit	No	31	21.99
	Yes	110	78.01
	Total	141	100.00
35. Pasta and ramen noodles	No	37	26.06
	Yes	105	73.94
	Total	142	100.00
36. Boxed cereal	No	44	34.65
	Yes	83	65.35
	Total	127	100.00
37. Sakau (Kava)	No	27	19.85
	Yes	109	80.15
	Total	136	100.00
38. Imported juice	No	47	35.07
	Yes	87	64.93
	Total	134	100.00
39. Imported coconut milk	No	64	62.75
	Yes	38	37.25
	Total	102	100.00
40. Other	No	32	96.97
	Yes	1	3.03
	Total	33	100.00

Q9.3.3 (1-40) Is there often a shortage:

Question	Responses	Frequency	Percent
1. Rice	No	108	71.52
	Yes	43	28.48
	Total	151	100.00
2. Taro	No	105	77.78
	Yes	30	22.22
	Total	135	100.00
3. Breadfruit	No	81	55.10
	Yes	66	44.90
	Total	147	100.00
4. Banana	No	113	75.84
	Yes	36	24.16
	Total	149	100.00
5. Coconut	No	107	75.35
	Yes	35	24.65
	Total	142	100.00
6. Copra (coconut product)	No	81	82.65
	Yes	17	17.35
	Total	98	100.00
7. Yam	No	93	63.70
	Yes	53	36.30
	Total	146	100.00
8. Sweet Potatoes	No	69	77.53
	Yes	20	22.47
	Total	89	100.00
9. Tapioca	No	87	76.99
	Yes	26	23.01
	Total	113	100.00
10. Soursop	No	90	78.26
	Yes	25	21.74
	Total	115	100.00
11. Locally grown/collected fresh vegetables	No	85	70.83
	Yes	35	29.17
	Total	120	100.00
12. Imported Vegetables Fresh	No	86	69.92
	Yes	37	30.08
	Total	123	100.00
13. Vegetables: Canned/ processed	No	90	77.59
	Yes	26	22.41
	Total	116	100.00
14. Local fresh fruits	No	84	63.16
	Yes	49	36.84
	Total	133	100.00
15. Imported fresh fruits	No	80	67.23
	Yes	39	32.77
	Total	119	100.00
16. Fruits: Canned/ processed	No	90	80.36
	Yes	22	19.64
	Total	112	100.00
17. Local citrus	No	84	66.67
	Yes	42	33.33
	Total	126	100.00
18. Imported citrus	No	69	70.41
	Yes	29	29.59
	Total	98	100.00
19. Open Ocean fish	No	90	63.83
	Yes	51	36.17
	Total	141	100.00
20. Reef fish	No	90	62.94
	Yes	53	37.06
	Total	143	100.00
21. Sea cucumbers	No	87	79.82
	Yes	22	20.18
	Total	109	100.00

Question	Responses	Freq.	Percent
22. Clams/ oysters	No	92	78.63
	Yes	25	21.37
	Total	117	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	88	68.22
	Yes	41	31.78
	Total	129	100.00
24. Octopus and squid	No	86	69.92
	Yes	37	30.08
	Total	123	100.00
25. Meat and meat products: fresh/ local	No	89	65.93
	Yes	46	34.07
	Total	135	100.00
26. Meat and meat products: processed	No	88	66.17
	Yes	45	33.83
	Total	133	100.00
27. Dairy (milk, cheese, yogurt)	No	87	70.16
	Yes	37	29.84
	Total	124	100.00
28. Eggs	No	73	50.69
	Yes	71	49.31
	Total	144	100.00
29. Black pepper	No	81	75.00
	Yes	27	25.00
	Total	108	100.00
30. Hot peppers	No	93	75.00
	Yes	31	25.00
	Total	124	100.00
31. Sodas	No	109	80.15
	Yes	27	19.85
	Total	136	100.00
32. Candies, cakes, cookies, sugary foods	No	109	81.95
	Yes	24	18.05
	Total	133	100.00
33. Coffee and tea	No	105	77.78
	Yes	30	22.22
	Total	135	100.00
34. Bread, crackers, biscuit	No	99	76.15
	Yes	31	23.85
	Total	130	100.00
35. Pasta and ramen noodles	No	105	78.95
	Yes	28	21.05
	Total	133	100.00
36. Boxed cereal	No	91	75.83
	Yes	29	24.17
	Total	120	100.00
37. Sakau (Kava)	No	89	68.46
	Yes	41	31.54
	Total	130	100.00
38. Imported juice	No	95	75.40
	Yes	31	24.60
	Total	126	100.00
39. Imported coconut milk	No	69	77.53
	Yes	20	22.47
	Total	89	100.00
40. Other	No	13	92.86
	Yes	1	7.14
	Total	14	100.00

Q9.3.4 (1-40) Has a changing climate impacted the availability of this food?

Question	Responses	Freq.	Percent
1. Rice	No	115	74.19
	Yes	40	25.81
	Total	155	100.00
2. Taro	No	90	65.22
	Yes	48	34.78
	Total	138	100.00
3. Breadfruit	No	85	57.43
	Yes	63	42.57
	Total	148	100.00
4. Banana	No	102	66.67
	Yes	51	33.33
	Total	153	100.00
5. Coconut	No	95	65.97
	Yes	49	34.03
	Total	144	100.00
6. Copra (coconut product)	No	81	75.00
	Yes	27	25.00
	Total	108	100.00
7. Yam	No	91	61.07
	Yes	58	38.93
	Total	149	100.00
8. Sweet potatoes	No	79	77.45
	Yes	23	22.55
	Total	102	100.00
9. Tapioca	No	87	74.36
	Yes	30	25.64
	Total	117	100.00
10. Soursop	No	96	81.36
	Yes	22	18.64
	Total	118	100.00
11. Locally grown/collected fresh vegetables	No	87	69.60
	Yes	38	30.40
	Total	125	100.00
12. Imported fresh vegetables	No	93	72.66
	Yes	35	27.34
	Total	128	100.00
13. Vegetables: Canned/ processed	No	96	78.69
	Yes	26	21.31
	Total	122	100.00
14. Local fresh fruits	No	95	68.84
	Yes	43	31.16
	Total	138	100.00

Question	Responses	Freq.	Percent
15. Imported fresh fruits	No	94	73.44
	Yes	34	26.56
	Total	128	100.00
16. Fruits: Canned/ processed	No	99	83.19
	Yes	20	16.81
	Total	119	100.00
17. Local citrus	No	95	74.22
	Yes	33	25.78
	Total	128	100.00
18. Imported citrus	No	90	82.57
	Yes	19	17.43
	Total	109	100.00
19. Open Ocean fish	No	92	63.89
	Yes	52	36.11
	Total	144	100.00
20. Reef fish	No	89	60.54
	Yes	58	39.46
	Total	147	100.00
21. Sea cucumbers	No	86	74.14
	Yes	30	25.86
	Total	116	100.00
22. Clams/ oysters	No	90	73.17
	Yes	33	26.83
	Total	123	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	98	71.53
	Yes	39	28.47
	Total	137	100.00
24. Octopus and squid	No	100	75.19
	Yes	33	24.81
	Total	133	100.00
25. Meat and meat products: fresh/ local	No	103	73.05
	Yes	38	26.95
	Total	141	100.00
26. Meat and meat products: processed	No	104	73.76
	Yes	37	26.24
	Total	141	100.00
27. Dairy (milk, cheese, yogurt)	No	100	76.92
	Yes	30	23.08
	Total	130	100.00
28. Eggs	No	106	73.61
	Yes	38	26.39
	Total	144	100.00
29. Black Pepper	No	102	87.18
	Yes	15	12.82
	Total	117	100.00
30. Hot peppers	No	104	80.00
	Yes	26	20.00
	Total	130	100.00
31. Sodas	No	115	82.14
	Yes	25	17.86
	Total	140	100.00
32. Candies, cakes, cookies, sugary foods	No	114	82.61
	Yes	24	17.39
	Total	138	100.00
33. Coffee and tea	No	116	82.27
	Yes	25	17.73
	Total	141	100.00
34. Bread, crackers, biscuit	No	113	82.48
	Yes	24	17.52
	Total	137	100.00
35. Pasta and ramen noodles	No	112	80.58
	Yes	27	19.42
	Total	139	100.00
36. Boxed cereal	No	101	79.53
	Yes	26	20.47
	Total	127	100.00
37. Sakau (Kava)	No	97	71.85
	Yes	38	28.15
	Total	135	100.00
38. Imported juice	No	109	81.95
	Yes	24	18.05
	Total	133	100.00
39. Imported coconut milk	No	88	84.62
	Yes	16	15.38
	Total	104	100.00
40. Other	No	33	100.00
	Yes	0	0.00
	Total	33	100.00

9.3.6 (1-40) Has a changing climate impacted the affordability of this food?

Question	Responses	Frequency	Percent
1. Rice	No	110	70.97
	Yes	45	29.03
	Total	155	100.00
2. Taro	No	99	71.74
	Yes	39	28.26
	Total	138	100.00
3. Breadfruit	No	89	60.14
	Yes	59	39.86
	Total	148	100.00
4. Banana	No	107	69.93
	Yes	46	30.07
	Total	153	100.00
5. Coconut	No	95	66.43
	Yes	48	33.57
	Total	143	100.00
6. Copra (coconut product)	No	87	79.82
	Yes	22	20.18
	Total	109	100.00
7. Yam	No	94	62.67
	Yes	56	37.33
	Total	150	100.00

Question	Responses	Frequency	Percent
8. Sweet potatoes	No	80	78.43
	Yes	22	21.57
	Total	102	100.00
9. Tapioca	No	87	75.00
	Yes	29	25.00
	Total	116	100.00
10. Soursop	No	95	81.90
	Yes	21	18.10
	Total	116	100.00
11. Locally grown/collected fresh vegetables	No	89	72.36
	Yes	34	27.64
	Total	123	100.00
12. Imported fresh vegetables	No	93	73.23
	Yes	34	26.77
	Total	127	100.00
13. Vegetables: Canned/ processed	No	94	75.81
	Yes	30	24.19
	Total	124	100.00
14. Local fresh fruits	No	93	66.43
	Yes	47	33.57
	Total	140	100.00
15. Imported Fresh Fruits	No	93	73.23
	Yes	34	26.77
	Total	127	100.00
16. Fruits: Canned/ processed	No	98	83.05
	Yes	20	16.95
	Total	118	100.00
17. Local citrus	No	93	72.66
	Yes	35	27.34
	Total	128	100.00
18. Imported citrus	No	90	82.57
	Yes	19	17.43
	Total	109	100.00
19. Open Ocean fish	No	93	64.14
	Yes	52	35.86
	Total	145	100.00
20. Reef fish	No	90	61.22
	Yes	57	38.78
	Total	147	100.00
21. Sea cucumbers	No	86	75.44
	Yes	28	24.56
	Total	114	100.00
22. Clams/ oysters	No	84	68.85
	Yes	38	31.15
	Total	122	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	92	66.67
	Yes	46	33.33
	Total	138	100.00
24. Octopus and squid	No	95	71.43
	Yes	38	28.57
	Total	133	100.00

Question	Responses	Frequency	Percent
25. Meat and meat products: fresh/ local	No	101	71.63
	Yes	40	28.37
	Total	141	100.00
26. Meat and meat products: processed	No	98	70.00
	Yes	42	30.00
	Total	140	100.00
27. Dairy (milk, cheese, yogurt)	No	96	75.00
	Yes	32	25.00
	Total	128	100.00
28. Eggs	No	101	68.71
	Yes	46	31.29
	Total	147	100.00
29. Black pepper	No	96	82.76
	Yes	20	17.24
	Total	116	100.00
30. Hot peppers	No	105	80.15
	Yes	26	19.85
	Total	131	100.00
31. Sodas	No	114	80.85
	Yes	27	19.15
	Total	141	100.00
32. Candies, cakes, cookies, sugary foods	No	111	79.86
	Yes	28	20.14
	Total	139	100.00
33. Coffee and tea	No	111	79.29
	Yes	29	20.71
	Total	140	100.00
34. Bread, crackers, biscuit	No	109	80.15
	Yes	27	19.85
	Total	136	100.00
35. Pasta and ramen noodles	No	107	76.98
	Yes	32	23.02
	Total	139	100.00
36. Boxed cereal	No	97	76.98
	Yes	29	23.02
	Total	126	100.00
37. Sakau (Kava)	No	89	66.42
	Yes	45	33.58
	Total	134	100.00
38. Imported juice	No	104	78.79
	Yes	28	21.21
	Total	132	100.00
39. Imported coconut milk	No	79	76.70
	Yes	24	23.30
	Total	103	100.00
40. Other	No	34	100.00
	Yes	0	0.00
	Total	34	100.00

Q9.4.2	Resp.	Freq.	Percent
Due to climate change, have the places you get food from (e.g., wild places, cultivated places, informal markets) changed?	No	104	65.41
	Yes	55	34.59
	Total	159	100.00

Q9.4.3 If yes, where are you getting more food from?

Question	Resp.	Freq.	Percent
1. More from wild places such as forests, freshwater, rivers, and/or the ocean	No	10	18.18
	Yes	45	81.82
	Total	55	100.00
2. More from cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	40	72.73
	Yes	15	27.27
	Total	55	100.00
3. More from informal markets such as street vendors and kiosks	No	36	67.92
	Yes	17	32.08
	Total	53	100.00
4. More from formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	30	56.60
	Yes	23	43.40
	Total	53	100.00
5. More from supplemental food assistance such as government food rations, food from churches, schools, and community organizations, etc.	No	49	96.08
	Yes	2	3.92
	Total	51	100.00
6. More from relatives and extended families	No	41	78.85
	Yes	11	21.15
	Total	52	100.00
7. More from other	No	46	97.87
	Yes	1	2.13
	Total	47	100.00

Question	Responses	Freq.	Percent
Q9.4.4 If yes, is it more difficult or less difficult to access foods?	More difficult	18	29.03
	Less difficult	44	70.97
	Total	62	100.00
Q9.4.5 Are you concerned with how climate change will impact the foods that you eat?	No	51	32.69
	Yes	105	67.31
	Total	156	100.00

Q9.4.6 If yes: why? Is it because you feel climate change will impact:

Question	Responses	Freq.	Percent
Food availability	No	12	11.32
	Yes	94	88.68
	Total	106	100.00
Food affordability	No	30	29.13
	Yes	73	70.87
	Total	103	100.00
Food quality	No	13	12.26
	Yes	93	87.74
	Total	106	100.00
Food safety	No	26	24.76
	Yes	79	75.24
	Total	105	100.00
Other	No	93	97.89
	Yes	2	2.11
	Total	95	100.00

10. IMPACT OF COVID 19

Question	Responses	Freq.	Percent
Q10.1 During the COVID 19 pandemic, did your consumption of local foods change?	No	119	75.80
	Yes	38	24.20
	Total	157	100.00
Q10.2 If yes, how did it change?	Increase	15	35.71
	Decrease	18	42.86
	Stay the same	8	19.05
	Total	41	100.00
Q10.3 During the COVID 19 pandemic, did your production of local foods change?	No	111	71.15
	Yes	45	28.85
	Total	156	100.00
Q10.4 If yes, how did it change?	Increase	14	35.71
	Decrease	28	42.86
	Stay the same	6	19.05
	Total	48	100.00
Q10.5 During the COVID 19 pandemic, did demand for local food change?	No	105	66.88
	Yes	52	33.12
	Total	157	100.00
Q10.6 If yes, did it… 1.Increased for local consumption	No	16	30.77
	Yes	36	69.23
	Total	52	100.00

2. Decreased local consumption	No	40	78.43
	Yes	11	21.57
	Total	51	100.00
3. Increased for export	No	46	90.20
	Yes	5	9.80
	Total	51	100.00
4. Decreased for export	No	44	86.27
	Yes	7	13.73
	Total	51	100.00
5. Stayed the same	No	44	86.27
	Yes	7	13.73
	Total	51	100.00
Q10.7 During COVID-19, have you sent your food products overseas (both commercial and to family members)?	No	136	87.18
	Yes	20	12.82
	Total	156	100.00

Q10.8 If yes, which crops were in most demand?

Question	Responses	Frequency	Percent
1. Swamp taro	No	12	54.55
	Yes	10	45.45
	Total	22	100.00
2. Land taro	No	15	68.18
	Yes	7	31.82
	Total	22	100.00
3. Breadfruit	No	12	54.55
	Yes	10	45.45
	Total	22	100.00
4. Betelnut	No	16	72.73
	Yes	6	27.27
	Total	22	100.00
5. Banana	No	12	54.55
	Yes	10	45.45
	Total	22	100.00
6. Coconut	No	19	86.36
	Yes	3	13.64
	Total	22	100.00
7. Copra (coconut product)	No	20	90.91
	Yes	2	9.09
	Total	22	100.00
8. Yam	No	16	72.73
	Yes	6	27.27
	Total	22	100.00
9. Sweet Potatoes	No	22	100.00
	Yes	0	0.00
	Total	22	100.00
10. Tapioca	No	22	100.00
	Yes	0	0.00
	Total	22	100.00
11. Soursop	No	22	100.00
	Yes	0	0.00
	Total	22	100.00
12. Locally grown/ collected vegetables	No	22	100.00
	Yes	0	0.00
	Total	22	100.00
13. Imported vegetables	No	22	100.00
	Yes	0	0.00
	Total	22	100.00
14. Locally grown/ collected Fruits	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
15. Imported fruits	No	22	100.00
	Yes	0	0.00
	Total	22	100.00
16. Citrus	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
17. Black Pepper	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
18. Hot peppers	No	21	95.45
	Yes	1	4.55
	Total	22	100.00
19. Sakau (Kava)	No	14	63.64
	Yes	8	36.36
	Total	22	100.00
20. Other	No	18	85.71
	Yes	3	14.29
	Total	21	100.00

11. PERCEPTION, PREFERENCE AND ATTITUDES

Q11.1a What do you consider to be healthy and nutritious?

Question	Responses	Freq.	Percent
1. Fresh vegetables	No	1	0.63
	Yes	157	99.37
	Total	158	100.00
2. Processed vegetables	No	118	77.12
	Yes	35	22.88
	Total	153	100.00
3. Fresh fruit	No	10	6.33
	Yes	148	93.67
	Total	158	100.00
4. Processed fruit	No	129	84.87
	Yes	23	15.13
	Total	152	100.00
5. Fresh fish/ seafood	No	16	10.13
	Yes	142	89.87
	Total	158	100.00
6. Processed fish/seafood	No	126	82.35
	Yes	27	17.65
	Total	153	100.00
7.Fresh meat	No	29	18.47
	Yes	128	81.53
	Total	157	100.00

Question	Responses	Freq.	Percent
8.Processed meat	No	139	93.29
	Yes	10	6.71
	Total	149	100.00
9.Bread, crackers, biscuit	No	121	81.21
	Yes	28	18.79
	Total	149	100.00
10.Pasta and ramen noodles	No	144	97.30
	Yes	4	2.70
	Total	148	100.00
11.Dairy	No	110	73.33
	Yes	40	26.67
	Total	150	100.00
12.Eggs	No	47	30.72
	Yes	106	69.28
	Total	153	100.00
13.Coconut milk	No	77	51.33
	Yes	73	48.67
	Total	150	100.00
14.Candies, Cakes, Cookies, Sugary foods	No	147	99.32
	Yes	1	0.68
	Total	148	100.00
15.Boxed cereal	No	141	94.63
	Yes	8	5.37
	Total	149	100.00
16.Soda	No	148	100.00
	Yes	0	0.00
	Total	148	100.00
17.Sakau (Kava)	No	117	79.05
	Yes	31	20.95
	Total	148	100.00
18.Coffee, tea	No	123	82.55
	Yes	26	17.45
	Total	149	100.00

Q11.1b What percentage of your diet is imported food?

Particulars	Frequency	Percent
Less than 25%	22	13.92
25-50%	34	21.52
50-75%	66	41.77
75-100%	36	22.78
Total	158	100.00

Question	Responses	Frequency	Percent
Q11.2 Do you feel your diet is healthy and nutritious?	No	44	27.85
	Yes	114	72.15
	Total	158	100.00

Question	Responses	Freq.	Percent
Q11.3 Does your diet impact your health?	No	43	27.22
	Yes, I feel healthy	84	53.16
	Yes, I feel unhealthy	31	19.62
	Total	**158**	**100.00**
Q11.4 Would you be interested in consuming more locally sourced seafood and marine fish on a daily basis if they were more available and affordable?	No	4	2.55
	Yes	153	97.45
	Total	157	100.00
Q11.5 Would you be interested in consuming more locally sourced meat and meat products on a daily basis if they were more available and affordable?	No	12	7.59
	Yes	146	92.41
	Total	158	100.00
Q11.6 Would you be interested in replacing imported rice with local starch crops such as taro and breadfruit if they are more available and affordable?	No	44	27.67
	Yes	115	72.33
	Total	159	100.00
Q11.7 Would you be interested in consuming more locally produced coconut milk products daily if they were more available and affordable?	No	26	16.56
	Yes	131	83.44
	Total	157	100.00

Question	Responses	Freq.	Percent
Q11.8 Would you be willing to replace imported milk products with coconut milk products for cooking?	No	40	25.32
	Yes	118	74.68
	Total	158	100.00
Q11.9 Would you be interested in consuming more locally produced vegetables on a daily basis if they were more available and affordable?	No	5	3.16
	Yes	153	96.84
	Total	158	100.00
Q11.10 Would you be interested in consuming more locally produced fruits on a daily basis if they were more available and affordable?	No	13	8.23
	Yes	145	91.77
	Total	158	100.00
Q11.11 If you knew any of these locally produced foods were healthier than imported and/or processed foods, would you be more willing to buy these food items?	No	28	17.83
	Yes	129	82.17
	Total	157	100.00

Q11.12 If not, why do you find imported and/or processed foods preferable?

Question	Responses	Frequency	Percent
More convenient	No	10	34.48
	Yes	19	65.52
	Total	29	100.00
Less work to prepare	No	11	37.93
	Yes	18	62.07
	Total	29	100.00
Tastes better	No	21	70.00
	Yes	9	30.00
	Total	30	100.00
More affordable	No	20	71.43
	Yes	8	28.57
	Total	28	100.00
More available	No	17	58.62
	Yes	12	41.38
	Total	29	100.00
Higher status	No	28	96.55
	Yes	1	3.45
	Total	29	100.00
Other	No	26	100.00
	Yes	0	0.00
	Total	26	100.00

12. ADAPTATION AND RESILIENT QUESTIONS

Q12.2 What solutions and/or resources do you feel can assist you with long term local food production goals?

Question	Responses	Freq.	Percent
1. Agriculture training	No	31	20.39
	Yes	121	79.61
	Total	152	100.00
2. Tools	No	31	20.39
	Yes	121	79.61
	Total	152	100.00
3. Greenhouses and aquaculture	No	66	43.71
	Yes	85	56.29
	Total	151	100.00
4. Climate resilience crops	No	81	53.29
	Yes	71	46.71
	Total	152	100.00
5. Disease resistant animals/ chickens	No	76	50.33
	Yes	75	49.67
	Total	151	100.00
6. Affordable feed	No	64	42.38
	Yes	87	57.62
	Total	151	100.00
7. Refrigeration	No	105	72.41
	Yes	40	27.59
	Total	145	100.00
8. Access to market	No	95	65.97
	Yes	49	34.03
	Total	144	100.00
9. Transportation	No	86	59.31
	Yes	59	40.69
	Total	145	100.00
10. Post-harvest handling (drying and cooling for long term storage)	No	105	70.95
	Yes	43	29.05
	Total	148	100.00
11. Financial credit	No	75	52.08
	Yes	69	47.92
	Total	144	100.00
12. Veterinary doctor	No	112	77.78
	Yes	32	22.22
	Total	144	100.00
13. Other	No	128	94.81
	Yes	7	5.19
	Total	135	100.00

POHNPEI OPEN-ENDED HOUSEHOLD SURVEY

Below are the main statements provided by the respondents in the open-ended survey.

Q3.3.5 If yes, which behavioral changes?

1) "Using compost, crop rotation, and intercropping."

Q6.8 In the last ten years, have you noticed a change in raising animals (if yes, please explain):

1) "More animals are confined, increased cost of raising pigs, most piggeries use commercial feed, animals need medication for better performance" – Pohnpei
2) "Manure is used for compost."
3) "Before, pigs for cultural/traditional use. Now, we have more pigs for funeral and family consumption."
4) "This farmer says that before, his livestock was fine, but these days his livestock are affected by extreme heat, feed prices, and climate change."
5) "Before, we mostly used coconut for pig feed. Now we depend on grower and copra from the store."
6) "Need to use PUC water to clean the fence."
7) "Law that pigs need to be inside the fence."
8) "Many diseases are appearing nowadays that slow the growth of livestock."
9) "The price of animal feed is going high; the price to buy one is also higher."

Q8.3.2 How has a change in climate impacted your access to clean, fresh water?

1) "Decrease in water level; dirty."
2) "Freshwater decreasing because of heat, and when it floods, the water is contaminated."
3) "Heavy rainfall causing water quality and color changes."
4) "Mangrove tree/coral reef depletion."
5) "Still have water but misuse by the community."
6) "The village water is not enough; we need to get water from afar."
7) "Erosion contaminating water."
8) "Heavy rainfall causing landslide and erosion at the banks of streams and rivers."
9) "Less water, off-taste."
10) "Now we boil water for drinking."
11) "Pig pens close to rivers."

Q8.4.3 What crops did you use to grow, and what crops do you grow now?

1) "I used to grow cucumber before, but now I grow tomatoes."
2) "For the cucumber, he planted taro at the sides to provide ground cover."
3) "No change. We keep planting the same food crops. Since sakau is our main source of income, my sons plant more sakau. They also plant more bananas since bananas grow better."
4) "Grow some crops, yam, sakau mostly, but rotate the crops depending on harvesting and season. Before I used to plant all kinds of food crops. Now, I only plant yam."
5) "The farmer has a spot for planting kava, and due to the extreme heat, he started planting bananas and breadfruit in that spot."

Q8.4.6 How did you change/adapt your farming practices (including fishing) over the last ten years?

1) "Especially for cucumber planting, he had to provide ground cover to protect them."
2) "Nothing, I just plant the crops again."
3) "Plant less in the upland and plant more in low land. Plant more breadfruit."
4) "Planting but reducing cutting all trees."
5) "Before, the farmer just planted kava and left it without covering the base with dead leaves or grass. Now he started to do that technique."
6) "For farming, I do agroforestry, plant all the crops that can grow together, and rotate the crops when needed."
7) "For fishing, I changed fishing areas. For farming, not much besides composting."
8) "More organic addition to soil, plant when weather is not wet."
9) "Start planting imported vegetables."

Q8.4.7 Have you or your household done anything else to become more food secure in response to climate change?

1) "Buy more imported food."
2) "Family relatives and I form groups to farm more staple crops."
3) "Leave some trees when farming to provide share and moisture."
4) "Yes, we try planting more food crops. Increase the number of plants that we planted."
5) "Yes, we are planting more stable crops like bananas and coconuts because they are more resilient than vegetable crops."
6) "Changing land and adding compost and green manure to the food crops."
7) "For the seafood, we freeze it, and for the local, we plant more."
8) Planting more perennial crops, root crops, such as swamp taros and wild yam."
9) "No, because we don't know how and have no tools. The only way to keep our food, especially meat, is to store, use the freezer, or put it in an ice chest covered with ice cubes."

10) “No, not enough land for farming.”
11) “No, lack of knowledge about food security.”
12) “Not sure, but we plant our own food crops and buy more food from the store.”
13) “Ringed trees instead of burning, planting more root crops.”
14) “Take up agricultural education.”
15) “Yes, for example, like with yam, we try to plant varieties that can tolerate the weather changes. Every year we have to find a new spot for planting yam. During breadfruit season, we store or preserve some fruits under the ground; we call it mahr. Outside its season, we still have some breadfruit to eat.”

Q9.1.5 How do you define healthy, nutritious food?

1) “Any food from the land, fresh crops, fruits, and locally grown vegetables.”
2) “Breadfruit, banana, yam, and taro.”
3) “Eating Pohnpei local foods that are good for the body to nourish.”
4) “Eating a variety of foods that give you the nutrients you need to maintain your heart, feel good, and have energy.”
5) “Local food that is the healthiest food / processed food is unhealthy.”
6) “No artificial flavors or ingredients.”
7) “Eating lean meat with fresh vegetables, very little starch, and lots of H2O.”
8) “Food that is grown personally.”
9) “Fresh food, produced locally, non-GMO, no additives.”
10) “Healthy food is food that helps the human body and decreases sickness. For example, local foods.”
11) “Healthy is food with energy for the body and food that keeps the body strong and free from sickness.”
12) “Local food (fresh) meat ex. Local chicken, not imported meat.”
13) “Local food and seafood.”
14) “Local food cooked without salt and sugar.”

Q9.4.4 If yes, is accessing foods more difficult or less difficult? If more difficult, why?

1) Less production, high demand; 2) Food from the store is more expensive, most family members are working, and we have less time to harvest local food; 3) Less farmers/fishermen and more buyers; 4) Less time and climate change; 5) Prices and shipping.

Q12.1 What have you done to adapt your local food production or harvesting because of a changing climate?

1) “Plant more crops, agroforestry method, and compost use.”
2) “Expanding the bed by double digging.”
3) “Drought-resistant crops, fast-growing varieties, better water management, and shared resources.”
4) “Farm but leave some trees behind.”
5) “Harvesting, we harvest as much as we can for consumption and share it with our relatives and extended families.”
6) “I haven’t done anything because I don’t know enough about farming against climate change. I usually add compost and manure to my plants and crops.”
7) “No deforestation when farming on land.”
8) “Not much because we did not have the tools or equipment to store or dry our food. Now we have a freezer and freeze when we have more.”
9) “Nothing; climate change does not really affect my local food.”
10) “Avoid burning of trellis but just ringing.”
11) “Change farming ground, change planting areas, use more bait for fishing.”
12) “Decreasing the number of plantings in crops to reduce a large collateral damage.”
13) “Increase use of imported soil and fertilizers and planting in a more mobile place for secure and safe growth.”
14) “Plant under greenhouse.”
15) “Storing processed canned vegetables and imported fresh vegetables.”
16) “Switch to processed food and wait for a better harvest.”

Q12.3 Is there anything else you would like us to know regarding your experience with food production, food security, climate change, or COVID-19?

1) “COVID-19 does not affect food production locally. However, the high inflation rate of imported food is in effect; people don’t plant food much these days, and the cost of food is very high, including local food.”
2) “Climate change has greater negative impacts on the lands with fewer trees.”
3) “Doesn’t matter what the circumstances are; Pohnpeians need to keep producing local food not just for the health benefit but also for our tradition and culture.”
4) “I recommend more training in school about how we can prevent climate change.”
5) “Local food price is too low when selling at the markets.”
6) “Local products are expensive. Markets buy at a smaller price and sell at a higher price. Few people are committed to farming and depend mostly on imported food.”
7) “Plant disease is causing a big problem; we need to clean the ocean and planting materials.”
8) “The farmer would prefer that food security issues are centered locally by planting resilient indigenous food. God has given us food sources specific for our environment that are disease free and compatible with our environment. Stop bringing other food that does not belong to this environment.”
9) “Stop deforestation and minimize using chemical fertilizer.”

10) “Climate change and COVID-19 are creating big issues to the prices of things that are coming in. For example, for pig feeds, there is a race for this high-priced item in every shipment. And I am suggesting that someone import a machine to make our local food here and convert it into pig feed.” 11) “Government to lease lands for farming activities, provide financial credit or capital.” 12) “More support from the government on invasive diseases and pests, fishing fleets over-harvest our water and cause locals to travel far out the reef for a better catch.”	13) “Government should provide financial credit to farmers for start-up operation and allow farmers to pay back loans on a flexible timeline based on the type of operation he or she is doing.” 14) “Plant more (need planting materials), budget on disasters, raise more food (need equipment), more food (plant more), more awareness.” 15) “Want to have more training conducted in their communities based on agriculture and aquaculture.” 16) “We have a natural freezer called kahlipw, this is where we store breadfruit, and we can have breadfruit out of its season.”

POHNPEI COMMERCIAL SURVEY

Q1.1 Gender of the sample respondents

Particulars	Frequency	Percent
Male	7	87.50
Female	1	12.50
Total	8	100.00

Particulars	Mean
Q1.2 Average number of people that are children (0-13 years)	1.875
Q1.3 Average number of people in the family	7.625

Q1.4 In general, would you say your health is?

Particulars	Frequency	Percent
Excellent	3	37.50
Very good	0	0.00
Good	5	62.50
Fair	0	0.00
Poor	0	0.00
Total	8	100.00

Q2.3.1 Which crops, animals/poultry and/or fish/seafood/clams have you tried to grow that did not work or that you did not continue to grow?

Particulars	Frequency	Percent
Cucumber	2	20.00
Watermelon	2	20.00
Peans	1	10.00
Bell Pepper	2	20.00
Taro	1	10.00
Others	2	20.00
Total	10	100.00

Q2.3.1.1 Why did you stop growing it?

Particulars	Frequency	Percent
Low Yield	3	30.00
Low Price	0	0.00
Low Demand	0	0.00
Seed Problem	2	20.00
Lack of production technologies	2	20.00
Others	3	30.00
Total	10	100.00

Q2.3.2 Which crops/marine products would you like to grow but are not yet growing?

Particulars	Frequency	Percent
Cabbage	1	10.00
Egg plant	1	10.00
Grabs	1	10.00
Karat	1	10.00
Pell pepper	1	10.00
Salary	1	10.00
Sigankan palu	1	10.00
Sea cucumber	1	10.00
Seaweed	1	10.00
Tomato	1	10.00
Total	10	100.00

Q2.3.2.1 Why are you not growing it?

Particulars	Frequency	Percent
Low price	0	0.00
Low price	0	0.00
Low demand	0	0.00
Seed problem	3	30.00
Lack of production technologies	3	30.00
Others	4	40.00
Total	10	100.00

Q3 Ownership of livestock

Livestock type	No of respondents	Average number
Chicken	5	35.00
Pigs	7	9.86
Goats	0	0.00
Cattle	0	0.00
Ducks	0	0.00
Others (specify)	0	0.00

Q4.1 Which Food crops do you grow?

Particulars	Freq.	Percent
Banana	6	13.64
Beans	2	4.55
Bell pepper	1	2.27
Breadfruit	4	9.09
Chinese cabbage	2	4.55
Coconut	3	6.82
Coffee	1	2.27
Cucumber	4	9.09
Citrus	1	2.27
Dry taro	1	2.27

Particulars	Freq.	Percent
Egg plant	2	4.55
Fruit trees	1	2.27
Head cabbage	1	2.27
Lemon	1	2.27
Pandanus	1	2.27
Peppers	1	2.27
Root crops	1	2.27
Sakau	1	2.27
Soft taro	1	2.27
Swamp taro	2	4.55
Sweet taro	1	2.27
Tapioca	1	2.27
Taro	1	2.27
Veggies	1	2.27
Yam	3	6.82
Total	44	100.00

Q4.2 Why the vegetable is grown and preferred?

Particulars	Frequency	Percent
Good prices	21	47.73
Contract with partner	0	0.00
Production experience	3	6.82
Available market	2	4.55
Opportunity to earn extra income	1	2.27
Cultural reasons for IVs	6	13.64
Home consumption	11	25.00
Other	0	0.00
Total	44	100.00

Q4.4.1 What are the important technology why you have never used or stopped to use practices you are aware of?

Particulars	Frequency	Percent
Bedding	2	18.18
Cooling/drying	1	9.09
Fertilizer	1	9.09
Hydroponics	3	27.27
Production system	1	9.09
Solar	1	9.09
Woodchipper	2	18.18
Total	11	100.00

Q4.4.2 What are the important reasons why you have never used or stopped to use practices you are aware of?

Particulars	Frequency	Percent
Lack of requisite materials	4	28.57
Labor demand is high	1	7.14
Requires more money	6	42.86
Makes crops susceptible to diseases and pests	1	7.14
Makes food taste bad	1	7.14
Other	1	7.14
Total	14	100.00

Q4.8 Do you have a water collection system?

Particulars	Frequency	Percent
Tank	6	60.00
Bucket	3	30.00
Other	1	10.00
Total	10	100.00

Q4.9 Do you have problems with excessive rainfall?

Particulars	Frequency	Percent
No	3	37.50
Yes	5	62.50
Total	8	100.00

Q4.10 How do you reduce crop and animal damage from excessive rains and runoff?

Particulars	Frequency	Percent
Digging drainage	3	60.00
Erosion	1	20.00
Design, crop selection	1	20.00
Total	5	100.00

Q4.11 How have production costs for growing foods changed over the past 5 years?

Particulars	Frequency	Percent
Increased	7	87.50
No change	1	12.50
Total	8	100.00

Q4.12 What were the major changes (for increased or decreased costs?):

Particulars	Freq.	Percent
Fuel cost increases, need fuel to get to the farm site	1	20.00
Price of material increase	2	40.00
Planting materials	1	20.00
Inflation	1	20.00
Total	5	100.00

Q5.2 Are any of your food crops stored immediately after harvest?

Particulars	Frequency	Percent
No	5	71.43
Yes	2	28.57
Total	7	100.00

Q5.4 How do you harvest your food crops?

Particulars	Freq.	Percent
Just cut a bunch of plant from top	8	40.00
Just cut a bunch of leaves from side shoots	3	15.00
Strip and harvest leaves only	3	15.00
Pull the plant out and sell entire plant	6	30.00
Total	20	100.00

Q6.1 Who are your main trading partner(s)?

Particulars	Frequency	Percent
Direct to consumers	6	18.18
Brokers	0	0.00
Direct to Supermarkets	5	15.15
Roadside Stands	1	3.03
Retailers	3	9.09
Wholesalers	2	6.06
Neighbors	5	15.15
Friends	4	12.12
Family Relatives	7	21.21
Total	33	100.00

Q6.2 How frequently does your nearest market meet?

Particulars	Frequency	Percent
Daily	1	14.29
Weekly	1	14.29
Thrice a week	3	42.86
Other	2	28.57
Total	7	100.00

Q6.3 How are your harvested crops normally packaged during transport?

Particulars	Frequency	Percent
Plastic bags/sacks	5	62.50
Plastic containers	2	25.00
Others	1	12.50
Total	8	100.00

Q6.4 Are you often aware of crop prices before you decide to sell?

Particulars	Frequency	Percent
No	3	37.50
Yes	5	62.50
Total	8	100.00

Q6.5 Who fixes or determines the prices of each crop you sold?

Particulars	Frequency	Percent
N/A	3	37.50
Self	2	25.00
Buyer	3	37.50
Total	8	100.00

Q6.7 If prices were not fixed by you, how do you determine them?

Particulars	Frequency	Percent
N/A	1	12.50
I use published prices in the newspapers	2	25.00
I use cost of production	5	62.50
Total	8	100.00

Q6.8 When do you start checking prices prior to harvesting of produce?

Particulars	Frequency	Percent
Less than 3 days before	2	25.00
A week before	1	12.50
One monthly before	2	25.00
Not at all	3	37.50
Total	8	100.00

Q6.9 How have the food crop prices changed over the past 5 years?

Particulars	Frequency	Percent
No	0	0.00
Yes	8	100.00
Total	8	100.00

Q6.10 Do you get paid at time of selling food crops?

Particulars	Frequency	Percent
No	2	25.00
Yes	6	75.00
Total	8	100.00

Q6.11 Are there any differences between the production and sale of the different food crops?

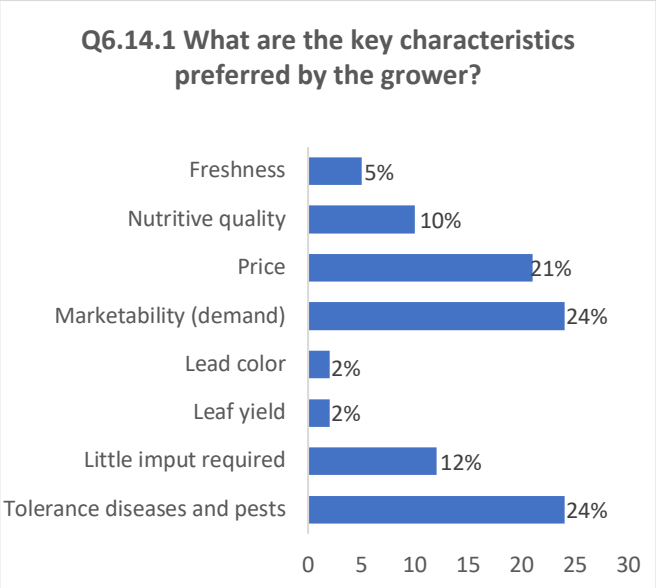
Particulars	Frequency	Percent
No	1	12.50
Yes	7	87.50
Total	8	100.00

Q6.12 Which one do you believe would allow you as a grower and producer to receive a higher price or a premium if improved?

Particulars	Frequency	Percent
Hygiene	1	12.50
Healthy	1	12.50
Taste	1	12.50
Organically produced	5	62.50
Total	8	100.00

Q6.14 What are food crops buyers looking in your farm?

Particulars	Frequency	Percent
Banana	3	16.67
Beans	1	5.56
Bell pepper	1	5.56
Bread fruit	2	11.11
Cucumber	3	16.67
Egg plant	2	11.11
Fruit trees	1	5.56
Pandanus	1	5.56
Root crops	1	5.56
Sakau	1	5.56
Veggies	1	5.56
Yam	1	5.56
Total	18	100.00



Q6.14.2 What are the key characteristics preferred by buyers?

Particulars	Frequency	Percent
Diseases and pests free	4	9.30
Little input / less chemical	2	4.65
Leaf size	4	9.30
Leaf color	2	4.65
Marketability (demand)	4	9.30
Price	8	18.60
Appearance	2	4.65
Taste	2	4.65
Palatability	3	6.98
Nutritive quality	3	6.98
Freshness	9	20.93
Total	43	100.00

Q7.2 Has anyone in your operation accessed agricultural extension services. If yes indicate the source of the advice and main messages:

Question	Resp.	Freq.	Percent
Seed or fingerlings production technology, methods, or practices	No	3	50.00
	Yes	3	50.00
	Total	6	100.00
Management technologies	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Varieties	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Disease and pest control	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Basic business management and income generation	No	3	100.00
	Yes	0	0.00
	Total	3	100.00
Ways and methods to increase commercial index	No	3	100.00
	Yes	0	0.00
	Total	3	100.00
Marketing	No	2	66.67
	Yes	1	33.33
	Total	3	100.00
Nutrition and health	No	1	25.00
	Yes	3	75.00
	Total	4	100.00
Value-addition/ processing methods	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
Others (specify)	No	2	50.00
	Yes	2	50.00
	Total	4	100.00

Q7.3 What type of training and assistance do you need, and would you like to receive?

Particulars	Freq.	Percent
Variety types	1	7.69
Design package and labeling	1	7.69
Disease and pest managements	1	7.69
Finance & management training	1	7.69

Particulars	Freq.	Percent
Food processing and packaging	2	15.38
Local vegetable production	2	15.38
Marketing	2	15.38
Production training	1	7.69
Training for best home gardening vegetable	1	7.69
Ways & method to increase commercial index	1	7.69
Total	13	100.00

Q7.4 Do you or any of your commercial partners/ members belong to inside community/ outside community groups or associations?

Particulars	Frequency	Percent
No	5	71.43
Yes	2	28.57
Total	7	100.00

Q7.5 what is the nature of the groups/associations?

Particulars	Frequency	Percent
NGO	1	14.29
Farmer groups	2	28.57
Religious	2	28.57
Community	2	28.57
Total	7	100.00

Q7.6 Of the groups/organizations you belong to, which ones are the three most important to you and your business?

Particulars	Frequency	Percent
NGO	1	5.56
Farmer groups	5	27.78
Religious	6	33.33
Community	5	27.78
Others	1	5.56
Total	18	100.00

Q8 Do you have any financial constraints in farming?

Particulars	Frequency	Percent
No	2	25.00
Yes	6	75.00
Total	8	100.00

Q9.1 Do you know any providers of financial credit services for agricultural activities?

Particulars	Frequency	Percent
No	3	37.50
Yes	5	62.50
Total	8	100.00

Q9.2 Have any of your household members ever applied for credit either in cash or kind?

Particulars	Frequency	Percent
No	6	75.00
Yes	2	25.00
Total	8	100.00

Q9.4 Have you ever-obtained credit in the past two years?

Particulars	Frequency	Percent
No	8	100.00
Yes	0	0.00
Total	8	100.00

Q10. Constraints in food crop farming

Q10.1 List the important constraints to farming and rank them (for plants and animals and poultry).

Question	Responses	Freq.	Percent
Socioeconomic			
1. Lack of seed or plant materials	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
2. Lack of improved seed	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
3. High prices of improved seed	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
4. Poor quality of seed	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
5. Unavailability of credit to buy seed	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
6. High price of fertilizer	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
7. Lack of credit to buy fertilizer	No	3	37.50
	Yes	5	62.50
	Total	8	100.00
8. Poor access to markets and information	No	6	75.00
	Yes	2	25.00
	Total	8	100.00

Question	Responses	Freq.	Percent
9. Poor vegetable leaf market prices	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
10. Food taboos	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
11. Small land sizes	No	7	87.50
	Yes	1	12.50
	Total	8	100.00
12. Too many sellers but a few buyers	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
13. Poor infrastructure	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
14. Lack of labor	No	2	25.00
	Yes	6	75.00
	Total	8	100.00
15. Lack of land	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
16. Better prices for other vegetables	No	8	100.00
	Yes	0	0.00
	Total	8	100.00
17. Need to give attention to my major food crops (e.g., taro)	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
18. Other	No	0	0.00
	Yes	7	100.00
	Total	7	100.00
Biophysical			
19. Drought	No	1	12.50
	Yes	7	87.50
	Total	8	100.00
20. Floods	No	6	75.00
	Yes	2	25.00
	Total	8	100.00
21. Pests	No	2	25.00
	Yes	6	75.00
	Total	8	100.00
22. Diseases	No	3	37.50
	Yes	5	62.50
	Total	8	100.00
23. Soil fertility	No	4	50.00
	Yes	4	50.00
	Total	8	100.00
24. Other	No	0	0.00
	Yes	7	100.00
	Total	7	100.00
25. Do you know have or use a water collection system?	No	5	62.50
	Yes	3	37.50
	Total	8	100.00
26. Do you now use irrigation?	No	6	85.71
	Yes	1	14.29
	Total	7	100.00
27. Across how many months of the year are you able to and do grow IVs and other vegetables?	No	6	85.71
	Yes	1	14.29
	Total	7	100.00

Q10.2 List the important constraints to farming and rank them (for aquaculture, fisheries, and marine products).

Question	Responses	Freq.	Percent
Socioeconomic			
1. Lack seafood, sea animals and fish in waters	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
2. Lack of facilities to raise, incubate, grow seafood	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
3. Technical expertise lacking	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
4. Lack of water transport	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
5. Unavailability of credit to support your business/ operation	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
6. High input costs (including fuel)	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
7. Lack of starting animals, fish, and crustaceans	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
8. Difficulty to access to markets	No	4	100.00
	Yes	0	0.00
	Total	4	100.00
9. Lack of cold storage and coolers	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
10. Lack of dryers/ smokers	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
11. Not sufficient access to water area to make it commercially	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
12. Local market too competitive	No	4	100.00
	Yes	0	0.00
	Total	4	100.00

Question	Responses	Freq.	Percent
13. Competition from larger international commercial fishing boats	No	4	100.00
	Yes	0	0.00
	Total	4	100.00
14. Lack of labor to assist	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
15. Poor infrastructure	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
16. Difficulty to access input supplies	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
17. Other	No	3	100.00
	Yes	0	0.00
	Total	3	100.00
Biophysical			
18. Storms	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
19. Floods	No	3	75.00
	Yes	1	25.00
	Total	4	100.00
20. Pests	No	2	66.67
	Yes	1	33.33
	Total	3	100.00
21. Diseases	No	2	66.67
	Yes	1	33.33
	Total	3	100.00
22. Erosion	No	2	50.00
	Yes	2	50.00
	Total	4	100.00
23. Theft and security	No	3	75.00
	Yes	1	25.00
	Total	4	100.00

Q10.3 Did you notice any changes in the following weather parameters in the past?

Question	Resp.	Changes in the weather parameters		Affecting agriculture?	
		Freq.	%	Freq	%
1. More frequent drought	No	1	12.50	1	12.50
	Yes	7	87.50	7	87.50
	Total	8	100.00	8	100.0
2. Delayed on-set rainfall	No	2	25.00	2	25.00
	Yes	6	75.00	6	75.00
	Total	8	100.00	8	100.0
3. Erratic rainfall pattern	No	0	0.00	1	12.50
	Yes	8	100.00	7	87.50
	Total	8	100.00	8	100.0
4. Too much rain	No	0	0.00	1	12.50
	Yes	8	100.00	7	87.50
	Total	8	100.00	8	100.0
5. Low rain	No	2	28.57	1	14.29
	Yes	5	71.43	6	85.71
	Total	7	100.0	7	100.0
6. Higher temperature	No	0	0.00	0	0.00
	Yes	8	100.0	8	100.0
	Total	8	100.0	8	100.0
7. Earlier on set of rainfall	No	1	14.29	0	0.00
	Yes	6	85.71	6	100.0
	Total	7	100.0	6	100.0
8. Others	No	2	66.67	1	50.00
	Yes	1	33.33	1	50.00
	Total	3	100.0	2	100.0

Q10.4 Did you face any damage due to any climate factor? If yes due to what?

1. Decline in yield

Crop Name	Particulars	1. Decline in yield		
		No	Yes	Total
Banana	Response	1	2	3
	Per cent	33.33	66.67	100.00
Beans	Response	0	1	1
	Per cent	0.00	100.00	100.00
Bell pepper	Response	0	1	1
	Per cent	0.00	100.00	100.00
Bread fruit	Response	0	1	1
	Per cent	0.00	100.00	100.00
Coffee	Response	1	0	1
	Per cent	100.00	0.00	100.00
Cucumber	Response	0	5	5
	Per cent	0.00	100.00	100.00
Egg plant	Response	0	1	1
	Per cent	0.00	100.00	100.00
Pandanus	Response	0	1	1
	Per cent	0.00	100.00	100.00
Sakau	Response	1	0	1
	Per cent	100.00	0.00	100.00
Swamp taro	Response	2	2	4
	Per cent	50.00	50.00	100.00
Yam	Response	1	1	2
	Per cent	50.00	50.00	100.00
Total	Response	6	15	21
	Per cent	28.57	71.43	100.00

2. Increase in yield

Crop Name	Particulars	1. Decline in yield		
		No	Yes	Total
Banana	Response	1	2	3
	Per cent	33.33	66.67	100.00

Beans	Response	1	0	1
	Per cent	100.00	0.00	100.00
Bell pepper	Response	1	0	1
	Per cent	100.00	0.00	100.00
Bread fruit	Response	1	0	1
	Per cent	100.00	0.00	100.00
Coffee	Response	1	0	1
	Per cent	100.00	0.00	100.00
Cucumber	Response	2	3	5
	Per cent	40.00	60.00	100.00
Egg plant	Response	1	0	1
	Per cent	100.00	0.00	100.00
Pandanus	Response	1	0	1
	Per cent	100.00	0.00	100.00
Sakau	Response	0	1	1
	Per cent	0.00	100.00	100.00
Swamp taro	Response	1	3	4
	Per cent	25.00	75.00	100.00
Yam	Response	2	0	2
	Per cent	100.00	0.00	100.00
Total	Response	12	9	21
	Per cent	57.14	42.86	100.00

3. Pests and diseases

Crop Name	Particulars	1. Decline in yield		
		No	Yes	Total
Banana	Response	2	1	3
	Per cent	66.67	33.33	100.00
Beans	Response	0	1	1
	Per cent	0.00	100.00	100.00
Bell pepper	Response	0	1	1
	Per cent	0.00	100.00	100.00
Bread fruit	Response	1	0	1
	Per cent	100.00	0.00	100.00
Coffee	Response	1	0	1
	Per cent	100.00	0.00	100.00
Cucumber	Response	0	5	5
	Per cent	0.00	100.00	100.00
Egg plant	Response	0	1	1
	Per cent	0.00	100.00	100.00
Pandanus	Response	1	0	1
	Per cent	100.00	0.00	100.00
Sakau	Response	0	1	1
	Per cent	0.00	100.00	100.00
Swamp taro	Response	1	2	3
	Per cent	33.33	66.67	100.00
Yam	Response	1	1	2
	Per cent	50.00	50.00	100.00
Total	Response	7	13	20
	Per cent	35.00	65.00	100.00

4. Weed regime

Crop Name	Particulars	1. Decline in yield		
		No	Yes	Total
Banana	Response	2	1	3
	Per cent	66.67	33.33	100.00
Beans	Response	0	1	1
	Per cent	0.00	100.00	100.00
Bell pepper	Response	0	1	1
	Per cent	0.00	100.00	100.00
Bread fruit	Response	1	0	1
	Per cent	100.00	0.00	100.00
Coffee	Response	1	0	1
	Per cent	100.00	0.00	100.00
Cucumber	Response	0	5	5
	Per cent	0.00	100.00	100.00
Egg plant	Response	0	1	1
	Per cent	0.00	100.00	100.00
Pandanus	Response	1	0	1
	Per cent	100.00	0.00	100.00
Sakau	Response	1	0	1
	Per cent	100.00	0.00	100.00
Swamp taro	Response	1	2	3
	Per cent	33.33	66.67	100.00
Yam	Response	2	0	2
	Per cent	100.00	0.00	100.00
Total	Response	9	11	20
	Per cent	45.00	55.00	100.00

Q10.5 Did you take any action against crop loss due to climate?

Particulars	Frequency	Percent
No	5	71.43
Yes	2	28.57
Total	7	100.00

Q10.6 And if so, please list actions taken:

Question	Responses	Actions taken	
		Freq.	Percent
Started growing new crop	No	1	33.33
	Yes	2	66.67
	Total	3	100.00
Adopted drought tolerant	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
Moved focus from crop to livestock production	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
Started non-farm activities	No	2	100.00
	Yes	0	0.00
	Total	2	100.00

Question	Responses	Actions taken	
		Freq.	Percent
Started using new land management practices	No	1	50.00
	Yes	1	50.00
	Total	2	100.00
Did nothing	No	2	100.00
	Yes	0	0.00
	Total	2	100.00
Others	No	1	100.00
	Yes	0	0.00
	Total	1	100.00

Q11 Commercial Farming Background

1. Gender

Particulars	Frequency	Percent
Female	1	14.29
Male	6	85.71
Total	7	100.00

2. Highest level of education

Particulars	Frequency	Percent
Primary	2	28.57
Secondary	4	57.14
College	1	14.29
Total	7	100.00

Q11.2 What are the main sources of your farm labor?

Particulars	Frequency	Percent
Household	4	80.00
Hired	1	20.00
Total	5	100.00

Q11.6 Are you able to save any money for unexpected expenses?

Particulars	Frequency	Percent
No	3	50.00
Yes	3	50.00
Total	6	100.00

Q12. 1 Do you see any change in the environment that is impacting your farming and food production?

Particulars	Frequency	Percent
No	4	50.00
Yes	4	50.00
Total	8	100.00

Community Group: Fishermen Focus Group

Moderator: What is your goal as a farmer/fisherman over the next five years?

1) Processing fish jerky and exporting to neighboring states.

2) Joint enforcement of ordinances and laws by all parties, including the Nahnmwarki and village chiefs.

Moderator: **Do you see any change in the environment that is impacting your fishing and food production? If so, what?**

1) Yes, increase in temperature. As the temperature increases, the soil gets dry and not fertile enough to grow food crops.

2) Heavy rains are causing runoffs. When there is too much rain, it washes away the fertile soil, and it affects the growth of the food crops. For instance, like yam, people need to wait till it's not too wet before they plant their yams. When it is too wet, the yam dies under the ground.

3) Sea level rise damages taro patches.

4) The increase in temperature affects the taro patches and other food crops.

5) The changes in the environment, like the wind, temperature, and heavy rain delay the fruit trees from bearing fruit.

6) Environment change and human activities, like overfishing, affect the invertebrates. Twenty years ago, in one day, a woman could collect 20 bottles, but in current years it's hard to collect such an amount. Recently we can only collect 2-3 bottles in a day.

7) Even catching reef fish is harder than 20 years ago; now we have smaller catches and smaller fish size.

Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**

1) If this generation maintains the resources that we have, our kids will have easier or the same. But it will be harder for them if we do not maintain what we have now,

2) It can be harder for the next generation if they do not learn the proper fishing or farming methods from the elders. For example, if they do not know the value of fishing and farming, they will not care to learn how to fish properly and raise food crops, which will give them a hard time. Because they will think that money is what they need to buy their needs and wants. But if they know the value, they will not need money daily to survive. Twenty or thirty years ago, each family or household needed to plant their own food crops, and one of the family members could also fish. With local food and fish in the house, that means you have food. But now, most families depend on imported food and goods; they consider rice and canned and frozen meat food. If there is no rice and no meat, that means no food. Compared to years back, most families can have rice just one meal a day or no rice at all, all they had was local food, and this is food. Most meals were local food like banana, breadfruit, or taro. If they have ripe breadfruit (uhmw) without meat, that's food for the day. They did not need meat. But now, if a household has no rice and no meat, there is no food. Most households depend on rice and meat; local food is considered a side dish but not food.

3) There is another behavior change that Pohnpeian's needs to consider. Most families now have kids in the US for work. These kids work in the US and send money back to their families. In contrast, their families in Pohnpei forget that they need to plant their food or do their farming. They sit around, use the internet, or relax because they wait for their kids to send money to buy food and their needs. Such families need to be reminded that even though the kids will send money for living, the value of planting food crops is still important.

4) The value of planting food crops is not only within the family but also part of the culture. But since culture changes as well, this will be harder for the next generations. In the past years, Pohnpeian only used food crops like yam, sakau, or any food crops from the land for a feast, offering to the Nahnmarki (Kings), or even in extended family gatherings. Now, Pohnpeians use money to buy goods from the store to offer or use in the feast. The value of food crops is declining. The next generation will think that this is the only option, but no, there is the option of offering local food, which is better and easier than depending on money to buy goods from the store.

Moderator: How do you want to improve your business?

1) Fish smart to maintain fish supply for the long term

2) Innovative ways to process tuna steak to export

3) Work with other businesses for fare prices on fish

4) Stop catching fish in the Marine Protected Area (MPA).

5) For options like making tuna jerky, fishermen need tuna meat processing training to start such a business.

6) If the Pohnpei state government can look for opportunities from outside that can help support the fisherman on how to process the fish meat and ways to export.

Moderator: What resources would be helpful to help improve your business?

1) Fish meat processing.

2) Loan or credit that can allow fishermen to get a loan.

3) Government support on alternatives for fishermen to sell fish like tuna during seasons.

4) Boat and motor engine.

Moderator: What are the greatest limitations or obstacles to growing your business/making more money?

1) Cost more to catch fish for sale.

2) The costs of running a business are too high.

3) Low cost of selling fish due to low-income generation from buyers

4) As a fisherman, I do not have enough income generation to maintain the fish market.

5) As a fisherman, nowadays, catching fish at closer sites like near shores is harder. People need to drive out to the reef to catch more fish.
6) At the fuel cost rate now, a fisherman tries to catch more fish so they can sell to cover the fuel cost and to have a few extra dollars for their needs. Most of the time, fishermen catch for the day and cannot cover the fuel cost for the next fishing trip.

Moderator: What type of public policies should be put in place that would strengthen or expand your business?

1) Price control policy; a need to reorganize and do an economic study for Pohnpei State. Try to figure out the benefits for farmers and fishermen.
2) Credit access. A policy that allows fishermen and farmers access to loans.
3) A policy that can address the fish price both when there is plenty or less fish. For instance, when there is plenty of fish, the market buys it at a lower price, like $1 per pound, and sells it at the same price, like $2.95 or $3.00.

Moderator: How does climate change affect your business? How do you think it will in the future?

1) Climate change affects everything. Unexpected weather changes in a day can delay the fisherman from going fishing.

Moderator: What are the most important trainings you need to improve your production and farm?

1) Aquaculture: fish, invertebrates, and mangrove crabs.
2) Financial management for farmers and fishermen.
3) By-production: fish jerky and fish meal.

Community Group: Seinwar Youth Focus Group

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?

1) Approach FSM R&D to assist with materials to build a chicken farm to access fresh meat. Such a practice could limit the consumption of imported meat.
2) EPA assisted the Pehleng community with materials and built pig pens. The purpose of this project is to control waste management. This would be an ideal project to maintain waste management. However, what is missing to complete this project is a woodchipper. Woodchippers would absorb the waste and can be used as fertilizer, but EPA is not providing woodchippers as promised.

Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?

1) A huge impact on crop production is very visible.
2) Crops are unable to grow.
3) Overheat crops.
4) Unable to bear fruits.
5) Affect marine products, especially sea-cucumber.
6) Scarcity of water issues; unable to feed pigs, animals and farms.
7) Pigs are immature.

Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?

1) Need to maintain so the next generation can benefit. Otherwise, it would be difficult for the next generation.
2) Some traditional habits have changed over time, and we must educate our young generation to keep the culture intact.

Moderator: How do you want to improve your business?

1) Need affordable transportation service.
2) Knowledge to grow local crops to adapt to climate change.

Moderator: What resources would be helpful to help improve your business?

1) Policies to enable farmers to name our price when selling local produces.
2) Need public transportation.
3) Exportable local produce; access to exporting.
4) Supplies and materials.
5) Manpower.
6) Funding sources.
7) Training/education.

Moderator: What are the greatest limitations or obstacles to growing your business/making more money?

1) Everything is way too expensive; therefore, on many occasions not affordable.
2) Lack of planting materials.
3) Focus largely on crops for traditional functions.
4) Lack of motivation/Laziness.
5) Local products are too cheap during harvest.
6) Always tried to comply with markets' demands.
7) Ladies focus more on tailoring because of the high demand, therefore not assisting with farming.
8) The high price of fuel, therefore, transportation is now an issue.
9) Markets refuse to buy due to the condition of crops.

Moderator: What type of policies should be put in place that would strengthen
or expand your business?

1) Price control on local produces.
2) To designate special prices on crops based on maturity rate.

Moderator: How does climate change affect your business? How do you think it will in the future?

1) Plants will continue to suffer as long as we lack the knowledge to adapt to climate change.
2) Immature of crops and will continue to do so.
3) Yams are not well preserved.
4) Crops will overheat and die.
5) Animals are placed in fences and, therefore, cannot access water.

Moderator: What are the most important trainings you need to improve your production and farm?
1) Due to the effect of climate change, related training is necessary.
2) How to raise pigs or poultry.
3) Training on how to grow crops in the current situation.
4) Training on growing vegetables.
5) Training to operate a business.
6) Training in basic accounting to maintain financial records and be able to comply with tax reporting.

Community Group: Metipw-U Focus Group

Moderator: What is your goal as a farmer/fisherman over the next five years?
1) As a fisherman and farmer, I am looking forward to seeing a positive change in our environment, especially to the dredging that has been happening around the island. These people believe that if Pohnpei stops the dredging or decreases the number of dredge sites, it will help improve marine life, and people will have more fish near the shore. As people have been impacting or destroying our environment, it will not help improve the life of the marine, forest, and especially human that depends on these resources for living.
2) Another thing that this group thought about is the price increase for local crops and local produce in the market.
3) They also want to see a project that can support farmers to improve the farming crops.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what? Yes,
1) Dredging destroys the mangrove and the shoreline. It destroys the habitat for fish and other living organisms. Dredging prevents people from fishing close to the shore. Before, people could walk during low tide to fish near the shore, and now people need to take a boat to go further out to fish, even for consumption only.
2) Littering in the mangrove and at the shore. Most people living close to the shore or the mangrove throw their trash or use the mangrove as their place to put their waste. This also impacts our marine lives, and people cannot access the mangrove crabs and other things that could be family meals.
3) Most farmers are experiencing frequent heavy rains and droughts. Heavy rains wash off the topsoil and decrease the food for the crops and plants. These farmers are not using any fertilizer for the crops, so they depend on having good soil.
4) Whiteflies (invasive species). Some farmers are experiencing problems with the food crops like sakau.
Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?
1) It will be harder if we keep depending on imported food.
2) Harder if we lose the value of planting our food crops and not preparing our food from the land.
3) It will be harder if we keep impacting our environment by not maintaining our land and ocean.
4) As we all know, lifestyle changes and things change, but if the next generation have no value of the land and the ocean, they will have difficulty catching their own fish and planting their own food crops.
Moderator: How do you want to improve your business?
1) Prices of the workers need to increase.
2) Fish price needs to increase since fuel is very expensive.
3) Price of sakau (kava) needs to increase.
4) Improve management for grocery stores.
5) Keep teaching the young kids how to plant their own food crops and how to fish.
Moderator: What resources would be helpful to help improve your business?
1) Financial.
2) Human resources (employee).
3) Physical assets.
4) Food processing tools.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
1) Every new shipment after a month or less, the bigger stores increase the stock price (food and everything).
2) For sakau some people are poaching or getting sakau from other lands without permission. Such a thing caused a person to lose a lot and not have the energy to move forward with sakau farming.
3) Fuel prices are very high. Most of the time, we have less cash, cannot cover the fuel cost, and cannot go fishing. Fuel prices are high while hourly rates are very low, and the food crops' cost in the market is very low.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
1) Price control. The price of food and other things always increases. What causes this? We need a policy that can work toward this issue.
2) A policy that can help trade or export local produce to neighboring states and other countries.
3) Policy to increase hourly rate in Pohnpei, so workers can afford the price of things on the island, especially food, fuel, and electricity.
Moderator: How does climate change affect your business? How do you think it will in the future?
1) Climate change affects the land and the ocean. It affects the food crops, how they grow, and the season for harvesting.
2) We are unsure how it will be in the future, but we are hoping for better, not worse.
Moderator: What are the most important trainings you need to improve your production and farm?
1) No training is needed. The older people need to train the young so they can start planting their own food crops.

2) What Pohnpeians need is time to improve the local crop planting.
3) Training can be on preventing local food crops from spoiling or rotting.
5) Since there are lots of pigs in Pohnpei, it will be great to have training on how to make pork and sell it in the store or in the restaurants on the island.

Community Group: Senipehn Focus Group

Moderator: What is your goal as a farmer/fisherman over the next five years?
1) Farm or produce more local food.
2) Local food should become one of your everyday meals, especially lunch or dinner.
3) Need a way to make local food convenient like imported food.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?
1) Farms are producing less crops than before.
2) The soil is not good like before.
3) Before, it was possible to fish near the shore, but now they have to go further out to get fish.
4) The government needs to find a way to improve infrastructure without polluting the ocean.
Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?
1) The young generation will have it harder to maintain culture.
2) Nowadays, even a simple greeting they are doing wrong.
3) Social media is taking up most of the young generation's time
4) The community needs to create educational and cultural activities for young generations.
Moderator: How do you want to improve your business?
1) Since we depend on sakau, I believe we need to plant more.
2) We only sell fish if we got more than what we need.
3) People need to stop fishing with the net so we can still have more fish and be able to sell.

Moderator: What resources would be helpful to help improve your business?
1) As a farmer, we need more farming tools.
2) Since the soil is not good like before, we need training to create our own fertilizer.
3) I believe we need time.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
1) You can't fish just anytime nowadays; you need to know when it will be a good time to catch more fish.
2) We can plant more sakau, yams, or other crops, but sometimes almost half of them will die.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
1) Fishing policies need to be enforced.
2) Littering policies need to be enforced.
3) Councilmen or other officials need to be aware of what is happening in the community and support any activities that will improve community life and keep our culture.
Moderator: How does climate change affect your business? How do you think it will in the future?
1) Climate change affects our crops, especially yam and sakau, and we believe it is worsening.
2) Community-based cleaning projects need to implement to keep the ocean clean, so the young generation can still go fishing in the future.
Moderator: What are the most important trainings you need to improve your production and farm?
1) We need training from an expert on how to improve global warming.
2) Local government and the mobile team need to work with the community to create training for local food production.

APPENDIX 3.5 YAP

HOUSEHOLD SURVEY

2. DEMOGRAPHIC AND LIVELIHOOD INFORMATION

Q2.1 Gender of the sample Respondents

Particulars	Frequency	Percent
Male	86	52.76
Female	77	47.24
Total	163	100.00

Particulars	Mean
Q2.2 Respondent's age (years)	46.72
Q.2.3 Number of people in the family	4.65

Q2.4 The livelihoods sources for your household
Multiple response item

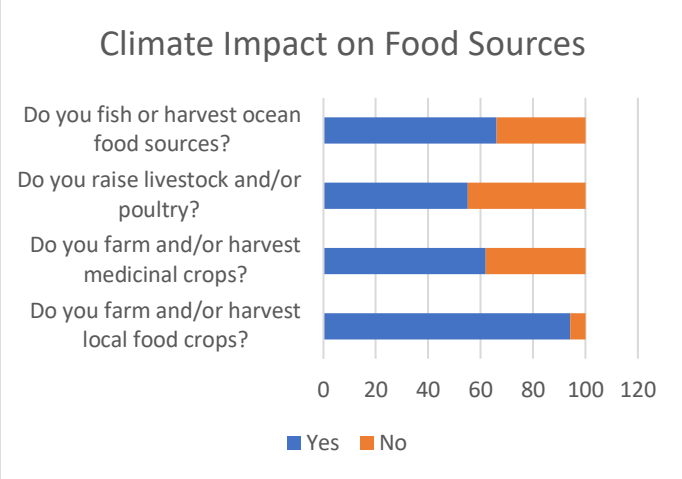
Particulars	Frequency	Percent
Subsistence living - growing food for household consumption	111	67.27
Growing Crops	124	75.15
Raising livestock	61	37.2
Fishing	81	49.09
Paid work in agriculture	16	9.7
Salaried government employment (non-agriculture)	58	35.15
Salaried private employment (non-agriculture)	42	25.45
Salaries NGO employment	9	5.49
Remittances	2	1.21
Social Security	31	18.9
Government transfers/NGO support	3	1.82
Other	7	4.24

Q2.5 Respondent's highest level of education

Particulars	Frequency	Percent
Traditional/Non-Formal	2	1.22
Incomplete primary school	6	3.66
Completed primary (Elementary) school	1	0.61
Incomplete secondary school	9	5.49
Completed secondary (High) school	77	46.95
Incomplete higher education	31	18.9
Completed higher education (*i.e.,* COM-FSM)	34	20.73
Completed graduate studies	4	2.44
Total	164	100.00

3. CLIMATE IMPACT ON FOOD SOURCES

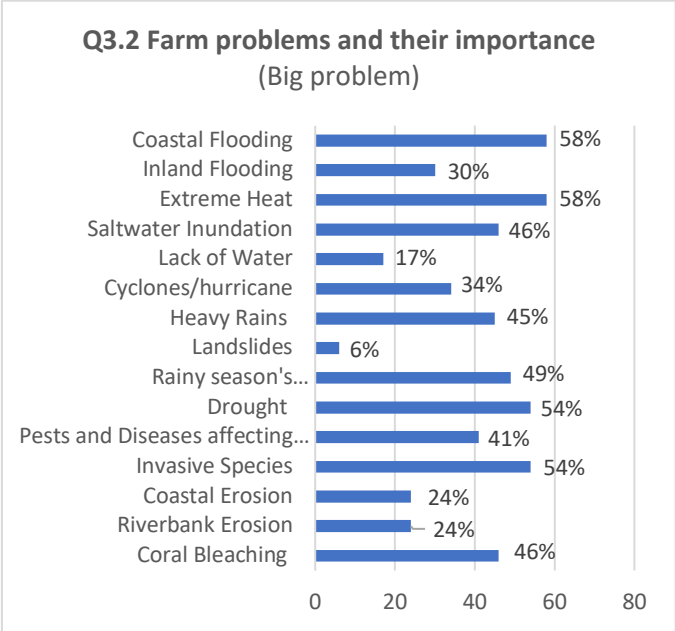
Q3.1.1 Do you farm and/or harvest local food crops?
Q3.1.2 Do you farm and/or harvest medicinal crops?
Q3.1.3 Do you raise livestock and/or poultry?
Q3.1.4 Do you fish or harvest ocean food sources?



Q3.2 Farm problems and their importance

Problem	Response	Frequency	Percent
Q3.2.1 Coastal flooding	Not a problem	30	18.29
	Little problem	39	23.78
	Big problem	95	57.93
	Total	164	100
Q3.2.2 Inland flooding	Not a problem	65	39.39
	Little problem	51	30.91
	Big problem	49	29.7
	Total	165	100

Problem	Response	Freq.	Percent
Q3.2.3 Extreme heat	Not a problem	11	6.67
	Little problem	59	35.76
	Big problem	95	57.58
	Total	165	100
Q3.2.4 Saltwater inundation	Not a problem	36	22.64
	Little problem	50	31.45
	Big problem	73	45.91
	Total	159	100
Q3.2.5 Lack of water	Not a problem	86	55.13
	Little problem	44	28.21
	Big problem	26	16.67
	Total	156	100
Q3.2.6 Cyclones/ hurricanes	Not a problem	49	29.7
	Little problem	60	36.36
	Big problem	56	33.94
	Total	165	100
Q3.2.7 Heavy rains	Not a problem	26	15.76
	Little problem	65	39.39
	Big problem	74	44.85
	Total	165	100
Q3.2.8 Landslides	Not a problem	123	78.34
	Little problem	24	15.29
	Big problem	10	6.37
	Total	157	100
Q3.2.9 Difficulty predicting when the rainy season will come	Not a problem	28	17.07
	Little problem	56	34.15
	Big problem	80	48.78
	Total	164	100
Q3.2.10 Drought	Not a problem	6	3.73
	Little problem	60	37.27
	Big problem	95	59.01
	Total	161	100
Q3.2.11 Increased threats to crops from pests and disease	Not a problem	23	14.84
	Little problem	69	44.52
	Big problem	63	40.65
	Total	155	100
Q3.2.12 Invasive species	Not a problem	30	18.99
	Little problem	43	27.22
	Big problem	85	53.8
	Total	158	100
Q3.2.13 Coastal erosion	Not a problem	85	55.19
	Little problem	32	20.78
	Big problem	37	24.03
	Total	154	100
Q3.2.14 Riverbank erosion	Not a problem	85	55.19
	Little problem	32	20.78
	Big problem	37	24.03
	Total	154	100
Q3.2.15 Coral bleaching	Not a problem	46	30.07
	Little problem	36	23.53
	Big problem	71	46.41
	Total	153	100



Q3.3.1 In the last 10 years, have you noticed any change in the average temperature over a long period?

Particulars	Frequency	Percent
Mean temperature increased	102	61.82
Mean temperature decreased	0	0.00
Yes, more erratic	45	27.27
No, no change	2	1.21
Not sure	16	9.70
Total	165	100.00

Q3.3.2 In the last 10 years, have you noticed any changes in the average rainfall over a long period?

Particulars	Frequency	Percent
Yes, mean rainfall increased	88	53.66
Yes, mean rainfall decreased	5	3.05
Yes, more erratic	50	30.49
No, no change	2	1.22
Not sure	19	11.59
Total	164	100.00

Q3.3.3 In the last 10 years, has the start of the rainy season changed?

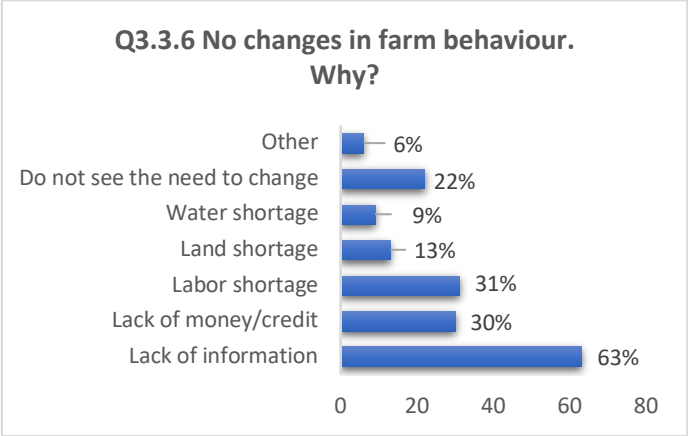
Particulars	Frequency	Percent
Yes, the rainy season starts later	11	6.83
Yes, the rainy season starts earlier	23	14.29
Yes, more erratic	99	61.49
No, no change	4	2.48
Not sure	24	14.91
Total	161	100.00

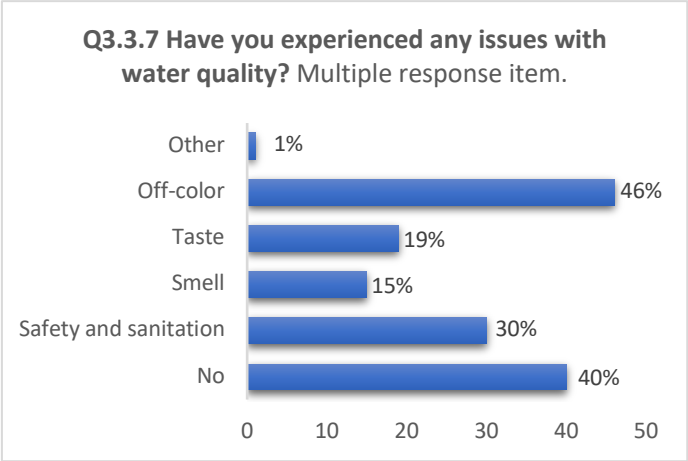
Q3.3.4 If yes (from Q3.3.2 to 3.3.4), have you made any adjustments in your farming (including marine)?

Particulars	Frequency	Percent
No	130	81.25
Yes	30	18.75
Total	160	100.00

Q3.3.5 If yes, which behavioral changes? Multiple response item.

Question	Response	Freq.	Percent
1. Changed crop types	No	18	51.43
	Yes	17	48.57
	Total	35	100.00
2. Changed crop varieties	No	17	47.22
	Yes	19	52.78
	Total	36	100.00
3. Built a water harvesting scheme	No	22	62.86
	Yes	13	37.14
	Total	35	100.00
4. Implemented soil conservation techniques (to prevent erosion or soil contamination)	No	23	65.71
	Yes	12	34.29
	Total	35	100.00
5. Planted trees	No	16	47.06
	Yes	18	52.94
	Total	34	100.00
6. Irrigation	No	28	77.78
	Yes	8	22.22
	Total	36	100.00
7. Included/ augmented livestock herding	No	33	94.29
	Yes	2	5.71
	Total	35	100.00
8. Migration	No	33	94.29
	Yes	2	5.71
	Total	35	100.00
9. Found an off-farm job	No	34	97.14
	Yes	1	2.86
	Total	35	100.00
10. Leased the land	No	34	97.14
	Yes	1	2.86
	Total	35	100.00
11. Put crops under protected structures	No	30	85.71
	Yes	5	14.29
	Total	35	100.00
12. Changed harvested fish species	No	30	85.71
	Yes	5	14.29
	Total	35	100.00
13. Changed harvested fishing location	No	24	68.57
	Yes	11	31.43
	Total	35	100.00
14. Others	No	35	97.22
	Yes	1	2.78
	Total	36	100.00





4. LOCAL FOOD PRODUCTION AND CLIMATE CHANGE

Q4.1 Do you grow and/or harvest food crops (including marine organisms)?

Particulars	Frequency	Percent
No	12	7.23
Yes	154	92.77
Total	166	100.00

Q4.2 Why do you grow and/or harvest food crops? Multiple response item.

Question	Responses	Frequency	Percent
Family consumption	No	1	0.63
	Yes	157	99.37
	Total	158	100
For sale	No	108	68.35
	Yes	50	31.65
	Total	158	100
Traditional exchange	No	118	74.68
	Yes	40	25.32
	Total	158	100
Other	No	155	98.1
	Yes	3	1.9
	Total	158	100

Q4.3 How would you describe the food production and/or harvesting that you do? Multiple response item.

Question	Response	Freq.	Percent
1. I raise livestock to feed my own family	No	60	37.97
	Yes	98	62.03
	Total	158	100
2. I raise livestock to sell livestock products at market	No	123	77.85
	Yes	35	22.15
	Total	158	100
3. Agroforestry (define this in colloquial terms for respondents)	No	131	83.97
	Yes	25	16.03
	Total	156	100
4. I collect products from the forest for my family	No	31	19.62
	Yes	127	80.38
	Total	158	100
5. I collect products from the forest to sell at market	No	107	67.72
	Yes	51	32.28
	Total	158	100
6. I fish and collect marine food for my family	No	63	39.87
	Yes	95	60.13
	Total	158	100
7. I fish and collect marine food to sell at the market	No	129	81.65
	Yes	29	18.35
	Total	158	100
8. I fish and collect marine products to send to my family/friends outside of the FSM?	No	121	76.58
	Yes	37	23.42
	Total	158	100
9. Other	No	157	100
	Yes	0	0
	Total	157	100

5. AGRICULTURE, FARMING, AND AGROFORESTRY

Q5.1	Response	Freq.	Percent
1. Do you have adequate access to land for growing and/or harvesting crops?	No	25	15.15
	Yes	140	84.85
	Total	165	100.00
2. Do you feel:	It is enough	131	79.39
	Not enough	34	20.61
	Total	165	100.00
3. Do you want more land?	No	126	76.83
	Yes	38	23.17
	Total	164	100.00
4. Is the land you have for growing and harvesting crops shared? (Including family members)?	No	54	33.13
	Yes	109	66.87
	Total	163	100.00

For the following questions:

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.1), you may skip the other questions in that row.

Q5.2.1 (1-28) Do you grow and/or harvest this food?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	11	6.75
	Yes	152	93.25
	Total	163	100.00
2. Land/soft taro	No	24	14.91
	Yes	137	85.09
	Total	161	100.00
3. Breadfruit	No	25	15.92
	Yes	132	84.08
	Total	157	100.00
4. Banana	No	5	3.13
	Yes	155	96.88
	Total	160	100.00
5. Coconut	No	8	5.10
	Yes	149	94.90
	Total	157	100.00
6. Copra (coconut product)	No	12	8.39
	Yes	131	91.61
	Total	143	100.00
7. Yam	No	33	21.57
	Yes	120	78.43
	Total	153	100.00
8. Mango	No	64	43.54
	Yes	83	56.46
	Total	147	100.00
9. Pineapple	No	56	37.58
	Yes	93	62.42
	Total	149	100.00
10. Limes/ lemons	No	50	33.56
	Yes	99	66.44
	Total	149	100.00
11. Sweet Potatoes	No	53	35.57
	Yes	96	64.43
	Total	149	100.00
12. Tapioca	No	42	27.81
	Yes	109	72.19
	Total	151	100.00
13. Papaya	No	41	27.70
	Yes	107	72.30
	Total	148	100.00
14. Locally grown/ collected fresh vegetables	No	55	37.67
	Yes	91	62.33
	Total	146	100.00
15. Locally grown/ collected fruits	No	75	55.15
	Yes	61	44.85
	Total	136	100.00
16. Soursop	No	75	54.35
	Yes	63	45.65
	Total	138	100.00
17. Black Pepper	No	121	93.80
	Yes	8	6.20
	Total	129	100.00
18. Hot peppers	No	59	40.69
	Yes	86	59.31
	Total	145	100.00
19. Sakau (Kava)	No	123	97.62
	Yes	3	2.38
	Total	126	100.00
20. Sugar cane	No	53	36.55
	Yes	92	63.45
	Total	145	100.00
21. Betel Leaf	No	19	12.26
	Yes	135	87.74
	Total	155	100.00
22. Durian (football plant)	No	118	90.08
	Yes	13	9.92
	Total	131	100.00
23. Cacao	No	111	85.38
	Yes	19	14.62
	Total	130	100.00
24. Chestnut	No	70	47.95
	Yes	75	52.05
	Total	146	100.00
25. Betelnut	No	9	5.61
	Yes	151	94.39
	Total	160	100.00
26. Tangerine/ orange	No	68	50.75
	Yes	66	49.25
	Total	134	100.00
27. Medicinal crops (example: Noni)	No	56	41.48
	Yes	79	58.52
	Total	135	100.00
28. If others, list them here:	No	39	97.50
	Yes	1	2.50
	Total	40	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.2), you may skip the other questions in that row.

Q5.2.2 (1-28) How often do you harvest from the garden, agroforest and/or patch?

1. Swamp taro or hard taro

Particulars	Freq.	Percent
Several times a week	12	7.95
Once a week	47	31.13
Every other week	48	31.79
Once a month	44	29.14
Never	0	0.00
Total	151	100.00

2. Land taro or soft taro

Particulars	Freq.	Percent
Several times a week	7	5.26
Once a week	31	23.31
Every other week	27	20.30
Once a month	68	51.13
Never	0	0
Total	133	100.00

3. Breadfruit

Particulars	Freq.	Percent
Several times a week	4	3.20
Once a week	28	22.40
Every other week	13	10.40
Once a month	80	64.00
Never	4	3.20
Total	125	100.00

4. Banana

Particulars	Freq.	Percent
Several times a week	18	11.61
Once a week	35	22.58
Every other week	47	30.32
Once a month	55	35.48
Never	0.	0
Total	155	100.00

5. Coconut

Particulars	Freq.	Percent
Several times a week	30	20.83
Once a week	49	34.03
Every other week	23	15.97
Once a month	42	29.17
Never	1	0.69
Total	144	100.00

6. Copra

Particulars	Freq.	Percent
Several times a week	42	33.07
Once a week	40	31.50
Every other week	26	20.47
Once a month	19	14.96
Never	1	0.79
Total	127	100.00

7. Yam

Particulars	Freq.	Percent
Several times a week	3	2.75
Once a week	21	19.27
Every other week	10	9.17
Once a month	67	61.47
Never	8	7.34
Total	109	100.00

8. Mango

Particulars	Freq.	Percent
Several times a week	7	8.86
Once a week	14	17.72
Every other week	1	1.27
Once a month	53	67.09
Never	4	5.06
Total	79	100.00

9. Pineapple

Particulars	Freq.	Percent
Several times a week	5	5.68
Once a week	13	14.77
Every other week	2	2.27
Once a month	63	71.59
Never	5	5.68
Total	88	100.00

10. Limes/lemon

Particulars	Freq.	Percent
Several times a week	13	13.40
Once a week	28	28.87
Every other week	22	22.68
Once a month	32	32.99
Never	2	2.06
Total	97	100.00

11. Sweet Potatoes

Particulars	Freq.	Percent
Several times a week	6	6.74
Once a week	10	11.24
Every other week	11	12.36
Once a month	59	66.29
Never	3	3.37
Total	89	100.00

12. Tapioca

Particulars	Freq.	Percent
Several times a week	5	4.95
Once a week	11	10.89
Every other week	17	16.83
Once a month	63	62.38
Never	5	4.95
Total	101	100.00

13. Papaya

Particulars	Freq.	Percent
Several times a week	9	8.91
Once a week	21	20.79
Every other week	21	20.79
Once a month	46	45.54
Never	4	3.96
Total	101	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Several times a week	24	27.91
Once a week	25	29.07
Every other week	15	17.44
Once a month	21	24.42
Never	1	1.16
Total	86	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Several times a week	11	18.33
Once a week	16	26.67
Every other week	7	11.67
Once a month	24	40.00
Never	2	3.33
Total	60	100.00

16. Soursop

Particulars	Freq.	Percent
Several times a week	2	3.17
Once a week	6	9.52
Every other week	2	3.17
Once a month	47	74.60
Never	6	9.52
Total	63	100.00

17. Black pepper

Particulars	Freq.	Percent
Several times a week	2	20.00
Once a week	0	0.00
Every other week	0	0.00
Once a month	2	20.00
Never	6	60.00
Total	10	100.00

18. Hot pepper

Particulars	Freq.	Percent
Several times a week	31	36.05
Once a week	21	24.42
Every other week	11	12.79
Once a month	21	24.42
Never	2	2.33
Total	86	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	0	0.00
Every other week	0	0.00
Once a month	1	16.67
Never	5	83.33
Total	6	100.00

20. Sugar cane

Particulars	Freq.	Percent
Several times a week	7	7.69
Once a week	16	17.58
Every other week	11	12.09
Once a month	53	58.24
Never	4	4.40
Total	91	100.00

21. Betel leaf

Particulars	Freq.	Percent
Several times a week	104	77.04
Once a week	22	16.30
Every other week	4	2.96
Once a month	4	2.96
Never	1	0.74
Total	135	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	1	5.88
Every other week	0	0.00
Once a month	10	58.82
Never	6	35.29
Total	17	100.00

23. Cacao

Particulars	Freq.	Percent
Several times a week	5	19.23
Once a week	2	7.69
Every other week	1	3.85
Once a month	10	38.46
Never	8	30.77
Total	26	100.00

24. Chestnut

Particulars	Freq.	Percent
Several times a week	8	10.81
Once a week	9	12.16
Every other week	4	5.41
Once a month	49	66.22
Never	4	5.41
Total	74	100.00

25. Betelnut

Particulars	Freq.	Percent
Several times a week	111	75.00
Once a week	19	12.84
Every other week	9	6.08
Once a month	8	5.41
Never	1	0.68
Total	148	100.00

26. Tangerine/orange

Particulars	Freq.	Percent
Several times a week	7	10.94
Once a week	16	25.00
Every other week	8	12.50
Once a month	31	48.44
Never	2	3.13
Total	64	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Several times a week	9	11.69
Once a week	12	15.58
Every other week	6	7.79
Once a month	47	61.04
Never	3	3.90
Total	77	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Several times a week	0	0.00
Once a week	0	0.00
Every other week	0	0.00
Once a month	1	100.00
Never	0	0.00
Total	1	100.00

For each crop, write the answer in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.2.3), you may skip the other questions in that row.

Q5.2.3 (1-28) Over the course of a year, how much do you harvest for each crop?

1. Swamp taro or hard taro

Particulars	Frequency	Percent
Crop not ready for harvest	1	0.66
Small quantity (<50 lbs)	48	31.58
Medium quantity (50-100 lbs)	51	33.55
Large quantity (>100 lbs)	52	34.21
Total	152	100.00

2. Land taro or soft taro

Particulars	Frequency	Percent
Crop not ready for harvest	2	1.44
Small quantity (<50 lbs)	68	48.92
Medium quantity (50-100 lbs)	38	27.34
Large quantity (>100 lbs)	31	22.30
Total	139	100.00

3. Breadfruit

Particulars	Freq.	Percent
Crop not ready for harvest	13	9.77
Small quantity (<50 lbs)	62	46.62
Medium quantity (50-100 lbs)	45	33.83
Large quantity (>100 lbs)	13	9.77
Total	133	100.00

4. Banana

Particulars	Freq.	Percent
Crop not ready for harvest	65	43.05
Small quantity (<50 lbs)	55	36.42
Medium quantity (50-100 lbs)	30	19.87
Large quantity (>100 lbs)	1	0.66
Total	151	100.00

5. Coconut

Particulars	Freq.	Percent
Crop not ready for harvest	2	1.38
Small quantity (<50 lbs)	49	33.79
Medium quantity (50-100 lbs)	52	35.86
Large quantity (>100 lbs)	42	28.97
Total	145	100.00

6. Copra

Particulars	Freq.	Percent
Crop not ready for harvest	3	2.38
Small quantity (<50 lbs)	44	34.92
Medium quantity (50-100 lbs)	35	27.78
Large quantity (>100 lbs)	44	34.92
Total	126	100.00

7. Yam

Particulars	Freq.	Percent
Crop not ready for harvest	15	12.93
Small quantity (<50 lbs)	56	48.28
Medium quantity (50-100 lbs)	37	31.90
Large quantity (>100 lbs)	8	6.90
Total	116	100.00

8. Mango

Particulars	Freq.	Percent
Crop not ready for harvest	15	16.13
Small quantity (<50 lbs)	44	47.31
Medium quantity (50-100 lbs)	26	27.96
Large quantity (>100 lbs)	8	8.60
Total	93	100.00

9. Pineapple

Particulars	Freq.	Percent
Crop not ready for harvest	12	13.04
Small quantity (<50 lbs)	61	66.30
Medium quantity (50-100 lbs)	15	16.30
Large quantity (>100 lbs)	4	4.35
Total	92	100.00

10. Limes/lemons

Particulars	Freq.	Percent
Crop not ready for harvest	10	9.52
Small quantity (<50 lbs)	67	63.81
Medium quantity (50-100 lbs)	25	23.81
Large quantity (>100 lbs)	3	2.86
Total	105	100.00

11. Sweet potatoes

Particulars	Freq.	Percent
Crop not ready for harvest	11	11.46
Small quantity (<50 lbs)	56	58.33
Medium quantity (50-100 lbs)	24	25.00
Large quantity (>100 lbs)	5	5.21
Total	96	100.00

12. Tapioca

Particulars	Freq.	Percent
Crop not ready for harvest	7	6.54
Small quantity (<50 lbs)	57	53.27
Medium quantity (50-100 lbs)	36	33.64
Large quantity (>100 lbs)	7	6.54
Total	107	100.00

13. Papaya

Particulars	Freq.	Percent
Crop not ready for harvest	6	5.56
Small quantity (<50 lbs)	72	66.67
Medium quantity (50-100 lbs)	25	23.15
Large quantity (>100 lbs)	5	4.63
Total	108	100.00

14. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Crop not ready for harvest	5	5.49
Small quantity (<50 lbs)	60	65.93
Medium quantity (50-100 lbs)	19	20.88
Large quantity (>100 lbs)	7	7.69
Total	91	100.00

15. Locally grown/collected fruits

Particulars	Freq.	Percent
Crop not ready for harvest	6	9.52
Small quantity (<50 lbs)	33	52.38
Medium quantity (50-100 lbs)	18	28.57
Large quantity (>100 lbs)	6	9.52
Total	63	100.00

16. Soursop

Particulars	Freq.	Percent
Crop not ready for harvest	10	14.29
Small quantity (<50 lbs)	50	71.43
Medium quantity (50-100 lbs)	9	12.86
Large quantity (>100 lbs)	1	1.43
Total	70	100.00

17. Black Pepper

Particulars	Freq.	Percent
Crop not ready for harvest	14	73.68
Small quantity (<50 lbs)	3	15.79
Medium quantity (50-100 lbs)	1	5.26
Large quantity (>100 lbs)	1	5.26
Total	19	100.00

18. Hot peppers

Particulars	Freq.	Percent
Crop not ready for harvest	10	10.99
Small quantity (<50 lbs)	65	71.43
Medium quantity (50-100 lbs)	9	9.89
Large quantity (>100 lbs)	7	7.69
Total	91	100.00

19. Sakau (Kava)

Particulars	Freq.	Percent
Crop not ready for harvest	14	93.33
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	1	6.67
Total	15	100.00

20. Sugar cane

Particulars	Freq.	Percent
Crop not ready for harvest	9	9.57
Small quantity (<50 lbs)	63	67.02
Medium quantity (50-100 lbs)	20	21.28
Large quantity (>100 lbs)	2	2.13
Total	94	100.00

21. Betel Leaf

Particulars	Freq.	Percent
Crop not ready for harvest	5	3.68
Small quantity (<50 lbs)	42	30.88
Medium quantity (50-100 lbs)	48	35.29
Large quantity (>100 lbs)	41	30.15
Total	136	100.00

22. Durian (football plant)

Particulars	Freq.	Percent
Crop not ready for harvest	15	57.69
Small quantity (<50 lbs)	8	30.77
Medium quantity (50-100 lbs)	2	7.69
Large quantity (>100 lbs)	1	3.85
Total	26	100.00

23. Cacao

Particulars	Freq.	Percent
Crop not ready for harvest	15	53.57
Small quantity (<50 lbs)	12	42.86
Medium quantity (50-100 lbs)	0	0.00
Large quantity (>100 lbs)	1	3.57
Total	28	100.00

24. Chestnut

Particulars	Freq.	Percent
Crop not ready for harvest	10	12.82
Small quantity (<50 lbs)	38	48.72
Medium quantity (50-100 lbs)	25	32.05
Large quantity (>100 lbs)	5	6.41
Total	78	100.00

25. Betelnut

Particulars	Freq.	Percent
Crop not ready for harvest	1	0.68
Small quantity (<50 lbs)	39	26.71
Medium quantity (50-100 lbs)	19	13.01
Large quantity (>100 lbs)	87	59.59
Total	146	100.00

26. Tangerine/Orange

Particulars	Freq.	Percent
Crop not ready for harvest	8	11.27
Small quantity (<50 lbs)	43	60.56
Medium quantity (50-100 lbs)	17	23.94
Large quantity (>100 lbs)	3	4.23
Total	71	100.00

27. Medicinal crops (example: Noni)

Particulars	Freq.	Percent
Crop not ready for harvest	7	8.86
Small quantity (<50 lbs)	60	75.95
Medium quantity (50-100 lbs)	11	13.92
Large quantity (>100 lbs)	1	1.27
Total	79	100.00

28. If others, list them here:

Particulars	Freq.	Percent
Crop not ready for harvest	3	60.00
Small quantity (<50 lbs)	0	0.00
Medium quantity (50-100 lbs)	1	20.00
Large quantity (>100 lbs)	1	20.00
Total	5	100.00

Q5.2.4 (1-28) Over the course of one year, how many plants do you have in your field?

Variable	Obs.	Mean	Min	Max
1. Swamp taro or hard taro	146	185.81	4	4000
2. Land taro or soft taro	134	74.28	2	1000
3. Breadfruit	129	19.95	1	300
4. Banana	150	43.38	1	800
5. Coconut	143	152.51	2	5000
6. Copra (coconut product)	124	212.02	2	6000
7. Yam	113	40.20	1	1000
8. Mango	87	16.24	0	300
9. Pineapple	91	19.66	2	100
10. Limes/lemons	99	14.13	1	500
11. Sweet potatoes	91	37.86	1	200
12. Tapioca	103	45.82	1	500
13. Papaya	106	24.27	1	300
14. Locally grown/ collected vegetables	82	24.74	1	200
15. Locally grown/ collected fruits	54	14.11	1	100
16. Soursop	62	10.18	1	50
17. Black pepper	4	7.75	5	10
18. Hot peppers	82	11.73	1	100
19. Sakau (Kava)	3	7.33	5	10
20. Sugar cane	89	17.44	1	100
21. Betel leaf	128	61.08	2	1000
22. Durian (football plant)	12	21.17	1	150
23. Cacao	12	7.17	1	20
24. Chestnut	74	18.76	1	300
25. Betelnut	144	212.79	1	2000
26. Tangerine/ Orange	66	10.05	1	150
27. Medicinal crops (example: Noni)	76	42.63	1	1000
28. Others	0	0	0	0

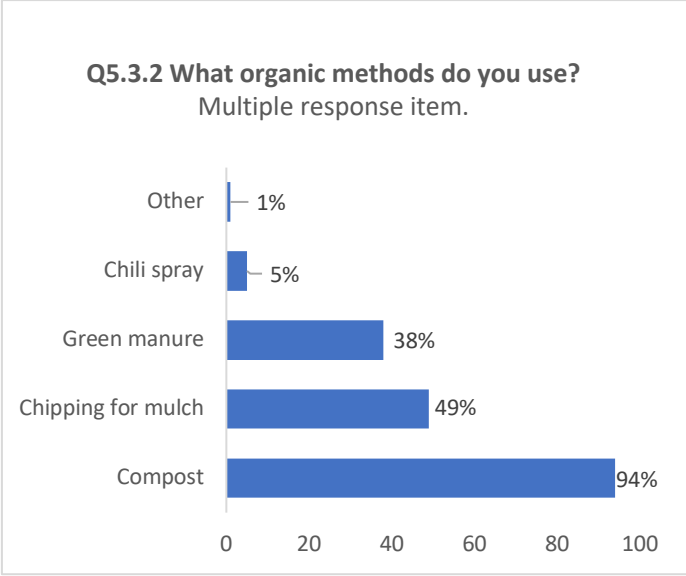
Q5.2.5 (1-28) Is there ever crop loss (0=no, 1=yes)?

Question	Responses	Freq.	Percent
1. Swamp/hard taro	No	43	29.05
	Yes	105	70.95
	Total	148	100.00
2. Land/soft taro	No	40	29.63
	Yes	95	70.37
	Total	135	100.00
3. Breadfruit	No	66	52.38
	Yes	60	47.62
	Total	126	100
4. Banana	No	72	49.32
	Yes	74	50.68
	Total	146	100.00
5. Coconut	No	81	57.45
	Yes	60	42.55
	Total	141	100.00
6. Copra (coconut product)	No	82	65.60
	Yes	43	34.40
	Total	125	100.00

Question	Response	Freq.	Percent
7. Yam	No	58	51.33
	Yes	55	48.67
	Total	113	100.00
8. Mango	No	51	61.45
	Yes	32	38.55
	Total	83	100.00
9. Pineapple	No	55	59.14
	Yes	38	40.86
	Total	93	100.00
10. Limes/lemons	No	68	69.39
	Yes	30	30.61
	Total	98	100.00
11. Sweet Potatoes	No	45	47.87
	Yes	49	52.13
	Total	94	100.00
12. Tapioca	No	48	47.52
	Yes	53	52.48
	Total	101	100.00
13. Papaya	No	45	42.45
	Yes	61	57.55
	Total	106	100.00
14. Locally grown/collected fresh vegetables	No	60	69.77
	Yes	26	30.23
	Total	86	100.00
15. Locally grown/ collected fruits	No	42	71.19
	Yes	17	28.81
	Total	59	100.00
16. Soursop	No	40	58.82
	Yes	28	41.18
	Total	68	100.00
17. Black Pepper	No	19	82.61
	Yes	4	17.39
	Total	23	100.00
18. Hot peppers	No	47	52.81
	Yes	42	47.19
	Total	89	100.00
19. Sakau (Kava)	No	14	82.35
	Yes	3	17.65
	Total	17	100.00
20. Sugar cane	No	45	50.56
	Yes	44	49.44
	Total	89	100.00
21. Betel Leaf	No	55	41.67
	Yes	77	58.33
	Total	132	100.00
22. Durian (football plant)	No	21	75.00
	Yes	7	25.00
	Total	28	100.00
23. Cacao	No	26	86.67
	Yes	4	13.33
	Total	30	100.00
24. Chestnut	No	49	66.22
	Yes	25	33.78
	Total	74	100.00
25. Betelnut	No	49	34.03
	Yes	95	65.97
	Total	144	100.00
26. Tangerine/ Orange	No	45	66.18
	Yes	23	33.82
	Total	68	100.00
27. Medicinal crops (example: Noni)	No	57	77.03
	Yes	17	22.97
	Total	74	100.00
28. If others, list them here:	No	4	100.00
	Yes	0	0.00
	Total	4	100.00

Q5.3.1 Do you practice organic agriculture, by which we mean… using natural plants, compost, waste from animals and poultry as soil amendments or to repel insects and diseases.

Responses	Frequency	Percent
No	75	45.18
Yes	91	54.82
Total	166	100.00



Question	Responses	Freq.	Percent
Q5.3.3 Has your ability to grow food been affected by a change in climate?	No	63	37.95
	Yes	103	62.05
	Total	166	100.00
Q5.3.4 Has a change in climate impacted your crop yield?	No	49	29.70
	Yes	116	70.30
	Total	165	100.00

Q5.3.5 If yes, which crops are the most affected by climate?

Question	Responses	Freq.	Percent
1. Swamp taro	No	36	30.25
	Yes	83	69.75
	Total	119	100.00
2. Land taro	No	43	36.13
	Yes	76	63.87
	Total	119	100.00
3. Breadfruit	No	66	55.46
	Yes	53	44.54
	Total	119	100.00
4. Betelnut	No	26	21.85
	Yes	93	78.15
	Total	119	100.00
5. Banana	No	59	49.58
	Yes	60	50.42
	Total	119	100.00
6. Coconut	No	80	67.23
	Yes	39	32.77
	Total	119	100.00
7. Copra (coconut product)	No	94	78.99
	Yes	25	21.01
	Total	119	100.00
8. Yam	No	69	57.98
	Yes	50	42.02
	Total	119	100.00
9. Sweet potatoes	No	63	52.94
	Yes	56	47.06
	Total	119	100.00
10. Tapioca	No	69	57.98
	Yes	50	42.02
	Total	119	100.00
11. Imported vegetables	No	108	90.76
	Yes	11	9.24
	Total	119	100.00
12. Locally grown/ collected vegetables	No	88	73.95
	Yes	31	26.05
	Total	119	100.00
13. Papaya	No	82	68.91
	Yes	37	31.09
	Total	119	100.00
14. Locally grown/ collected fruits	No	94	80.34
	Yes	23	19.66
	Total	117	100.00
15. Imported fruits	No	112	94.12
	Yes	7	5.88
	Total	119	100.00
16. Citrus	No	103	86.55
	Yes	16	13.45
	Total	119	100.00
17. Black pepper (peppercorns)	No	116	97.48
	Yes	3	2.52
	Total	119	100.00
18. Hot peppers	No	105	88.24
	Yes	14	11.76
	Total	119	100.00
19. Sakau (Kava)	No	116	97.48
	Yes	3	2.52
	Total	119	100.00
20. Other (specify)	No	115	97.46
	Yes	3	2.54
	Total	118	100.00

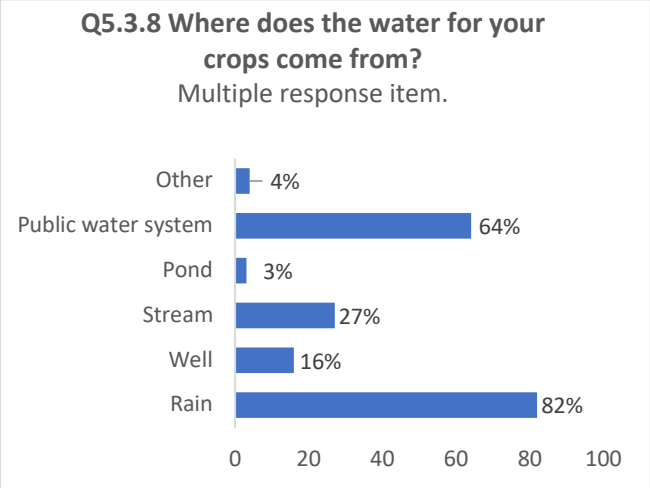
Q5.3.6 If yes, how did climate contribute to your crop loss?

Question	Response	Freq.	Percent
1. Flooding	No	71	59.66
	Yes	48	40.34
	Total	119	100.00
2. Extreme heat	No	19	15.97
	Yes	100	84.03
	Total	119	100.00
3. Saltwater inundation (intrusion)	No	66	55.46
	Yes	53	44.54
	Total	119	100.00
4. Lack of water (etc.)	No	76	63.87
	Yes	43	36.13
	Total	119	100.00
5. Cyclones/ hurricanes	No	72	60.50
	Yes	47	39.50
	Total	119	100.00
6. Heavy rains	No	39	32.77
	Yes	80	67.23
	Total	119	100.00
7. Landslides	No	115	96.64
	Yes	4	3.36
	Total	119	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	55	46.22
	Yes	64	53.78
	Total	119	100.00
9. Drought	No	55	46.22
	Yes	64	53.78
	Total	119	100.00
10. Increased threats to crops from pests and disease	No	46	38.66
	Yes	73	61.34
	Total	119	100.00
11. Invasive species	No	75	63.03
	Yes	44	36.97
	Total	119	100.00
12. Plant diseases	No	34	28.57
	Yes	85	71.43
	Total	119	100.00
13. Coastal erosion	No	90	75.63
	Yes	29	24.37
	Total	119	100.00
14. Riverbank erosion	No	106	89.08
	Yes	13	10.92
	Total	119	100.00
15. Displaced from land	No	115	96.64
	Yes	4	3.36
	Total	119	100.00
16. Other (specify)	No	118	99.16
	Yes	1	0.84
	Total	119	100.00

Q5.3.7. Do you have access to enough water for crop production?

Responses	Frequency	Percent
All of the time	64	39.02
Some of the time	94	57.32
None of the time	6	3.66
Total	164	100.00



Q5.4 For each crop, write the answers in each column according to the numbers specified in the table header. If a crop is NOT grown or harvested (5.4.1), you may skip the other questions in that row.

Q5.4.1 (1-20) Do you grow this crop?

Question	Responses	Frequency	Percent
1. Swamp/ hard taro	No	11	6.71
	Yes	153	93.29
	Total	164	100.00
2. Land/ soft taro	No	22	13.75
	Yes	138	86.25
	Total	160	100.00
3. Breadfruit	No	37	24.18
	Yes	116	75.82
	Total	153	100.00
4. Betelnut	No	9	5.52
	Yes	154	94.48
	Total	163	100.00
5. Banana	No	6	3.66
	Yes	158	96.34
	Total	164	100.00
6. Coconut	No	15	9.32
	Yes	146	90.68
	Total	161	100.00
7. Copra (coconut product)	No	26	17.93
	Yes	119	82.07
	Total	145	100.00
8. Yam	No	34	22.67
	Yes	116	77.33
	Total	150	100.00
9. Sweet Potatoes	No	53	34.87
	Yes	99	65.13
	Total	152	100.00
10. Tapioca	No	41	27.33
	Yes	109	72.67
	Total	150	100.00
11. Soursop	No	78	56.93
	Yes	59	43.07
	Total	137	100.00
12. Locally grown/ collected fresh vegetables	No	44	29.53
	Yes	105	70.47
	Total	149	100.00
13. Imported fresh vegetables	No	100	75.76
	Yes	32	24.24
	Total	132	100.00
14. Locally grown/ collected fruits	No	67	46.53
	Yes	77	53.47
	Total	144	100.00
15. Imported fruits	No	109	85.16
	Yes	19	14.84
	Total	128	100.00

Question	Response	Freq.	Percent
16. Lime/Lemon	No	60	40.27
	Yes	89	59.73
	Total	149	100.00
17. Tangerine	No	79	56.43
	Yes	61	43.57
	Total	140	100.00
18. Black pepper (peppercorns)	No	124	96.88
	Yes	4	3.13
	Total	128	100.00
19. Hot peppers	No	63	44.68
	Yes	78	55.32
	Total	141	100.00
20. Sakau (Kava)	No	124	99.20
	Yes	1	0.80
	Total	125	100.00

5.4.2 (1-20) Do you experience crop loss?

Question	Response	Freq.	Percent
1. Swamp/hard taro	No	56	36.13
	Yes	99	63.87
	Total	155	100.00
2. Land/soft taro	No	47	33.81
	Yes	92	66.19
	Total	139	100.00
3. Breadfruit	No	66	51.56
	Yes	62	48.44
	Total	128	100.00
4. Betelnut	No	32	20.78
	Yes	122	79.22
	Total	154	100.00
5. Banana	No	71	45.22
	Yes	86	54.78
	Total	157	100.00
6. Coconut	No	82	55.03
	Yes	67	44.97
	Total	149	100.00
7. Copra (coconut product)	No	72	58.54
	Yes	51	41.46
	Total	123	100.00
8. Yam	No	50	42.74
	Yes	67	57.26
	Total	117	100.00
9. Sweet Potatoes	No	40	38.46
	Yes	64	61.54
	Total	104	100.00
10. Tapioca	No	44	41.12
	Yes	63	58.88
	Total	107	100.00
11. Soursop	No	40	54.05
	Yes	34	45.95
	Total	74	100.00
12. Locally grown/ collected fresh vegetables	No	59	52.68
	Yes	53	47.32
	Total	112	100.00
13. Imported fresh vegetables	No	42	75.00
	Yes	14	25.00
	Total	56	100.00
14. Locally grown/ collected fruits	No	45	52.33
	Yes	41	47.67
	Total	86	100.00
15. Imported fruits	No	39	82.98
	Yes	8	17.02
	Total	47	100.00
16. Lime/ Lemon	No	63	64.95
	Yes	34	35.05
	Total	97	100.00
17. Tangerine	No	43	56.58
	Yes	33	43.42
	Total	76	100.00
18.Black pepper (peppercorns)	No	32	94.12
	Yes	2	5.88
	Total	34	100.00
19. Hot peppers	No	39	43.82
	Yes	50	56.18
	Total	89	100.00
20. Sakau (Kava)	No	29	93.55
	Yes	2	6.45
	Total	31	100.00

Q5.4.3 (1-20) If you observe crop loss due to climate change, what is the cause? Indicate all that apply.

1. Swamp/hard taro

Question	Responses	Freq.	Percent
1. Flooding	No	66	60.00
	Yes	44	40.00
	Total	110	100.00
2. Extreme heat	No	52	48.15
	Yes	56	51.85
	Total	108	100.00
3. Saltwater inundation (intrusion)	No	50	45.87
	Yes	59	54.13
	Total	109	100.00
4. Lack of water	No	86	79.63
	Yes	22	20.37
	Total	108	100.00
5. Cyclones/ hurricanes	No	**86**	79.63
	Yes	22	20.37
	Total	108	100.00
6. Heavy rains	No	62	57.41
	Yes	46	42.59
	Total	108	100.00
7. Landslides	No	101	94.39
	Yes	6	5.61
	Total	107	100.00

Question	Response	Freq.	Percent
8. Unpredictability of the rainy season	No	77	71.96
	Yes	30	28.04
	Total	107	100.00
9. Drought	No	50	46.30
	Yes	58	53.70
	Total	108	100.00
10. Increased threats to crops from pests and disease	No	79	73.15
	Yes	29	26.85
	Total	108	100.00
11. Invasive species	No	91	85.85
	Yes	15	14.15
	Total	106	100.00
12. Plant diseases	No	74	68.52
	Yes	34	31.48
	Total	108	100.00
13. Coastal erosion	No	94	87.04
	Yes	14	12.96
	Total	108	100.00
14. Riverbank erosion	No	102	95.33
	Yes	5	4.67
	Total	107	100.00
15. Displaced from land	No	104	97.20
	Yes	3	2.80
	Total	107	100.00
16. Other (specify below)	No	106	99.07
	Yes	1	0.93
	Total	107	100.00

2.Land/soft taro

Question	Response	Freq.	Percent
1. Flooding	No	74	74.75
	Yes	25	25.25
	Total	99	100.00
2. Extreme heat	No	32	32.32
	Yes	67	67.68
	Total	99	100.00
3. Saltwater inundation (intrusion)	No	71	71.72
	Yes	28	28.28
	Total	99	100.00
4. Lack of water	No	74	74.75
	Yes	25	25.25
	Total	99	100.00
5. Cyclones/ hurricanes	No	73	73.74
	Yes	26	26.26
	Total	99	100.00
6. Heavy rains	No	57	57.58
	Yes	42	42.42
	Total	99	100.00
7. Landslides	No	94	94.95
	Yes	5	5.05
	Total	99	100.00
8. Difficulty predicting when the rainy season will come	No	63	63.64
	Yes	36	36.36
	Total	99	100.00
9. Drought	No	45	45.45
	Yes	54	54.55
	Total	99	100.00
10. Increased threats to crops from pests and disease	No	61	61.62
	Yes	38	38.38
	Total	99	100.00
11. Invasive species	No	82	82.83
	Yes	17	17.17
	Total	99	100.00
12. Plant diseases	No	56	56.57
	Yes	43	43.43
	Total	99	100.00
13. Coastal erosion	No	89	89.90
	Yes	10	10.10
	Total	99	100.00
14. Riverbank erosion	No	96	96.97
	Yes	3	3.03
	Total	99	100.00
15. Displaced from land	No	98	98.99
	Yes	1	1.01
	Total	99	100.00
16. Other (specify below)	No	96	98.97
	Yes	1	1.03
	Total	97	100.00

3.Breadfruit

Question	Responses	Freq.	Percent
1. Flooding	No	62	88.57
	Yes	8	11.43
	Total	70	100.00
2. Extreme heat	No	32	45.71
	Yes	38	54.29
	Total	70	100.00
3. Saltwater inundation	No	60	85.71
	Yes	10	14.29
	Total	70	100.00
4. Lack of water	No	53	75.71
	Yes	17	24.29
	Total	70	100.00
5. Cyclones/ hurricanes	No	35	50.00
	Yes	35	50.00
	Total	70	100.00
6. Heavy rains	No	48	68.57
	Yes	22	31.43
	Total	70	100.00
7. Landslides	No	68	97.14
	Yes	2	2.86
	Total	70	100.00

Question	Responses	Freq.	Percent
8. Unpredictability of the rainy season	No	44	62.86
	Yes	26	37.14
	Total	70	100.00
9.Drought	No	37	52.86
	Yes	33	47.14
	Total	70	100.00
10.Increased threats to crops from pests and disease	No	40	57.14
	Yes	30	42.86
	Total	70	100.00
11.Invasive species	No	63	90.00
	Yes	7	10.00
	Total	70	100.00
12. Plant diseases	No	35	50.00
	Yes	35	50.00
	Total	70	100.00
13. Coastal erosion	No	65	92.86
	Yes	5	7.14
	Total	70	100.00
14. Riverbank erosion	No	69	98.57
	Yes	1	1.43
	Total	70	100.00
15. Displaced from land	No	69	98.57
	Yes	1	1.43
	Total	70	100.00
16. Other (specify below)	No	69	98.57
	Yes	1	1.43
	Total	70	100.00

4. Betelnut

Question	Responses	Freq.	Percent
1. Flooding	No	117	92.13
	Yes	10	7.87
	Total	127	100.00
2. Extreme heat	No	41	32.54
	Yes	85	67.46
	Total	126	100.00
3. Saltwater inundation	No	115	90.55
	Yes	12	9.45
	Total	127	100.00
4. Lack of water	No	101	79.53
	Yes	26	20.47
	Total	127	100.00
5. Cyclones/ hurricanes	No	86	67.72
	Yes	41	32.28
	Total	127	100.00
6. Heavy rains	No	103	81.10
	Yes	24	18.90
	Total	127	100.00
7. Landslides	No	121	95.28
	Yes	6	4.72
	Total	127	100.00
8. Difficulty predicting when the rainy season will come	No	96	75.59
	Yes	31	24.41
	Total	127	100.00
9. Drought	No	63	49.61
	Yes	64	50.39
	Total	127	100.00
10. Increased threats to crops from pests and disease	No	76	59.84
	Yes	51	40.16
	Total	127	100.00
11. Invasive species	No	104	81.89
	Yes	23	18.11
	Total	127	100.00
12. Plant diseases	No	47	37.01
	Yes	80	62.99
	Total	127	100.00
13. Coastal erosion	No	119	93.70
	Yes	8	6.30
	Total	127	100.00
14. Riverbank erosion	No	125	98.43
	Yes	2	1.57
	Total	127	100.00
15. Displaced from land	No	126	99.21
	Yes	1	0.79
	Total	127	100.00
16. Other (specify below)	No	126	99.21
	Yes	1	0.79
	Total	127	100.00

5. Banana

Question	Response	Freq.	Percent
1. Flooding	No	84	92.31
	Yes	7	7.69
	Total	91	100.00
2. Extreme heat	No	38	42.22
	Yes	52	57.78
	Total	90	100.00
3. Saltwater inundation (intrusion)	No	74	83.15
	Yes	15	16.85
	Total	89	100.00
4. Lack of water	No	70	78.65
	Yes	19	21.35
	Total	89	100.00
5. Cyclones/ hurricanes	No	45	50.00
	Yes	45	50.00
	Total	90	100.00
6. Heavy rains	No	66	73.33
	Yes	24	26.67
	Total	90	100.00
7. Landslides	No	84	93.33
	Yes	6	6.67
	Total	90	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	64	71.11
	Yes	26	28.89
	Total	90	100.00
9. Drought	No	43	47.78
	Yes	47	52.22
	Total	90	100.00
10. Increased threats to crops from pests and disease	No	58	64.44
	Yes	32	35.56
	Total	90	100.00
11. Invasive species	No	78	86.67
	Yes	12	13.33
	Total	90	100.00
12. Plant diseases	No	50	55.56
	Yes	40	44.44
	Total	90	100.00
13. Coastal erosion	No	86	95.56
	Yes	4	4.44
	Total	90	100.00
14. Riverbank erosion	No	89	98.89
	Yes	1	1.11
	Total	90	100.00
15. Displaced from land	No	88	98.88
	Yes	1	1.12
	Total	89	100.00
16. Other (specify below)	No	89	98.89
	Yes	1	1.11
	Total	90	100.00

6. Coconut

Question	Responses	Freq.	Percent
1. Flooding	No	69	90.79
	Yes	7	9.21
	Total	76	100.00
2. Extreme heat	No	35	46.05
	Yes	41	53.95
	Total	76	100.00
3. Saltwater inundation (intrusion)	No	62	81.58
	Yes	14	18.42
	Total	76	100.00
4. Lack of water	No	60	80.00
	Yes	15	20.00
	Total	75	100.00
5. Cyclones/ hurricanes	No	48	63.16
	Yes	28	36.84
	Total	76	100.00
6. Heavy rains	No	58	76.32
	Yes	18	23.68
	Total	76	100.00
7. Landslides	No	73	96.05
	Yes	3	3.95
	Total	76	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	53	69.74
	Yes	23	30.26
	Total	76	100.00
9. Drought	No	40	52.63
	Yes	36	47.37
	Total	76	100.00
10. Increased threats to crops from pests and disease	No	52	68.42
	Yes	24	31.58
	Total	76	100.00
11. Invasive species	No	65	85.53
	Yes	11	14.47
	Total	76	100.00
12. Plant diseases	No	45	59.21
	Yes	31	40.79
	Total	76	100.00
13. Coastal erosion	No	67	88.16
	Yes	9	11.84
	Total	76	100.00
14. Riverbank erosion	No	73	96.05
	Yes	3	3.95
	Total	76	100.00
15. Displaced from land	No	75	98.68
	Yes	1	1.32
	Total	76	100.00
16. Other (specify below)	No	74	98.67
	Yes	1	1.33
	Total	75	100.00

7. Copra (coconut product)

Question	Response	Freq.	Percent
1. Flooding	No	59	92.19
	Yes	5	7.81
	Total	64	100.00
2. Extreme heat	No	30	47.62
	Yes	33	52.38
	Total	63	100.00
3. Saltwater inundation (intrusion)	No	54	84.38
	Yes	10	15.63
	Total	64	100.00
4. Lack of water	No	49	76.56
	Yes	15	23.44
	Total	64	100.00
5. Cyclones/ hurricanes	No	49	76.56
	Yes	15	23.44
	Total	64	100.00
6. Heavy rains	No	51	79.69
	Yes	13	20.31
	Total	64	100.00
7. Landslides	No	63	98.44
	Yes	1	1.56
	Total	64	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	49	76.56
	Yes	15	23.44
	Total	64	100.00
9. Drought	No	39	60.94
	Yes	25	39.06
	Total	64	100.00
10. Increased threats to crops from pests and disease	No	42	65.63
	Yes	22	34.38
	Total	64	100.00
11. Invasive species	No	55	85.94
	Yes	9	14.06
	Total	64	100.00
12. Plant diseases	No	38	59.38
	Yes	26	40.63
	Total	64	100.00
13. Coastal erosion	No	52	81.25
	Yes	12	18.75
	Total	64	100.00
14. Riverbank erosion	No	61	95.31
	Yes	3	4.69
	Total	64	100.00
15. Displaced from land	No	61	95.31
	Yes	3	4.69
	Total	64	100.00
16. Other (specify below)	No	63	98.44
	Yes	1	1.56
	Total	64	100.00

8. Yam

Question	Response	Freq.	Percent
1. Flooding	No	66	86.84
	Yes	10	13.16
	Total	76	100.00
2. Extreme heat	No	32	42.11
	Yes	44	57.89
	Total	76	100.00
3. Saltwater inundation (intrusion)	No	67	88.16
	Yes	9	11.84
	Total	76	100.00
4. Lack of water	No	57	75.00
	Yes	19	25.00
	Total	76	100.00
5. Cyclones/ hurricanes	No	56	73.68
	Yes	20	26.32
	Total	76	100.00
6. Heavy rains	No	46	60.53
	Yes	30	39.47
	Total	76	100.00
7. Landslides	No	71	93.42
	Yes	5	6.58
	Total	76	100.00
8. Difficulty predicting when the rainy season will come	No	48	63.16
	Yes	28	36.84
	Total	76	100.00
9. Drought	No	42	55.26
	Yes	34	44.74
	Total	76	100.00
10. Increased threats to crops from pests and disease	No	42	55.26
	Yes	34	44.74
	Total	76	100.00
11. Invasive species	No	63	82.89
	Yes	13	17.11
	Total	76	100.00
12. Plant diseases	No	39	51.32
	Yes	37	48.68
	Total	76	100.00
13. Coastal erosion	No	71	93.42
	Yes	5	6.58
	Total	76	100.00
14. Riverbank erosion	No	75	98.68
	Yes	1	1.32
	Total	76	100.00
15. Displaced from land	No	74	97.37
	Yes	2	2.63
	Total	76	100.00
16. Other (specify below)	No	73	97.33
	Yes	2	2.67
	Total	75	100.00

9. Sweet potatoes

Question	Response	Freq.	Percent
1. Flooding	No	63	86.30
	Yes	10	13.70
	Total	73	100.00
2. Extreme heat	No	25	34.72
	Yes	47	65.28
	Total	72	100.00
3. Saltwater inundation (intrusion)	No	64	87.67
	Yes	9	12.33
	Total	73	100.00
4. Lack of water	No	54	73.97
	Yes	19	26.03
	Total	73	100.00
5. Cyclones/ hurricanes	No	54	73.97
	Yes	19	26.03
	Total	73	100.00
6. Heavy rains	No	45	61.64
	Yes	28	38.36
	Total	73	100.00
7. Landslides	No	70	95.89
	Yes	3	4.11
	Total	73	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	48	65.75
	Yes	25	34.25
	Total	73	100.00
9.Drought	No	34	47.22
	Yes	38	52.78
	Total	72	100.00
10.Increased threats to crops from pests and disease	No	44	60.27
	Yes	29	39.73
	Total	73	100.00
11.Invasive species	No	57	78.08
	Yes	16	21.92
	Total	73	100.00
12. Plant diseases	No	42	57.53
	Yes	31	42.47
	Total	73	100.00
13. Coastal erosion	No	67	91.78
	Yes	6	8.22
	Total	73	100.00
14. Riverbank erosion	No	72	98.63
	Yes	1	1.37
	Total	73	100.00
15. Displaced from land	No	72	98.63
	Yes	1	1.37
	Total	73	100.00
16. Other (specify below)	No	72	98.63
	Yes	1	1.37
	Total	73	100.00

10. Tapioca

Question	Response	Freq.	Percent
1. Flooding	No	59	88.06
	Yes	8	11.94
	Total	67	100.00
2. Extreme heat	No	24	35.82
	Yes	43	64.18
	Total	67	100.00
3. Saltwater inundation (intrusion)	No	59	88.06
	Yes	8	11.94
	Total	67	100.00
4. Lack of water	No	49	74.24
	Yes	17	25.76
	Total	66	100.00
5. Cyclones/ hurricanes	No	48	71.64
	Yes	19	28.36
	Total	67	100.00
6. Heavy rains	No	32	47.76
	Yes	35	52.24
	Total	67	100.00
7. Landslides	No	62	92.54
	Yes	5	7.46
	Total	67	100.00
8. Difficulty predicting when the rainy season will come	No	40	59.70
	Yes	27	40.30
	Total	67	100.00
9.Drought	No	33	49.25
	Yes	34	50.75
	Total	67	100.00
10.Increased threats to crops from pests and disease	No	35	52.24
	Yes	32	47.76
	Total	67	100.00
11.Invasive species	No	36	53.73
	Yes	31	46.27
	Total	67	100.00
12. Plant diseases	No	36	53.73
	Yes	31	46.27
	Total	67	100.00
13. Coastal erosion	No	62	92.54
	Yes	5	7.46
	Total	67	100.00
14. Riverbank erosion	No	66	98.51
	Yes	1	1.49
	Total	67	100.00
15. Displaced from land	No	66	98.51
	Yes	1	1.49
	Total	67	100.00
16. Other (specify below)	No	66	98.51
	Yes	1	1.49
	Total	67	100.00

11. Soursop

Question	Responses	Freq.	Percent
1. Flooding	No	42	97.67
	Yes	1	2.33
	Total	43	100.00
2. Extreme heat	No	21	48.84
	Yes	22	51.16
	Total	43	100.00
3. Saltwater inundation (intrusion)	No	36	83.72
	Yes	7	16.28
	Total	43	100.00
4. Lack of water	No	30	69.77
	Yes	13	30.23
	Total	43	100.00
5. Cyclones/ hurricanes	No	27	62.79
	Yes	16	37.21
	Total	43	100.00
6. Heavy rains	No	30	69.77
	Yes	13	30.23
	Total	43	100.00
7. Landslides	No	42	97.67
	Yes	1	2.33
	Total	43	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	29	67.44
	Yes	14	32.56
	Total	43	100.00
9. Drought	No	24	55.81
	Yes	19	44.19
	Total	43	100.00
10. Increased threats to crops from pests and disease	No	26	60.47
	Yes	17	39.53
	Total	43	100.00
11.Invasive species	No	35	81.40
	Yes	8	18.60
	Total	43	100.00
12. Plant diseases	No	23	53.49
	Yes	20	46.51
	Total	43	100.00
13. Coastal erosion	No	40	93.02
	Yes	3	6.98
	Total	43	100.00
14. Riverbank erosion	No	42	97.67
	Yes	1	2.33
	Total	43	100.00
15. Displaced from land	No	42	97.67
	Yes	1	2.33
	Total	43	100.00
16. Other (specify below)	No	42	97.67
	Yes	1	2.33
	Total	43	100.00

12. Locally grown/collected vegetables

Question	Response	Freq.	Percent
1. Flooding	No	59	89.39
	Yes	7	10.61
	Total	66	100.00
2. Extreme heat	No	22	33.33
	Yes	44	66.67
	Total	66	100.00
3. Saltwater inundation (intrusion)	No	55	84.62
	Yes	10	15.38
	Total	65	100.00
4. Lack of water	No	49	74.24
	Yes	17	25.76
	Total	66	100.00
5. Cyclones/ hurricanes	No	46	69.70
	Yes	20	30.30
	Total	66	100.00
6. Heavy rains	No	46	69.70
	Yes	20	30.30
	Total	66	100.00
7. Landslides	No	64	96.97
	Yes	2	3.03
	Total	66	100.00
8. Difficulty predicting when the rainy season will come	No	47	71.21
	Yes	19	28.79
	Total	66	100.00
9.Drought	No	42	63.64
	Yes	24	36.36
	Total	66	100.00
10. Increased threats to crops from pests and disease	No	40	60.61
	Yes	26	39.39
	Total	66	100.00
11. Invasive species	No	53	80.30
	Yes	13	19.70
	Total	66	100.00
12. Plant diseases	No	33	50.00
	Yes	33	50.00
	Total	66	100.00
13. Coastal erosion	No	63	96.92
	Yes	2	3.08
	Total	65	100.00
14. Riverbank erosion	No	65	98.48
	Yes	1	1.52
	Total	66	100.00
15. Displaced from land	No	65	98.48
	Yes	1	1.52
	Total	66	100.00
16. Other (specify below)	No	64	98.46
	Yes	1	1.54
	Total	65	100.00

13. Imported vegetables

Question	Response	Freq.	Percent
1. Flooding	No	26	96.30
	Yes	1	3.70
	Total	27	100.00
2. Extreme heat	No	13	52.00
	Yes	12	48.00
	Total	25	100.00
3. Saltwater inundation (intrusion)	No	22	88.00
	Yes	3	12.00
	Total	25	100.00
4. Lack of water	No	20	80.00
	Yes	5	20.00
	Total	25	100.00
5. Cyclones/ hurricanes	No	19	76.00
	Yes	6	24.00
	Total	25	100.00
6. Heavy rains	No	21	87.50
	Yes	3	12.50
	Total	24	100.00
7. Landslides	No	25	100.00
	Yes	0	0.00
	Total	25	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	23	92.00
	Yes	2	8.00
	Total	25	100.00
9. Drought	No	19	76.00
	Yes	6	24.00
	Total	25	100.00
10. Increased threats to crops from pests and disease	No	21	84.00
	Yes	4	16.00
	Total	25	100.00
11. Invasive species	No	22	88.00
	Yes	3	12.00
	Total	25	100.00
12. Plant diseases	No	20	80.00
	Yes	5	20.00
	Total	25	100.00
13. Coastal erosion	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
14. Riverbank erosion	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
15. Displaced from land	No	25	100.00
	Yes	0	0.00
	Total	25	100.00
16. Other (specify below)	No	24	96.00
	Yes	1	4.00
	Total	25	100.00

14. Locally grown/collected fruits

Question	Response	Freq.	Percent
1. Flooding	No	48	96.00
	Yes	2	4.00
	Total	50	100.00
2. Extreme heat	No	18	36.00
	Yes	32	64.00
	Total	50	100.00
3. Saltwater inundation (intrusion)	No	43	86.00
	Yes	7	14.00
	Total	50	100.00
4. Lack of water	No	34	68.00
	Yes	16	32.00
	Total	50	100.00
5. Cyclones/ hurricanes	No	38	76.00
	Yes	12	24.00
	Total	50	100.00
6. Heavy rains	No	36	72.00
	Yes	14	28.00
	Total	50	100.00
7. Landslides	No	50	100.00
	Yes	0	0.00
	Total	50	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	37	74.00
	Yes	13	26.00
	Total	50	100.00
9. Drought	No	32	64.00
	Yes	18	36.00
	Total	50	100.00
10. Increased threats to crops from pests and disease	No	28	56.00
	Yes	22	44.00
	Total	50	100.00
11. Invasive species	No	43	86.00
	Yes	7	14.00
	Total	50	100.00
12. Plant diseases	No	24	48.00
	Yes	26	52.00
	Total	50	100.00
13. Coastal erosion	No	50	100.00
	Yes	0	0.00
	Total	50	100.00
14. Riverbank erosion	No	50	100.00
	Yes	0	0.00
	Total	50	100.00
15. Displaced from land	No	50	100.00
	Yes	0	0.00
	Total	50	100.00
16. Other (specify below)	No	50	100.00
	Yes	0	0.00
	Total	50	100.00

15. Imported fruits

Question	Response	Freq.	Percent
1. Flooding	No	13	86.67
	Yes	2	13.33
	Total	15	100.00
2. Extreme heat	No	11	73.33
	Yes	4	26.67
	Total	15	100.00
3. Saltwater inundation (intrusion)	No	15	100.00
	Yes	0	0.00
	Total	15	100.00
4. Lack of water	No	14	93.33
	Yes	1	6.67
	Total	15	100.00
5. Cyclones/ hurricanes	No	12	80.00
	Yes	3	20.00
	Total	15	100.00
6. Heavy rains	No	12	85.71
	Yes	2	14.29
	Total	14	100.00
7. Landslides	No	15	100.00
	Yes	0	0.00
	Total	15	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	13	86.67
	Yes	2	13.33
	Total	15	100.00
9. Drought	No	13	86.67
	Yes	2	13.33
	Total	15	100.00
10. Increased threats to crops from pests and disease	No	13	86.67
	Yes	2	13.33
	Total	15	100.00
11. Invasive species	No	14	93.33
	Yes	1	6.67
	Total	15	100.00
12. Plant diseases	No	14	93.33
	Yes	1	6.67
	Total	15	100.00
13. Coastal erosion	No	15	100.00
	Yes	0	0.00
	Total	15	100.00
14. Riverbank erosion	No	15	100.00
	Yes	0	0.00
	Total	15	100.00
15. Displaced from land	No	15	100.00
	Yes	0	0.00
	Total	15	100.00
16. Other (specify below)	No	15	100.00
	Yes	0	0.00
	Total	15	100.00

16. Lime/lemon

Question	Response	Freq.	Percent
1. Flooding	No	45	95.74
	Yes	2	4.26
	Total	47	100.00
2. Extreme heat	No	18	38.30
	Yes	29	61.70
	Total	47	100.00
3. Saltwater inundation (intrusion)	No	42	89.36
	Yes	5	10.64
	Total	47	100.00
4. Lack of water	No	40	85.11
	Yes	7	14.89
	Total	47	100.00
5. Cyclones/ hurricanes	No	23	48.94
	Yes	24	51.06
	Total	47	100.00
6. Heavy rains	No	38	80.85
	Yes	9	19.15
	Total	47	100.00
7. Landslides	No	46	97.87
	Yes	1	2.13
	Total	47	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	36	76.60
	Yes	11	23.40
	Total	47	100.00
9. Drought	No	27	57.45
	Yes	20	42.55
	Total	47	100.00
10. Increased threats to crops from pests and disease	No	35	74.47
	Yes	12	25.53
	Total	47	100.00
11. Invasive species	No	44	93.62
	Yes	3	6.38
	Total	47	100.00
12. Plant diseases	No	25	53.19
	Yes	22	46.81
	Total	47	100.00
13. Coastal erosion	No	47	100.00
	Yes	0	0.00
	Total	47	100.00
14. Riverbank erosion	No	47	100.00
	Yes	0	0.00
	Total	47	100.00
15. Displaced from land	No	47	100.00
	Yes	0	0.00
	Total	47	100.00
16. Other (specify below)	No	47	100.00
	Yes	0	0.00
	Total	47	100.00

17. Tangerine

Question	Response	Freq.	Percent
1. Flooding	No	42	100.00
	Yes	0	0.00
	Total	42	100.00
2. Extreme heat	No	23	53.49
	Yes	20	46.51
	Total	43	100.00
3. Saltwater inundation (intrusion)	No	39	90.70
	Yes	4	9.30
	Total	43	100.00
4. Lack of water	No	36	83.72
	Yes	7	16.28
	Total	43	100.00
5. Cyclones/ hurricanes	No	25	58.14
	Yes	18	41.86
	Total	43	100.00
6. Heavy rains	No	34	79.07
	Yes	9	20.93
	Total	43	100.00
7. Landslides	No	43	100.00
	Yes	0	0.00
	Total	43	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	34	79.07
	Yes	9	20.93
	Total	43	100.00
9. Drought	No	30	69.77
	Yes	13	30.23
	Total	43	100.00
10. Increased threats to crops from pests and disease	No	31	72.09
	Yes	12	27.91
	Total	43	100.00
11. Invasive species	No	39	90.70
	Yes	4	9.30
	Total	43	100.00
12. Plant diseases	No	21	48.84
	Yes	22	51.16
	Total	43	100.00
13. Coastal erosion	No	43	100.00
	Yes	0	0.00
	Total	43	100.00
14. Riverbank erosion	No	43	100.00
	Yes	0	0.00
	Total	43	100.00
15. Displaced from land	No	43	100.00
	Yes	0	0.00
	Total	43	100.00
16. Other (specify below)	No	43	100.00
	Yes	0	0.00
	Total	43	100.00

18. Black pepper (peppercorns)

Question	Response	Freq.	Percent
1. Flooding	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
2. Extreme heat	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
3. Saltwater inundation (intrusion)	No	8	72.73
	Yes	3	27.27
	Total	11	100.00
4. Lack of water	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
5. Cyclones/ hurricanes	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
6. Heavy rains	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
7. Landslides	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
8. Difficulty predicting when the rainy season will come	No	9	81.82
	Yes	2	18.18
	Total	11	100.00
9. Drought	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
10. Increased threats to crops from pests and disease	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
11. Invasive species	No	10	90.91
	Yes	1	9.09
	Total	11	100.00
12. Plant diseases	No	9	81.82
	Yes	2	18.18
	Total	11	100.00
13. Coastal erosion	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
14. Riverbank erosion	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
15. Displaced from land	No	11	100.00
	Yes	0	0.00
	Total	11	100.00
16. Other (specify below)	No	11	100.00
	Yes	0	0.00
	Total	11	100.00

19. Hot peppers

Question	Response	Freq.	Percent
1. Flooding	No	59	95.16
	Yes	3	4.84
	Total	62	100.00
2. Extreme heat	No	28	45.16
	Yes	34	54.84
	Total	62	100.00
3. Saltwater inundation (intrusion)	No	59	95.16
	Yes	3	4.84
	Total	62	100.00
4. Lack of water	No	52	85.25
	Yes	9	14.75
	Total	61	100.00
5. Cyclones/ hurricanes	No	51	82.26
	Yes	11	17.74
	Total	62	100.00
6. Heavy rains	No	56	90.32
	Yes	6	9.68
	Total	62	100.00
7. Landslides	No	61	98.39
	Yes	1	1.61
	Total	62	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	55	88.71
	Yes	7	11.29
	Total	62	100.00
9. Drought	No	39	62.90
	Yes	23	37.10
	Total	62	100.00
10. Increased threats to crops from pests and disease	No	39	62.90
	Yes	23	37.10
	Total	62	100.00
11. Invasive species	No	50	80.65
	Yes	12	19.35
	Total	62	100.00
12. Plant diseases	No	36	58.06
	Yes	26	41.94
	Total	62	100.00
13. Coastal erosion	No	60	98.36
	Yes	1	1.64
	Total	61	100.00
14. Riverbank erosion	No	61	98.39
	Yes	1	1.61
	Total	62	100.00
15. Displaced from land	No	61	98.39
	Yes	1	1.61
	Total	62	100.00
16. Other (specify below)	No	61	98.39
	Yes	1	1.61
	Total	62	100.00

20. Sakau (Kava)

Question	Response	Freq.	Percent
1. Flooding	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
2. Extreme heat	No	8	80.00
	Yes	2	20.00
	Total	10	100.00
3. Saltwater inundation (intrusion)	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
4. Lack of water	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
5. Cyclones/ hurricanes	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
6. Heavy rains	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
7. Landslides	No	10	100.00
	Yes	0	0.00
	Total	10	100.00

Question	Response	Freq.	Percent
8. Difficulty predicting when the rainy season will come	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
9. Drought	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
10. Increased threats to crops from pests and disease	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
11. Invasive species	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
12. Plant diseases	No	9	90.00
	Yes	1	10.00
	Total	10	100.00
13. Coastal erosion	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
14. Riverbank erosion	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
15. Displaced from land	No	10	100.00
	Yes	0	0.00
	Total	10	100.00
16. Other (specify below)	No	10	100.00
	Yes	0	0.00
	Total	10	100.00

6. RAISING LIVESTOCK AND POULTRY

Q6	Responses	Freq.	Percent
Q6.1 Are you raising livestock and/or poultry?	No	76	46.63
	Yes	87	53.37
	Total	163	100.00
Q6.2 Do you have access to adequate land for rearing livestock and/or poultry?	No	17	17.89
	Yes	78	82.11
	Total	95	100.00
Q6.3 Do you feel it is enough?	Yes	82	88.17
	No	11	11.83
	Total	93	100.00
Q6.4 Do you want more land?	No	78	78.79
	Yes	21	21.21
	Total	99	100.00
Q6.5 Is the land you have access to shared (including family members)?	No	41	42.71
	Yes	55	57.29
	Total	96	100.00

Q6.6 What kind of animals/livestock do you raise or keep? Multiple response item

Q6.6.1 - Q6.6.7	Responses	Freq.	Percent
1. Chickens	No	30	31.58
	Yes	65	68.42
	Total	95	100.00
2. Pigs	No	14	14.74
	Yes	81	85.26
	Total	95	100.00
3. Goats	No	94	98.95
	Yes	1	1.05
	Total	95	100.00
4. Dogs	No	68	71.58
	Yes	27	28.42
	Total	95	100.00
5. Deer	No	94	98.95
	Yes	1	1.05
	Total	95	100.00
6. Bovine	No	94	98.95
	Yes	1	1.05
	Total	95	100.00
7. Other	No	93	97.89
	Yes	2	2.11
	Total	95	100.00

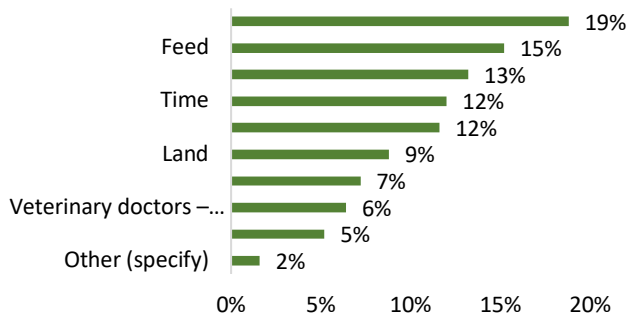
Q6.7 In the last 10 years, have you noticed a change in raising animals?

Responses	Freq.	Percent
No	49	51.58
Yes	9	9.47
Stayed the same	37	38.95
Total	95	100.00

Q6.8 If yes, please explain:

Q6.9	Responses	Freq.	Percent
Would you like to raise livestock/ poultry commercially?	No	68	66.02
	Yes	35	33.98
	Total	103	100.00

Q6.10 What do you feel is the main obstacle to your raising livestock/poultry production?



7. MARINE FOOD SOURCES

Q7.1 Question	Responses	Freq.	Percent
Q7.1.1 Do you harvest marine or freshwater fish/organisms?	No	59	35.54
	Yes	107	64.46
	Total	166	100.00
Q7.1.2 In terms of access to marine resources, do you feel:	It is enough	67	60.91
	Not enough	43	39.09
	Total	110	100.00

Q7.2. How often do you fish or collect food from this location?

Q7.2.1 Mangrove

Particulars	Frequency	Percent
Once a day	9	9.09
Several times a week	4	4.04
Once a week	13	13.13
Once a month	21	21.22
Once every three months or more	19	19.19
Never	33	33.33
Total	99	100

Inner Reef (lagoon)

Particulars	Frequency	Percent
Once a day	6	5.71
Several times a week	14	13.33
Once a week	34	32.38
Once a month	31	29.52
Once every three months or more	14	13.33
Never	6	5.71
Total	105	100.00

Outer reef

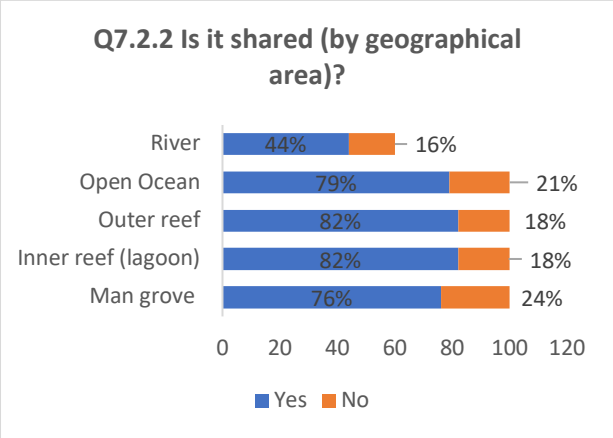
Particulars	Frequency	Percent
Once a day	7	6.86
Several times a week	5	4.90
Once a week	15	14.71
Once a month	32	31.37
Once every three months or more	22	21.57
Never	21	20.59
Total	102	100.00

Open Ocean

Particulars	Frequency	Percent
Once a day	8	7.84
Several times a week	4	3.92
Once a week	7	6.86
Once a month	21	20.59
Once every three months or more	23	22.55
Never	39	38.24
Total	102	100.00

River

Particulars	Frequency	Percent
Once a day	0	0.00
Several times a week	0	0.00
Once a week	0	0.00
Once a month	2	2.56
Once every three months or more	6	7.69
Never	70	89.74
Total	78	100.00



Q7.2.3. In the last 10 years, have these food sources (aquatic species):

Q7.2.4 Mangrove

Particulars	Frequency	Percent
Increased in number	3	4.62
Decreased in number	49	75.38
Stayed the same	13	20.00
Total	65	100.00

Q7.2.5 Inner reef (lagoon)

Particulars	Frequency	Percent
Increased in number	9	10.00
Decreased in number	73	81.11
Stayed the same	8	8.89
Total	90	100.00

Q7.2.6 Outer reef

Particulars	Frequency	Percent
Increased in number	6	8.57
Decreased in number	54	77.14
Stayed the same	10	14.29
Total	70	100.00

Q7.2.7 Open Ocean

Particulars	Frequency	Percent
Increased in number	5	9.80
Decreased in number	40	78.43
Stayed the same	6	11.76
Total	51	100.00

Q7.2.8 River

Particulars	Frequency	Percent
Increased in number	0	0.00
Decreased in number	8	72.73
Stayed the same	3	27.27
Total	11	100.00

8. BARRIERS TO FOOD PRODUCTION

Q8.1	Responses	Freq.	Percent
Would you grow/fish/harvest more food or raise more livestock if you could?	No	60	38.71
	Yes	95	61.29
	Total	155	100.00

Q8.1.2 If yes, what barriers are preventing you from doing so?

Question	Responses	Freq.	Percent
1. No barrier	No	92	91.09
	Yes	9	8.91
	Total	101	100.00
2. Lack of production resources/tools (greenhouses, tractors, aquaculture, etc.)	No	29	28.43
	Yes	73	71.57
	Total	102	100.00
3. Lack of the source of finance	No	33	32.35
	Yes	69	67.65
	Total	102	100.00
4. No land or ocean available	No	82	80.39
	Yes	20	19.61
	Total	102	100.00
5. Lack of management skills	No	54	52.94
	Yes	48	47.06
	Total	102	100.00

Question	Resp.	Freq.	Percent
6. Difficulty getting to the land or sea	No	91	89.22
	Yes	11	10.78
	Total	102	100.00
7. Lack of the market to sell the produce	No	93	91.18
	Yes	9	8.82
	Total	102	100.00
8. Lack of ways to keep my foods fresh	No	85	83.33
	Yes	17	16.67
	Total	102	100.00
9. Lack of ways to process and dry the foods	No	87	85.29
	Yes	14	14.71
	Total	102	
10. Lack of storage to hold and keep food for home use and/or sale (refrigeration)	No	75	73.53
	Yes	27	26.47
	Total	102	100.00
11. Lack of new tech & infrastructure	No	82	80.39
	Yes	20	19.61
	Total	102	100.00
12. Transportation to market	No	90	88.24
	Yes	12	11.76
	Total	102	100.00
13.Disease or pest infestation	No	65	63.73
	Yes	37	36.27
	Total	102	100.00
14. Permit/ regulation issues	No	94	92.16
	Yes	8	7.84
	Total	102	100.00
15. Weather issues	No	63	61.76
	Yes	39	38.24
	Total	102	100.00
16. Labor	No	52	50.98
	Yes	50	49.02
	Total	102	100.00
17. Time	No	38	37.62
	Yes	63	62.38
	Total	101	100.00
18. Other	No	101	98.06
	Yes	2	1.94
	Total	103	100.00

Q8.2.1 Climate change is causing a lot of problems for my farm/fishing.

Particulars	Freq.	Percent
Strongly disagree	2	1.23
Disagree	2	1.23
Neither agree nor disagree	38	23.46
Agree	56	34.57
Strongly agree	64	39.51
Total	162	100.00

8.2.2 Climate change is making it harder for me to grow crops/fish/harvest.

Particulars	Freq.	Percent
Strongly disagree	2	1.23
Disagree	12	7.36
Neither agree nor disagree	49	30.06
Agree	49	30.06
Strongly agree	51	31.29
Total	163	100.00

Q8.2.3 Climate change is making it harder for me to raise livestock.

Particulars	Freq.	Percent
Strongly disagree	4	2.45
Disagree	33	20.25
Neither agree nor disagree	69	42.33
Agree	27	16.56
Strongly agree	30	18.40
Total	163	100.00

Q8.2.4. Climate change is causing a lot of extreme weather.

Particulars	Freq.	Percent
Strongly disagree	2	1.24
Disagree	5	3.11
Neither agree nor disagree	24	14.91
Agree	46	28.57
Strongly agree	84	52.17
Total	161	100.00

Q8.2.5 I might have to stop farming because of climate change.

Particulars	Freq.	Percent
Strongly disagree	6	3.73
Disagree	49	30.43
Neither agree nor disagree	57	35.40
Agree	20	12.42
Strongly agree	29	18.01
Total	161	100.00

Q8.2.6 Climate change has caused me to make a lot of changes on my farm.

Particulars	Freq.	Percent
Strongly disagree	3	1.86
Disagree	27	16.77
Neither agree nor disagree	61	37.89
Agree	39	24.22
Strongly agree	31	19.25
Total	161	100.00

Q8.2.7 Climate change is the biggest problem facing my farm right now.

Particulars	Freq.	Percent
Strongly disagree	3	1.85
Disagree	20	12.35
Neither agree nor disagree	57	35.19
Agree	39	24.07
Strongly agree	43	26.54
Total	162	100.00

Q8.3.1	Responses	Freq.	Percent
Has a change in climate impacted your access to clean fresh water?	No	136	83.44
	Yes	27	16.56
	Total	163	100.00

Q8.4.1	Responses	Freq.	Percent
Have you changed crop types (including marine) in the past 10 years?	No	46	88.46
	Yes	6	11.54
	Total	52	100.00

Q8.4.2	Responses	Freq.	Percent
Was climate change an important reason for changing crop types?	No	10	58.82
	Yes	7	41.18
	Total	17	100.00

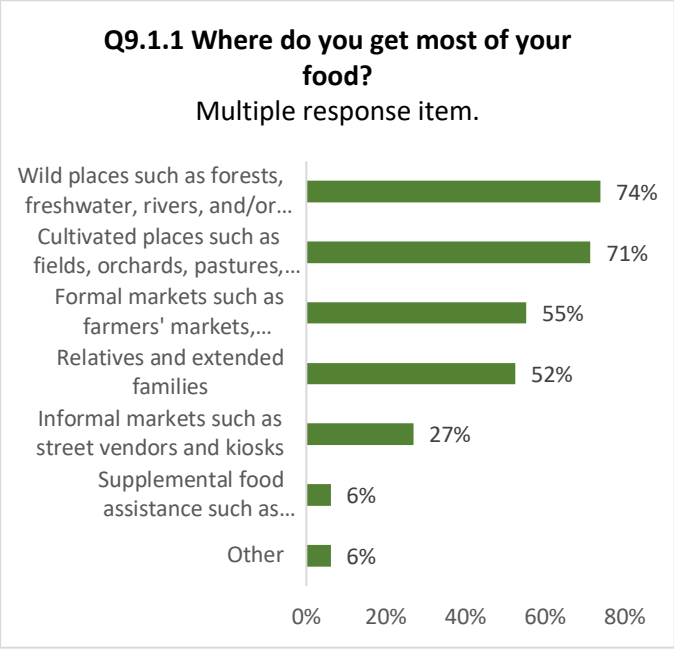
Q8.4.4	Responses	Freq.	Percent
Have you changed/adapted any of your farming practices (including fishing) in the past 10 years?	No	45	78.95
	Yes	12	21.05
	Total	57	100.00

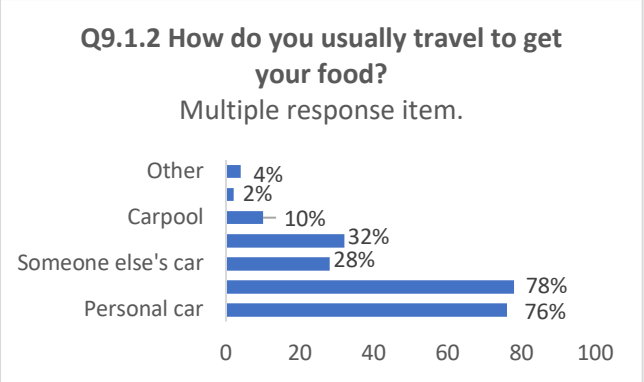
Q8.4.5	Responses	Freq.	Percent
Was climate change an important reason for changing/ adapting your farming practices (including fishing)?	No	6	33.33
	Yes	12	66.67
	Total	18	100.00

9. DIET AND FOOD ACCESS, AVAILABILITY AND AFFORDABILITY

Q9.1.1 where do you get most of your food?

Question	Response	Freq.	Percent
1. Wild places such as forests, freshwater, rivers, and/or the ocean	No	43	26.22
	Yes	121	73.78
	Total	164	100.00
2. Cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	47	28.66
	Yes	117	71.34
	Total	164	100.00
3. Informal markets such as street vendors and kiosks	No	120	73.17
	Yes	44	26.83
	Total	164	100.00
4. Formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	73	44.79
	Yes	90	55.21
	Total	163	100.00
5. Supplemental food assistance such as government food rations, food from churches, schools and community organizations, etc.,	No	154	93.90
	Yes	10	6.10
	Total	164	100.00
6. Relatives and extended families	No	78	47.56
	Yes	86	52.44
	Total	164	100.00
7. Other	No	154	93.90
	Yes	10	6.10
	Total	164	100.00





Q9.1.3 How long does it take you to reach the location where you get a majority of the food that you produce/harvest?

Particulars	Freq.	Percent
Not much time	46	28.75
5-30 minutes	64	40.00
30-45 minutes	36	22.50
More than 45 minutes	14	8.75
Total	160	100.00

Q9.1.4 How long does it take you to reach the location where you get a majority of the food that you're purchase?

Particulars	Freq.	Percent
Not much time	40	24.69
5-30 minutes	60	37.04
30-45 minutes	32	19.75
More than 45 minutes	30	18.52
Total	162	100.00

Q9.1.6 What barriers (if any) prevent you from attaining healthy, nutritious food?

Particular	Resp.	Freq.	Percent
None	No	92	56.79
	Yes	70	43.21
	Total	162	100.00
Too far to walk, no other means of transportation	No	145	90.06
	Yes	16	9.94
	Total	161	100.00
Health problems interfere with ability to walk or harvest crops (including marine)	No	135	83.85
	Yes	26	16.15
	Total	161	100.00
Lack of assistance from relatives or extended families	No	140	86.96
	Yes	21	13.04
	Total	161	100.00
Affordability	No	113	70.19
	Yes	48	29.81
	Total	161	100.00
Availability	No	109	67.70
	Yes	52	32.30
	Total	161	100.00
Other	No	139	86.34
	Yes	22	13.66
	Total	161	100.00

Q9.2.1 (I/we) were worried (I/we) wouldn't have enough healthy and nutritious food to eat.

Particulars	Freq.	Percent
Never	62	37.58
Rarely (only 1 or 2 months)	30	18.18
Sometimes (some months, but not every month)	60	36.36
Often (almost every month or more)	13	7.88
Total	165	100.00

Q9.2.2 (I/we) couldn't afford to eat healthy and nutritious food.

Particulars	Freq.	Percent
Never	73	44.24
Rarely (only 1 or 2 months)	29	17.58
Sometimes (some months, but not every month)	56	33.94
Often (almost every month or more)	7	4.24
Total	165	100.00

Q9.2.3 (I/we) couldn't afford to eat the foods (I/we) prefer and had to eat different types of foods.

Particulars	Freq.	Percent
Never	60	36.59
Rarely (only 1 or 2 months)	30	18.29
Sometimes (some months, but not every month)	65	39.63
Often (almost every month or more)	9	5.49
Total	164	100.00

Q9.2.4 (I/we) skipped meals because there wasn't enough money for food.

Particulars	Freq.	Percent
Never	116	70.30
Rarely (only 1 or 2 months)	19	11.52
Sometimes (some months, but not every month)	26	15.76
Often (almost every month or more)	4	2.42
Total	165	100.00

Q9.2.5 (I/we) ate less than preferred because there wasn't enough money for food.

Particulars	Freq.	Percent
Never	100	60.61
Never	26	15.76
Rarely (only 1 or 2 months)	37	22.42
Sometimes (some months, but not every month)	2	1.21
Total	165	100.00

Q9.2.6 (I/we) were hungry because there wasn't enough money for food.

Particulars	Freq.	Percent
Never	117	70.91
Rarely (only 1 or 2 months)	15	9.09
Sometimes (some months, but not every month)	32	19.39
Often (almost every month or more)	1	0.61
Total	165	100.00

Q9.2.7 (I/we) went a whole day without eating.

Particulars	Freq.	Percent
Never	137	83.03
Rarely (only 1 or 2 months)	16	9.70
Sometimes (some months, but not every month)	12	7.27
Often (almost every month or more)	0	0
Total	165	100.00

For each food, write the answers in each column according to the numbers specified in the table header. If a food is NOT consumed (9.1.1), you may skip the other questions in that row.

Q9.3 (1 – 40) Consumption Frequency

1. Rice

Particulars	Freq.	Percent
Never	1	0.61
1-4 times a week	39	23.78
5-7 times a week	29	17.68
Multiple times a day	95	57.93
Total	164	100.00

2. Taro

Particulars	Freq.	Percent
Never	3	1.85
1-4 times a week	104	64.20
5-7 times a week	46	28.40
Multiple times a day	9	5.56
Total	162	100.00

3. Breadfruit

Particulars	Freq.	Percent
Never	19	14.39
1-4 times a week	113	71.52
5-7 times a week	20	12.66
Multiple times a day	7	4.43
Total	158	100.00

4. Banana

Particulars	Freq.	Percent
Never	5	3.07
1-4 times a week	113	69.33
5-7 times a week	37	22.70
Multiple times a day	8	4.91
Total	163	100.00

5. Coconut

Particulars	Freq.	Percent
Never	9	4.96
1-4 times a week	111	73.51
5-7 times a week	25	16.56
Multiple times a day	6	3.97
Total	151	100.00

6. Copra

Particulars	Freq.	Percent
Never	12	8.11
1-4 times a week	106	71.62
5-7 times a week	22	14.86
Multiple times a day	8	5.41
Total	148	100.00

7. Yam

Particulars	Freq.	Percent
Never	25	18.25
1-4 times a week	93	67.88
5-7 times a week	14	10.22
Multiple times a day	5	3.65
Total	137	100.00

8. Sweet potatoes

Particulars	Freq.	Percent
Never	42	28.76
1-4 times a week	82	56.16
5-7 times a week	18	12.33
Multiple times a day	4	2.74
Total	146	100.00

9. Tapioca

Particulars	Freq.	Percent
Never	31	21.83
1-4 times a week	92	64.79
5-7 times a week	18	12.68
Multiple times a day	1	0.70
Total	142	100.00

10. Soursop

Particulars	Freq.	Percent
Never	57	44.88
1-4 times a week	58	45.67
5-7 times a week	10	7.87
Multiple times a day	2	1.57
Total	127	100.00

11. Locally grown/collected fresh vegetables

Particulars	Freq.	Percent
Never	26	17.80
1-4 times a week	84	57.53
5-7 times a week	29	19.86
Multiple times a day	7	4.79
Total	146	100.00

12. Imported vegetables fresh

Particulars	Freq.	Percent
Never	27	19.57
1-4 times a week	72	52.17
5-7 times a week	32	23.19
Multiple times a day	7	5.07
Total	138	100.00

13. Canned/processed vegetables

Particulars	Freq.	Percent
Never	43	30.94
1-4 times a week	64	46.04
5-7 times a week	22	15.83
Multiple times a day	10	7.19
Total	139	100.00

14. Local fresh fruits

Particulars	Freq.	Percent
Never	24	16.78
1-4 times a week	93	65.03
5-7 times a week	20	13.99
Multiple times a day	6	4.20
Total	143	100.00

15. Imported fresh fruits

Particulars	Freq.	Percent
Never	49	36.29
1-4 times a week	68	50.37
5-7 times a week	12	8.89
Multiple times a day	6	4.44
Total	135	100.00

16. Canned/processed fruits

Particulars	Freq.	Percent
Never	52	39.19
1-4 times a week	63	47.37
5-7 times a week	14	10.53
Multiple times a day	4	3.01
Total	133	100.00

17. Local citrus

Particulars	Freq.	Percent
Never	40	31.50
1-4 times a week	72	56.69
5-7 times a week	11	8.66
Multiple times a day	4	3.15
Total	127	100.00

18. Imported citrus

Particulars	Freq.	Percent
Never	88	57.52
1-4 times a week	47	30.72
5-7 times a week	11	7.19
Multiple times a day	7	4.58
Total	153	100.00

19. Open Ocean fish

Particulars	Freq.	Percent
Never	20	13.79
1-4 times a week	96	66.21
5-7 times a week	23	15.86
Multiple times a day	6	4.14
Total	145	100.00

20. Reef fish

Particulars	Freq.	Percent
Never	12	8.28
1-4 times a week	99	68.28
5-7 times a week	26	17.93
Multiple times a day	8	5.52
Total	145	100.00

21. Sea cucumbers

Particulars	Freq.	Percent
Never	112	91.80
1-4 times a week	5	4.10
5-7 times a week	4	3.28
Multiple times a day	1	0.82
Total	122	100.00

22. Clams/oysters

Particulars	Freq.	Percent
Never	62	45.25
1-4 times a week	68	49.64
5-7 times a week	5	3.65
Multiple times a day	2	1.46
Total	137	100.00

23. Crustaceans such as shrimp, lobster, mangrove crabs

Particulars	Freq.	Percent
Never	49	34.51
1-4 times a week	77	54.23
5-7 times a week	11	7.75
Multiple times a day	5	3.52
Total	142	100.00

24. Octopus and squid

Particulars	Freq.	Percent
Never	72	53.73
1-4 times a week	54	40.30
5-7 times a week	7	5.22
Multiple times a day	1	0.75
Total	134	100.00

25. Meat and meat products: fresh/local

Particulars	Freq.	Percent
Never	18	12.00
1-4 times a week	93	62.00
5-7 times a week	30	20.00
Multiple times a day	9	6.00
Total	150	100.00

26. Meat and meat products: processed

Particulars	Freq.	Percent
Never	11	7.33
1-4 times a week	85	56.67
5-7 times a week	35	23.33
Multiple times a day	19	12.67
Total	150	100.00

27. Dairy (milk, cheese, yogurt)

Particulars	Freq.	Percent
Never	41	29.08
1-4 times a week	72	51.06
5-7 times a week	16	11.35
Multiple times a day	12	8.51
Total	141	100.00

28. Eggs

Particulars	Freq.	Percent
Never	21	14.58
1-4 times a week	84	58.33
5-7 times a week	27	18.75
Multiple times a day	12	8.33
Total	144	100.00

29. Black pepper

Particulars	Freq.	Percent
Never	49	40.17
1-4 times a week	46	37.70
5-7 times a week	14	11.48
Multiple times a day	13	10.66
Total	122	100.00

30. Hot peppers

Particulars	Freq.	Percent
Never	40	31.01
1-4 times a week	65	50.39
5-7 times a week	12	9.30
Multiple times a day	12	9.30
Total	129	100.00

31. Sodas

Particulars	Freq.	Percent
Never	25	18.52
1-4 times a week	60	44.44
5-7 times a week	20	14.81
Multiple times a day	30	22.22
Total	135	100.00

32. Candies, cakes, cookies, sugary foods

Particulars	Freq.	Percent
Never	30	20.27
1-4 times a week	67	45.27
5-7 times a week	26	17.57
Multiple times a day	25	16.89
Total	148	100.00

33. Coffee and tea

Particulars	Freq.	Percent
Never	22	15.38
1-4 times a week	56	39.16
5-7 times a week	30	20.98
Multiple times a day	35	24.48
Total	143	100.00

34. Bread, crackers, biscuit

Particulars	Freq.	Percent
Never	15	10.10
1-4 times a week	75	51.02
5-7 times a week	30	20.41
Multiple times a day	27	18.37
Total	147	100.00

35. Pasta and ramen noodles

Particulars	Freq.	Percent
Never	13	8.67
1-4 times a week	73	48.67
5-7 times a week	29	19.33
Multiple times a day	35	23.33
Total	150	100.00

36. Boxed cereal

Particulars	Freq.	Percent
Never	47	32.87
1-4 times a week	56	39.16
5-7 times a week	25	17.48
Multiple times a day	15	10.49
Total	143	100.00

37. Sakau (Kava)

Particulars	Freq.	Percent
Never	104	92.03
1-4 times a week	7	6.19
5-7 times a week	0	0.00
Multiple times a day	2	1.77
Total	113	100.00

38. Imported juice

Particulars	Freq.	Percent
Never	48	33.57
1-4 times a week	53	37.06
5-7 times a week	21	14.69
Multiple times a day	21	14.69
Total	143	100.00

39. Imported coconut milk

Particulars	Freq.	Percent
Never	69	53.08
1-4 times a week	35	26.92
5-7 times a week	16	12.31
Multiple times a day	10	7.69
Total	130	100.00

40. Other

Particulars	Freq.	Percent
Never	20	100.00
1-4 times a week	0	0
5-7 times a week	0	0
Multiple times a day	0	0
Total	20	100.00

Q9.3.2 (1-40)Is this a favorite food?

Question	Responses	Frequency	Percent
1. Rice	No	55	33.54
	Yes	109	66.46
	Total	164	100.00
2. Taro	No	7	4.35
	Yes	154	95.65
	Total	161	100.00
3. Breadfruit	No	45	29.61
	Yes	107	70.39
	Total	152	100.00
4. Banana	No	34	21.25
	Yes	126	78.75
	Total	160	100.00
5. Coconut	No	17	11.33
	Yes	133	88.67
	Total	150	100.00
6. Copra (coconut product)	No	24	16.78
	Yes	119	83.22
	Total	143	100.00
7. Yam	No	29	23.58
	Yes	94	76.42
	Total	123	100.00
8. Sweet Potatoes	No	15	12.93
	Yes	101	87.07
	Total	116	100.00
9. Tapioca	No	23	19.17
	Yes	97	80.83
	Total	119	100.00
10. Soursop	No	42	44.21
	Yes	53	55.79
	Total	95	100.00
11. Locally grown/collected fresh vegetables	No	14	10.45
	Yes	120	89.55
	Total	134	100.00
12. Imported Vegetables Fresh	No	24	20.17
	Yes	95	79.83
	Total	119	100.00
13. Vegetables: Canned/ processed	No	47	43.93
	Yes	60	56.07
	Total	107	100.00
14. Local fresh fruits	No	15	11.54
	Yes	115	88.46
	Total	130	100.00
15. Imported fresh fruits	No	35	33.98
	Yes	68	66.02
	Total	103	100.00
16. Fruits: Canned/ processed	No	47	48.96
	Yes	49	51.04
	Total	96	100.00
17. Local citrus	No	30	30.00
	Yes	70	70.00
	Total	100	100.00
18. Imported citrus	No	45	56.96
	Yes	34	43.04
	Total	79	100.00
19. Open Ocean fish	No	12	9.02
	Yes	121	90.98
	Total	133	100.00
20. Reef fish	No	11	7.80
	Yes	129	92.20
	Total	141	100.00
21. Sea cucumbers	No	36	73.47
	Yes	13	26.53
	Total	49	100.00
22. Clams/ oysters	No	21	22.34
	Yes	73	77.66
	Total	94	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	12	11.65
	Yes	91	88.35
	Total	103	100.00
24. Octopus and squid	No	14	17.72
	Yes	65	82.28
	Total	79	100.00
25. Meat and meat products: fresh/ local	No	5	3.70
	Yes	130	96.30
	Total	135	100.00
26. Meat and meat products: processed	No	21	14.79
	Yes	121	85.21
	Total	142	100.00
27. Dairy (milk, cheese, yogurt)	No	28	25.00
	Yes	84	75.00
	Total	112	100.00

Question	Responses	Frequency	Percent
28. Eggs	No	24	18.75
	Yes	104	81.25
	Total	128	100.00
29. Black Pepper	No	29	33.33
	Yes	58	66.67
	Total	87	100.00
30. Hot peppers	No	33	32.35
	Yes	69	67.65
	Total	102	100.00
31. Sodas	No	23	20.35
	Yes	90	79.65
	Total	113	100.00
32. Candies, cakes, cookies, sugary foods	No	25	20.49
	Yes	97	79.51
	Total	122	100.00
33. Coffee and tea	No	19	14.84
	Yes	109	85.16
	Total	128	100.00
34. Bread, crackers, biscuit	No	22	16.54
	Yes	111	83.46
	Total	133	100.00
35. Pasta and ramen noodles	No	22	15.94
	Yes	116	84.06
	Total	138	100.00
36. Boxed cereal	No	16	15.53
	Yes	87	84.47
	Total	103	100.00
37. Sakau (Kava)	No	32	65.31
	Yes	17	34.69
	Total	49	100.00
38. Imported juice	No	29	27.62
	Yes	76	72.38
	Total	105	100.00
39. Imported coconut milk	No	35	42.17
	Yes	48	57.83
	Total	83	100.00
40. Other	No	5	83.33
	Yes	1	16.67
	Total	6	100.00

Q9.3.3 (1-40) Is there often a shortage:

Question	Responses	Frequency	Percent
1. Rice	No	118	72.39
	Yes	45	27.61
	Total	163	100.00
2. Taro	No	104	65.00
	Yes	56	35.00
	Total	160	100.00
3. Breadfruit	No	52	35.14
	Yes	96	64.86
	Total	148	100.00
4. Banana	No	93	58.13
	Yes	67	41.88
	Total	160	100.00
5. Coconut	No	106	73.61
	Yes	38	26.39
	Total	144	100.00
6. Copra (coconut product)	No	104	75.36
	Yes	34	24.64
	Total	138	100.00
7. Yam	No	47	39.83
	Yes	71	60.17
	Total	118	100.00
8. Sweet Potatoes	No	44	40.00
	Yes	66	60.00
	Total	110	100.00
9. Tapioca	No	50	43.86
	Yes	64	56.14
	Total	114	100.00
10. Soursop	No	40	46.51
	Yes	46	53.49
	Total	86	100.00
11. Locally grown/collected fresh vegetables	No	66	51.97
	Yes	61	48.03
	Total	127	100.00
12. Imported fresh vegetables	No	52	45.61
	Yes	62	54.39
	Total	114	100.00
13. Vegetables: Canned/ processed	No	65	65.00
	Yes	35	35.00
	Total	100	100.00
14. Local fresh fruits	No	49	39.84
	Yes	74	60.16
	Total	123	100.00
15. Imported fresh fruits	No	55	57.29
	Yes	41	42.71
	Total	96	100.00
16. Fruits: Canned/ processed	No	62	69.66
	Yes	27	30.34
	Total	89	100.00
17. Local citrus	No	37	40.22
	Yes	55	59.78
	Total	92	100.00
18. Imported citrus	No	42	60.87
	Yes	27	39.13
	Total	69	100.00
19. Open Ocean fish	No	55	41.98
	Yes	76	58.02
	Total	131	100.00
20. Reef fish	No	54	40.00
	Yes	81	60.00
	Total	135	100.00
21. Sea cucumbers	No	29	70.73
	Yes	12	29.27
	Total	41	100.00

Question	Responses	Freq.	Percent
22. Clams/ oysters	No	44	50.00
	Yes	44	50.00
	Total	88	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	47	47.47
	Yes	52	52.53
	Total	99	100.00
24. Octopus and squid	No	42	56.00
	Yes	33	44.00
	Total	75	100.00
25. Meat and meat products: fresh/ local	No	57	43.18
	Yes	75	56.82
	Total	132	100.00
26. Meat and meat products: processed	No	76	54.68
	Yes	63	45.32
	Total	139	100.00
27. Dairy (milk, cheese, yogurt)	No	61	55.96
	Yes	48	44.04
	Total	109	100.00
28. Eggs	No	49	39.20
	Yes	76	60.80
	Total	125	100.00
29. Black Pepper	No	53	63.10
	Yes	31	36.90
	Total	84	100.00
30. Hot peppers	No	67	70.53
	Yes	28	29.47
	Total	95	100.00
31. Sodas	No	71	64.55
	Yes	39	35.45
	Total	110	100.00
32. Candies, cakes, cookies, sugary foods	No	75	63.56
	Yes	43	36.44
	Total	118	100.00
33. Coffee and tea	No	81	65.85
	Yes	42	34.15
	Total	123	100.00
34. Bread, crackers, biscuit	No	85	65.38
	Yes	45	34.62
	Total	130	100.00
35. Pasta and ramen noodles	No	82	60.29
	Yes	54	39.71
	Total	136	100.00
36. Boxed cereal	No	64	64.65
	Yes	35	35.35
	Total	99	100.00
37. Sakau (Kava)	No	31	72.09
	Yes	12	27.91
	Total	43	100.00
38. Imported juice	No	64	63.37
	Yes	37	36.63
	Total	101	100.00
39. Imported coconut milk	No	61	79.22
	Yes	16	20.78
	Total	77	100.00
40. Other	No	88.89	88.89
	Yes	11.11	11.11
	Total	100.00	100.00

Q9.3.4 (1-40) Has a changing climate impacted the availability of this food?

Question	Responses	Frequency	Percent
1. Rice	No	117	85.40
	Yes	20	14.60
	Total	137	100.00
2. Taro	No	72	53.73
	Yes	62	46.27
	Total	134	100.00
3. Breadfruit	No	61	44.53
	Yes	76	55.47
	Total	137	100.00
4. Banana	No	76	54.68
	Yes	63	45.32
	Total	139	100.00
5. Coconut	No	81	68.64
	Yes	37	31.36
	Total	118	100.00
6. Copra (coconut product)	No	76	69.72
	Yes	33	30.28
	Total	109	100.00
7. Yam	No	44	41.12
	Yes	63	58.88
	Total	107	100.00
8. Sweet potatoes	No	42	41.18
	Yes	60	58.82
	Total	102	100.00
9. Tapioca	No	42	40.78
	Yes	61	59.22
	Total	103	100.00
10. Soursop	No	39	51.32
	Yes	37	48.68
	Total	76	100.00
11. Locally grown/collected fresh vegetables	No	58	51.33
	Yes	55	48.67
	Total	113	100.00
12. Imported Vegetables Fresh	No	81	76.42
	Yes	25	23.58
	Total	106	100.00
13. Vegetables: Canned/ processed	No	73	77.66
	Yes	21	22.34
	Total	94	100.00
14. Local fresh fruits	No	49	42.61
	Yes	66	57.39
	Total	115	100.00

Question	Responses	Freq.	Percent
15. Imported fresh fruits	No	70	75.27
	Yes	23	24.73
	Total	93	100.00
16. Fruits: Canned/ processed	No	69	81.18
	Yes	16	18.82
	Total	85	100.00
17. Local citrus	No	45	51.14
	Yes	43	48.86
	Total	88	100.00
18. Imported citrus	No	57	80.28
	Yes	14	19.72
	Total	71	100.00
19. Open Ocean fish	No	58	47.93
	Yes	63	52.07
	Total	121	100.00
20. Reef fish	No	54	41.86
	Yes	75	58.14
	Total	129	100.00
21. Sea cucumbers	No	28	63.64
	Yes	16	36.36
	Total	44	100.00
22. Clams/ oysters	No	46	52.27
	Yes	42	47.73
	Total	88	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	47	47.47
	Yes	52	52.53
	Total	99	100.00
24. Octopus and squid	No	38	54.29
	Yes	32	45.71
	Total	70	100.00
25. Meat and meat products: fresh/ local	No	77	60.16
	Yes	51	39.84
	Total	128	100.00
26. Meat and meat products: processed	No	98	74.24
	Yes	34	25.76
	Total	132	100.00
27. Dairy (milk, cheese, yogurt)	No	76	72.38
	Yes	29	27.62
	Total	105	100.00
28. Eggs	No	86	71.07
	Yes	35	28.93
	Total	121	100.00
29. Black pepper	No	54	78.26
	Yes	15	21.74
	Total	69	100.00
30. Hot peppers	No	53	66.25
	Yes	27	33.75
	Total	80	100.00
31. Sodas	No	79	78.22
	Yes	22	21.78
	Total	101	100.00
32. Candies, cakes, cookies, sugary foods	No	89	81.65
	Yes	20	18.35
	Total	109	100.00
33. Coffee and Tea	No	90	81.82
	Yes	20	18.18
	Total	110	100.00
34. Bread, Crackers, Biscuit	No	99	83.90
	Yes	19	16.10
	Total	118	100.00
35. Pasta and ramen noodles	No	101	81.45
	Yes	23	18.55
	Total	124	100.00
36. Boxed cereal	No	71	76.34
	Yes	22	23.66
	Total	93	100.00
37. Sakau (Kava)	No	32	76.19
	Yes	10	23.81
	Total	42	100.00
38. Imported juice	No	76	79.17
	Yes	20	20.83
	Total	96	100.00
39. Imported coconut milk	No	62	83.78
	Yes	12	16.22
	Total	74	100.00
40. Other	No	8	88.89
	Yes	1	11.11
	Total	9	100.00

9.3.6 (1-40) Has a changing climate impacted the affordability of this food?

Question	Responses	Freq.	Percent
1. Rice	No	89	66.92
	Yes	44	33.08
	Total	133	100.00
2. Taro	No	109	82.58
	Yes	23	17.42
	Total	132	100.00
3. Breadfruit	No	109	80.15
	Yes	27	19.85
	Total	136	100.00
4. Banana	No	109	81.34
	Yes	25	18.66
	Total	134	100.00
5. Coconut	No	93	82.30
	Yes	20	17.70
	Total	113	100.00
6. Copra (coconut product)	No	87	83.65
	Yes	17	16.35
	Total	104	100.00
7. Yam	No	79	73.15
	Yes	29	26.85
	Total	108	100.00

Question	Responses	Freq.	Percent
8. Sweet potatoes	No	68	69.39
	Yes	30	30.61
	Total	98	100.00
9. Tapioca	No	73	73.00
	Yes	27	27.00
	Total	100	100.00
10. Soursop	No	59	73.75
	Yes	21	26.25
	Total	80	100.00
11. Locally grown/ collected fresh vegetables	No	71	66.36
	Yes	36	33.64
	Total	107	100.00
12. Imported Vegetables Fresh	No	55	55.00
	Yes	45	45.00
	Total	100	100.00
13. Vegetables: Canned/ processed	No	55	63.22
	Yes	32	36.78
	Total	87	100.00
14. Local fresh fruits	No	77	70.00
	Yes	33	30.00
	Total	110	100.00
15. Imported fresh fruits	No	53	60.92
	Yes	34	39.08
	Total	87	100.00
16. Fruits: Canned/ processed	No	49	61.25
	Yes	31	38.75
	Total	80	100.00
17. Local citrus	No	66	75.86
	Yes	21	24.14
	Total	87	100.00
18. Imported citrus	No	45	69.23
	Yes	20	30.77
	Total	65	100.00
19. Open Ocean fish	No	68	58.62
	Yes	48	41.38
	Total	116	100.00
20. Reef fish	No	74	59.68
	Yes	50	40.32
	Total	124	100.00
21. Sea cucumbers	No	29	72.50
	Yes	11	27.50
	Total	40	100.00
22. Clams/ oysters	No	56	67.47
	Yes	27	32.53
	Total	83	100.00
23. Crustaceans such as shrimp, lobster, mangrove crabs	No	62	68.13
	Yes	29	31.87
	Total	91	100.00
24. Octopus and squid	No	45	64.29
	Yes	25	35.71
	Total	70	100.00

Question	Responses	Frequency	Percent
25. Meat and meat products: fresh/ local	No	82	67.77
	Yes	39	32.23
	Total	121	100.00
26. Meat and meat products: processed	No	69	55.65
	Yes	55	44.35
	Total	124	100.00
27. Dairy (milk, cheese, yogurt)	No	54	55.67
	Yes	43	44.33
	Total	97	100.00
28. Eggs	No	63	53.85
	Yes	54	46.15
	Total	117	100.00
29. Black pepper	No	51	73.91
	Yes	18	26.09
	Total	69	100.00
30. Hot peppers	No	61	78.21
	Yes	17	21.79
	Total	78	100.00
31. Sodas	No	55	55.56
	Yes	44	44.44
	Total	99	100.00
32. Candies, cakes, cookies, sugary foods	No	65	61.90
	Yes	40	38.10
	Total	105	100.00
33. Coffee and tea	No	67	63.21
	Yes	39	36.79
	Total	106	100.00
34. Bread, crackers, biscuit	No	68	60.71
	Yes	44	39.29
	Total	112	100.00
35. Pasta and ramen noodles	No	70	59.83
	Yes	47	40.17
	Total	117	100.00
36. Boxed cereal	No	52	57.78
	Yes	38	42.22
	Total	90	100.00
37. Sakau (Kava)	No	32	71.11
	Yes	13	28.89
	Total	45	100.00
38. Imported Juice	No	52	59.09
	Yes	36	40.91
	Total	88	100.00
39. Imported coconut milk	No	43	66.15
	Yes	22	33.85
	Total	65	100.00
40. Other	No	7	87.50
	Yes	1	12.50
	Total	8	100.00

Q9.4.2	Resp.	Freq.	Percent
Due to climate change, have the places you get food from (e.g., wild places, cultivated places, informal markets) changed?	No	81	50.00
	Yes	81	50.00
	Total	162	100.00

Q9.4.3 If yes, where are you getting more food from?

Question	Resp.	Freq.	Percent
1. More from wild places such as forests, freshwater, rivers, and/or the ocean	No	41	48.81
	Yes	43	51.19
	Total	84	100.00
2. More from cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	38	44.71
	Yes	47	55.29
	Total	85	100.00
3. More from informal markets such as street vendors and kiosks	No	49	57.65
	Yes	36	42.35
	Total	85	100.00
4. More from formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	38	45.24
	Yes	46	54.76
	Total	84	100.00
5. More from supplemental food assistance such as government food rations, food from churches, schools, and community organizations, etc.	No	80	91.95
	Yes	7	8.05
	Total	87	100.00
6. More from relatives and extended families	No	52	60.47
	Yes	34	39.53
	Total	86	100.00
7. More from other	No	84	97.67
	Yes	2	2.33
	Total	86	100.00

Question	Responses	Freq.	Percent
Q9.4.4 If yes, is it more difficult or less difficult to access foods?	More difficult	29	35.80
	Less difficult	52	63.19
	Total	81	100.00
Q9.4.5 Are you concerned with how climate change will impact the foods that you eat?	No	32	19.88
	Yes	129	80.12
	Total	161	100.00

Q9.4.6 If yes: why? Is it because you feel climate change will impact: Multiple response item.

Question	Responses	Freq.	Percent
Food availability	No	11	8.40
	Yes	120	91.60
	Total	131	100.00
Food affordability	No	47	36.15
	Yes	83	63.85
	Total	130	100.00
Food quality	No	27	20.77
	Yes	103	79.23
	Total	130	100.00
Food safety	No	38	29.46
	Yes	91	70.54
	Total	129	100.00
Other	No	128	98.46
	Yes	2	1.54
	Total	130	100.00

10. IMPACT OF COVID 19

Question	Responses	Freq.	Percent
Q10.1 During the COVID 19 pandemic, did your consumption of local foods change?	No	134	81.71
	Yes	30	18.29
	Total	164	100.00
Q10.2 If yes, how did it change?	Increase	7	22.58
	Decrease	19	61.29
	Stay the same	5	16.13
	Total	31	100.00
Q10.3 During the COVID 19 pandemic, did your production of local foods change?	No	132	80.98
	Yes	31	19.02
	Total	163	100.00
Q10.4 If yes, how did it change?	Increase	9	29.03
	Decrease	20	64.52
	Stay the same	2	6.45
	Total	31	100.00
Q10.5 During the COVID 19 pandemic, did demand for local food change?	No	136	82.42
	Yes	29	17.58
	Total	165	100.00
Q10.6 If yes, did it… 1.Increased for local consumption	No	11	34.38
	Yes	21	65.63
	Total	32	100.00

2. Decreased local consumption	No	**28**	**82.35**
	Yes	6	17.65
	Total	34	100.00
3. Increased for export	No	26	83.87
	Yes	5	16.13
	Total	31	100.00
4. Decreased for export	No	26	86.67
	Yes	4	13.33
	Total	30	100.00
5. Stayed the same	No	27	87.10
	Yes	4	12.90
	Total	31	100.00
Q10.7 During COVID-19, have you sent your food products overseas (both commercial and to family members)?	No	135	83.33
	Yes	27	16.67
	Total	162	100.00

Q10.8 If yes, which crops were in most demand?

Question	Responses	Frequency	Percent
1. Swamp taro	No	10	33.33
	Yes	20	66.67
	Total	30	100.00
2. Land taro	No	12	40.00
	Yes	18	60.00
	Total	30	100.00
3. Breadfruit	No	26	86.67
	Yes	4	13.33
	Total	30	100.00
4. Betelnut	No	5	16.67
	Yes	25	83.33
	Total	30	100.00
5. Banana	No	26	86.67
	Yes	4	13.33
	Total	30	100.00
6. Coconut	No	28	93.33
	Yes	2	6.67
	Total	30	100.00
7. Copra (coconut product)	No	27	90.00
	Yes	3	10.00
	Total	30	100.00
8. Yam	No	26	86.67
	Yes	4	13.33
	Total	30	100.00
9. Sweet Potatoes	No	27	90.00
	Yes	3	10.00
	Total	30	100.00
10. Tapioca	No	19	63.33
	Yes	11	36.67
	Total	30	100.00
11. Soursop	No	30	100.00
	Yes	0	0.00
	Total	30	100.00
12. Locally grown/ collected vegetables	No	11	86.67
	Yes	4	13.33
	Total	30	100.00
13. Imported vegetables	No	29	96.67
	Yes	1	3.33
	Total	30	100.00
14. Locally grown/ collected fruits	No	30	100.00
	Yes	0	0.00
	Total	30	100.00
15. Imported fruits	No	30	100.00
	Yes	0	0.00
	Total	30	100.00
16. Citrus	No	29	96.67
	Yes	1	3.33
	Total	30	100.00
17. Black pepper	No	30	100.00
	Yes	0	0.00
	Total	30	100.00
18. Hot peppers	No	30	100.00
	Yes	0	0.00
	Total	30	100.00
19. Sakau (Kava)	No	30	100.00
	Yes	0	0.00
	Total	30	100.00
20. Other	No	27	90.00
	Yes	3	10.00
	Total	30	100.00

11. PERCEPTION, PREFERENCE AND ATTITUDES

Q11.1a What do you consider to be healthy and nutritious?

Question	Responses	Freq.	Percent
1. Fresh vegetables	No	0	0.00
	Yes	165	100.00
	Total	165	100.00
2. Processed vegetables	No	153	92.73
	Yes	12	7.27
	Total	165	100.00
3. Fresh fruit	No	3	1.82
	Yes	162	98.18
	Total	165	100.00
4. Processed fruit	No	158	95.76
	Yes	7	4.24
	Total	165	100.00
5. Fresh fish/ seafood	No	6	3.64
	Yes	159	96.36
	Total	165	100.00
6. Processed fish/ seafood	No	155	93.94
	Yes	10	6.06
	Total	165	100.00
7. Fresh meat	No	11	6.67
	Yes	154	93.33
	Total	165	100.00

Question	Responses	Freq.	Percent
8. Processed meat	No	158	95.76
	Yes	7	4.24
	Total	165	100.00
9, Bread, crackers, biscuit	No	143	86.67
	Yes	22	13.33
	Total	165	100.00
10. Pasta and ramen noodles	No	154	93.33
	Yes	11	6.67
	Total	165	100.00
11. Dairy	No	125	75.76
	Yes	40	24.24
	Total	165	100.00
12. Eggs	No	60	36.36
	Yes	105	63.64
	Total	165	100.00
13. Coconut milk	No	48	29.09
	Yes	117	70.91
	Total	165	100.00
14.. Candies, Cakes, Cookies, Sugary foods	No	163	98.79
	Yes	2	1.21
	Total	165	100.00
15. Boxed cereal	No	161	97.58
	Yes	4	2.42
	Total	165	100.00
16. Soda	No	163	98.79
	Yes	2	1.21
	Total	165	100.00
17. Sakau (Kava)	No	163	99.39
	Yes	1	0.61
	Total	164	100.00
18. Coffee and tea	No	154	93.33
	Yes	11	6.67
	Total	165	100.00

Q11.1b What percentage of your diet is imported food?

Particulars	Frequency	Percent
Less than 25%	22	13.33
25-50%	56	33.94
50-75%	58	35.15
75-100%	29	17.58
Total	165	100.00

Question	Responses	Frequency	Percent
Q11.2 Do you feel your diet is healthy and nutritious?	No	78	47.56
	Yes	86	52.44
	Total	164	100.00

Question	Responses	Freq.	Percent
Q11.3 Does your diet impact your health?	No	30	18.29
	Yes, I feel healthy	58	35.37
	Yes, I feel unhealthy	76	46.34
	Total	2	1.12
Q11.4 Would you be interested in consuming more locally sourced seafood and marine fish on a daily basis if they were more available and affordable?	No	162	98.78
	Yes	164	100.00
	Total	2	1.12
Q11.5 Would you be interested in consuming more locally sourced meat and meat products on a daily basis if they were more available and affordable?	No	5	3.05
	Yes	159	96.95
	Total	164	100.00
Q11.6 Would you be interested in replacing imported rice with local starch crops such as taro and breadfruit if they are more available and affordable?	No	42	25.77
	Yes	121	74.23
	Total	163	100.00
Q11.7 Would you be interested in consuming more locally produced coconut milk products on a daily basis if they were more available and affordable?	No	13	8.07
	Yes	148	91.93
	Total	161	100.00

Question	Resp.	Freq.	Percent
Q11.8 Would you be willing to replace imported milk products with coconut milk products for cooking?	No	54	33.33
	Yes	108	66.67
	Total	162	100.00
Q11.9 Would you be interested in consuming more locally produced vegetables on a daily basis if they were more available and affordable?	No	5	3.07
	Yes	158	96.93
	Total	163	100.00
Q11.10 Would you be interested in consuming more locally produced fruits on a daily basis if they were more available and affordable?	No	3	1.84
	Yes	160	98.16
	Total	163	100.00
Q11.11 If you knew any of these locally produced foods were healthier than imported and/or processed foods, would you be more willing to buy these food items?	No	24	14.81
	Yes	138	85.19
	Total	162	100.00

Q11.12 If not, why do you find imported and/or processed foods preferable?

Question	Responses	Frequency	Percent
More convenient	No	6	20.00
	Yes	24	80.00
	Total	30	100.00
Less work to prepare	No	10	34.48
	Yes	19	65.52
	Total	29	100.00
Tastes better	No	11	37.93
	Yes	18	62.07
	Total	29	100.00
More affordable	No	24	85.71
	Yes	4	14.29
	Total	28	100.00
More available	No	25	89.29
	Yes	3	10.71
	Total	28	100.00
Higher status	No	27	96.43
	Yes	1	3.57
	Total	28	100.00
Other	No	28	100.00
	Yes	0	0.00
	Total	28	100.00

12. ADAPTATION AND RESILIENT QUESTIONS

Q12.2 What solutions and/or resources do you feel can assist you with long term local food production goals?

Question	Responses	Freq.	Percent
1. Agriculture training	No	21	12.88
	Yes	142	87.12
	Total	163	100.00
2. Tools	No	16	9.82
	Yes	147	90.18
	Total	163	100.00
3. Greenhouses and aquaculture	No	71	43.56
	Yes	92	56.44
	Total	163	100.00
4. Climate resilience crops	No	73	44.79
	Yes	90	55.21
	Total	163	100.00
5. Disease resistant animals/ chickens	No	102	62.58
	Yes	61	37.42
	Total	163	100.00
6. Affordable feed	No	84	51.53
	Yes	79	48.47
	Total	163	100.00
7. Refrigeration	No	126	77.30
	Yes	37	22.70
	Total	163	100.00
8. Access to market	No	141	86.50
	Yes	22	13.50
	Total	163	100.00
9. Transportation	No	127	77.91
	Yes	36	22.09
	Total	163	100.00
10. Post-harvest handling (drying and cooling for long term storage)	No	130	79.75
	Yes	33	20.25
	Total	163	100.00
11. Financial credit	No	111	67.68
	Yes	53	32.32
	Total	164	100.00
12. Veterinary doctor	No	135	82.32
	Yes	29	17.68
	Total	164	100.00
13. Other	No	157	95.73
	Yes	7	4.27
	Total	164	100.00

YAP OPEN-ENDED HOUSEHOLD SURVEY

Below are the main statements provided by the respondents in the open-ended survey.

Q3.3.5 If yes, which behavioral changes?

1) "Small area for farming."
2) "Lack of time."

Q6.8 In the last ten years, have you noticed a change in raising animals (if yes, please explain):

1) "Costs more to maintain environment-friendly conditions (ex: pig pens and waste management)."
2) "Animal food in the market has increased in price."
3) "Decreased number of animals. Big lizards are eating the hatchlings."
4) "They got sick and grew slowly. Some died."

Q8.3.2 How has a change in climate impacted your access to clean, fresh water?

1) "Unpredictable weather, flooding, landslides, riverbank erosion, and heavy rains."
2) "More chlorine is used when there is off-color water."
3) "Affects the clean water. Color and taste changed. It looks polluted."

Q8.4.3 What crops did you use to grow, and what crops do you grow now?

1) "Before: land taro. Now: swamp taro, banana, and betelnut."
2) "Before: napa, cucumbers, and tomatoes. Now, I stick to the local crops such as taro, yam, and tapioca."
3) "I used to grow taro in patches near the coastal area. Now I am growing away from coastal areas."

Q8.4.6 How did you change/adapt your farming practices (including fishing) over the last ten years?

1) "We started buying products from the store. More junk foods."
2) "Fish migrate from shallow areas on low tide on sunny days. Thus, we tend to fish more at night compared to daytime."
3) "Decrease in fish diversity/species due to climate change. Fish habitats are damaged, affected."
4) "Bleaching corals affect habitats, limiting fish varieties and diversities."
5) "Planting vegetables in pots/bag instead on the ground; make it easier to relocate."
6) "Not really. Limited resources."

Q8.4.7 Have you or your household done anything else to become more food secure in response to climate change?

1) "Not enough information/resources (labor and time)."
2) "Updated fishing method. Harvested more food crops due to invasion of pests and diseases (ex: taro mites)."
3) "Trying different crops."
4) "Plant taro in taro patch located inland away from the shoreline."
5) "Currently, we are building water catchments around the house."
6) "Be more resilient and conservative with what we consume and use daily."

Q9.1.5 How do you define healthy, nutritious food?

1) "Organic or locally grown food, and freshly caught marine food."
2) "Foods good for my body with no chemicals or preservatives added."
4) "Foods that are low in calories but high in vitamins and minerals."
5) "Consume less processed food and eat more local food."

Q9.4.4 If yes, is accessing foods more difficult or less difficult? If more difficult, why?

1) "More difficult. The weather, too much rain, too much heat."
2) "Increased price."

Q12.1 What have you done to adapt your local food production or harvesting because of a changing climate?

1) "Relying on produce sold at the markets."
2) "Due to unpredictable weather, I tend to use butane more often than firewood."
3) "Planting into poly bags instead of the ground area."
4) "Shredded coconut husk mixed with manure to plant vegetables due to extreme heat; plantation of variety of local food."
5) "Migrate crops/plants/vegetables to higher elevations. Plant trees along coastal areas that are susceptible to erosion. Changed fishing methods to strictly catching fish of mature sizes (sustainable fishing)."
6) "Conservative and more resilient animals; built more water catchments during drought season; uses food and plant wastes for plant compost/fertilizers."
7) "With the unpredictable weather, crops planted are being carefully maintained at least twice daily to observe if pests or insects are damaging the crops. Also, to protect from direct sunlight or heavy rains, so they grow healthy."
8) "Changing gardening methods by planting on raised beds filled with composts."
9)"Crop rotation; quarterly planting vs. annual planting; less elimination of trees and bushes to increase shades to plants."

Q12.3 Is there anything else you would like us to know regarding your experience with food production, food security, climate change, or COVID-19? 1) Climate change has increasingly depleted most of the food resources on land as well as the fish population in the sea, which has disrupted food production and food security all over the islands in Micronesia."	2) "Need more information and awareness about climate change; detailed trainings on how to adapt and become more food secure." 3) "Provide more awareness of workshops and trainings for agriculture; provide financial assistance in agriculture." 4) "This year of 2022, we have witnessed for the first-time full-grown coconut and betelnut trees die due to extreme heat."

YAP FOCUS GROUP DISCUSSION

Community Group: Women Focus Group

Moderator: What is your goal as a farmer/fisherman over the next five years?

1) Food security. Enough for the community. Changes in the climate will bring up the issue of food security, and so this is a main goal of the community.

2) Other issues related to food security include minimizing soil erosion, clearing rivers, rain catchment, watershed activities, etc. A foundation on which to complete the food security goal.

We feel we are about halfway through completing this goal.

Moderator: **Do you see any change in the environment that is impacting your fishing and food production? If so, what?**

1) Yes. Many issues are impacting farming and food production, some of which are listed above. Other may include the weather being unpredictable. Another is soil health, the decrease of good soil.

Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**

1) Harder. The youth is not paying attention to culture and tradition. Few are learning the local ways, and most are off island.

Moderator: How do you want to improve your business?

1) Community awareness but also include in the school curriculum.

Moderator: What resources would be helpful to help improve your business?

1) Training
2) Funding to pay a community liaison within the same community, between different communities, and also between communities and the government. Similar to COP.

Moderator: What are the greatest limitations or obstacles to growing your business/making more money?

1) Lack of communication between communities, especially when one is organized and the other is not.
2) Culture and tradition.
3) Old and new.

Moderator: What type of public policies should be put in place that would strengthen or expand your business?

1) Focus on communication; organized communication plan.
2) Liason solution.
3) Delegating and working with COP.
4) Conflict resolution.
5) Minimize misunderstanding and gossip.

Moderator: How does climate change affect your business? How do you think it will in the future?

1) Tidal surge and extreme heat.
2) It will get worse if we don't try to achieve our goal related to food security and related areas.

Moderator: What are the most important trainings you need to improve your production and farm?

1) How can we adapt to climate change. Planting methods, crop varieties, and comparison to our traditional methods.
2) Technical assistance training.
3) How to adapt agriculture products to climate change.

Community Group: Women Island Focus Group

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?

1) Complete the second phase of our building/facilities. Utilize the current space with the community and other organization projects.

Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?

1) Yes. The heat is more pronounced. The dry season is longer.

Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**

1) It is most likely harder, as less are learning traditional lifestyle and most are opting for living outside of Yap because it is easier.

Moderator: How do you want to improve your business?

1) Technical assistance with organizing our projects.

Moderator: What resources would be helpful to help improve your business?

1)Technology, office computers, equipment, and supplies to start communicating worldwide to source all that can help.

Moderator: What are the greatest limitations or obstacles to growing your business/making more money?

1) Communication between our organization and all government branches. Also, internally among women from different places on the island or from outlying islands.

2) It is challenging working with multiple parties and government procedures that have long and various steps.

Moderator: What type of public policies should be put in place that would strengthen or expand your business?

1) Partnership and better communication between all gender-related organizations on the island, the government, and within FSM.

Moderator: How does climate change affect your business? How do you think it will in the future?
1) The ocean is reclaiming land through erosion. Suppose there is no land reclamation or maintenance. In that case, the ocean will come inland and turn areas near the shoreline back into ocean.
Moderator: What are the most important trainings you need to improve your production and farm?
1) Consult on digital e-commerce and on how to market and sell traditional Yapese wares. Consult on grant writing and project management.

Community Group: Small scale village producer (local and export)

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?
Maintain my small-scale production going.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?
Yes. Seasons have been more extreme, the price for boom-and-bust seasons is more pronounced and so I have to shift products. Some agricultural products are better at different times.
Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**
Easier. If we keep our traditional knowledge and pass it on, there is no reason one would not have food. Starving and livelihood are choices. Most of my production is zero cost, traditional cultivation, and maintenance. When traveling to town, it involves gas/taxi. Most of the time, I just ask someone to deliver and call the person to leave instructions about money/sale/profit. Most of the time I'm in the village, content. If we have this traditional knowledge, it is easy now and probably easier in the future with more technology.
Moderator: How do you want to improve your business?
I would like to know more about value-added and niche markets. How can I keep production levels the same but make more money?
Moderator: What resources would be helpful to help improve your business?
Information, computer, Youtube. I don't have a computer, but I do have a phone. So more information about value-added products or niche markets, and maybe a consultant that can help with some of these questions.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
Transport, bad roads, and taxis.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
I want more transparency. Sometimes there are a lot of activities in the village but no follow-through. I want more information about Yap government funding and how it is helping the agricultural sector at the community level and also preserving culture and tradition. I want to compare these activities and plans with previous and future plans. I feel we are running in circles.
Moderator: How does climate change affect your business? How do you think it will in the future?
Yes. But there are ways to maintain your crop and to minimize effects. Also you want to have multiple products. Sometimes, rope making is the best market; other times, it'll be taro or betelnut. You have to be able to shift crops/activities and maintain all your gardens (traditional best practice/work smarter) to pull one plant from many gardens to make your weight or quota.
Moderator: What are the most important trainings you need to improve your production and farm?
Besides value-added and niche markets, I want to learn small-scale aquaculture, for example, how to do a freshwater shrimp farm/eel and conduct it in synergy with taro patch activities.

Community Group: Retail and Agriculture Producer

Moderator: What is your goal as a farmer (fisheries/ agriculture/ farming land-based crops, animals, poultry) over the next five years?
Growth. Order more and sell more.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?
No. Producers call regularly and we discuss their agriculture products and if we want to purchase we do so.
Moderator: **Will the next generation have it easier, harder, or the same to maintaining life and culture?**
I'm working to make it easier and so if I fail it'll either be easier or stay the same.
Moderator: How do you want to improve your business?
Volume order, such as container from outside. As for agricultural products, there is nothing we would change about at this time.
Moderator: What resources would be helpful to help improve your business?
Funding for growth.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
Ordering. Prefer off island ordering. Not enough on the island to order and grow.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
Now is fine. The current policies related to retail are ok.

Moderator: How does climate change affect your business? How do you think it will in the future?
No. It will not have an effect in the future**.**
Moderator: What are the most important trainings you need to improve your production and farm?
None at this time. Growth is still the objective.

Community Group: Council of Pilung (COP) member

Moderator: What is your goal as a farmer/fisherman over the next five years?
For the community, the main goal is for each of us to serve the other; this is the only way we can prosper. There have been new things, but we must not lose this core value—the parable of the long spoons.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what? Yes,
There is a great change in the environment, in how we view it and what it is to us. This is changing, has become more commercial. The most valuable thing we have is our culture and tradition. One generation doesn't value taro and all related activities like taro patch making and maintaining, then we lose that. Our values create the focus and are kind of self-fulfilling.
Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?
Generally, things are easier because of technology, but the values and the Yapese identity are very hard to maintain going into a modern life of convenience. How can we say we know when we have not experienced it?
Moderator: How do you want to improve your business?
Communication is the key. Old values like community first and respect are worth teaching because they create a social benefit.
In the community, we need to resolve all land and ocean-related issues because that will be a harder issue for future generations.
Generally, in the community finding synergy through a co-op can help all businesses and agriculture activities because, most of the time, each person does their own thing. You don't burden others with your responsibilities, or it may seem like showing off. But working together can be a good solution to find synergy.
Moderator: What resources would be helpful to help improve your business?
Training and working with experts can help organize the community bottom-up, letting the community explore solutions that they want help with.
Moderator: What are the greatest limitations or obstacles to growing your business/making more money?
9 to 5 jobs. Jobs vs. traditional lifestyles. Living in the village and contributing to the community daily. You don't need the community to chip in if you have money.
Moderator: What type of public policies should be put in place that would strengthen or expand your business?
That all four branches work together to resolve people's concerns and promote the values of the Yapese people.
Moderator: How does climate change affect your business? How do you think it will in the future?
Many people are migrating from the outer islands to the main island, and migrating from one side to a more central place next to Colonia Town because of 9 to 5 jobs.
Unpredictable weather, shifting seasons, changing conditions, and extreme heat.
We have a modern lifestyle that younger generations try to figure out how best to be Yapese. Then there are clear signs of weather distress and changing patterns. Patterns that were turned into aphorisms/sayings that are no longer true.
Climate change adds another aspect to the complex social question in Yap. In the future, we either have an answer, attempt, or suffer in ignorance.
Moderator: What are the most important trainings you need to improve your production and farm?
Technical Assistance. Preferably outside of the government, through an NGO in connection with the grassroots level in the community. The community has a better idea of what can be a solution; they just need an activity to realize what it means or what it takes.

Community Group: Retail Agriculture products only (land and marine)

Moderator: What is your goal as a farmer/fisherman over the next five years?
Grow and become a major market with many agricultural products sold locally and for export.
Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what? Yes,
Seasons are at different times and more extreme. Farmers and fisherman report it is harder to predict production levels and generally harder to farm and fish.
Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?
Here in Yap, people still know about culture and tradition, and we have plenty of resources. It is getting harder because of net fishing and over-exploitation, but one can usually always feed themselves in their household.
Producers say the supply is decreasing for our market, especially in the ocean. Also, there are plenty of traditional reserves and Marine protected areas, so this makes it harder for fishermen.
Moderator: How do you want to improve your business?
More business in Guam because, locally, there is less money.
Moderator: What resources would be helpful to help improve your business?

Logistics and paperwork assistance to have regular customers in Guam.

Moderator: What are the greatest limitations or obstacles to growing your business/making more money?

Importation vs. exportation. Tax importation and make exportation easier, so we will have a reward for businesses connecting to Guam's and other's economies and bringing money to the island.

Moderator: What type of public policies should be put in place that would strengthen or expand your business?

Between climate change, Marine protected areas, and Traditional Reserves, it is hard for the fishermen's livelihoods. Now more are going out further and spending more on gas. All the marine is private, and open ocean fishing is the only way to continue being a fisherman. This has shifted from the inner reef fish to the barrier reef, outer reef fish, or submerged reef fish. Fishermen can catch bigger fish and get to the weight they want faster, but it is getting harder to keep regular quotas because of climate change and other related issues (overfishing in remaining inner reef areas not regulated).

Moderator: What are the most important trainings you need to improve your production and farm?

Learning how to sustainably grow my business of agriculture products in this current situation I am in. I am a middleman for exploitation activity that is most likely not sustainable. However, it is hard to switch away from and maintain growth. Maybe aquaculture training would help shift land production into the water as there is more water.

Community Group: Commercial Focus Group

Moderator: What is your goal as a farmer/fisherman over the next five years?

One of our mandates is to improve our water. Restock marine resources, for instance, aquaculture to restock, Giant Clams as food stock, and filtering water.

Moderator: Do you see any change in the environment that is impacting your farming and food production? If so, what?

There is an impact. One is Illegal fishing, fishing in areas you are not supposed to. Even from in the communities and people outside the community. This affects our organization's restocking efforts. It is basically poaching.

Moderator: Will the next generation have it easier, harder or the same to maintain the life and culture?

Based on our ongoing projects, it would be easier. I have seen that the community wanted to be involved. So I can see that they would help us in our projects and bring in marine catch to sell. I am confident because of their involvement in our shared efforts.

Moderator: How do you want to improve your business?

More fishing and keeping it sustainable; having more boats out and improving the port. Another aspect is to work together. If all the island's commercial fisheries activities were linked, then we would have a fully functional supply chain. However, currently, each organization is compartmentalized and divided.

Moderator: What resources would be helpful to help improve your business?

Funding for specific projects. A dock renovation and improvements would benefit the whole operation of the transhipment project.

Moderator: What are the greatest limitations or obstacles to growing your business/making more money?

Bureaucracy with government funding. They always question it and shut it down. Too much red tape. At every meeting, they say that fisheries are a priority. However, the action doesn't follow suit with that statement. We've applied for six in the last two years, but only three have been approved. So a fifty percent approval rate is not good. Especially because of the time, money, and effort expended on the lost fifty percent.

Moderator: What type of public policies should be put in place that would strengthen or expand your business?

One would be related to illegal fishing, specifically foreigners on the island fishing. At least regulate or register for a license or something, so we all have papers to fish in our waters. Additionally, this affects local fishermen and their livelihoods.

Moderator: How does climate change affect your business? How do you think it will in the future?

Yes. Weather is unpredictable. We go out weekly, but scheduling is shifting due to the weather window. We can plan with NAOO Yap Branch and other forecasting services. But out there it is different. From the forecast to the reality is different. Luckily, we have some local captains who use their knowledge of the weather and our forecast to better guess the weather window. They are usually successful, but this is just the weather window. It does not mean that there will be fish. That is another shift. A shift in the location and pattern of fishing because of the weather. I feel that these weather issues will be more pronounced in the future.

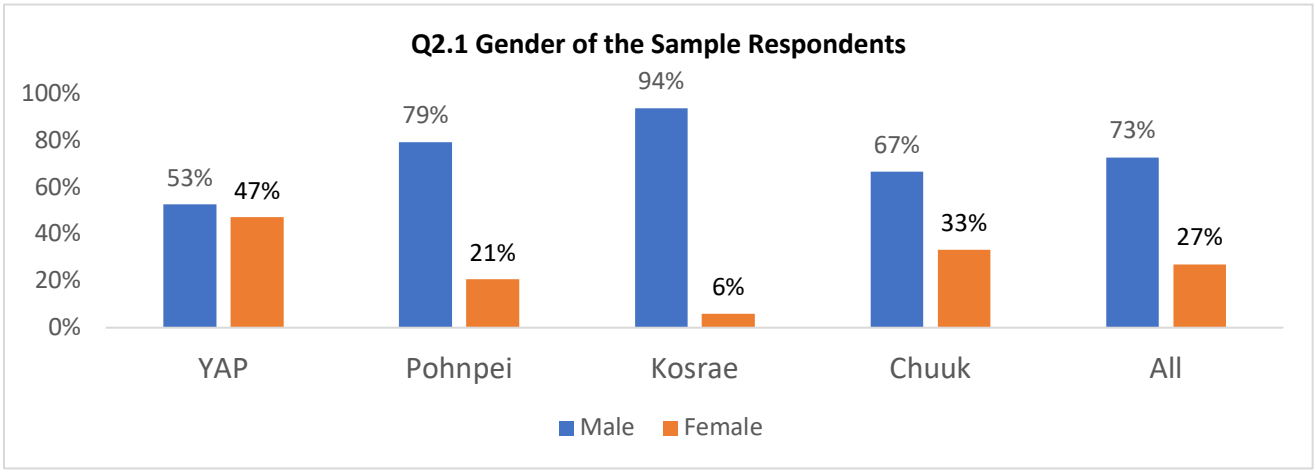
Moderator: What are the most important trainings you need to improve your production and farm?

We need a lot of that. Two areas of high priority are training in Hatchery, especially in the early stages of the process. We have some basic training, but we can always do better.

Another area is to assess our waters and stock. Especially when doing a project, we need to have that assessment before and after the project.

A third area is consultation. We need technical assistance/consultation in putting these plans together. Someone to look it over and say this is a sound plan.

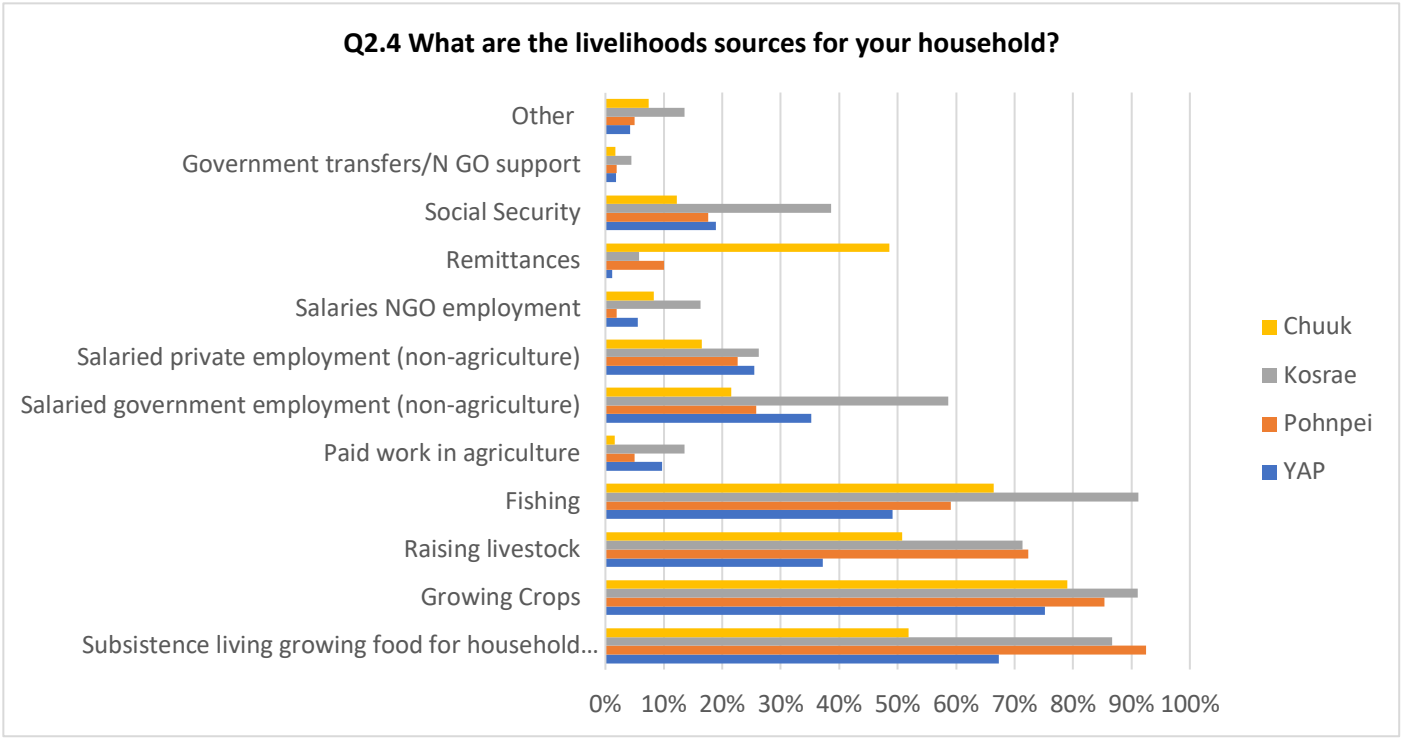
APPENDIX 3.6 CROSS-STATE COMPARISON HOUSEHOLD SURVEY

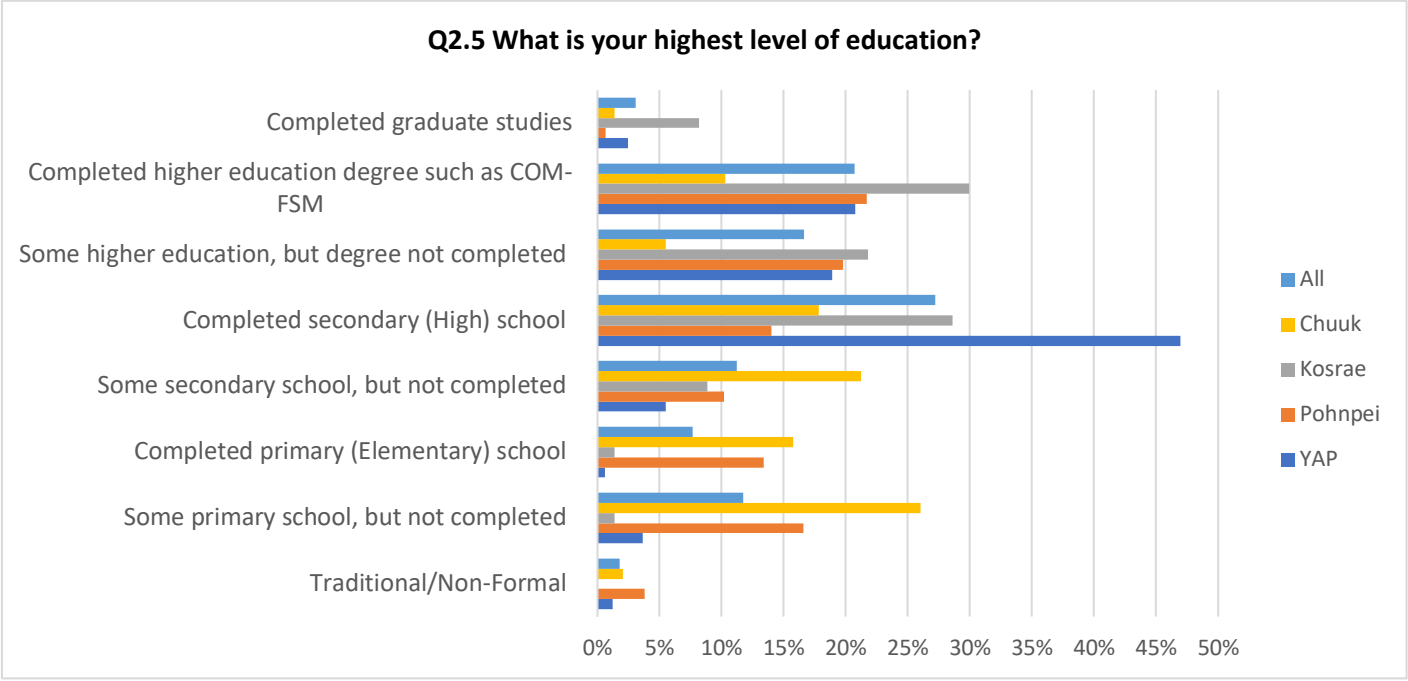


Particulars	YAP	Pohnpei	Kosrae	Chuuk	All
Q2.2 Average age of the respondents (years)	46.72	47.03	49.47	45.80	47.255
Q2.3 Average number of people in the family	4.65	6.95	6.09	7.69	6.345

Q2.4 What are the livelihoods sources for your household? Multiple response item.

	YAP		Pohnpei		Kosrae		Chuuk	
Particulars	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
Subsistence living growing food for household consumption	111	67.27	147	92.45	110	86.61	69	51.88
Growing Crops	124	75.15	134	85.35	121	90.98	113	79.02
Raising livestock	61	37.2	115	72.33	82	71.30	67	50.76
Fishing	81	49.09	94	59.12	124	91.18	91	66.42
Paid work in agriculture	16	9.7	8	5.03	10	13.51	2	1.65
Salaried government employment (non-agriculture)	58	35.15	41	25.79	61	58.65	26	21.49
Salaried private employment (non-agriculture)	42	25.45	36	22.64	21	26.25	20	16.53
Salaries NGO employment	9	5.49	3	1.89	12	16.22	10	8.26
Remittances	2	1.21	16	10.06	4	5.71	66	48.53
Social Security	31	18.9	28	17.61	34	38.64	15	12.20
Government transfers/NGO support	3	1.82	3	1.89	3	4.41	2	1.67
Other	7	4.24	8	5.00	10	13.51	9	7.38





3. CLIMATE IMPACT ON FOOD SOURCES

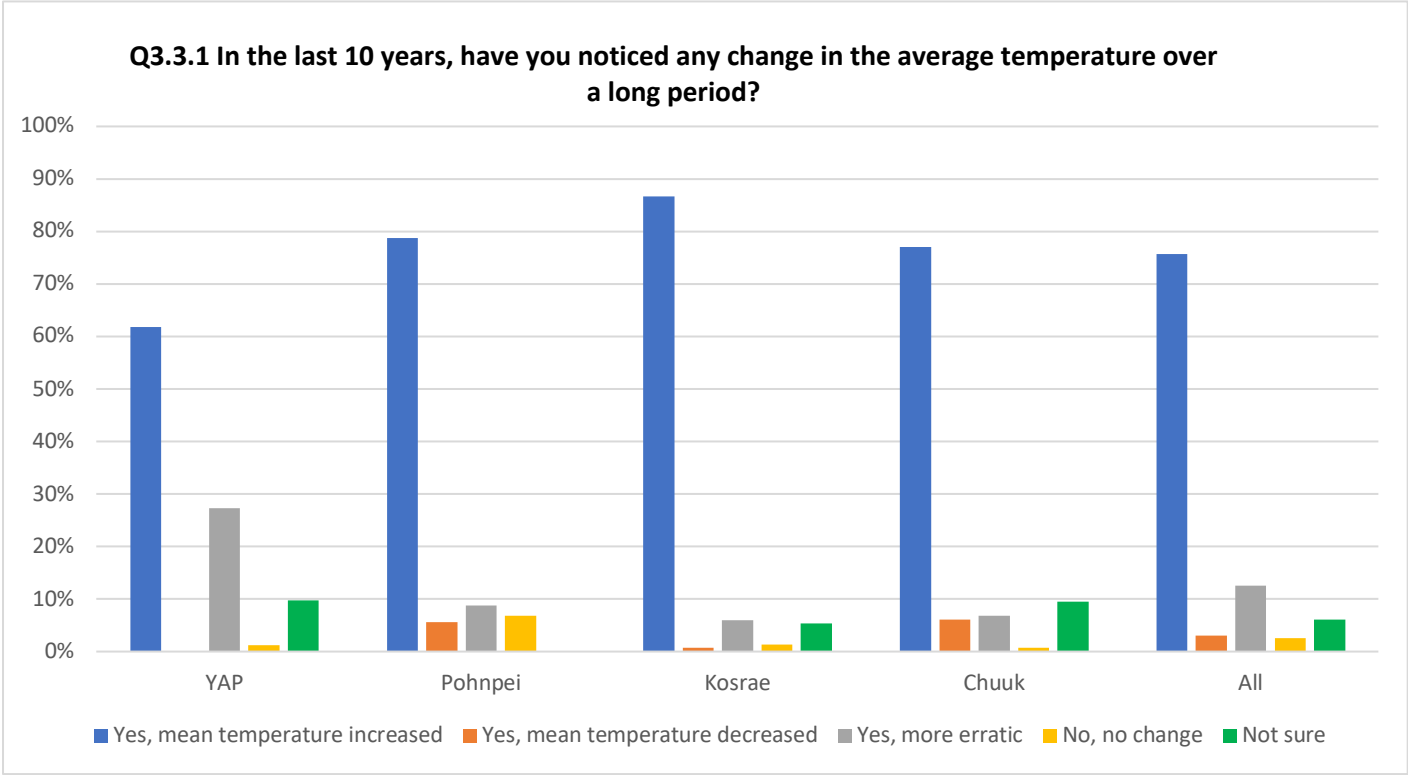
Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq.	%	Freq.	%
Q3.1.1 Do you farm and/or harvest local food crops?	No	10	6.10	4	2.50	16	10.74	7	4.67	37	5.94
	Yes	154	93.90	156	97.50	133	89.26	143	95.33	586	94.06
	Total	164	100.00	160	100.00	149	100.00	150	100.00	623	100.00
Q3.1.2 Do you farm and/or harvest medicinal crops?	No	62	38.04	31	19.50	64	43.24	22	14.77	179	28.92
	Yes	101	61.96	128	80.50	84	56.76	127	85.23	440	71.08
	Total	163	100.00	159	100.00	148	100.00	149	100.00	619	100.00

Q3.1.4 Do you raise livestock and/or poultry?	No	73	45.06	16	10.13	54	36.49	25	16.67	168	27.18
	Yes	89	54.94	142	89.87	94	63.51	125	83.33	450	72.82
	Total	162	100.00	158	100.00	148	100.00	150	100.00	618	100.00
Q3.1.4 Do you fish or harvest ocean food sources?	No	55	33.54	38	23.90	19	12.84	37	25.34	149	24.15
	Yes	109	66.46	121	76.10	129	87.16	109	74.66	468	75.85
	Total	164	100.00	159	100.00	148	100.00	146	100.00	617	100.00

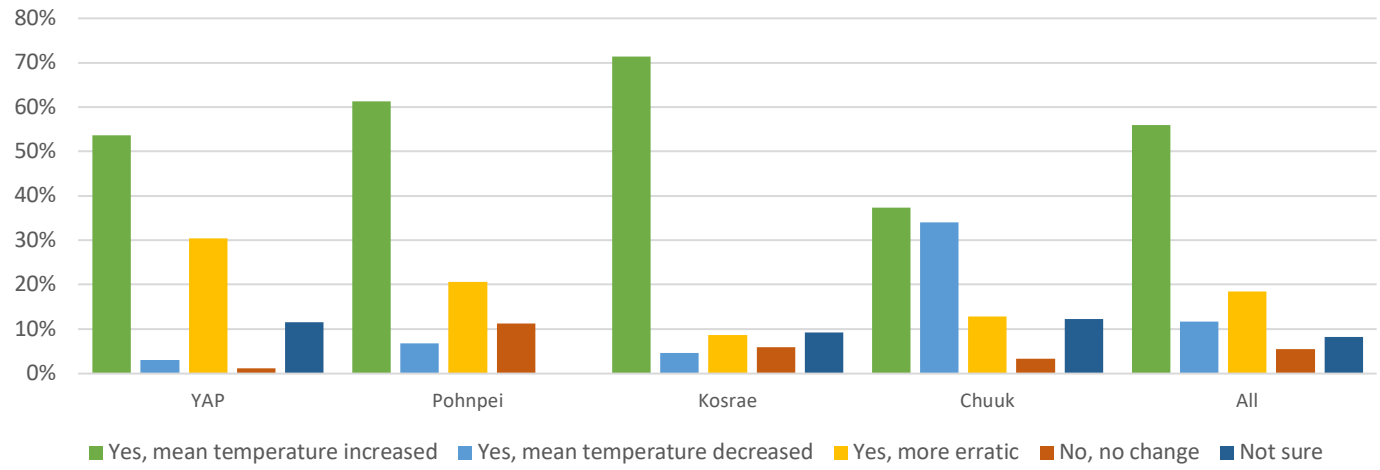
Q3.2 Farm Problems and their importance

Problem		**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
	Response	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq**	**%**
3.2.1 Coastal flooding	Not a problem	30	18.29	112	70.00	37	24.67	58	38.67	237	37.98
	Little problem	39	23.78	29	18.13	43	28.67	32	21.33	143	22.92
	Big problem	95	57.93	19	11.88	70	46.67	60	40.00	244	39.10
	Total	164	100	160	100.00	150	100.00	150	100.00	624	100.00
3.2.2 Inland flooding	Not a problem	65	39.39	76	47.50	21	14.09	57	38.51	219	35.21
	Little problem	51	30.91	44	27.50	44	29.53	37	25.00	176	28.30
	Big problem	49	29.7	40	25.00	84	56.38	54	36.49	227	36.50
	Total	165	100	160	100.00	149	100.00	148	100.00	622	100.00
3.2.3 Extreme heat	Not a problem	11	6.67	21	13.13	15	10.00	11	7.38	58	9.29
	Little problem	59	35.76	61	38.13	54	36.00	35	23.49	209	33.49
	Big problem	95	57.58	78	48.75	81	54.00	103	69.13	357	57.21
	Total	165	100	160	100.00	150	100.00	149	100.00	624	100.00
3.2.4 Saltwater inundation	Not a problem	36	22.64	130	81.76	49	32.67	70	47.30	285	46.27
	Little problem	50	31.45	17	10.69	53	35.33	16	10.81	136	22.08
	Big problem	73	45.91	12	7.55	48	32.00	62	41.89	195	31.66
	Total	159	100	159	100.00	150	100.00	148	100.00	616	100.00
3.2.5 Lack of water	Not a problem	86	55.13	83	51.88	53	35.57	36	24.16	258	42.02
	Little problem	44	28.21	44	27.50	52	34.90	59	39.60	199	32.41
	Big problem	26	16.67	33	20.63	44	29.53	54	36.24	157	25.57
	Total	156	100	160	100.00	149	100.00	149	100.00	614	100.00
3.2.6 Cyclones/ hurricanes	Not a problem	49	29.7	142	89.87	73	61.86	116	79.45	380	64.74
	Little problem	60	36.36	12	7.59	25	21.19	15	10.27	112	19.08
	Big problem	56	33.94	4	2.53	20	16.95	15	10.27	95	16.18
	Total	165	100	158	100.00	118	100.00	146	100.00	587	100.00
3.2.7 Heavy rains	Not a problem	26	15.76	38	23.75	25	16.67	32	21.62	121	19.42
	Little problem	65	39.39	61	38.13	48	32.00	48	32.43	222	35.63
	Big problem	74	44.85	61	38.13	77	51.33	68	45.95	280	44.94
	Total	165	100	160	100.00	150	100.00	148	100.00	623	100.00
3.2.8 Landslides	Not a problem	123	78.34	106	66.25	92	61.33	78	52.70	399	64.88
	Little problem	24	15.29	30	18.75	36	24.00	29	19.59	119	19.35
	Big problem	10	6.37	24	15.00	22	14.67	41	27.70	97	15.77
	Total	157	100	160	100.00	150	100.00	148	100.00	615	100.00
3.2.9 Difficulty predicting when the rainy season will come	Not a problem	28	17.07	74	46.25	39	26.35	60	40.54	201	32.42
	Little problem	56	34.15	43	26.88	60	40.54	56	37.84	215	34.68
	Big problem	80	48.78	43	26.88	49	33.11	32	21.62	204	32.90
	Total	164	100	160	100.00	148	100.00	148	100.00	620	100.00

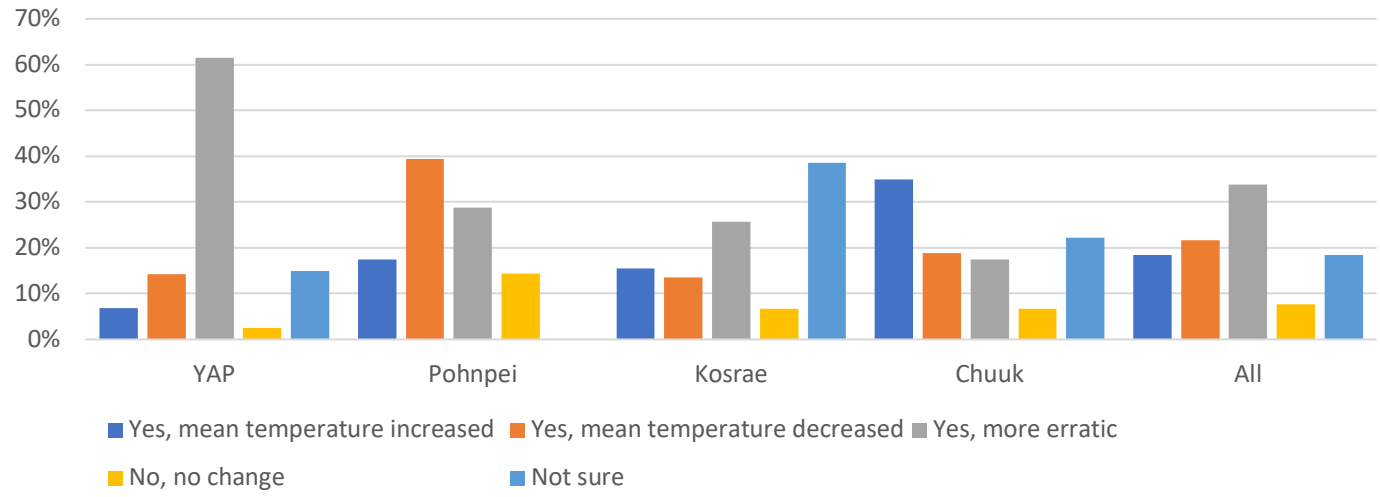
Problem		YAP		Pohnpei		Kosrae		Chuuk		All	
	Response	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq	%
3.2.10 Drought	Not a problem	6	3.73	68	42.50	60	49.18	20	13.33	154	25.97
	Little problem	60	37.27	55	34.38	27	22.13	35	23.33	177	29.85
	Big problem	95	59.01	37	23.13	35	28.69	95	63.33	262	44.18
	Total	161	100	160	100.00	122	100.00	150	100.00	593	100.00
3.2.11 Increased threats to crops from pests and disease	Not a problem	23	14.84	49	30.63	17	11.33	61	41.22	150	24.47
	Little problem	69	44.52	60	37.50	46	30.67	36	24.32	211	34.42
	Big problem	63	40.65	51	31.87	87	58.00	51	34.46	252	41.11
	Total	155	100	160	100.00	150	100.00	148	100.00	613	100.00
3.2.12 Invasive species	Not a problem	30	18.99	56	35.00	15	10.00	51	34.23	152	24.64
	Little problem	43	27.22	47	29.38	34	22.67	27	18.12	151	24.47
	Big problem	85	53.8	57	35.63	101	67.33	71	47.65	314	50.89
	Total	158	100	160	100.00	150	100.00	149	100.00	617	100.00
3.2.13 Coastal erosion	Not a problem	85	55.19	120	75.00	40	26.67	82	55.78	327	53.52
	Little problem	32	20.78	24	15.00	36	24.00	35	23.81	127	20.79
	Big problem	37	24.03	16	10.00	74	49.33	30	20.41	157	25.70
	Total	154	100	160	100.00	150	100.00	147	100.00	611	100.00
3.2.14 Riverbank erosion	Not a problem	85	55.19	105	65.63	44	29.33	112	76.19	346	56.63
	Little problem	32	20.78	34	21.25	44	29.33	22	14.97	132	21.60
	Big problem	37	24.03	21	13.13	62	41.33	13	8.84	133	21.77
	Total	154	100	160	100.00	150	100.00	147	100.00	611	100.00
3.2.15 Coral bleaching	Not a problem	46	30.07	101	63.52	68	45.64	98	67.59	313	51.65
	Little problem	36	23.53	38	23.90	34	22.82	21	14.48	129	21.29
	Big problem	71	46.41	20	12.58	47	31.54	26	17.93	164	27.06
	Total	153	100	159	100.00	149	100.00	145	100.00	606	100.00



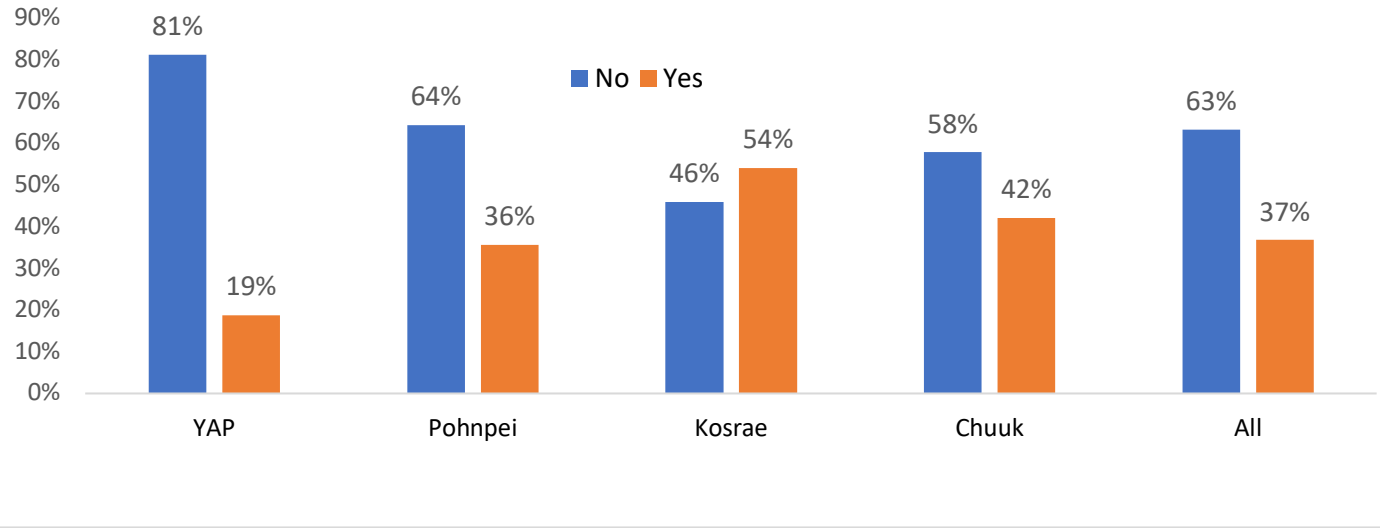
Q3.3.2 In the last 10 years, have you noticed any changes in the average rainfall over a long period?



Q3.3.3 In the last 10 years, has the start of the rainy season changed?



Q3.3.4 If yes (to any of the previous questions), have you made any adjustments in your farming (including marine)?



Q3.3.5 If yes, which behavioral changes?

Question	Resp	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1. Changed crop types	No	18	51.43	30	53.57	17	35.42	18	39.13	83	44.86
	Yes	17	48.57	26	46.43	31	64.58	28	60.87	102	55.14
	Tot.	35	100.00	56	100.00	48	100.00	46	100.00	185	100.00
Changed crop varieties	No	17	47.22	36	64.29	18	36.00	19	45.24	90	48.91
	Yes	19	52.78	20	35.71	32	64.00	23	54.76	94	51.09
	Total	36	100.00	56	100.00	50	100.00	42	100.00	184	100.00
Built a water harvesting scheme (collecting water)	No	22	62.86	43	76.79	22	46.81	33	78.57	120	66.67
	Yes	13	37.14	13	23.21	25	53.19	9	21.43	60	33.33
	Total	35	100.00	56	100.00	47	100.00	42	100.00	180	100.00
Implemented soil conservation techniques (to prevent erosion or soil contamination)	No	23	65.71	32	58.93	20	40.00	22	52.38	97	53.01
	Yes	12	34.29	23	41.07	30	60.00	20	47.62	85	46.45
	Total	35	100.00	56	100.00	50	100.00	42	100.00	183	100.00
Planted trees	No	16	47.06	29	51.79	19	40.43	30	76.92	94	53.41
	Yes	18	52.94	27	48.21	28	59.57	9	23.08	82	46.59
	Total	34	100.00	56	100.00	47	100.00	39	100.00	176	100.00
Irrigation	No	28	77.78	52	92.86	14	26.92	34	89.47	128	70.33
	Yes	8	22.22	4	7.14	38	73.08	4	10.53	54	29.67
	Total	36	100.00	56	100.00	52	100.00	38	100.00	182	100.00
Included/augmented livestock herding	No	33	94.29	53	92.98	30	83.33	37	100.00	153	92.73
	Yes	2	5.71	3	5.26	6	16.67	0	0	11	6.67
	Total	35	100.00	57	100.00	36	100.00	37	100.00	165	100.00
Migration	No	33	94.29	55	98.21	24	63.16	36	97.30	148	89.16
	Yes	2	5.71	1	1.79	14	36.84	1	2.70	18	10.84
	Total	35	100.00	56	100.00	38	100.00	37	100.00	166	100.00
Found an off-farm job	No	34	97.14	54	96.43	33	89.19	37	100.00	158	95.76
	Yes	1	2.86	2	3.57	4	10.81	0	0	7	4.24
	Total	35	100.00	56	100.00	37	100.00	37	100.00	165	100.00
Leased the land	No	34	97.14	56	100.00	33	94.29	37	100.00	160	98.16
	Yes	1	2.86	0	0	2	5.71	0	0	3	1.84
	Total	35	100.00	56	100.00	35	100.00	37	100.00	163	100.00
Put crops under protected structures	No	30	85.71	48	85.71	17	32.69	24	58.54	119	64.67
	Yes	5	14.29	8	14.29	35	67.31	17	41.46	65	35.33
	Total	35	100.00	56	100.00	52	100.00	41	100.00	184	100.00
Changed harvested fish species	No	30	85.71	52	92.86	29	72.50	34	87.18	145	85.29
	Yes	5	14.29	4	7.14	11	27.50	5	12.82	25	14.71
	Total	35	100.00	56	100.00	40	100.00	39	100.00	170	100.00
Changed harvested fishing location	No	24	68.57	48	85.71	25	59.52	28	68.29	125	71.84
	Yes	11	31.43	8	14.29	17	40.48	13	31.71	49	28.16
	Total	35	100.00	56	100.00	42	100.00	41	100.00	174	100.00
Others	No	35	97.22	50	90.91	31	83.78	37	94.87	153	91.62
	Yes	1	2.78	5	9.09	6	16.22	2	5.13	14	8.38
	Total	36	100.00	55	100.00	37	100.00	39	100	167	100.00

Q3.3.6 If no, why?

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Lack of information	No	50	37.31	47	49.47	14	23.33	36	47.37	147	40.27
	Yes	84	62.69	48	50.53	46	76.67	40	52.63	218	59.73
	Total	134	100.00	95	100.00	60	100.00	76	100.00	365	100.00
Lack of money/ credit	No	93	69.92	64	68.09	24	52.17	53	77.94	234	68.62
	Yes	40	30.08	30	31.91	22	47.83	15	22.06	107	31.38
	Total	133	100.00	94	100.00	46	100.00	68	100.00	341	100.00
Labor shortage	No	92	68.66	72	76.60	28	65.12	59	74.68	251	71.71
	Yes	42	31.34	22	23.40	15	34.88	20	25.32	99	28.29
	Total	134	100.00	94	100.00	43	100.00	79	100.00	350	100.00
Land shortage	No	116	86.57	83	87.37	32	88.89	56	78.87	287	85.42
	Yes	18	13.43	12	12.63	4	11.11	15	21.13	49	14.58
	Total	134	100.00	95	100.00	36	100.00	71	100.00	336	100.00
Water shortage	No	122	91.04	91	95.79	32	88.89	57	78.08	302	89.35
	Yes	12	8.96	4	4.21	4	11.11	16	21.92	36	10.65
	Total	134	100.00	95	100.00	36	100.00	73	100.00	338	100.00
Do not see the need to change	No	104	77.61	43	45.26	23	54.76	32	40.51	202	57.71
	Yes	30	22.39	52	54.74	19	45.24	47	59.49	148	42.29
	Total	134	100.00	95	100.00	42	100.00	79	100.00	350	100.00
Other	No	126	94.03	92	96.84	28	80.00	63	94.03	309	93.35
	Yes	8	5.97	3	3.16	7	20.00	4	5.97	22	6.65
	Total	134	100.00	95	100.00	35	100.00	67	100	331	100.00

Q3.3.7 Have you experienced any issues with water quality?

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
No	No	98	59.76	111	69.38	63	75.00	87	69.60	359	67.35
	Yes	66	40.24	49	30.63	21	25.00	38	30.40	174	32.65
	Total	164	100.00	160	100.00	84	100.00	125	100.00	533	100.00
Safety and sanitation	No	115	70.12	120	75.00	25	25.00	68	54.40	328	59.74
	Yes	49	29.88	40	25.00	75	75.00	57	45.60	221	40.26
	Total	164	100.00	160	100.00	100	100.00	125	100.00	549	100.00
Smell	No	139	84.76	134	83.75	48	76.19	79	66.39	400	79.05
	Yes	25	15.24	26	16.25	15	23.81	40	33.61	106	20.95
	Total	164	100.00	160	100.00	63	100.00	119	100.00	506	100.00
Taste	No	133	81.10	111	69.38	46	75.41	89	78.07	379	75.95
	Yes	31	18.90	49	30.63	15	24.59	25	21.93	120	24.05
	Total	164	100.00	160	100.00	61	100.00	114	100.00	499	100.00
Off-color	No	89	54.27	81	50.63	11	10.89	54	45.00	235	43.12
	Yes	75	45.73	79	49.38	90	89.11	66	55.00	310	56.88
	Total	164	100.00	160	100.00	101	100.00	120	100.00	545	100.00
Other	No	161	98.77	153	95.63	54	94.74	105	96.33	473	96.73
	Yes	2	1.23	7	4.38	3	5.26	4	3.67	16	3.27
	Total	163	100.00	160	100.00	57	100.00	109	100.00	489	100.00

Q4.2 Why do you grow and/or harvest food crops?

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Family consumption	No	1	0.63	2	1.36	0	0	0	0	3	0.51
	Yes	157	99.37	145	98.64	137	100.00	142	100.00	581	99.49
	Total	158	100	147	100.00	137	100.00	142	100.00	584	100.00
For sale	No	108	68.35	58	39.46	30	27.03	70	61.40	266	50.19
	Yes	50	31.65	89	60.54	81	72.97	44	38.60	264	49.81
	Total	158	100	147	100.00	111	100.00	114	100.00	530	100.00
Traditional exchange	No	118	74.68	28	19.05	48	53.93	95	86.36	289	57.34
	Yes	40	25.32	119	80.95	41	46.07	15	13.64	215	42.66
	Total	158	100	147	100.00	89	100.00	110	100.00	504	100.00
Other	No	155	98.1	141	96.58	69	95.83	106	100.00	471	97.72
	Yes	3	1.9	5	3.42	3	4.17	0	0	11	2.28
	Total	158	100	146	100.00	72	100.00	106	100.00	482	100.00

Q4.3 How would you describe the food production and/or harvesting that you do?

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
I raise livestock to feed my own family	No	60	37.97	22	14.97	22	19.13	17	13.08	121	22.00
	Yes	98	62.03	125	85.03	93	80.87	113	86.92	429	78.00
	Total	158	100	147	100.00	115	100.00	130	100.00	550	100.00
I raise livestock to sell livestock products at market	No	123	77.85	89	60.54	43	42.16	93	83.78	348	67.18
	Yes	35	22.15	58	39.46	59	57.84	18	16.22	170	32.82
	Total	158	100	147	100.00	102	100.00	111	100.00	518	100.00
Agroforestry	No	131	83.97	53	36.05	62	77.50	96	88.07	342	69.51
	Yes	25	16.03	94	63.95	18	22.50	13	11.93	150	30.49
	Total	156	100	147	100.00	80	100.00	109	100.00	492	100.00
I collect products from the forest for my family	No	31	19.62	67	45.58	12	9.52	37	29.84	147	26.49
	Yes	127	80.38	80	54.42	114	90.48	87	70.16	408	73.51
	Total	158	100	147	100.00	126	100.00	124	100.00	555	100.00
I collect products from the forest to sell at market	No	107	67.72	122	82.99	42	44.68	88	80.73	359	70.67
	Yes	51	32.28	25	17.01	52	55.32	21	19.27	149	29.33
	Total	158	100	147	100.00	94	100.00	109	100.00	508	100.00
I fish and collect marine food for my family	No	63	39.87	66	44.90	14	10.69	32	23.36	175	30.54
	Yes	95	60.13	81	55.10	117	89.31	105	76.64	398	69.46
	Total	158	100	147	100.00	131	100.00	137	100.00	573	100.00
I fish and collect marine food to sell at the market	No	129	81.65	116	78.91	31	30.10	83	75.45	359	69.31
	Yes	29	18.35	31	21.09	72	69.90	27	24.55	159	30.69
	Total	158	100	147	100.00	103	100.00	110	100.00	518	100.00
I fish and collect marine products to send to my family/friends outside of the FSM?	No	121	76.58	139	94.56	45	45.45	92	83.64	397	87.06
	Yes	37	23.42	8	5.44	54	54.55	18	16.36	117	25.66
	Total	158	100	147	100.00	99	100.00	110	100.00	514	112.72
Other	No	157	100	129	97.73	67	95.71	103	97.17	456	98.06
	Yes	0	0	3	2.27	3	4.29	3	2.83	9	1.94
	Total	157	100	132	100.00	70	100.00	106	100.00	465	100.00

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Q5.1.1 Do you have adequate access to land for growing and/or harvesting crops?	No	25	15.15	35	21.88	13	8.78	42	28.19	115	18.49
	Yes	140	84.85	125	78.13	135	91.22	107	71.81	507	81.51
	Total	165	100.00	160	100.00	148	100.00	149	100.00	622	100.00
Q5.1.2 Do you feel:	It is enough	131	79.39	115	71.88	106	71.14	115	77.70	467	75.08
	Not enough	34	20.61	45	28.13	43	28.86	33	22.30	155	24.92
	Total	165	100.00	160	100.00	149	100.00	148	100.00	622	100.00
Q5.1.2 Do you want more land?	No	126	76.83	85	53.46	58	38.93	100	67.57	369	59.52
	Yes	38	23.17	74	46.54	91	61.07	48	32.43	251	40.48
	Total	164	100.00	159	100.00	149	100.00	148	100.00	620	100.00
Q5.1.4 Is the land you have for growing and harvesting crops shared? (including family members)	No	54	33.13	33	20.75	53	36.05	14	9.33	154	24.88
	Yes	109	66.87	126	79.25	94	63.95	136	90.67	465	75.12
	Total	163	100.00	159	100.00	147	100.00	150	100.00	619	100.00

Q5.2.1 (1-28) Do you grow and/or harvest this food?

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1. Swamp/hard taro	No	11	6.75	27	16.88	23	15.44	32	21.77	93	15.02
	Yes	152	93.25	133	83.13	126	84.56	115	78.23	526	84.98
	Total	163	100.00	160	100.00	149	100.00	147	100.00	619	100.00
2. Land/soft taro	No	24	14.91	33	20.63	28	19.18	75	53.19	160	26.32
	Yes	137	85.09	127	79.38	118	80.82	66	46.81	448	73.68
	Total	161	100.00	160	100.00	146	100.00	141	100.00	608	100.00
3. Breadfruit	No	25	15.92	2	1.25	14	9.46	7	4.73	48	7.83
	Yes	132	84.08	158	98.75	134	90.54	141	95.27	565	92.17
	Total	157	100.00	160	100.00	148	100.00	148	100.00	613	100.00
4. Banana	No	5	3.13	1	0.63	9	6.04	3	2.03	18	2.92
	Yes	155	96.88	159	99.38	140	93.96	145	97.97	599	97.08
	Total	160	100.00	160	100.00	149	100.00	148	100.00	617	100.00
5. Coconut	No	8	5.10	5	3.13	15	10.14	7	4.76	35	5.72
	Yes	149	94.90	155	96.88	133	89.86	140	95.24	577	94.28
	Total	157	100.00	160	100.00	148	100.00	147	100.00	612	100.00
6. Copra (coconut product)	No	12	8.39	82	51.25	20	14.39	81	57.45	195	33.45
	Yes	131	91.61	78	48.75	119	85.61	60	42.55	388	66.55
	Total	143	100.00	160	100.00	139	100.00	141	100.00	583	100.00
7. Yam	No	33	21.57	22	13.75	83	58.87	126	90.65	264	44.52
	Yes	120	78.43	138	86.25	58	41.13	13	9.35	329	55.48
	Total	153	100.00	160	100.00	141	100.00	139	100.00	593	100.00
8. Mango	No	64	43.54	44	27.50	41	28.87	27	19.15	176	29.83
	Yes	83	56.46	116	72.50	101	71.13	114	80.85	414	70.17
	Total	147	100.00	160	100.00	142	100.00	141	100.00	590	100.00
9. Pineapple	No	56	37.58	59	36.88	60	41.96	88	62.86	263	44.43
	Yes	93	62.42	101	63.13	83	58.04	52	37.14	329	55.57
	Total	149	100.00	160	100.00	143	100.00	140	100.00	592	100.00
10. Limes/lemons	No	50	33.56	26	16.25	24	16.33	38	26.95	138	23.12
	Yes	99	66.44	134	83.75	123	83.67	103	73.05	459	76.88
	Total	149	100.00	160	100.00	147	100.00	141	100.00	597	100.00

11. Sweet potatoes	No	53	35.57	142	89.31	81	59.56	108	77.70	384	65.87
	Yes	96	64.43	17	10.69	55	40.44	31	22.30	199	34.13
	Total	149	100.00	159	100.00	136	100.00	139	100.00	583	100.00
12. Tapioca	No	42	27.81	89	55.63	62	43.36	72	50.70	265	44.46
	Yes	109	72.19	71	44.38	81	56.64	70	49.30	331	55.54
	Total	151	100.00	160	100.00	143	100.00	142	100.00	596	100.00
13. Papaya	No	41	27.70	59	37.11	49	34.75	53	37.59	202	34.30
	Yes	107	72.30	100	62.89	92	65.25	88	62.41	387	65.70
	Total	148	100.00	159	100.00	141	100.00	141	100.00	589	100.00
14. Locally grown/collected Fresh Vegetables	No	55	37.67	106	66.25	72	56.69	87	63.50	320	56.14
	Yes	91	62.33	54	33.75	55	43.31	50	36.50	250	43.86
	Total	146	100.00	160	100.00	127	100.00	137	100.00	570	100.00
15. Locally grown/collected fruits	No	75	55.15	95	59.38	55	65.48	82	60.29	307	59.50
	Yes	61	44.85	65	40.63	29	34.52	54	39.71	209	40.50
	Total	136	100.00	160	100.00	84	100.00	136	100.00	516	100.00
16. Soursop	No	75	54.35	57	35.63	77	57.89	60	43.17	269	47.19
	Yes	63	45.65	103	64.38	56	42.11	79	56.83	301	52.81
	Total	138	100.00	160	100.00	133	100.00	139	100.00	570	100.00
17. Black lepper	No	121	93.80	141	88.68	120	93.75	136	98.55	518	93.50
	Yes	8	6.20	18	11.32	8	6.25	2	1.45	36	6.50
	Total	129	100.00	159	100.00	128	100.00	138	100.00	554	100.00
18. Hot peppers	No	59	40.69	78	48.75	57	40.43	72	51.06	266	45.32
	Yes	86	59.31	82	51.25	84	59.57	69	48.94	321	54.68
	Total	145	100.00	160	100.00	141	100.00	141	100.00	587	100.00
19. Sakau (Kava)	No	123	97.62	27	16.88	90	68.18	134	97.10	374	67.27
	Yes	3	2.38	133	83.13	42	31.82	4	2.90	182	32.73
	Total	126	100.00	160	100.00	132	100.00	138	100.00	556	100.00
20. Sugar cane	No	53	36.55	74	46.25	82	59.85	98	70.00	307	52.75
	Yes	92	63.45	86	53.75	55	40.15	42	30.00	275	47.25
	Total	145	100.00	160	100.00	137	100.00	140	100.00	582	100.00
21. Betel leaf	No	19	12.26	108	67.50	98	74.24	120	86.33	345	58.87
	Yes	135	87.74	52	32.50	34	25.76	19	13.67	240	40.96
	Total	155	100.00	160	100.00	132	100.00	139	100.00	586	100.00
22. Durian (football plant)	No	118	90.08	151	94.38	121	94.53	139	100.00	529	94.80
	Yes	13	9.92	9	5.63	7	5.47	0	0	29	5.20
	Total	131	100.00	160	100.00	128	100.00	139	100.00	558	100.00
23. Cacao	No	111	85.38	140	87.50	124	96.88	139	100.00	514	92.28
	Yes	19	14.62	20	12.50	4	3.13	0	0	43	7.72
	Total	130	100.00	160	100.00	128	100.00	139	100.00	557	100.00
24. Chestnut	No	70	47.95	118	73.75	115	89.15	137	99.28	440	76.79
	Yes	75	52.05	42	26.25	14	10.85	1	0.72	132	23.04
	Total	146	100.00	160	100.00	129	100.00	138	100.00	573	100.00
25. Betelnut	No	9	5.61	38	23.75	34	24.64	53	38.41	134	22.48
	Yes	151	94.39	122	76.25	104	75.36	85	61.59	462	77.52
	Total	160	100.00	160	100.00	138	100.00	138	100.00	596	100.00
26. Tangerine/ orange	No	68	50.75	138	86.25	47	33.10	109	81.34	362	63.51
	Yes	66	49.25	22	13.75	95	66.90	25	18.66	208	36.49
	Total	134	100.00	160	100.00	142	100.00	134	100.00	570	100.00
27. Medicinal crops (example: Noni)	No	56	41.48	43	26.88	54	39.71	32	23.53	185	32.63
	Yes	79	58.52	117	73.13	82	60.29	104	76.47	382	67.37
	Total	135	100.00	160	100.00	136	100.00	136	100.00	567	100.00
28. If others, list them here:	No	39	97.50	145	91.19	7	50.00	72	83.72	263	87.96
	Yes	1	2.50	14	8.81	7	50.00	14	16.28	36	12.04
	Total	40	100.00	159	100.00	14	100.00	86	100.00	299	100.00

Q5.2.2 (1-28) How often do you harvest from the garden, agroforest and/or patch?

1. Swamp taro or hard taro

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Several times a week	12	7.95	17	12.78	13	10.40	26	22.81	68	13.00
Once a week	47	31.13	18	13.53	23	18.40	27	23.68	115	21.99
Every other week	48	31.79	14	10.53	21	16.80	15	13.16	98	18.74
Once a month	44	29.14	76	57.14	64	51.20	44	38.60	228	43.59
Never	0	0.00	8	6.02	4	3.20	2	1.75	14	2.68
Total	151	100.00	133	100.00	125	100.00	114	100.00	523	100.00

2. Land taro or soft taro

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Several times a week	7	5.26	14	10.85	14	11.86	10	14.71	45	10.04
Once a week	31	23.31	19	14.73	19	16.10	13	19.12	82	18.30
Every other week	27	20.30	18	13.95	25	21.19	10	14.71	80	17.86
Once a month	68	51.13	69	53.49	58	49.15	31	45.59	226	50.45
Never	0	0	9	6.98	2	1.69	4	5.88	15	3.35
Total	133	100.00	129	100.00	118	100.00	68	100.00	448	100.00

3. Breadfruit

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Several times a week	4	3.20	46	29.68	21	16.03	20	14.39	91	16.55
Once a week	28	22.40	30	19.35	45	34.35	28	20.14	131	23.82
Every other week	13	10.40	21	13.55	22	16.79	33	23.74	89	16.18
Once a month	80	64.00	56	36.13	41	31.30	55	39.57	232	42.18
Never	4	3.20	2	1.29	2	1.53	3	2.16	11	2.00
Total	125	100.00	155	100.00	131	100.00	139	100.00	550	100.00

4. Banana

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Several times a week	18	11.61	56	35.90	38	27.74	30	21.28	142	24.11
Once a week	35	22.58	39	25.00	45	32.85	37	26.24	156	26.49
Every other week	47	30.32	29	18.59	23	16.79	38	26.95	137	23.26
Once a month	55	35.48	32	20.51	30	21.90	33	23.40	150	25.47
Never	0.	0	0	0	1	0.73	3	2.13	4	0.68
Total	155	100.00	156	100.00	137	100.00	141	100.00	589	100.00

5. Coconut

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Several times a week	30	20.83	81	53.64	29	22.48	38	27.54	178	31.67
Once a week	49	34.03	20	13.25	40	31.01	35	25.36	144	25.62
Every other week	23	15.97	17	11.26	21	16.28	28	20.29	89	15.84
Once a month	42	29.17	31	20.53	35	27.13	34	24.64	142	25.27
Never	1	0.69	2	1.32	4	3.10	3	2.17	10	1.78
Total	144	100.00	151	100.00	129	100.00	138	100.00	562	100.00

6. Copra

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	42	33.07	50	61.73	25	21.93	23	39.66	140	36.84
Once a week	40	31.50	13	16.05	37	32.46	18	31.03	108	28.42
Every other week	26	20.47	5	6.17	21	18.42	6	10.34	58	15.26
Once a month	19	14.96	6	7.41	28	24.56	7	12.07	60	15.79
Never	1	0.79	7	8.64	3	2.63	4	6.90	15	3.95
Total	42	33.07	50	61.73	25	21.93	23	39.66	140	36.84

7. Yam

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	3	2.75	22	16.42	2	3.39	1	5.56	28	8.75
Once a week	21	19.27	10	7.46	8	13.56	5	27.78	44	13.75
Every other week	10	9.17	12	8.96	7	11.86	4	22.22	33	10.31
Once a month	67	61.47	81	60.45	29	49.15	6	33.33	183	57.19
Never	8	7.34	9	6.72	13	22.03	2	11.11	32	10.00
Total	109	100.00	134	100.00	59	100.00	18	100.00	320	100.00

8. Mango

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	7	8.86	40	34.19	6	6.32	15	14.56	68	17.26
Once a week	14	17.72	6	5.13	12	12.63	16	15.53	48	12.18
Every other week	1	1.27	3	2.56	6	6.32	18	17.48	28	7.11
Once a month	53	67.09	58	49.57	53	55.79	52	50.49	216	54.82
Never	4	5.06	10	8.55	18	18.95	2	1.94	34	8.63
Total	79	100.00	117	100.00	95	100.00	103	100.00	394	100.00

9. Pineapple

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	5	5.68	14	13.86	2	2.41	4	6.90	25	7.58
Once a week	13	14.77	13	12.87	11	13.25	16	27.59	53	16.06
Every other week	2	2.27	15	14.85	10	12.05	12	20.69	39	11.82
Once a month	63	71.59	52	51.49	46	55.42	26	44.83	187	56.67
Never	5	5.68	7	6.93	14	16.87	0	0.00	26	7.88
Total	88	100.00	101	100.00	83	100.00	58	100.00	330	100.00

10. Lime/lemon

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	13	13.40	82	61.65	34	28.33	29	29.59	158	35.27
Once a week	28	28.87	24	18.05	35	29.17	28	28.57	115	25.67
Every other week	22	22.68	10	7.52	19	15.83	28	28.57	79	17.63
Once a month	32	32.99	14	10.53	23	19.17	13	13.27	82	18.30
Never	2	2.06	3	2.26	9	7.50	0	0.00	14	3.13
Total	97	100.00	133	100.00	120	100.00	98	100.00	448	100.00

11. Sweet potatoes

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	6	6.74	2	8.70	2	3.64	0	0.00	10	5.13
Once a week	10	11.24	1	4.35	9	16.36	3	10.71	23	11.79
Every other week	11	12.36	3	13.04	4	7.27	12	42.86	30	15.38
Once a month	59	66.29	5	21.74	26	47.27	12	42.86	102	52.31
Never	3	3.37	12	52.17	14	25.45	1	3.57	30	15.38
Total	89	100.00	23	100.00	55	100.00	28	100.00	195	100.00

12. Tapioca

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	5	4.95	6	7.79	5	6.17	2	2.99	18	5.52
Once a week	11	10.89	7	9.09	11	13.58	14	20.90	43	13.19
Every other week	17	16.83	16	20.78	13	16.05	16	23.88	62	19.02
Once a month	63	62.38	38	49.35	43	53.09	31	46.27	175	53.68
Never	5	4.95	10	12.99	9	11.11	4	5.97	28	8.59
Total	101	100.00	77	100.00	81	100.00	67	100.00	326	100.00

13. Papaya

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	9	8.91	20	18.18	9	10.23	15	17.65	53	13.80
Once a week	21	20.79	26	23.64	13	14.77	24	28.24	84	21.88
Every other week	21	20.79	20	18.18	20	22.73	28	32.94	89	23.18
Once a month	46	45.54	38	34.55	38	43.18	16	18.82	138	35.94
Never	4	3.96	6	5.45	8	9.09	2	2.35	20	5.21
Total	101	100.00	110	100.00	88	100.00	85	100.00	384	100.00

14. Locally grown/collected fresh vegetables

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	24	27.91	26	45.61	17	30.91	10	21.28	77	31.43
Once a week	25	29.07	8	14.04	11	20.00	14	29.79	58	23.67
Every other week	15	17.44	6	10.53	9	16.36	16	34.04	46	18.78
Once a month	21	24.42	8	14.04	13	23.64	6	12.77	48	19.59
Never	1	1.16	9	15.79	5	9.09	1	2.13	16	6.53
Total	86	100.00	57	100.00	55	100.00	47	100.00	245	100.00

15. Locally grown/collected fruits

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	11	18.33	18	26.47	2	6.06	11	20.37	42	19.53
Once a week	16	26.67	10	14.71	7	21.21	17	31.48	50	23.26
Every other week	7	11.67	8	11.76	4	12.12	14	25.93	33	15.35
Once a month	24	40.00	25	36.76	16	48.48	11	20.37	76	35.35
Never	2	3.33	7	10.29	4	12.12	1	1.85	14	6.51
Total	60	100.00	68	100.00	33	100.00	54	100.00	215	100.00

16. Soursop

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	2	3.17	11	10.28	2	3.57	10	12.99	25	8.25
Once a week	6	9.52	7	6.54	2	3.57	14	18.18	29	9.57
Every other week	2	3.17	12	11.21	1	1.79	21	27.27	36	11.88
Once a month	47	74.60	68	63.55	39	69.64	30	38.96	184	60.73
Never	6	9.52	9	8.41	12	21.43	2	2.60	29	9.57
Total	63	100.00	107	100.00	56	100.00	77	100.00	303	100.00

17. Black pepper

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	2	20.00	4	13.79	2	18.18	1	50.00	9	17.31
Once a week	0	0.00	5	17.24	2	18.18	1	50.00	8	15.38
Every other week	0	0.00	1	3.45	0	0	0	0.00	1	1.92
Once a month	2	20.00	7	24.14	4	36.36	0	0.00	13	25.00
Never	6	60.00	12	41.38	3	27.27	0	0.00	21	40.38
Total	10	100.00	29	100.00	11	100.00	2	100.00	52	100.00

18. Hot pepper

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	31	36.05	55	62.50	29	37.18	22	33.33	137	43.08
Once a week	21	24.42	11	12.50	18	23.08	15	22.73	65	20.44
Every other week	11	12.79	4	4.55	12	15.38	17	25.76	44	13.84
Once a month	21	24.42	8	9.09	13	16.67	10	15.15	52	16.35
Never	2	2.33	10	11.36	6	7.69	2	3.03	20	6.29
Total	86	100.00	88	100.00	78	100.00	66	100.00	318	100.00

19. Sakau (Kava)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	0	0.00	33	24.63	1	2.27	0	0.00	34	18.18
Once a week	0	0.00	23	17.16	3	6.82	1	33.33	27	14.44
Every other week	0	0.00	22	16.42	0	0	1	33.33	23	12.30
Once a month	1	16.67	49	36.57	18	40.91	1	33.33	69	36.90
Never	5	83.33	7	5.22	22	50.00	0	0.00	34	18.18
Total	6	100.00	134	100.00	44	100.00	3	100.00	187	100.00

20. Sugar cane

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	7	7.69	9	10.47	3	5.45	0	0.00	19	6.99
Once a week	16	17.58	12	13.95	4	7.27	5	12.50	37	13.60
Every other week	11	12.09	13	15.12	3	5.45	11	27.50	38	13.97
Once a month	53	58.24	39	45.35	37	67.27	9	22.50	138	50.74
Never	4	4.40	13	15.12	8	14.55	15	37.50	40	14.71
Total	91	100.00	86	100.00	55	100.00	40	100.00	272	100.00

21. Betel leaf

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	104	77.04	29	49.15	6	16.67	0	0.00	139	56.05
Once a week	22	16.30	5	8.47	6	16.67	4	22.22	37	14.92
Every other week	4	2.96	6	10.17	5	13.89	4	22.22	19	7.66
Once a month	4	2.96	7	11.86	11	30.56	2	11.11	24	9.68
Never	1	0.74	12	20.34	8	22.22	8	44.44	29	11.69
Total	135	100.00	59	100.00	36	100.00	18	100.00	248	100.00

22. Durian (football plant)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	0	0.00	1	6.67	2	20.00	0	0.00	3	7.14
Once a week	1	5.88	2	13.33	1	10.00	0	0.00	4	9.52
Every other week	0	0.00	o	o	1	10.00	0	0.00	1	2.38
Once a month	10	58.82	2	13.33	1	10.00	0	0.00	13	30.95
Never	6	35.29	10	66.67	5	50.00	0	0.00	21	50.00
Total	17	100.00	15	100.00	10	100.00	0	0.00	42	100.00

23. Cacao

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	5	19.23	2	6.67	0	0	0	0.00	7	10.94
Once a week	2	7.69	3	10.00	1	12.50	0	0.00	6	9.38
Every other week	1	3.85	0	0	0	0	0	0.00	1	1.56
Once a month	10	38.46	10	33.33	2	25.00	0	0.00	22	34.38
Never	8	30.77	15	50.00	5	62.50	0	0.00	28	43.75
Total	26	100.00	30	100.00	8	100.00	0	0.00	64	100.00

24. Chestnut

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	8	10.81	7	14.29	1	6.25	0	0.00	16	11.19
Once a week	9	12.16	2	4.08	1	6.25	2	50.00	14	9.79
Every other week	4	5.41	2	4.08	0	0	0	0.00	6	4.20
Once a month	49	66.22	25	51.02	6	37.50	0	0.00	80	55.94
Never	4	5.41	13	26.53	8	50.00	2	50.00	27	18.88
Total	74	100.00	49	100.00	16	100.00	4	100.00	143	100.00

25. Betelnut

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	111	75.00	54	43.90	11	11.34	27	32.14	203	44.91
Once a week	19	12.84	22	17.89	7	7.22	17	20.24	65	14.38
Every other week	9	6.08	15	12.20	14	14.43	16	19.05	54	11.95
Once a month	8	5.41	23	18.70	47	48.45	23	27.38	101	22.35
Never	1	0.68	7	5.69	18	18.56	1	1.19	27	5.97
Total	148	100.00	123	100.00	97	100.00	84	100.00	452	100.00

26. Tangerine/orange

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	7	10.94	4	12.12	11	11.83	6	24.00	28	13.02
Once a week	16	25.00	1	3.03	17	18.28	4	16.00	38	17.67
Every other week	8	12.50	6	18.18	18	19.35	5	20.00	37	17.21
Once a month	31	48.44	7	21.21	40	43.01	9	36.00	87	40.47
Never	2	3.13	15	45.45	7	7.53	1	4.00	25	11.63
Total	64	100.00	33	100.00	93	100.00	25	100.00	215	100.00

27. Medicinal crops (example: Noni)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	9	11.69	25	21.37	11	14.10	31	31.96	76	20.60
Once a week	12	15.58	22	18.80	8	10.26	27	27.84	69	18.70
Every other week	6	7.79	14	11.97	9	11.54	18	18.56	47	12.74
Once a month	47	61.04	50	42.74	42	53.85	19	19.59	158	42.82
Never	3	3.90	6	5.13	8	10.26	2	2.06	19	5.15
Total	77	100.00	117	100.00	78	100.00	97	100.00	369	100.00

28. If others, list them here:

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Several times a week	0	0.00	3	21.43	1	14.29	3	33.33	7	22.58
Once a week	0	0.00	1	7.14	4	57.14	1	11.11	6	19.35
Every other week	0	0.00	5	35.71	0	0.00	1	11.11	6	19.35
Once a month	1	100.00	3	21.43	1	14.29	3	33.33	8	25.81
Never	0	0.00	2	14.29	1	14.29	1	11.11	4	12.90
Total	1	100.00	14	100.00	7	100.00	9	100.00	31	100.00

Q5.2.3 (1-28) Over the course of a year, how much do you harvest for each crop?

1. Swamp taro or hard taro

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	1	0.66	5	3.70	4	3.20	51	45.13	61	11.62
Small quantity (<50 lbs)	48	31.58	61	45.19	40	32.00	46	40.71	195	37.14
Medium quantity (50-100 lbs)	51	33.55	43	31.85	47	37.60	15	13.27	156	29.71
Large quantity (>100 lbs)	52	34.21	26	19.26	34	27.20	1	0.88	113	21.52
Total	152	100.00	135	100.00	125	100.00	113	100.00	525	100.00

2. Land taro or soft taro

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	2	1.44	8	6.35	2	1.68	38	58.46	50	11.14
Small quantity (<50 lbs)	68	48.92	59	46.83	41	34.45	21	32.31	189	42.09
Medium quantity (50-100 lbs)	38	27.34	38	30.16	47	39.50	5	7.69	128	28.51
Large quantity (>100 lbs)	31	22.30	21	16.67	29	24.37	1	1.54	82	18.26
Total	139	100.00	126	100.00	119	100.00	65	100.00	449	100.00

3. Breadfruit

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	13	9.77	6	3.85	2	1.53	53	39.85	74	13.38
Small quantity (<50 lbs)	62	46.62	47	30.13	35	26.72	63	47.37	207	37.43
Medium quantity (50-100 lbs)	45	33.83	44	28.21	52	39.69	16	12.03	157	28.39
Large quantity (>100 lbs)	13	9.77	59	37.82	42	32.06	1	0.75	115	20.80
Total	133	100.00	156	100.00	131	100.00	133	100.00	553	100.00

4. Banana

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	65	43.05	1	0.63	2	1.46	60	42.55	128	21.77
Small quantity (<50 lbs)	55	36.42	57	35.85	44	32.12	64	45.39	220	37.41
Medium quantity (50-100 lbs)	30	19.87	46	28.93	44	32.12	16	11.35	136	23.13
Large quantity (>100 lbs)	1	0.66	55	34.59	47	34.31	1	0.71	104	17.69
Total	151	100.00	159	100.00	137	100.00	141	100.00	588	100.00

5. Coconut

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	2	1.38	3	1.95	5	3.85	64	48.12	74	13.17
Small quantity (<50 lbs)	49	33.79	45	29.22	37	28.46	57	42.86	188	33.45
Medium quantity (50-100 lbs)	52	35.86	60	38.96	49	37.69	11	8.27	172	30.60
Large quantity (>100 lbs)	42	28.97	46	29.87	39	30.00	1	0.75	128	22.78
Total	145	100.00	154	100.00	130	100.00	133	100.00	562	100.00

6. Copra

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	3	2.38	7	8.64	4	3.57	28	52.83	42	11.29
Small quantity (<50 lbs)	44	34.92	8	9.88	25	22.32	21	39.62	98	26.34
Medium quantity (50-100 lbs)	35	27.78	31	38.27	44	39.29	4	7.55	114	30.65
Large quantity (>100 lbs)	44	34.92	35	43.21	39	34.82	0	0.00	118	31.72
Total	126	100.00	81	100.00	112	100.00	53	100.00	372	100.00

7. Yam

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	15	12.93	11	8.21	12	20.34	7	58.33	45	14.02
Small quantity (<50 lbs)	56	48.28	37	27.61	33	55.93	4	33.33	130	40.50
Medium quantity (50-100 lbs)	37	31.90	44	32.84	11	18.64	1	8.33	93	28.97
Large quantity (>100 lbs)	8	6.90	42	31.34	3	5.08	0	0.00	53	16.51
Total	116	100.00	134	100.00	59	100.00	12	100.00	321	100.00

8. Mango

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	15	16.13	13	11.30	15	15.63	57	54.29	100	24.45
Small quantity (<50 lbs)	44	47.31	30	26.09	40	41.67	40	38.10	154	37.65
Medium quantity (50-100 lbs)	26	27.96	51	44.35	28	29.17	5	4.76	110	26.89
Large quantity (>100 lbs)	8	8.60	21	18.26	13	13.54	3	2.86	45	11.00
Total	93	100.00	115	100.00	96	100.00	105	100.00	409	100.00

9. Pineapple

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	12	13.04	13	13.00	11	13.25	30	58.82	66	20.25
Small quantity (<50 lbs)	61	66.30	56	56.00	45	54.22	18	35.29	180	55.21
Medium quantity (50-100 lbs)	15	16.30	25	25.00	23	27.71	2	3.92	65	19.94
Large quantity (>100 lbs)	4	4.35	6	6.00	4	4.82	1	1.96	15	4.60
Total	92	100.00	100	100.00	83	100.00	51	100.00	326	100.00

10. Lime/lemon

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	10	9.52	5	3.79	8	7.08	68	66.02	91	20.09
Small quantity (<50 lbs)	67	63.81	70	53.03	52	46.02	31	30.10	220	48.57
Medium quantity (50-100 lbs)	25	23.81	44	33.33	45	39.82	4	3.88	118	26.05
Large quantity (>100 lbs)	3	2.86	13	9.85	8	7.08	0	0.00	24	5.30
Total	105	100.00	132	100.00	113	100.00	103	100.00	453	100.00

11. Sweet potato

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	11	11.46	10	47.62	15	26.32	8	29.63	44	21.89
Small quantity (<50 lbs)	56	58.33	3	14.29	30	52.63	14	51.85	103	51.24
Medium quantity (50-100 lbs)	24	25.00	4	19.05	8	14.04	4	14.81	40	19.90
Large quantity (>100 lbs)	5	5.21	4	19.05	4	7.02	1	3.70	14	6.97
Total	96	100.00	21	100.00	57	100.00	27	100.00	201	100.00

12. Tapioca

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	7	6.54	15	19.74	9	11.25	23	37.10	54	16.62
Small quantity (<50 lbs)	57	53.27	27	35.53	38	47.50	31	50.00	153	47.08
Medium quantity (50-100 lbs)	36	33.64	25	32.89	25	31.25	7	11.29	93	28.62
Large quantity (>100 lbs)	7	6.54	9	11.84	8	10.00	1	1.61	25	7.69
Total	107	100.00	76	100.00	80	100.00	62	100.00	325	100.00

13. Papaya

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	6	5.56	8	7.69	6	7.06	47	57.32	67	17.68
Small quantity (<50 lbs)	72	66.67	57	54.81	42	49.41	28	34.15	199	52.51
Medium quantity (50-100 lbs)	25	23.15	31	29.81	25	29.41	6	7.32	87	22.96
Large quantity (>100 lbs)	5	4.63	8	7.69	12	14.12	1	1.22	26	6.86
Total	108	100.00	104	100.00	85	100.00	82	100.00	379	100.00

14. Locally grown/collected fresh vegetables

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	5	5.49	11	19.30	9	16.36	6	10.91	31	12.02
Small quantity (<50 lbs)	60	65.93	23	40.35	26	47.27	34	61.82	143	55.43
Medium quantity (50-100 lbs)	19	20.88	15	26.32	11	20.00	13	23.64	58	22.48
Large quantity (>100 lbs)	7	7.69	8	14.04	9	16.36	2	3.64	26	10.08
Total	91	100.00	57	100.00	55	100.00	55	100.00	258	100.00

15. Locally grown/collected fruits

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	6	9.52	10	14.49	9	25.00	35	74.47	60	27.91
Small quantity (<50 lbs)	33	52.38	30	43.48	16	44.44	10	21.28	89	41.40
Medium quantity (50-100 lbs)	18	28.57	21	30.43	8	22.22	2	4.26	49	22.79
Large quantity (>100 lbs)	6	9.52	8	11.59	3	8.33	0	0.00	17	7.91
Total	63	100.00	69	100.00	36	100.00	47	100.00	215	100.00

16. Soursop

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	10	14.29	7	6.80	10	19.61	50	67.57	77	25.84
Small quantity (<50 lbs)	50	71.43	67	65.05	26	50.98	21	28.38	164	55.03
Medium quantity (50-100 lbs)	9	12.86	24	23.30	13	25.49	2	2.70	48	16.11
Large quantity (>100 lbs)	1	1.43	5	4.85	2	3.92	1	1.35	9	3.02
Total	70	100.00	103	100.00	51	100.00	74	100.00	298	100.00

17. Black pepper

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	14	73.68	11	45.83	7	46.67	4	100.00	36	58.06
Small quantity (<50 lbs)	3	15.79	11	45.83	7	46.67	0	0.00	21	33.87
Medium quantity (50-100 lbs)	1	5.26	1	4.17	1	6.67	0	0.00	3	4.84
Large quantity (>100 lbs)	1	5.26	1	4.17	0	0	0	0.00	2	3.23
Total	19	100.00	24	100.00	15	100.00	4	100.00	62	100.00

18. Hot peppers

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	10	10.99	9	10.34	9	11.11	43	66.15	71	21.91
Small quantity (<50 lbs)	65	71.43	61	70.11	53	65.43	19	29.23	198	61.11
Medium quantity (50-100 lbs)	9	9.89	15	17.24	12	14.81	2	3.08	38	11.73
Large quantity (>100 lbs)	7	7.69	2	2.30	7	8.64	1	1.54	17	5.25
Total	91	100.00	87	100.00	81	100.00	65	100.00	324	100.00

19. Sakau (Kava)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	14	93.33	9	6.98	18	46.15	4	100.00	45	24.06
Small quantity (<50 lbs)	0	0.00	34	26.36	13	33.33	0	0.00	47	25.13
Medium quantity (50-100 lbs)	0	0.00	34	26.36	2	5.13	0	0.00	36	19.25
Large quantity (>100 lbs)	1	6.67	52	40.31	6	15.38	0	0.00	59	31.55
Total	15	100.00	129	100.00	39	100.00	4	100.00	187	100.00

20. Sugar cane

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	9	9.57	15	17.65	12	21.43	22	55.00	58	21.09
Small quantity (<50 lbs)	63	67.02	37	43.53	24	42.86	13	32.50	137	49.82
Medium quantity (50-100 lbs)	20	21.28	21	24.71	14	25.00	3	7.50	58	21.09
Large quantity (>100 lbs)	2	2.13	12	14.12	6	10.71	2	5.00	22	8.00
Total	94	100.00	85	100.00	56	100.00	40	100.00	275	100.00

21. Betel leaf

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	5	3.68	9	16.36	8	24.24	8	42.11	30	12.35
Small quantity (<50 lbs)	42	30.88	32	58.18	15	45.45	10	52.63	99	40.74
Medium quantity (50-100 lbs)	48	35.29	12	21.82	6	18.18	0	0.00	66	27.16
Large quantity (>100 lbs)	41	30.15	2	3.64	4	12.12	1	5.26	48	19.75
Total	136	100.00	55	100.00	33	100.00	19	100.00	243	100.00

22. Durian (football plant)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	15	57.69	9	56.25	9	64.29	0	0.00	33	58.93
Small quantity (<50 lbs)	8	30.77	4	25.00	4	28.57	0	0.00	16	28.57
Medium quantity (50-100 lbs)	2	7.69	3	18.75	1	7.14	0	0.00	6	10.71
Large quantity (>100 lbs)	1	3.85	0	0	0	0	0	0.00	1	1.79
Total	26	100.00	16	100.00	14	100.00	0	0.00	56	100.00

23. Cacao

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	15	53.57	13	46.43	9	69.23	0	0.00	33	58.93
Small quantity (<50 lbs)	12	42.86	11	39.29	3	23.08	0	0.00	16	28.57
Medium quantity (50-100 lbs)	0	0.00	3	10.71	1	7.69	0	0.00	6	10.71
Large quantity (>100 lbs)	1	3.57	1	3.57	0	0	0	0.00	1	1.79
Total	28	100.00	28	100.00	13	100.00	0	0.00	56	100.00

24. Chestnut

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	10	12.82	13	26.53	11	55.00	0	0.00	34	23.13
Small quantity (<50 lbs)	38	48.72	21	42.86	5	25.00	0	0.00	64	43.54
Medium quantity (50-100 lbs)	25	32.05	14	28.57	3	15.00	0	0.00	42	28.57
Large quantity (>100 lbs)	5	6.41	1	2.04	1	5.00	0	0.00	7	4.76
Total	78	100.00	49	100.00	20	100.00	0	0.00	147	100.00

25. Betelnut

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	1	0.68	6	5.08	13	14.29	33	39.29	53	12.07
Small quantity (<50 lbs)	39	26.71	39	33.05	31	34.07	39	46.43	148	33.71
Medium quantity (50-100 lbs)	19	13.01	29	24.58	37	40.66	12	14.29	97	22.10
Large quantity (>100 lbs)	87	59.59	44	37.29	10	10.99	0	0.00	141	32.12
Total	146	100.00	118	100.00	91	100.00	84	100.00	439	100.00

26. Tangerine/orange

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	8	11.27	10	32.26	8	8.70	15	62.50	41	18.81
Small quantity (<50 lbs)	43	60.56	11	35.48	41	44.57	7	29.17	102	46.79
Medium quantity (50-100 lbs)	17	23.94	8	25.81	31	33.70	2	8.33	58	26.61
Large quantity (>100 lbs)	3	4.23	2	6.45	12	13.04	0	0.00	17	7.80
Total	71	100.00	31	100.00	92	100.00	24	100.00	218	100.00

27. Medicinal crops (example: Noni)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	7	8.86	5	4.27	9	11.39	66	71.74	87	23.71
Small quantity (<50 lbs)	60	75.95	71	60.68	40	50.63	18	19.57	189	51.50
Medium quantity (50-100 lbs)	11	13.92	38	32.48	25	31.65	7	7.61	81	22.07
Large quantity (>100 lbs)	1	1.27	3	2.56	5	6.33	1	1.09	10	2.72
Total	79	100.00	117	100.00	79	100.00	92	100.00	367	100.00

28. If others, list them here:

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Crop not ready for harvest	3	60.00	5	33.33	5	71.43	5	62.50	18	51.43
Small quantity (<50 lbs)	0	0.00	7	46.67	1	14.29	1	12.50	9	25.71
Medium quantity (50-100 lbs)	1	20.00	2	13.33	0	0	1	12.50	4	11.43
Large quantity (>100 lbs)	1	20.00	1	6.67	1	14.29	1	12.50	4	11.43
Total	5	100.00	15	100.00	7	100.00	8	100.00	35	100.00

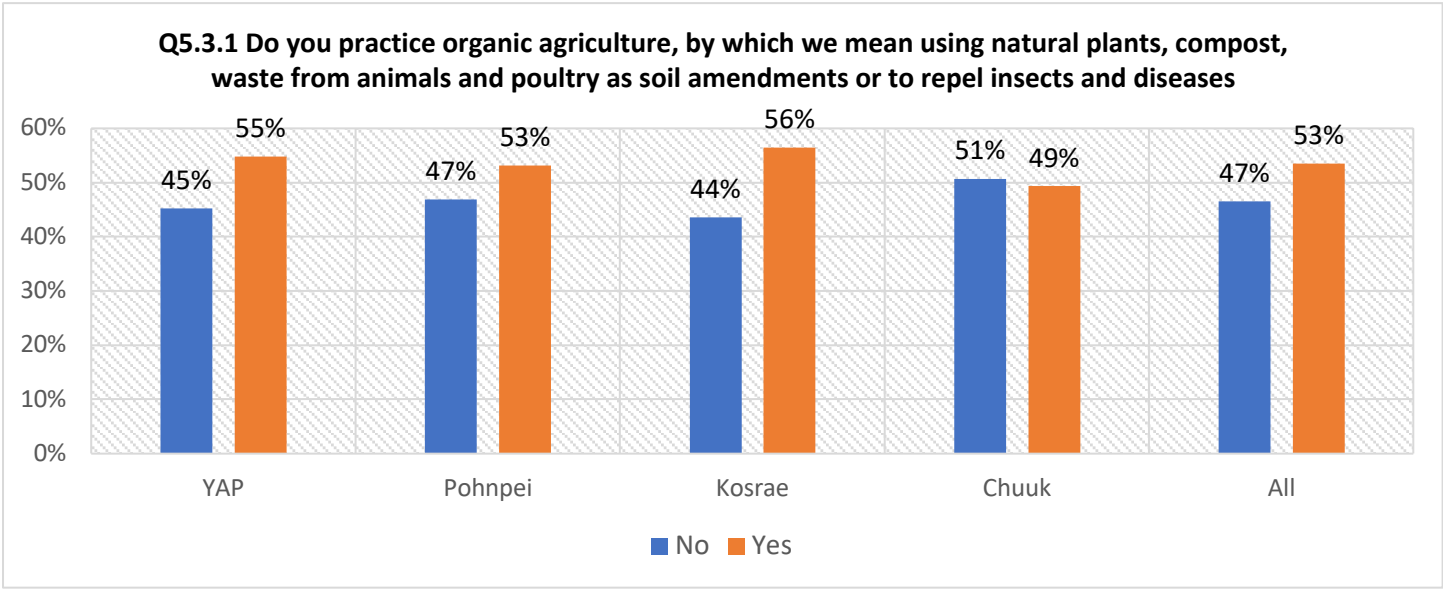
Q5.2.4 (1-28) Over the course of one year, how many plants do you have in your field?

Variable	Yap				Pohnpei				Kosrae				Chuuk			
	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max
Swamp taro or hard taro	146	185.81	4	4000	128	475.63	5	5000	123	655.187	2067.264	10	119	191	0	3000
Land taro or soft taro	134	74.28	2	1000	123	170.54	2	2000	118	362.314	1843.17	7	76	54	0	300
Bread-fruit	129	19.95	1	300	150	34.33	1	200	131	25.359	63.266	1	139	106	0	11100
Banana	150	43.38	1	800	156	127.81	1	2500	137	114.803	170.417	2	142	52	0	500
Coconut	143	152.51	2	5000	151	86.93	1	1500	129	64.752	113.553	2	138	42	0	700
Copra (coco-nut)	124	212.02	2	6000	64	612.13	1	30000	110	60.827	104.096	1	60	54	0	1000
Yam	113	40.20	1	1000	132	28.17	1	250	51	20.902	33.717	1	25	6	0	40
Mango	87	16.24	0	300	113	10.80	0	100	98	6.673	11.738	1	114	7	0	50
Pine-apple	91	19.66	2	100	93	99.69	2	6000	81	36	500	1	66	18	0	200
Limes/ lemons	99	14.13	1	500	125	15.18	1	650	120	13.392	33.363	1	108	5	0	70
Sweet Potatoes	91	37.86	1	200	10	97.60	2	600	53	24.566	33.629	1	44	31	0	305
Tapioca	103	45.82	1	500	66	71.14	1	500	80	51.938	92.911	1	76	56	0	400
Papaya	106	24.27	1	300	94	20.26	1	250	88	17.08	31.506	1	89	15	0	305
Locally grown / collected vegetables	82	24.74	1	200	47	56.57	1	1000	51	35.902	52.125	1	51	19	0	100
Locally grown/ collected Fruits	54	14.11	1	100	57	30.40	1	1000	30	11.2	16.61	2	59	6	0	100

Soursop	62	10.18	1	50	97	7.28	1	50	54	4.778	5.046	1	81	4	0	23
Black pepper	4	7.75	5	10	12	36.58	1	300	9	15.556	14.723	4	14	2	0	8
Hot peppers	82	11.73	1	100	79	36.24	1	1000	76	18.579	61.469	1	70	7	0	50
Sakau (Kava)	3	7.33	5	10	125	254.28	1	10000	40	98.475	206.14	3	10	1	0	6
Sugar cane	89	17.44	1	100	73	33.37	1	500	52	26.865	28.207	2	52	14	0	100
Betel leaf	128	61.08	2	1000	48	26.29	1	1000	31	24.419	89.451	1	26	8	0	100
Durian (foot-ball)	12	21.17	1	150	6	9.17	1	30	9	3.667	3.24	1	10	0	0	0
Cacao	12	7.17	1	20	20	3.50	0	15	4	30.5	47.191	1	10	0	0	0
Chestnut	74	18.76	1	300	39	5.36	1	45	11	7.273	14.346	1	12	1	0	6
Betelnut	144	212.79	1	2000	116	57.85	1	3000	99	24.596	33.146	1	91	19	0	100
Tangeri-ne/ orange	66	10.05	1	150	18	9.94	1	50	93	7.71	13.337	1	33	2	0	14
Medici-nal crops	76	42.63	1	1000	112	29.52	1	500	78	23.192	48.483	1	100	13	0	100
Others	0	.	.	.	14	6.14	1	30	3	3.333	2.517	1	11	5	0	25

Q5.2.5.1-28. Is there ever crop loss (0=no, 1=yes,)?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Swamp/hard taro	No	43	29.05	82	64.57	58	46.03	22	19.47	205	39.88
	Yes	105	70.95	45	35.43	68	53.97	91	80.53	309	60.12
	Total	148	100.00	127	100.00	126	100.00	113	100.00	514	100.00
Land/soft taro	No	40	29.63	75	61.98	53	44.54	33	40.24	201	43.98
	Yes	95	70.37	46	38.02	66	55.46	49	59.76	256	56.02
	Total	135	100.00	121	100.00	119	100.00	82	100.00	457	100.00
Breadfruit	No	66	52.38	80	54.79	65	48.15	49	35.25	260	47.62
	Yes	60	47.62	66	45.21	70	51.85	90	64.75	286	52.38
	Total	126	100	146	100.00	135	100.00	139	100.00	546	100.00
Banana	No	72	49.32	99	66.44	71	52.99	50	35.21	292	51.14
	Yes	74	50.68	50	33.56	63	47.01	92	64.79	279	48.86
	Total	146	100.00	149	100.00	134	100.00	142	100.00	571	100.00
Coconut	No	81	57.45	98	67.12	93	73.23	64	47.06	336	61.09
	Yes	60	42.55	48	32.88	34	26.77	72	52.94	214	38.91
	Total	141	100.00	146	100.00	127	100.00	136	100.00	550	100.00
Copra (coconut product)	No	82	65.60	70	80.46	80	72.07	45	70.31	277	71.58
	Yes	43	34.40	17	19.54	31	27.93	19	29.69	110	28.42
	Total	125	100.00	87	100.00	111	100.00	64	100.00	387	100.00
Yam	No	58	51.33	79	60.77	57	78.08	22	73.33	216	62.43
	Yes	55	48.67	51	39.23	16	21.92	8	26.67	130	37.57
	Total	113	100.00	130	100.00	73	100.00	30	100.00	346	100.00
Mango	No	51	61.45	81	69.83	71	70.30	61	53.51	264	63.77
	Yes	32	38.55	35	30.17	30	29.70	53	46.49	150	36.23
	Total	83	100.00	116	100.00	101	100.00	114	100.00	414	100.00
Pineapple	No	55	59.14	74	74.00	59	64.13	34	52.31	222	63.43
	Yes	38	40.86	26	26.00	33	35.87	31	47.69	128	36.57
	Total	93	100.00	100	100.00	92	100.00	65	100.00	350	100.00

Limes/lemons	No	68	69.39	97	73.48	43	36.44	67	62.62	275	60.44
	Yes	30	30.61	35	26.52	75	63.56	40	37.38	180	39.56
	Total	98	100.00	132	100.00	118	100.00	107	100.00	455	100.00
Sweet potatoes	No	45	47.87	26	78.79	55	75.34	24	54.55	150	61.48
	Yes	49	52.13	7	21.21	18	24.66	20	45.45	94	38.52
	Total	94	100.00	33	100.00	73	100.00	44	100.00	244	100.00
Tapioca	No	48	47.52	61	77.22	60	65.22	32	41.03	201	57.43
	Yes	53	52.48	18	22.78	32	34.78	46	58.97	149	42.57
	Total	101	100.00	79	100.00	92	100.00	78	100.00	350	100.00
Papaya	No	45	42.45	75	69.44	53	54.64	45	49.45	218	54.23
	Yes	61	57.55	33	30.56	44	45.36	46	50.55	184	45.77
	Total	106	100.00	108	100.00	97	100.00	91	100.00	402	100.00
Locally grown/collected fresh vegetables	No	60	69.77	50	72.46	32	45.71	30	51.72	172	60.78
	Yes	26	30.23	19	27.54	38	54.29	28	48.28	111	39.22
	Total	86	100.00	69	100.00	70	100.00	58	100.00	283	100.00
Locally grown/ collected fruits	No	42	71.19	62	76.54	40	78.43	31	51.67	175	69.72
	Yes	17	28.81	19	23.46	11	21.57	29	48.33	76	30.28
	Total	59	100.00	81	100.00	51	100.00	60	100.00	251	100.00
Soursop	No	40	58.82	87	82.86	52	80.00	49	56.98	228	70.37
	Yes	28	41.18	18	17.14	13	20.00	37	43.02	96	29.63
	Total	68	100.00	105	100.00	65	100.00	86	100.00	324	100.00
Black pepper	No	19	82.61	33	91.67	32	84.21	15	75.00	99	84.62
	Yes	4	17.39	3	8.33	6	15.79	5	25.00	18	15.38
	Total	23	100.00	36	100.00	38	100.00	20	100.00	117	100.00
Hot peppers	No	47	52.81	73	76.84	43	48.31	41	54.67	204	58.62
	Yes	42	47.19	22	23.16	46	51.69	34	45.33	144	41.38
	Total	89	100.00	95	100.00	89	100.00	75	100.00	348	100.00
Sakau (Kava)	No	14	82.35	83	65.35	46	76.67	17	94.44	160	72.07
	Yes	3	17.65	44	34.65	14	23.33	1	5.56	62	27.93
	Total	17	100.00	127	100.00	60	100.00	18	100.00	222	100.00
Sugar cane	No	45	50.56	68	75.56	50	71.43	26	50.98	189	63.00
	Yes	44	49.44	22	24.44	20	28.57	25	49.02	111	37.00
	Total	89	100.00	90	100.00	70	100.00	51	100.00	300	100.00
Betel leaf	No	55	41.67	58	89.23	43	81.13	19	63.33	175	62.50
	Yes	77	58.33	7	10.77	10	18.87	11	36.67	105	37.50
	Total	132	100.00	65	100.00	53	100.00	30	100.00	280	100.00
Durian (football plant)	No	21	75.00	25	89.29	35	97.22	15	93.75	96	88.89
	Yes	7	25.00	3	10.71	1	2.78	1	6.25	12	11.11
	Total	28	100.00	28	100.00	36	100.00	16	100.00	108	100.00
Cacao	No	26	86.67	32	80.00	34	94.44	13	86.67	105	86.78
	Yes	4	13.33	8	20.00	2	5.56	2	13.33	16	13.22
	Total	30	100.00	40	100.00	36	100.00	15	100.00	121	100.00
Chestnut	No	49	66.22	49	84.48	38	95.00	15	93.75	151	80.32
	Yes	25	33.78	9	15.52	2	5.00	1	6.25	37	19.68
	Total	74	100.00	58	100.00	40	100.00	16	100.00	188	100.00
Betelnut	No	49	34.03	83	70.94	60	58.82	49	55.06	241	53.32
	Yes	95	65.97	34	29.06	42	41.18	40	44.94	211	46.68
	Total	144	100.00	117	100.00	102	100.00	89	100.00	452	100.00
Tangerine/ orange	No	45	66.18	35	87.50	51	51.00	24	66.67	155	63.52
	Yes	23	33.82	5	12.50	49	49.00	12	33.33	89	36.48
	Total	68	100.00	40	100.00	100	100.00	36	100.00	244	100.00
Medicinal crops (example: Noni)	No	57	77.03	96	82.76	61	67.78	54	54.55	268	70.71
	Yes	17	22.97	20	17.24	29	32.22	45	45.45	111	29.29
	Total	74	100.00	116	100.00	90	100.00	99	100.00	379	100.00
If others, list them here:	No	4	100.00	18	85.71	10	100.00	15	88.24	47	90.38
	Yes	0	0.00	3	14.29	0	0	2	11.76	5	9.62
	Total	4	100.00	21	100.00	10	100.00	17	100.00	52	100.00



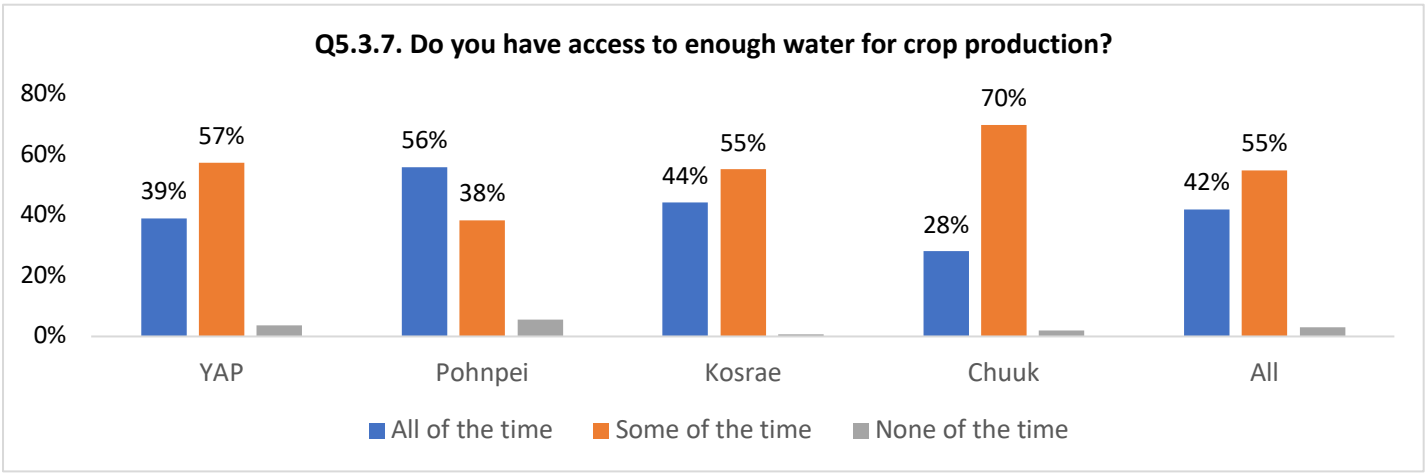
Q5.3.2 What organic methods do you use?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Compost	No	6	6.25	12	13.79	6	7.23	20	31.75	44	13.37
	Yes	90	93.75	75	86.21	77	92.77	43	68.25	285	86.63
	Total	96	100.00	87	100.00	83	100.00	63	100.00	329	100.00
Green manure	No	59	62.11	31	36.47	21	38.89	24	32.88	135	43.97
	Yes	36	37.89	54	63.53	33	61.11	49	67.12	172	56.03
	Total	95	100.00	85	100.00	54	100.00	73	100.00	307	100.00
Chili spray	No	90	94.74	71	89.87	32	72.73	45	90.00	238	88.81
	Yes	5	5.26	8	10.13	12	27.27	5	10.00	30	11.19
	Total	95	100.00	79	100.00	44	100.00	50	100.00	268	100.00
Chipping for mulch	No	48	50.53	63	79.75	29	55.77	37	69.81	177	63.44
	Yes	47	49.47	16	20.25	23	44.23	16	30.19	102	36.56
	Total	95	100.00	79	100.00	52	100.00	53	100.00	279	100.00
Other	No	93	98.94	70	89.74	34	91.89	44	93.62	241	94.14
	Yes	1	1.06	8	10.26	3	8.11	3	6.38	15	5.86
	Total	94	100.00	78	100.00	37	100.00	47	100.00	256	100.00

Questions	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Q5.3.3 Has your ability to grow food been affected by a change in climate?	No	63	37.95	40	25.97	31	20.95	50	34.01	184	29.92
	Yes	103	62.05	114	74.03	117	79.05	97	65.99	431	70.08
	Total	166	100.00	154	100.00	148	100.00	147	100.00	615	100.00
Q5.3.4 Has a change in climate impacted your crop yield?	No	49	29.70	45	28.48	33	22.30	34	23.29	161	26.09
	Yes	116	70.30	113	71.52	115	77.70	112	76.71	456	73.91
	Total	165	100.00	158	10.00	148	100.00	146	100.00	617	100.00

Q5.3.5 If yes, which crops are most affected by climate?	Responses	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Swamp taro	No	36	30.25	56	50.00	30	35.71	31	29.52	127	32.40
	Yes	83	69.75	56	50.00	54	64.29	74	70.48	265	67.60
	Total	119	100.00	112	100.00	84	100.00	105	100.00	392	100.00
Land taro	No	43	36.13	65	58.04	33	40.74	49	56.32	158	42.93
	Yes	76	63.87	47	41.96	48	59.26	38	43.68	210	57.07
	Total	119	100.00	112	100.00	81	100.00	87	100.00	368	100.00
Breadfruit	No	66	55.46	28	25.23	35	40.70	29	30.53	165	42.75
	Yes	53	44.54	83	74.77	51	59.30	66	69.47	221	57.25
	Total	119	100.00	111	100.00	86	100.00	95	100.00	386	100.00
Betelnut	No	26	21.85	62	56.36	45	57.69	55	59.78	171	46.59
	Yes	93	78.15	48	43.64	33	42.31	37	40.22	196	53.41
	Total	119	100.00	110	100.00	78	100.00	92	100.00	367	100.00
Banana	No	59	49.58	58	52.25	32	39.51	29	28.43	152	39.69
	Yes	60	50.42	53	47.75	49	60.49	73	71.57	231	60.31
	Total	119	100.00	111	100.00	81	100.00	102	100.00	383	100.00
Coconut	No	80	67.23	54	48.65	49	70.00	49	55.68	227	65.42
	Yes	39	32.77	57	51.35	21	30.00	39	44.32	120	34.58
	Total	119	100.00	111	100.00	70	100.00	88	100.00	347	100.00
Copra (coconut product)	No	94	78.99	96	87.27	52	75.36	73	85.88	271	79.24
	Yes	25	21.01	14	12.73	17	24.64	12	14.12	71	20.76
	Total	119	100.00	110	100.00	69	100.00	85	100.00	342	100.00
Yam	No	69	57.98	41	35.96	51	80.95	79	94.05	250	75.99
	Yes	50	42.02	73	64.04	12	19.05	5	5.95	79	24.01
	Total	119	100.00	114	100.00	63	100.00	84	100.00	329	100.00
Sweet potatoes	No	63	52.94	105	95.45	43	69.35	70	80.46	219	66.36
	Yes	56	47.06	5	4.55	19	30.65	17	19.54	111	33.64
	Total	119	100.00	110	100.00	62	100.00	87	100.00	330	100.00
Tapioca	No	69	57.98	84	75.68	47	75.81	56	60.87	219	65.37
	Yes	50	42.02	27	24.32	15	24.19	36	39.13	116	34.63
	Total	119	100.00	111	100.00	62	100.00	92	100.00	335	100.00
Imported Vegetables	No	108	90.76	98	88.29	55	84.62	75	89.29	293	87.99
	Yes	11	9.24	13	11.71	10	15.38	9	10.71	40	12.01
	Total	119	100.00	111	100.00	65	100.00	84	100.00	333	100.00
Locally grown/ collected vegetables	No	88	73.95	93	83.04	41	48.81	69	82.14	239	64.42
	Yes	31	26.05	19	16.96	43	51.19	15	17.86	132	35.58
	Total	119	100.00	112	100.00	84	100.00	84	100.00	371	100.00
Papaya	No	82	68.91	85	76.58	43	58.11	63	71.59	231	65.07
	Yes	37	31.09	26	23.42	31	41.89	25	28.41	124	34.93
	Total	119	100.00	111	100.00	74	100.00	88	100.00	355	100.00
Locally grown/ collected fruits	No	94	80.34	93	83.04	52	78.79	68	79.07	266	79.40
	Yes	23	19.66	19	16.96	14	21.21	18	20.93	69	20.60
	Total	117	100.00	112	100.00	66	100.00	86	100.00	335	100.00
Imported fruits	No	112	94.12	105	95.45	57	93.44	81	96.43	307	94.46
	Yes	7	5.88	5	4.55	4	6.56	3	3.57	18	5.54
	Total	119	100.00	110	100.00	61	100.00	84	100.00	325	100.00
Citrus	No	103	86.55	76	69.09	28	32.18	76	90.48	235	62.33
	Yes	16	13.45	34	30.91	59	67.82	8	9.52	142	37.67
	Total	119	100.00	110	100.00	87	100.00	84	100.00	377	100.00
Black pepper (peppercorns)	No	116	97.48	101	91.82	54	88.52	84	100.00	308	94.77
	Yes	3	2.52	9	8.18	7	11.48	0	0	17	5.23
	Total	119	100.00	110	100.00	61	100.00	84	100.00	325	100.00
Hot peppers	No	105	88.24	88	80.00	32	42.11	69	79.31	238	66.48
	Yes	14	11.76	22	20.00	44	57.89	18	20.69	120	33.52
	Total	119	100.00	110	100.00	76	100.00	87	100.00	358	100.00

Sakau (Kava)	No	116	97.48	43	38.74	49	76.56	84	100.00	298	90.03
	Yes	3	2.52	68	61.26	15	23.44	0	0	33	9.97
	Total	119	100.00	111	100.00	64	100.00	84	100.00	331	100.00
Other (specify)	No	115	97.46	110	100.00	55	91.67	82	96.47	307	95.05
	Yes	3	2.54	0	0	5	8.33	3	3.53	16	4.95
	Total	118	100.00	110	100.00	60	100.00	85	100.00	323	100.00

Q5.3.6 How did climate contribute to crop loss?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Flooding	No	71	59.66	72	64.29	26	27.96	48	51.61	217	52.04
	Yes	48	40.34	40	35.71	67	72.04	45	48.39	200	47.96
	Total	119	100.00	112	100.00	93	100.00	93	100.00	417	100.00
Extreme heat	No	19	15.97	15	13.27	9	8.49	15	13.64	58	12.95
	Yes	100	84.03	98	86.73	97	91.51	95	86.36	390	87.05
	Total	119	100.00	113	100.00	106	100.00	110	100.00	448	100.00
Saltwater inundation (intrusion)	No	66	55.46	104	94.55	41	53.25	43	43.00	254	62.56
	Yes	53	44.54	6	5.45	36	46.75	57	57.00	152	37.44
	Total	119	100.00	110	100.00	77	100.00	100	100.00	406	100.00
Lack of water (etc.)	No	76	63.87	**76**	68.47	38	49.35	60	63.83	250	62.34
	Yes	43	36.13	35	31.53	39	50.65	34	36.17	151	37.66
	Total	119	100.00	111	100.00	77	100.00	94	100.00	401	100.00
Cyclones/hurricanes	No	72	60.50	110	100.00	53	88.33	81	93.10	316	84.04
	Yes	47	39.50	0	0	7	11.67	6	6.90	60	15.96
	Total	119	100.00	110	100.00	60	100.00	87	100.00	376	100.00
Heavy rains	No	39	32.77	29	25.89	16	15.69	38	40.86	122	28.64
	Yes	80	67.23	83	74.11	86	84.31	55	59.14	304	71.36
	Total	119	100.00	112	100.00	102	100.00	93	100.00	426	100.00
Landslides	No	115	96.64	88	78.57	49	76.56	73	82.02	325	84.64
	Yes	4	3.36	24	21.43	15	23.44	16	17.98	59	15.36
	Total	119	100.00	112	100.00	64	100.00	89	100.00	384	100.00
Difficulty predicting when the rainy season will come	No	55	46.22	81	71.68	45	60.81	65	69.89	246	61.65
	Yes	64	53.78	32	28.32	29	39.19	28	30.11	153	38.35
	Total	119	100.00	113	100.00	74	100.00	93	100.00	399	100.00
Drought	No	55	46.22	67	59.82	45	66.18	27	26.73	194	48.50
	Yes	64	53.78	45	40.18	23	33.82	74	73.27	206	51.50
	Total	119	100.00	112	100.00	68	100.00	101	100.00	400	100.00
Increased threats to crops from pests and disease	No	46	38.66	61	54.46	23	24.73	63	69.23	193	46.51
	Yes	73	61.34	51	45.54	70	75.27	28	30.77	222	53.49
	Total	119	100.00	112	100.00	93	100.00	91	100.00	415	100.00
Invasive species	No	75	63.03	70	62.50	18	18.00	58	64.44	221	52.49
	Yes	44	36.97	42	37.50	82	82.00	32	35.56	200	47.51
	Total	119	100.00	112	100.00	100	100.00	90	100.00	421	100.00
Plant diseases	No	34	28.57	48	42.86	17	16.04	63	67.02	162	37.59
	Yes	85	71.43	64	57.14	89	83.96	31	32.98	269	62.41
	Total	119	100.00	112	100.00	106	100.00	94	100.00	431	100.00
Coastal erosion	No	90	75.63	108	98.18	46	66.67	78	88.64	322	83.42
	Yes	29	24.37	2	1.82	23	33.33	10	11.36	64	16.58
	Total	119	100.00	110	100.00	69	100.00	88	100.00	386	100.00
Riverbank erosion	No	106	89.08	106	95.50	44	60.27	82	96.47	338	87.11
	Yes	13	10.92	5	4.50	29	39.73	3	3.53	50	12.89
	Total	119	100.00	111	100.00	73	100.00	85	100.00	388	100.00
Displaced from land	No	115	96.64	110	100.00	49	79.03	84	98.82	358	95.21
	Yes	4	3.36	0	0	13	20.97	1	1.18	18	4.79
	Total	119	100.00	110	100.00	62	100.00	85	100.00	376	100.00
Other (specify)	No	118	99.16	110	100.00	59	100.00	82	96.47	369	98.93
	Yes	1	0.84	0	0	0	0	3	3.53	4	1.07
	Total	119	100.00	110	100.00	59	100.00	85	100.00	373	100.00



Q5.3.8 Where does the water for your crops come from?	Resp	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Rain	No	30	18.29	67	41.88	11	8.27	41	31.30	149	25.34
	Yes	134	81.71	93	58.13	122	91.73	90	68.70	439	74.66
	Total	164	100.00	160	100.00	133	100.00	131	100.00	588	100.00
Well	No	142	86.59	132	82.50	67	90.54	72	57.60	413	78.97
	Yes	22	13.41	28	17.50	7	9.46	53	42.40	110	21.03
	Total	164	100.00	160	100.00	74	100.00	125	100.00	523	100.00
Stream	No	137	83.54	82	51.25	33	33.67	66	54.10	318	58.46
	Yes	27	16.46	78	48.75	65	66.33	56	45.90	226	41.54
	Total	164	100.00	160	100.00	98	100.00	122	100.00	544	100.00
Pond	No	160	97.56	152	95.00	66	91.67	106	92.17	484	94.72
	Yes	4	2.44	8	5.00	6	8.33	9	7.83	27	5.28
	Total	164	100.00	160	100.00	72	100.00	115	100.00	511	100.00
Public water system	No	59	35.98	94	58.75	12	9.45	97	88.18	262	46.70
	Yes	105	64.02	66	41.25	115	90.55	13	11.82	299	53.30
	Total	164	100.00	160	100.00	127	100.00	110	100.00	561	100.00
Other	No	157	95.73	157	98.13	66	89.19	105	98.13	485	96.04
	Yes	7	4.27	3	1.88	8	10.81	2	1.87	20	3.96
	Total	164	100.00	160	100.00	74	100.00	107	100.00	505	100.00

Q5.4.1 (1-20) Do you grow this crop?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Swamp/hard taro	No	11	6.71	28	17.50	24	16.55	30	20.41	93	15.10
	Yes	153	93.29	132	82.50	121	83.45	117	79.59	523	84.90
	Total	164	100.00	160	100.00	145	100.00	147	100.00	616	100.00
Land/soft taro	No	22	13.75	37	23.27	27	19.01	75	52.82	161	26.70
	Yes	138	86.25	122	76.73	115	80.99	67	47.18	442	73.30
	Total	160	100.00	159	100.00	142	100.00	142	100.00	603	100.00
Breadfruit	No	37	24.18	9	5.63	13	9.09	5	3.42	64	10.63
	Yes	116	75.82	151	94.38	130	90.91	141	96.58	538	89.37
	Total	153	100.00	160	100.00	143	100.00	146	100.00	602	100.00
Betelnut	No	9	5.52	23	14.47	32	23.36	54	38.03	118	19.63
	Yes	154	94.48	136	85.53	105	76.64	88	61.97	483	80.37
	Total	163	100.00	159	100.00	137	100.00	142	100.00	601	100.00
Banana	No	6	3.66	6	3.75	9	6.25	3	2.07	24	3.92
	Yes	158	96.34	154	96.25	135	93.75	142	97.93	589	96.08

	Total	164	100.00	160	100.00	144	100.00	145	100.00	613	100.00
Coconut	No	15	9.32	13	8.13	15	10.56	8	5.56	51	8.40
	Yes	146	90.68	147	91.88	127	89.44	136	94.44	556	91.60
	Total	161	100.00	160	100.00	142	100.00	144	100.00	607	100.00
Copra (coconut product)	No	26	17.93	**90**	56.96	20	15.04	77	54.61	213	36.92
	Yes	119	82.07	68	43.04	113	84.96	64	45.39	364	63.08
	Total	145	100.00	158	100.00	133	100.00	141	100.00	577	100.00
Yam	No	34	22.67	20	12.50	77	59.69	125	91.24	256	44.44
	Yes	116	77.33	140	87.50	52	40.31	12	8.76	320	55.56
	Total	150	100.00	160	100.00	129	100.00	137	100.00	576	100.00
Sweet potatoes	No	53	34.87	138	86.79	79	61.72	108	78.26	378	65.51
	Yes	99	65.13	21	13.21	49	38.28	30	21.74	199	34.49
	Total	152	100.00	159	100.00	128	100.00	138	100.00	577	100.00
Tapioca	No	41	27.33	92	57.86	57	42.54	82	58.57	272	46.66
	Yes	109	72.67	67	42.14	77	57.46	58	41.43	311	53.34
	Total	150	100.00	159	100.00	134	100.00	140	100.00	583	100.00
Soursop	No	78	56.93	67	42.14	73	57.94	61	43.88	279	49.73
	Yes	59	43.07	92	57.86	53	42.06	78	56.12	282	50.27
	Total	137	100.00	159	100.00	126	100.00	139	100.00	561	100.00
Locally grown/collected fresh vegetables	No	44	29.53	102	63.75	70	52.63	93	67.39	309	53.28
	Yes	105	70.47	58	36.25	63	47.37	45	32.61	271	46.72
	Total	149	100.00	160	100.00	133	100.00	138	100.00	580	100.00
Imported fresh vegetables	No	100	75.76	129	80.63	109	91.60	126	93.33	464	84.98
	Yes	32	24.24	31	19.38	10	8.40	9	6.67	82	15.02
	Total	132	100.00	160	100.00	119	100.00	135	100.00	546	100.00
Locally grown/ collected fruits	No	67	46.53	94	58.75	61	49.19	81	58.70	303	53.53
	Yes	77	53.47	66	41.25	63	50.81	57	41.30	263	46.47
	Total	144	100.00	160	100.00	124	100.00	138	100.00	566	100.00
Imported fruits	No	109	85.16	145	90.63	113	94.96	131	95.62	498	91.54
	Yes	19	14.84	15	9.38	6	5.04	6	4.38	46	8.46
	Total	128	100.00	160	100.00	119	100.00	137	100.00	544	100.00
Lime/ lemon	No	60	40.27	43	26.88	24	17.14	37	26.43	164	27.84
	Yes	89	59.73	117	73.13	116	82.86	103	73.57	425	72.16
	Total	149	100.00	160	100.00	140	100.00	140	100.00	589	100.00
Tangerine	No	79	56.43	134	83.75	43	30.94	112	81.75	368	63.89
	Yes	61	43.57	26	16.25	96	69.06	25	18.25	208	36.11
	Total	140	100.00	160	100.00	139	100.00	137	100.00	576	100.00
Black pepper (peppercorns)	No	124	96.88	142	88.75	117	92.86	135	98.54	518	94.01
	Yes	4	3.13	18	11.25	9	7.14	2	1.46	33	5.99
	Total	128	100.00	160	100.00	126	100.00	137	100.00	551	100.00
Hot peppers	No	63	44.68	81	50.63	51	38.06	73	52.52	268	46.69
	Yes	78	55.32	79	49.38	83	61.94	66	47.48	306	53.31
	Total	141	100.00	160	100.00	134	100.00	139	100.00	574	100.00
Sakau (Kava)	No	124	99.20	27	16.88	87	70.73	134	99.26	372	68.51
	Yes	1	0.80	133	83.13	36	29.27	1	0.74	171	31.49
	Total	125	100.00	160	100.00	123	100.00	135	100.00	543	100.00

Q5.4.2 (1-20) Do you experience crop loss?		**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
	Resp.	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Swamp/hard taro	No	56	36.13	67	50.76	57	45.60	23	19.17	203	38.16
	Yes	99	63.87	65	49.24	68	54.40	97	80.83	329	61.84
	Total	155	100.00	132	100.00	125	100.00	120	100.00	532	100.00
Land/soft taro	No	47	33.81	70	56.00	53	43.80	47	48.96	217	45.11
	Yes	92	66.19	55	44.00	68	56.20	49	51.04	264	54.89
	Total	139	100.00	125	100.00	121	100.00	96	100.00	481	100.00

Breadfruit	No	66	51.56	65	44.52	53	41.09	50	35.46	234	43.01
	Yes	62	48.44	81	55.48	76	58.91	91	64.54	310	56.99
	Total	128	100.00	146	100.00	129	100.00	141	100.00	544	100.00
Betelnut	No	32	20.78	71	51.82	59	51.30	57	55.88	219	43.11
	Yes	122	79.22	66	48.18	56	48.70	45	44.12	289	56.89
	Total	154	100.00	137	100.00	115	100.00	102	100.00	508	100.00
Banana	No	71	45.22	79	54.11	68	52.31	41	28.87	259	45.04
	Yes	86	54.78	67	45.89	62	47.69	101	71.13	316	54.96
	Total	157	100.00	146	100.00	130	100.00	142	100.00	575	100.00
Coconut	No	82	55.03	79	55.63	88	72.13	69	48.94	318	57.40
	Yes	67	44.97	63	44.37	34	27.87	72	51.06	236	42.60
	Total	149	100.00	142	100.00	122	100.00	141	100.00	554	100.00
Copra (coconut product)	No	72	58.54	61	70.93	88	75.86	57	73.08	278	68.98
	Yes	51	41.46	25	29.07	28	24.14	21	26.92	125	31.02
	Total	123	100.00	86	100.00	116	100.00	78	100.00	403	100.00
Yam	No	50	42.74	56	40.00	74	79.57	38	82.61	218	55.05
	Yes	67	57.26	84	60.00	19	20.43	8	17.39	178	44.95
	Total	117	100.00	140	100.00	93	100.00	46	100.00	396	100.00
Sweet potatoes	No	40	38.46	37	71.15	71	76.34	41	64.06	189	60.38
	Yes	64	61.54	15	28.85	22	23.66	23	35.94	124	39.62
	Total	104	100.00	52	100.00	93	100.00	64	100.00	313	100.00
Tapioca	No	44	41.12	52	63.41	66	64.08	38	45.24	200	53.19
	Yes	63	58.88	30	36.59	37	35.92	46	54.76	176	46.81
	Total	107	100.00	82	100.00	103	100.00	84	100.00	376	100.00
Soursop	No	40	54.05	83	79.81	72	83.72	48	50.53	243	67.69
	Yes	34	45.95	21	20.19	14	16.28	47	49.47	116	32.31
	Total	74	100.00	104	100.00	86	100.00	95	100.00	359	100.00
Locally grown/collected fresh vegetables	No	59	52.68	55	67.07	48	48.98	49	64.47	211	57.34
	Yes	53	47.32	27	32.93	50	51.02	27	35.53	157	42.66
	Total	112	100.00	82	100.00	98	100.00	76	100.00	368	100.00
Imported fresh vegetables	No	42	75.00	43	71.67	63	92.65	39	88.64	187	82.02
	Yes	14	25.00	17	28.33	5	7.35	5	11.36	41	17.98
	Total	56	100.00	60	100.00	68	100.00	44	100.00	228	100.00
Locally grown/ collected fruits	No	45	52.33	68	72.34	63	67.02	52	59.77	228	63.16
	Yes	41	47.67	26	27.66	31	32.98	35	40.23	133	36.84
	Total	86	100.00	94	100.00	94	100.00	87	100.00	361	100.00
Imported fruits	No	39	82.98	39	90.70	65	97.01	38	90.48	181	90.95
	Yes	8	17.02	4	9.30	2	2.99	4	9.52	18	9.05
	Total	47	100.00	43	100.00	67	100.00	42	100.00	199	100.00
Lime/ lemon	No	63	64.95	78	60.47	37	30.83	59	52.21	237	51.63
	Yes	34	35.05	51	39.53	83	69.17	54	47.79	222	48.37
	Total	97	100.00	129	100.00	120	100.00	113	100.00	459	100.00
Tangerine	No	43	56.58	40	80.00	59	52.21	41	73.21	183	62.03
	Yes	33	43.42	10	20.00	54	47.79	15	26.79	112	37.97
	Total	76	100.00	50	100.00	113	100.00	56	100.00	295	100.00
Black pepper (peppercorns)	No	32	94.12	39	86.67	63	90.00	36	100.00	170	91.89
	Yes	2	5.88	6	13.33	7	10.00	0	0	15	8.11
	Total	34	100.00	45	100.00	70	100.00	36	100.00	185	100.00
Hot peppers	No	39	43.82	73	70.87	43	41.75	50	57.47	205	53.66
	Yes	50	56.18	30	29.13	60	58.25	37	42.53	177	46.34
	Total	89	100.00	103	100.00	103	100.00	87	100.00	382	100.00
Sakau (Kava)	No	29	93.55	50	36.50	63	75.00	34	97.14	176	61.32
	Yes	2	6.45	87	63.50	21	25.00	1	2.86	111	38.68
	Total	31	100.00	137	100.00	84	100.00	35	100.00	287	100.00

Q5.4.3 (1-20) If you observe crop loss due to climate change, what is the cause? Indicate all that apply.

1. Swamp/hard taro	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	66	60.00	51	71.83	7	12.07	41	48.24	165	50.93
	Yes	44	40.00	20	28.17	51	87.93	44	51.76	159	49.07
	Total	110	100.00	71	100.00	58	100.00	85	100.00	324	100.00
Extreme heat	No	52	48.15	30	42.25	14	25.45	30	33.71	126	39.01
	Yes	56	51.85	41	57.75	41	74.55	59	66.29	197	60.99
	Total	108	100.00	71	100.00	55	100.00	89	100.00	323	100.00
Saltwater inundation (intrusion)	No	50	45.87	66	94.29	23	50.00	34	38.20	173	55.10
	Yes	59	54.13	4	5.71	23	50.00	55	61.80	141	44.90
	Total	109	100.00	70	100.00	46	100.00	89	100.00	314	100.00
Lack of water (etc.)	No	86	79.63	59	83.10	32	76.19	61	78.21	238	79.60
	Yes	22	20.37	12	16.90	10	23.81	17	21.79	61	20.40
	Total	108	100.00	71	100.00	42	100.00	78	100.00	299	100.00
Cyclones/hurricanes	No	86	79.63	69	98.57	34	85.00	75	100.00	264	90.10
	Yes	22	20.37	1	1.43	6	15.00	0	0.00	29	9.90
	Total	108	100.00	70	100.00	40	100.00	75	100.00	293	100.00
Heavy rains	No	62	57.41	46	65.71	17	32.08	61	79.22	186	60.39
	Yes	46	42.59	24	34.29	36	67.92	16	20.78	122	39.61
	Total	108	100.00	70	100.00	53	100.00	77	100.00	308	100.00
Landslides	No	101	94.39	65	91.55	36	90.00	74	94.87	276	93.24
	Yes	6	5.61	6	8.45	4	10.00	4	5.13	20	6.76
	Total	107	100.00	71	100.00	40	100.00	78	100.00	296	100.00
Difficulty predicting when the rainy season will come	No	77	71.96	68	95.77	35	85.37	68	88.31	248	83.78
	Yes	30	28.04	3	4.23	6	14.63	9	11.69	48	16.22
	Total	107	100.00	71	100.00	41	100.00	77	100.00	296	100.00
Drought	No	50	46.30	49	68.06	28	66.67	34	40.48	161	52.61
	Yes	58	53.70	23	31.94	14	33.33	50	59.52	145	47.39
	Total	108	100.00	72	100.00	42	100.00	84	100.00	306	100.00
Increased threats to crops from pests and disease	No	79	73.15	67	94.37	26	60.47	65	82.28	237	78.74
	Yes	29	26.85	4	5.63	17	39.53	14	17.72	64	21.26
	Total	108	100.00	71	100.00	43	100.00	79	100.00	301	100.00
Invasive species	No	91	85.85	60	83.33	26	54.17	65	86.67	242	80.40
	Yes	15	14.15	12	16.67	22	45.83	10	13.33	59	19.60
	Total	106	100.00	72	100.00	48	100.00	75	100.00	301	100.00
Plant diseases	No	74	68.52	56	78.87	23	48.94	64	84.21	217	71.85
	Yes	34	31.48	15	21.13	24	51.06	12	15.79	85	28.15
	Total	108	100.00	71	100.00	47	100.00	76	100.00	302	100.00
Coastal erosion	No	94	87.04	68	97.14	36	90.00	69	84.15	267	89.00
	Yes	14	12.96	2	2.86	4	10.00	13	15.85	33	11.00
	Total	108	100.00	70	100.00	40	100.00	82	100.00	300	100.00
Riverbank erosion	No	102	95.33	67	95.71	32	71.11	73	96.05	274	91.95
	Yes	5	4.67	3	4.29	13	28.89	3	3.95	24	8.05
	Total	107	100.00	70	100.00	45	100.00	76	100.00	298	100.00
Displaced from land	No	104	97.20	70	100.00	35	85.37	74	100.00	283	96.92
	Yes	3	2.80	0	0	6	14.63	0	0.00	9	3.08
	Total	107	100.00	70	100.00	41	100.00	74	100.00	292	100.00
Other (specify below)	No	106	99.07	70	100.00	31	88.57	72	97.30	279	97.55
	Yes	1	0.93	0	0	4	11.43	2	2.70	7	2.45
	Total	107	100.00	70	100.00	35	100.00	74	100.00	286	100.00

2. Land/soft taro	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	74	74.75	38	66.67	8	15.09	38	71.70	158	60.31
	Yes	25	25.25	19	33.33	45	84.91	15	28.30	104	39.69
	Total	99	100.00	57	100.00	53	100.00	53	100.00	262	100.00
Extreme heat	No	32	32.32	23	40.35	12	22.22	18	33.33	85	32.20
	Yes	67	67.68	34	59.65	42	77.78	36	66.67	179	67.80
	Total	99	100.00	57	100.00	54	100.00	54	100.00	264	100.00
Saltwater inundation (intrusion)	No	71	71.72	55	98.21	21	51.22	36	67.92	183	73.49
	Yes	28	28.28	1	1.79	20	48.78	17	32.08	66	26.51
	Total	99	100.00	56	100.00	41	100.00	53	100.00	249	100.00
Lack of water (etc.)	No	74	74.75	46	80.70	30	78.95	43	89.58	193	79.75
	Yes	25	25.25	11	19.30	8	21.05	5	10.42	49	20.25
	Total	99	100.00	57	100.00	38	100.00	48	100.00	242	100.00
Cyclones/hurricanes	No	73	73.74	56	100.00	30	90.91	49	98.00	208	87.39
	Yes	26	26.26	0	0	3	9.09	1	2.00	30	12.61
	Total	99	100.00	56	100.00	33	100.00	50	100.00	238	100.00
Heavy rains	No	57	57.58	30	52.63	19	35.85	34	68.00	140	54.05
	Yes	42	42.42	27	47.37	34	64.15	16	32.00	119	45.95
	Total	99	100.00	57	100.00	53	100.00	50	100.00	259	100.00
Landslides	No	94	94.95	53	94.64	31	86.11	46	92.00	224	92.95
	Yes	5	5.05	3	5.36	5	13.89	4	8.00	17	7.05
	Total	99	100.00	56	100.00	36	100.00	50	100.00	241	100.00
Difficulty predicting when the rainy season will come	No	63	63.64	53	94.64	30	83.33	44	88.00	190	78.84
	Yes	36	36.36	3	5.36	6	16.67	6	12.00	51	21.16
	Total	99	100.00	56	100.00	36	100.00	50	100.00	241	100.00
Drought	No	45	45.45	37	64.91	26	70.27	24	45.28	132	53.66
	Yes	54	54.55	20	35.09	11	29.73	29	54.72	114	46.34
	Total	99	100.00	57	100.00	37	100.00	53	100.00	246	100.00
Increased threats to crops from pests and disease	No	61	61.62	51	89.47	25	60.98	40	81.63	177	71.95
	Yes	38	38.38	6	10.53	16	39.02	9	18.37	69	28.05
	Total	99	100.00	57	100.00	41	100.00	49	100.00	246	100.00
Invasive species	No	82	82.83,	49	85.96	26	54.17	45	91.84	202	79.84
	Yes	17	17.17	8	14.04	22	45.83	4	8.16	51	20.16
	Total	99	100.00	57	100.00	48	100.00	49	100.00	253	100.00
Plant diseases	No	56	56.57	42	75.00	21	45.65	38	77.55	157	62.80
	Yes	43	43.43	14	25.00	25	54.35	11	22.45	93	37.20
	Total	99	100.00	56	100.00	46	100.00	49	100.00	250	100.00
Coastal erosion	No	89	89.90	54	96.43	32	94.12	46	92.00	221	92.47
	Yes	10	10.10	2	3.57	2	5.88	4	8.00	18	7.53
	Total	99	100.00	56	100.00	34	100.00	50	100.00	239	100.00
Riverbank erosion	No	96	96.97	53	94.64	30	69.77	48	96.00	227	91.53
	Yes	3	3.03	3	5.36	13	30.23	2	4.00	21	8.47
	Total	99	100.00	56	100.00	43	100.00	50	100.00	248	100.00
Displaced from land	No	98	98.99	55	98.21	32	88.89	48	100.00	233	97.49
	Yes	1	1.01	1	1.79	4	11.11	0	0.00	6	2.51
	Total	99	100.00	56	100.00	36	100.00	48	100.00	239	100.00
Other (specify below)	No	96	98.97	56	98.25	29	85.29	47	97.92	228	96.61
	Yes	1	1.03	1	1.75	5	14.71	1	2.08	8	3.39
	Total	97	100.00	57	100.00	34	100.00	48	100.00	236	100.00

3. Breadfruit	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	62	88.57	74	92.50	28	54.90	67	82.72	231	81.91
	Yes	8	11.43	6	7.50	23	45.10	14	17.28	51	18.09
	Total	70	100.00	80	100.00	51	100.00	81	100.00	282	100.00
Extreme heat	No	32	45.71	30	36.59	12	19.05	29	29.90	103	33.01
	Yes	38	54.29	52	63.41	51	80.95	68	70.10	209	66.99
	Total	70	100.00	82	100.00	63	100.00	97	100.00	312	100.00
Saltwater inundation (intrusion)	No	60	85.71	80	98.77	30	63.83	63	73.26	233	82.04
	Yes	10	14.29	1	1.23	17	36.17	23	26.74	51	17.96
	Total	70	100.00	81	100.00	47	100.00	86	100.00	284	100.00
Lack of water (etc.)	No	53	75.71	66	81.48	33	75.00	70	86.42	222	80.43
	Yes	17	24.29	15	18.52	11	25.00	11	13.58	54	19.57
	Total	70	100.00	81	100.00	44	100.00	81	100.00	276	100.00
Cyclones/hurricanes	No	35	50.00	81	100.00	32	80.00	73	85.88	221	80.07
	Yes	35	50.00	0	0	8	20.00	12	14.12	55	19.93
	Total	70	100.00	81	100.00	40	100.00	85	100.00	276	100.00
Heavy rains	No	48	68.57	36	44.44	22	38.60	57	67.86	163	55.82
	Yes	22	31.43	45	55.56	35	61.40	27	32.14	129	44.18
	Total	70	100.00	81	100.00	57	100.00	84	100.00	292	100.00
Landslides	No	68	97.14	78	96.30	36	85.71	76	92.68	258	93.82
	Yes	2	2.86	3	3.70	6	14.29	6	7.32	17	6.18
	Total	70	100.00	81	100.00	42	100.00	82	100.00	275	100.00
Difficulty predicting when the rainy season will come	No	44	62.86	77	95.06	35	83.33	67	81.71	223	81.09
	Yes	26	37.14	4	4.94	7	16.67	15	18.29	52	18.91
	Total	70	100.00	81	100.00	42	100.00	82	100.00	275	100.00
Drought	No	37	52.86	59	72.84	26	56.52	42	44.68	164	56.36
	Yes	33	47.14	22	27.16	20	43.48	52	55.32	127	43.64
	Total	70	100.00	81	100.00	46	100.00	94	100.00	291	100.00
Increased threats to crops from pests and disease	No	40	57.14	62	74.70	25	52.08	60	71.43	187	65.61
	Yes	30	42.86	21	25.30	23	47.92	24	28.57	98	34.39
	Total	70	100.00	83	100.00	48	100.00	84	100.00	285	100.00
Invasive species	No	63	90.00	66	79.52	34	70.83	50	62.50	213	75.80
	Yes	7	10.00	17	20.48	14	29.17	30	37.50	68	24.20
	Total	70	100.00	83	100.00	48	100.00	80	100.00	281	100.00
Plant diseases	No	35	50.00	51	60.71	26	50.98	64	78.05	176	61.32
	Yes	35	50.00	33	39.29	25	49.02	18	21.95	111	38.68
	Total	70	100.00	84	100.00	51	100.00	82	100.00	287	100.00
Coastal erosion	No	65	92.86	79	97.53	36	92.31	79	98.75	259	95.93
	Yes	5	7.14	2	2.47	3	7.69	1	1.25	11	4.07
	Total	70	100.00	81	100.00	39	100.00	80	100.00	270	100.00
Riverbank erosion	No	69	98.57	79	97.53	35	83.33	78	100.00	261	96.31
	Yes	1	1.43	2	2.47	7	16.67	0	0.00	10	3.69
	Total	70	100.00	81	100.00	42	100.00	78	100.00	271	100.00
Displaced from land	No	69	98.57	80	98.77	36	97.30	78	100.00	263	98.87
	Yes	1	1.43	1	1.23	1	2.70	0	0.00	3	1.13
	Total	70	100.00	81	100.00	37	100.00	78	100.00	266	100.00
Other (specify below)	No	69	98.57	79	97.53	36	97.30	76	98.70	260	98.11
	Yes	1	1.43	2	2.47	1	2.70	1	1.30	5	1.89
	Total	70	100.00	81	100.00	37	100.00	77	100.00	265	100.00

4. Betelnut	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	117	92.13	64	95.52	22	62.86	38	80.85	241	87.32
	Yes	10	7.87	3	4.48	13	37.14	9	19.15	35	12.68
	Total	127	100.00	67	100.00	35	100.00	47	100.00	276	100.00
Extreme heat	No	41	32.54	28	41.79	8	15.69	16	29.09	93	31.10
	Yes	85	67.46	39	58.21	43	84.31	39	70.91	206	68.90
	Total	126	100.00	67	100.00	51	100.00	55	100.00	299	100.00
Saltwater inundation (intrusion)	No	115	90.55	65	97.01	23	79.31	36	72.00	239	87.55
	Yes	12	9.45	2	2.99	6	20.69	14	28.00	34	12.45
	Total	127	100.00	67	100.00	29	100.00	50	100.00	273	100.00
Lack of water (etc.)	No	101	79.53	61	91.04	20	50.00	38	84.44	220	78.85
	Yes	26	20.47	6	8.96	20	50.00	7	15.56	59	21.15
	Total	127	100.00	67	100.00	40	100.00	45	100.00	279	100.00
Cyclones/hurricanes	No	86	67.72	65	97.01	25	89.29	42	87.50	218	80.74
	Yes	41	32.28	2	2.99	3	10.71	6	12.50	52	19.26
	Total	127	100.00	67	100.00	28	100.00	48	100.00	270	100.00
Heavy rains	No	103	81.10	38	56.72	17	43.59	34	72.34	192	68.57
	Yes	24	18.90	29	43.28	22	56.41	13	27.66	88	31.43
	Total	127	100.00	67	100.00	39	100.00	47	100.00	280	100.00
Landslides	No	121	95.28	66	100.00	24	82.76	43	97.73	254	95.49
	Yes	6	4.72	0	0	5	17.24	1	2.27	12	4.51
	Total	127	100.00	66	100.00	29	100.00	44	100.00	266	100.00
Difficulty predicting when the rainy season will come	No	96	75.59	63	94.03	26	86.67	39	84.78	224	82.96
	Yes	31	24.41	4	5.97	4	13.33	7	15.22	46	17.04
	Total	127	100.00	67	100.00	30	100.00	46	100.00	270	100.00
Drought	No	63	49.61	44	65.67	18	51.43	24	48.00	149	53.41
	Yes	64	50.39	23	34.33	17	48.57	26	52.00	130	46.59
	Total	127	100.00	67	100.00	35	100.00	50	100.00	279	100.00
Increased threats to crops from pests and disease	No	76	59.84	55	82.09	17	50.00	33	68.75	181	65.58
	Yes	51	40.16	12	17.91	17	50.00	15	31.25	95	34.42
	Total	127	100.00	67	100.00	34	100.00	48	100.00	276	100.00
Invasive species	No	104	81.89	59	88.06	22	62.86	42	91.30	227	82.55
	Yes	23	18.11	8	11.94	13	37.14	4	8.70	48	17.45
	Total	127	100.00	67	100.00	35	100.00	46	100.00	275	100.00
Plant diseases	No	47	37.01	44	65.67	17	44.74	38	80.85	146	52.33
	Yes	80	62.99	23	34.33	21	55.26	9	19.15	133	47.67
	Total	127	100.00	67	100.00	38	100.00	47	100.00	279	100.00
Coastal erosion	No	119	93.70	65	97.01	23	88.46	45	97.83	252	94.74
	Yes	8	6.30	2	2.99	3	11.54	1	2.17	14	5.26
	Total	127	100.00	67	100.00	26	100.00	46	100.00	266	100.00
Riverbank erosion	No	125	98.43	65	97.01	24	85.71	45	100.00	259	97.00
	Yes	2	1.57	2	2.99	4	14.29	0	0.00	8	3.00
	Total	127	100.00	67	100.00	28	100.00	45	100.00	267	100.00
Displaced from land	No	126	99.21	66	98.51	23	92.00	45	100.00	260	98.48
	Yes	1	0.79	1	1.49	2	8.00	0	0.00	4	1.52
	Total	127	100.00	67	100.00	25	100.00	45	100.00	264	100.00
Other (specify below)	No	126	99.21	66	100.00	21	91.30	43	97.73	256	98.46
	Yes	1	0.79	0	0	2	8.70	1	2.27	4	1.54
	Total	127	100.00	66	100.00	23	100.00	44	100.00	260	100.00

5. Banana	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	84	92.31	57	89.06	14	31.11	65	75.58	220	76.92
	Yes	7	7.69	7	10.94	31	68.89	21	24.42	66	23.08
	Total	91	100.00	64	100.00	45	100.00	86	100.00	286	100.00
Extreme heat	No	38	42.22	27	40.91	5	9.43	39	38.24	109	35.05
	Yes	52	57.78	39	59.09	48	90.57	63	61.76	202	64.95
	Total	90	100.00	66	100.00	53	100.00	102	100.00	311	100.00
Saltwater inundation (intrusion)	No	74	83.15	64	96.97	23	58.97	58	65.17	219	77.39
	Yes	15	16.85	2	3.03	16	41.03	31	34.83	64	22.61
	Total	89	100.00	66	100.00	39	100.00	89	100.00	283	100.00
Lack of water (etc.)	No	70	78.65	60	90.91	26	65.00	68	81.93	224	80.58
	Yes	19	21.35	6	9.09	14	35.00	15	18.07	54	19.42
	Total	89	100.00	66	100.00	40	100.00	83	100.00	278	100.00
Cyclones/hurricanes	No	45	50.00	62	93.94	29	87.88	77	85.56	213	76.34
	Yes	45	50.00	4	6.06	4	12.12	13	14.44	66	23.66
	Total	90	100.00	66	100.00	33	100.00	90	100.00	279	100.00
Heavy rains	No	66	73.33	36	54.55	14	28.57	56	65.88	172	59.31
	Yes	24	26.67	30	45.45	35	71.43	29	34.12	118	40.69
	Total	90	100.00	66	100.00	49	100.00	85	100.00	290	100.00
Landslides	No	84	93.33	61	92.42	28	77.78	77	93.90	250	91.24
	Yes	6	6.67	5	7.58	8	22.22	5	6.10	24	8.76
	Total	90	100.00	66	100.00	36	100.00	82	100.00	274	100.00
Difficulty predicting when the rainy season will come	No	64	71.11	64	95.52	29	80.56	72	86.75	229	82.97
	Yes	26	28.89	3	4.48	7	19.44	11	13.25	47	17.03
	Total	90	100.00	67	100.00	36	100.00	83	100.00	276	100.00
Drought	No	43	47.78	49	74.24	24	63.16	49	53.85	165	57.89
	Yes	47	52.22	17	25.76	14	36.84	42	46.15	120	42.11
	Total	90	100.00	66	100.00	38	100.00	91	100.00	285	100.00
Increased threats to crops from pests and disease	No	58	64.44	58	86.57	21	48.84	64	72.73	201	69.79
	Yes	32	35.56	9	13.43	22	51.16	24	27.27	87	30.21
	Total	90	100.00	67	100.00	43	100.00	88	100.00	288	100.00
Invasive species	No	78	86.67	60	89.55	28	62.22	61	72.62	227	79.37
	Yes	12	13.33	7	10.45	17	37.78	23	27.38	59	20.63
	Total	90	100.00	67	100.00	45	100.00	84	100.00	286	100.00
Plant diseases	No	50	55.56	47	69.12	19	43.18	70	81.40	186	64.58
	Yes	40	44.44	21	30.88	25	56.82	16	18.60	102	35.42
	Total	90	100.00	68	100.00	44	100.00	86	100.00	288	100.00
Coastal erosion	No	86	95.56	64	96.97	30	93.75	81	97.59	261	96.31
	Yes	4	4.44	2	3.03	2	6.25	2	2.41	10	3.69
	Total	90	100.00	66	100.00	32	100.00	83	100.00	271	100.00
Riverbank erosion	No	89	98.89	64	96.97	28	77.78	80	98.77	261	95.60
	Yes	1	1.11	2	3.03	8	22.22	1	1.23	12	4.40
	Total	90	100.00	66	100.00	36	100.00	81	100.00	273	100.00
Displaced from land	No	88	98.88	65	98.48	30	85.71	80	98.77	263	97.05
	Yes	1	1.12	1	1.52	5	14.29	1	1.23	8	2.95
	Total	89	100.00	66	100.00	35	100.00	81	100.00	271	100.00
Other (specify below)	No	89	98.89	66	98.51	31	100.00	77	95.06	263	97.77
	Yes	1	1.11	1	1.49	0	0	4	4.94	6	2.23
	Total	90	100.00	67	100.00	31	100.00	81	100.00	269	100.00

6. Coconut	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	69	90.79	62	93.94	10	37.04	56	80.00	197	82.43
	Yes	7	9.21	4	6.06	17	62.96	14	20.00	42	17.57
	Total	76	100.00	66	100.00	27	100.00	70	100.00	239	100.00
Extreme heat	No	35	46.05	22	33.33	10	31.25	37	47.44	104	41.27
	Yes	41	53.95	44	66.67	22	68.75	41	52.56	148	58.73
	Total	76	100.00	66	100.00	32	100.00	78	100.00	252	100.00
Saltwater inundation (intrusion)	No	62	81.58	65	98.48	15	71.43	58	80.56	200	85.11
	Yes	14	18.42	1	1.52	6	28.57	14	19.44	35	14.89
	Total	76	100.00	66	100.00	21	100.00	72	100.00	235	100.00
Lack of water (etc.)	No	60	80.00	51	77.27	16	66.67	61	87.14	188	80.00
	Yes	15	20.00	15	22.73	8	33.33	9	12.86	47	20.00
	Total	75	100.00	66	100.00	24	100.00	70	100.00	235	100.00
Cyclones/hurricanes	No	48	63.16	64	96.97	18	94.74	66	89.19	196	83.40
	Yes	28	36.84	2	3.03	1	5.26	8	10.81	39	16.60
	Total	76	100.00	66	100.00	19	100.00	74	100.00	235	100.00
Heavy rains	No	58	76.32	37	56.06	12	42.86	58	81.69	165	68.46
	Yes	18	23.68	29	43.94	16	57.14	13	18.31	76	31.54
	Total	76	100.00	66	100.00	28	100.00	71	100.00	241	100.00
Landslides	No	73	96.05	64	96.97	19	90.48	66	94.29	222	95.28
	Yes	3	3.95	2	3.03	2	9.52	4	5.71	11	4.72
	Total	76	100.00	66	100.00	21	100.00	70	100.00	233	100.00
Difficulty predicting when the rainy season will come	No	53	69.74	66	100.00	18	78.26	61	85.92	198	83.90
	Yes	23	30.26	0	0	5	21.74	10	14.08	38	16.10
	Total	76	100.00	66	100.00	23	100.00	71	100.00	236	100.00
Drought	No	40	52.63	41	62.12	15	65.22	43	58.90	139	58.40
	Yes	36	47.37	25	37.88	8	34.78	30	41.10	99	41.60
	Total	76	100.00	66	100.00	23	100.00	73	100.00	238	100.00
Increased threats to crops from pests and disease	No	52	68.42	50	75.76	16	57.14	55	74.32	173	70.90
	Yes	24	31.58	16	24.24	12	42.86	19	25.68	71	29.10
	Total	76	100.00	66	100.00	28	100.00	74	100.00	244	100.00
Invasive species	No	65	85.53	58	87.88	17	58.62	45	63.38	185	76.45
	Yes	11	14.47	8	12.12	12	41.38	26	36.62	57	23.55
	Total	76	100.00	66	100.00	29	100.00	71	100.00	242	100.00
Plant diseases	No	45	59.21	46	69.70	14	48.28	61	85.92	166	68.60
	Yes	31	40.79	20	30.30	15	51.72	10	14.08	76	31.40
	Total	76	100.00	66	100.00	29	100.00	71	100.00	242	100.00
Coastal erosion	No	67	88.16	64	96.97	17	80.95	70	100.00	218	93.56
	Yes	9	11.84	2	3.03	4	19.05	0	0.00	15	6.44
	Total	76	100.00	66	100.00	21	100.00	70	100.00	233	100.00
Riverbank erosion	No	73	96.05	64	96.97	17	73.91	70	100.00	224	95.32
	Yes	3	3.95	2	3.03	6	26.09	0	0.00	11	4.68
	Total	76	100.00	66	100.00	23	100.00	70	100.00	235	100.00
Displaced from land	No	75	98.68	65	98.48	19	90.48	69	98.57	228	97.85
	Yes	1	1.32	1	1.52	2	9.52	1	1.43	5	2.15
	Total	76	100.00	66	100.00	21	100.00	70	100.00	233	100.00
Other (specify below)	No	74	98.67	66	100.00	19	95.00	67	95.71	226	97.84
	Yes	1	1.33	0	0	1	5.00	3	4.29	5	2.16
	Total	75	100.00	66	100.00	20	100.00	70	100.00	231	100.00

7. Copra (coconut product)	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	59	92.19	19	90.48	6	35.29	18	66.67	102	79.07
	Yes	5	7.81	2	9.52	11	64.71	9	33.33	27	20.93
	Total	64	100.00	21	100.00	17	100.00	27	100.00	129	100.00
Extreme heat	No	30	47.62	8	36.36	4	15.38	12	42.86	54	38.85
	Yes	33	52.38	14	63.64	22	84.62	16	57.14	85	61.15
	Total	63	100.00	22	100.00	26	100.00	28	100.00	139	100.00
Saltwater inundation (intrusion)	No	54	84.38	21	95.45	10	71.43	18	69.23	103	81.75
	Yes	10	15.63	1	4.55	4	28.57	8	30.77	23	18.25
	Total	64	100.00	22	100.00	14	100.00	26	100.00	126	100.00
Lack of water (etc.)	No	49	76.56	19	86.36	8	50.00	21	77.78	97	75.19
	Yes	15	23.44	3	13.64	8	50.00	6	22.22	32	24.81
	Total	64	100.00	22	100.00	16	100.00	27	100.00	129	100.00
Cyclones/hurricanes	No	49	76.56	21	95.45	11	84.62	25	89.29	106	83.46
	Yes	15	23.44	1	4.55	2	15.38	3	10.71	21	16.54
	Total	64	100.00	22	100.00	13	100.00	28	100.00	127	100.00
Heavy rains	No	51	79.69	10	45.45	7	35.00	23	88.46	91	68.94
	Yes	13	20.31	12	54.55	13	65.00	3	11.54	41	31.06
	Total	64	100.00	22	100.00	20	100.00	26	100.00	132	100.00
Landslides	No	63	98.44	22	100.00	10	76.92	26	100.00	121	96.80
	Yes	1	1.56	0	0	3	23.08	0	0.00	4	3.20
	Total	64	100.00	22	100.00	13	100.00	26	100.00	125	100.00
Difficulty predicting when the rainy season will come	No	49	76.56	21	95.45	11	73.33	22	84.62	103	81.10
	Yes	15	23.44	1	4.55	4	26.67	4	15.38	24	18.90
	Total	64	100.00	22	100.00	15	100.00	26	100.00	127	100.00
Drought	No	39	60.94	10	45.45	9	60.00	9	33.33	67	52.34
	Yes	25	39.06	12	54.55	6	40.00	18	66.67	61	47.66
	Total	64	100.00	22	100.00	15	100.00	27	100.00	128	100.00
Increased threats to crops from pests and disease	No	42	65.63	18	81.82	11	57.89	23	92.00	94	72.31
	Yes	22	34.38	4	18.18	8	42.11	2	8.00	36	27.69
	Total	64	100.00	22	100.00	19	100.00	25	100.00	130	100.00
Invasive species	No	55	85.94	18	81.82	11	55.00	19	73.08	103	78.03
	Yes	9	14.06	4	18.18	9	45.00	7	26.92	29	21.97
	Total	64	100.00	22	100.00	20	100.00	26	100.00	132	100.00
Plant diseases	No	38	59.38	14	63.64	10	50.00	23	88.46	85	64.39
	Yes	26	40.63	8	36.36	10	50.00	3	11.54	47	35.61
	Total	64	100.00	22	100.00	20	100.00	26	100.00	132	100.00
Coastal erosion	No	52	81.25	20	90.91	11	78.57	26	100.00	109	86.51
	Yes	12	18.75	2	9.09	3	21.43	0.	0.00	17	13.49
	Total	64	100.00	22	100.00	14	100.00	26	100.00	126	100.00
Riverbank erosion	No	61	95.31	20	90.91	10	66.67	26	100.00	117	92.13
	Yes	3	4.69	2	9.09	5	33.33	0.	0.00	10	7.87
	Total	64	100.00	22	100.00	15	100.00	26	100.00	127	100.00
Displaced from land	No	61	95.31	21	95.45	11	91.67	26	100.00	119	95.97
	Yes	3	4.69	1	4.55	1	8.33	0.	0.00	5	4.03
	Total	64	100.00	22	100.00	12	100.00	26	100.00	124	100.00
Other (specify below)	No	63	98.44	22	100.00	11	91.67	26	100.00	122	98.39
	Yes	1	1.56	0	0	1	8.33	0.	0.00	2	1.61
	Total	64	100.00	22	100.00	12	100.00	26	100.00	124	100.00

8. Yam	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	66	86.84	57	74.03	4	26.67	12	80.00	139	75.96
	Yes	10	13.16	20	25.97	11	73.33	3	20.00	44	24.04
	Total	76	100.00	77	100.00	15	100.00	15	100.00	183	100.00
Extreme heat	No	32	42.11	30	38.96	4	23.53	9	69.23	75	40.98
	Yes	44	57.89	47	61.04	13	76.47	4	30.77	108	59.02
	Total	76	100.00	77	100.00	17	100.00	13	100.00	183	100.00
Saltwater inundation (intrusion)	No	67	88.16	74	96.10	10	83.33	13	92.86	164	91.62
	Yes	9	11.84	3	3.90	2	16.67	1	7.14	15	8.38
	Total	76	100.00	77	100.00	12	100.00	14	100.00	179	100.00
Lack of water (etc.)	No	57	75.00	67	85.90	9	64.29	12	92.31	145	80.11
	Yes	19	25.00	11	14.10	5	35.71	1	7.69	36	19.89
	Total	76	100.00	78	100.00	14	100.00	13	100.00	181	100.00
Cyclones/hurricanes	No	56	73.68	74	97.37	11	100.00	13	100.00	154	87.50
	Yes	20	26.32	2	2.63	0	0	0	0.00	22	12.50
	Total	76	100.00	76	100.00	11	100.00	13	100.00	176	100.00
Heavy rains	No	46	60.53	31	39.74	5	33.33	8	57.14	90	49.18
	Yes	30	39.47	47	60.26	10	66.67	6	42.86	93	50.82
	Total	76	100.00	78	100.00	15	100.00	14	100.00	183	100.00
Landslides	No	71	93.42	73	96.05	7	46.67	13	100.00	164	91.11
	Yes	5	6.58	3	3.95	8	53.33	0	0.00	16	8.89
	Total	76	100.00	76	100.00	15	100.00	13	100.00	180	100.00
Difficulty predicting when the rainy season will come	No	48	63.16	66	83.54	10	76.92	12	92.31	136	75.14
	Yes	28	36.84	13	16.46	3	23.08	1	7.69	45	24.86
	Total	76	100.00	79	100.00	13	100.00	13	100.00	181	100.00
Drought	No	42	55.26	53	65.43	7	58.33	7	53.85	109	59.89
	Yes	34	44.74	28	34.57	5	41.67	6	46.15	73	40.11
	Total	76	100.00	81	100.00	12	100.00	13	100.00	182	100.00
Increased threats to crops from pests and disease	No	42	55.26	64	80.00	8	57.14	13	100.00	127	69.40
	Yes	34	44.74	16	20.00	6	42.86	0	0.00	56	30.60
	Total	76	100.00	80	100.00	14	100.00	13	100.00	183	100.00
Invasive species	No	63	82.89	70	89.74	9	60.00	12	92.31	154	84.62
	Yes	13	17.11	8	10.26	6	40.00	1	7.69	28	15.38
	Total	76	100.00	78	100.00	15	100.00	13	100.00	182	100.00
Plant diseases	No	39	51.32	50	62.50	8	47.06	13	92.86	110	58.82
	Yes	37	48.68	30	37.50	9	52.94	1	7.14	77	41.18
	Total	76	100.00	80	100.00	17	100.00	14	100.00	187	100.00
Coastal erosion	No	71	93.42	74	98.67	11	100.00	13	100.00	169	96.57
	Yes	5	6.58	1	1.33	0	0	0	0.00	6	3.43
	Total	76	100.00	75	100.00	11	100.00	13	100.00	175	100.00
Riverbank erosion	No	75	98.68	73	96.05	10	76.92	13	100.00	171	96.07
	Yes	1	1.32	3	3.95	3	23.08	0	0.00	7	3.93
	Total	76	100.00	76	100.00	13	100.00	13	100.00	178	100.00
Displaced from land	No	74	97.37	75	98.68	10	76.92	12	92.31	171	96.07
	Yes	2	2.63	1	1.32	3	23.08	1	7.69	7	3.93
	Total	76	100.00	76	100.00	13	100.00	13	100.00	178	100.00
Other (specify below)	No	73	97.33	75	98.68	11	100.00	13	100.00	172	98.29
	Yes	2	2.67	1	1.32	0	0	0	0.00	3	1.71
	Total	75	100.00	76	100.00	11	100.00	13	100.00	175	100.00

9. Sweet potatoes	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	63	86.30	12	100.00	7	38.89	19	70.37	101	77.69
	Yes	10	13.70	0	0	11	61.11	8	29.63	29	22.31
	Total	73	100.00	12	100.00	18	100.00	27	100.00	130	100.00
Extreme heat	No	25	34.72	8	66.67	4	23.53	18	62.07	55	42.31
	Yes	47	65.28	4	33.33	13	76.47	11	37.93	75	57.69
	Total	72	100.00	12	100.00	17	100.00	29	100.00	130	100.00
Saltwater inundation (intrusion)	No	64	87.67	11	91.67	11	64.71	22	84.62	108	84.38
	Yes	9	12.33	1	8.33	6	35.29	4	15.38	20	15.63
	Total	73	100.00	12	100.00	17	100.00	26	100.00	128	100.00
Lack of water (etc.)	No	54	73.97	11	91.67	12	70.59	20	74.07	97	75.19
	Yes	19	26.03	1	8.33	5	29.41	7	25.93	32	24.81
	Total	73	100.00	12	100.00	17	100.00	27	100.00	129	100.00
Cyclones/hurricanes	No	54	73.97	12	100.00	14	100.00	25	100.00	105	84.68
	Yes	19	26.03	0	0	0	0	0	0.00	19	15.32
	Total	73	100.00	12	100.00	14	100.00	25	100.00	124	100.00
Heavy rains	No	45	61.64	6	50.00	7	41.18	14	56.00	72	56.69
	Yes	28	38.36	6	50.00	10	58.82	11	44.00	55	43.31
	Total	73	100.00	12	100.00	17	100.00	25	100.00	127	100.00
Landslides	No	70	95.89	12	100.00	13	86.67	24	92.31	119	94.44
	Yes	3	4.11	0	0	2	13.33	2	7.69	7	5.56
	Total	73	100.00	12	100.00	15	100.00	26	100.00	126	100.00
Difficulty predicting when the rainy season will come	No	48	65.75	12	100.00	13	92.86	23	92.00	96	77.42
	Yes	25	34.25	0	0	1	7.14	2	8.00	28	22.58
	Total	73	100.00	12	100.00	14	100.00	25	100.00	124	100.00
Drought	No	34	47.22	8	61.54	12	80.00	19	70.37	73	57.48
	Yes	38	52.78	5	38.46	3	20.00	8	29.63	54	42.52
	Total	72	100.00	13	100.00	15	100.00	27	100.00	127	100.00
Increased threats to crops from pests and disease	No	44	60.27	10	76.92	10	62.50	22	78.57	86	66.15
	Yes	29	39.73	3	23.08	6	37.50	6	21.43	44	33.85
	Total	73	100.00	13	100.00	16	100.00	28	100.00	130	100.00
Invasive species	No	57	78.08	11	91.67	11	64.71	23	92.00	102	80.31
	Yes	16	21.92	1	8.33	6	35.29	2	8.00	25	19.69
	Total	73	100.00	12	100.00	17	100.00	25	100.00	127	100.00
Plant diseases	No	42	57.53	10	71.43	8	47.06	21	84.00	81	62.79
	Yes	31	42.47	4	28.57	9	52.94	4	16.00	48	37.21
	Total	73	100.00	14	100.00	17	100.00	25	100.00	129	100.00
Coastal erosion	No	67	91.78	12	100.00	14	100.00	25	100.00	118	95.16
	Yes	6	8.22	0	0	0	0	0	0.00	6	4.84
	Total	73	100.00	12	100.00	14	100.00	25	100.00	124	100.00
Riverbank erosion	No	72	98.63	12	100.00	14	93.33	25	100.00	123	98.40
	Yes	1	1.37	0	0	1	6.67	0	0.00	2	1.60
	Total	73	100.00	12	100.00	15	100.00	25	100.00	125	100.00
Displaced from land	No	72	98.63	12	100.00	13	92.86	25	100.00	122	98.39
	Yes	1	1.37	0	0	1	7.14	0	0.00	2	1.61
	Total	73	100.00	12	100.00	14	100.00	25	100.00	124	100.00
Other (specify below)	No	72	98.63	11	91.67	13	100.00	25	100.00	121	98.37
	Yes	1	1.37	1	8.33	0	0	0	0.00	2	1.63
	Total	73	100.00	12	100.00	13	100.00	25	100.00	123	100.00

10. Tapioca	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	59	88.06	22	84.62	15	51.72	34	68.00	130	75.58
	Yes	8	11.94	4	15.38	14	48.28	16	32.00	42	24.42
	Total	67	100.00	26	100.00	29	100.00	50	100.00	172	100.00
Extreme heat	No	24	35.82	9	33.33	7	21.88	23	48.94	63	36.42
	Yes	43	64.18	18	66.67	25	78.13	24	51.06	110	63.58
	Total	67	100.00	27	100.00	32	100.00	47	100.00	173	100.00
Saltwater inundation (intrusion)	No	59	88.06	26	100.00	20	86.96	35	77.78	140	86.96
	Yes	8	11.94	0	0	3	13.04	10	22.22	21	13.04
	Total	67	100.00	26	100.00	23	100.00	45	100.00	161	100.00
Lack of water (etc.)	No	49	74.24	24	92.31	19	73.08	34	77.27	126	77.78
	Yes	17	25.76	2	7.69	7	26.92	10	22.73	36	22.22
	Total	66	100.00	26	100.00	26	100.00	44	100.00	162	100.00
Cyclones/hurricanes	No	48	71.64	26	100.00	21	91.30	43	100.00	138	86.79
	Yes	19	28.36	0	0	2	8.70	0	0.00	21	13.21
	Total	67	100.00	26	100.00	23	100.00	43	100.00	159	100.00
Heavy rains	No	32	47.76	18	69.23	12	40.00	25	52.08	87	50.88
	Yes	35	52.24	8	30.77	18	60.00	23	47.92	84	49.12
	Total	67	100.00	26	100.00	30	100.00	48	100.00	171	100.00
Landslides	No	62	92.54	23	88.46	17	65.38	41	87.23	143	86.14
	Yes	5	7.46	3	11.54	9	34.62	6	12.77	23	13.86
	Total	67	100.00	26	100.00	26	100.00	47	100.00	166	100.00
Difficulty predicting when the rainy season will come	No	40	59.70	26	96.30	20	80.00	36	83.72	122	75.31
	Yes	27	40.30	1	3.70	5	20.00	7	16.28	40	24.69
	Total	67	100.00	27	100.00	25	100.00	43	100.00	162	100.00
Drought	No	33	49.25	18	69.23	16	66.67	30	63.83	97	59.15
	Yes	34	50.75	8	30.77	8	33.33	17	36.17	67	40.85
	Total	67	100.00	26	100.00	24	100.00	47	100.00	164	100.00
Increased threats to crops from pests and disease	No	35	52.24	23	88.46	16	66.67	31	67.39	105	64.42
	Yes	32	47.76	3	11.54	8	33.33	15	32.61	58	35.58
	Total	67	100.00	26	100.00	24	100.00	46	100.00	163	100.00
Invasive species	No	36	53.73	22	81.48	18	62.07	41	95.35	117	70.48
	Yes	31	46.27	5	18.52	11	37.93	2	4.65	49	29.52
	Total	67	100.00	27	100.00	29	100.00	43	100.00	166	100.00
Plant diseases	No	36	53.73	21	77.78	15	53.57	34	79.07	106	64.24
	Yes	31	46.27	6	22.22	13	46.43	9	20.93	59	35.76
	Total	67	100.00	27	100.00	28	100.00	43	100.00	165	100.00
Coastal erosion	No	62	92.54	26	100.00	22	95.65	43	100.00	153	96.23
	Yes	5	7.46	0	0	1	4.35	0	0.00	6	3.77
	Total	67	100.00	26	100.00	23	100.00	43	100.00	159	100.00
Riverbank erosion	No	66	98.51	26	100.00	20	76.92	43	100.00	155	95.68
	Yes	1	1.49	0	0	6	23.08	0	0.00	7	4.32
	Total	67	100.00	26	100.00	26	100.00	43	100.00	162	100.00
Displaced from land	No	66	98.51	26	100.00	20	86.96	42	97.67	154	96.86
	Yes	1	1.49	0	0	3	13.04	1	2.33	5	3.14
	Total	67	100.00	26	100.00	23	100.00	43	100.00	159	100.00
Other (specify below)	No	66	98.51	25	96.15	18	81.82	43	100.00	152	96.20
	Yes	1	1.49	1	3.85	4	18.18	0	0.00	6	3.80
	Total	67	100.00	26	100.00	22	100.00	43	100.00	158	100.00

11. Soursop	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	42	97.67	18	90.00	5	38.46	34	77.27	99	82.50
	Yes	1	2.33	2	10.00	8	61.54	10	22.73	21	17.50
	Total	43	100.00	20	100.00	13	100.00	44	100.00	120	100.00
Extreme heat	No	21	48.84	8	42.11	4	26.67	19	40.43	52	41.94
	Yes	22	51.16	11	57.89	11	73.33	28	59.57	72	58.06
	Total	43	100.00	19	100.00	15	100.00	47	100.00	124	100.00
Saltwater inundation (intrusion)	No	36	83.72	19	100.00	8	72.73	37	84.09	100	85.47
	Yes	7	16.28	0	0	3	27.27	7	15.91	17	14.53
	Total	43	100.00	19	100.00	11	100.00	44	100.00	117	100.00
Lack of water (etc.)	No	30	69.77	17	89.47	8	57.14	35	79.55	90	75.00
	Yes	13	30.23	2	10.53	6	42.86	9	20.45	30	25.00
	Total	43	100.00	19	100.00	14	100.00	44	100.00	120	100.00
Cyclones/hurricanes	No	27	62.79	19	100.00	8	88.89	43	97.73	97	84.35
	Yes	16	37.21	0	0	1	11.11	1	2.27	18	15.65
	Total	43	100.00	19	100.00	9	100.00	44	100.00	115	100.00
Heavy rains	No	30	69.77	11	57.89	6	42.86	30	65.22	77	63.11
	Yes	13	30.23	8	42.11	8	57.14	16	34.78	45	36.89
	Total	43	100.00	19	100.00	14	100.00	46	100.00	122	100.00
Landslides	No	42	97.67	19	100.00	7	70.00	43	93.48	111	94.07
	Yes	1	2.33	0	0	3	30.00	3	6.52	7	5.93
	Total	43	100.00	19	100.00	10	100.00	46	100.00	118	100.00
Difficulty predicting when the rainy season will come	No	29	67.44	19	100.00	8	66.67	39	86.67	95	79.83
	Yes	14	32.56	0	0	4	33.33	6	13.33	24	20.17
	Total	43	100.00	19	100.00	12	100.00	45	100.00	119	100.00
Drought	No	24	55.81	15	78.95	8	88.89	28	60.87	75	64.10
	Yes	19	44.19	4	21.05	1	11.11	18	39.13	42	35.90
	Total	43	100.00	19	100.00	9	100.00	46	100.00	117	100.00
Increased threats to crops from pests and disease	No	26	60.47	17	89.47	6	46.15	35	76.09	84	69.42
	Yes	17	39.53	2	10.53	7	53.85	11	23.91	37	30.58
	Total	43	100.00	19	100.00	13	100.00	46	100.00	121	100.00
Invasive species	No	35	81.40	17	89.47	8	61.54	36	80.00	96	81.36
	Yes	8	18.60	2	10.53	5	38.46	9	20.00	24	20.34
	Total	43	100.00	17	89.47	13	100.00	45	100.00	118	101.69
Plant diseases	No	23	53.49	11	57.89	5	38.46	31	67.39	70	57.85
	Yes	20	46.51	8	42.11	8	61.54	15	32.61	51	42.15
	Total	43	100.00	19	100.00	13	100.00	46	100.00	121	100.00
Coastal erosion	No	40	93.02	17	89.47	8	100.00	44	100.00	109	95.61
	Yes	3	6.98	2	10.53	0	0	0	0.00	5	4.39
	Total	43	100.00	19	100.00	8	100.00	44	100.00	114	100.00
Riverbank erosion	No	42	97.67	19	100.00	7	63.64	44	100.00	112	95.73
	Yes	1	2.33	0	0	4	36.36	0	0.00	5	4.27
	Total	43	100.00	19	100.00	11	100.00	44	100.00	117	100.00
Displaced from land	No	42	97.67	19	100.00	8	80.00	44	100.00	113	97.41
	Yes	1	2.33	0	0	2	20.00	0	0.00	3	2.59
	Total	43	100.00	19	100.00	10	100.00	44	100.00	116	100.00
Other (specify below)	No	42	97.67	18	94.74	8	100.00	44	100.00	112	98.25
	Yes	1	2.33	1	5.26	0	0	0	0.00	2	1.75
	Total	43	100.00	19	100.00	8	100.00	44	100.00	114	100.00

12. Locally grown/collected vegetables	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	59	89.39	22	88.00	14	45.16	30	81.08	125	78.62
	Yes	7	10.61	3	12.00	17	54.84	7	18.92	34	21.38
	Total	66	100.00	25	100.00	31	100.00	37	100.00	159	100.00
Extreme heat	No	22	33.33	6	22.22	5	11.36	18	48.65	51	29.31
	Yes	44	66.67	21	77.78	39	88.64	19	51.35	123	70.69
	Total	66	100.00	27	100.00	44	100.00	37	100.00	174	100.00
Saltwater inundation (intrusion)	No	55	84.62	25	100.00	19	67.86	31	83.78	130	83.87
	Yes	10	15.38	0	0	9	32.14	6	16.22	25	16.13
	Total	65	100.00	25	100.00	28	100.00	37	100.00	155	100.00
Lack of water (etc.)	No	49	74.24	19	70.37	16	59.26	29	80.56	113	72.44
	Yes	17	25.76	8	29.63	11	40.74	7	19.44	43	27.56
	Total	66	100.00	27	100.00	27	100.00	36	100.00	156	100.00
Cyclones/hurricanes	No	46	69.70	25	100.00	19	79.17	36	100.00	126	83.44
	Yes	20	30.30	0	0	5	20.83	0	0.00	25	16.56
	Total	66	100.00	25	100.00	24	100.00	36	100.00	151	100.00
Heavy rains	No	46	69.70	17	68.00	10	27.03	21	56.76	94	56.97
	Yes	20	30.30	8	32.00	27	72.97	16	43.24	71	43.03
	Total	66	100.00	25	100.00	37	100.00	37	100.00	165	100.00
Landslides	No	64	96.97	24	100.00	23	95.83	35	97.22	146	97.33
	Yes	2	3.03	0	0	1	4.17	1	2.78	4	2.67
	Total	66	100.00	24	100.00	24	100.00	36	100.00	150	100.00
Difficulty predicting when the rainy season will come	No	47	71.21	21	80.77	21	84.00	30	83.33	119	77.78
	Yes	19	28.79	5	19.23	4	16.00	6	16.67	34	22.22
	Total	66	100.00	26	100.00	25	100.00	36	100.00	153	100.00
Drought	No	42	63.64	15	60.00	18	72.00	25	69.44	100	65.79
	Yes	24	36.36	10	40.00	7	28.00	11	30.56	52	34.21
	Total	66	100.00	25	100.00	25	100.00	36	100.00	152	100.00
Increased threats to crops from pests and disease	No	40	60.61	21	80.77	12	31.58	24	66.67	97	58.43
	Yes	26	39.39	5	19.23	26	68.42	12	33.33	69	41.57
	Total	66	100.00	26	100.00	38	100.00	36	100.00	166	100.00
Invasive species	No	53	80.30	19	76.00	13	36.11	34	94.44	119	73.01
	Yes	13	19.70	6	24.00	23	63.89	2	5.56	44	26.99
	Total	66	100.00	25	100.00	36	100.00	36	100.00	163	100.00
Plant diseases	No	33	50.00	14	56.00	7	17.50	28	75.68	82	48.81
	Yes	33	50.00	11	44.00	33	82.50	9	24.32	86	51.19
	Total	66	100.00	25	100.00	40	100.00	37	100.00	168	100.00
Coastal erosion	No	63	96.92	24	96.00	22	91.67	36	100.00	145	96.67
	Yes	2	3.08	1	4.00	2	8.33	0	0.00	5	3.33
	Total	65	100.00	25	100.00	24	100.00	36	100.00	150	100.00
Riverbank erosion	No	65	98.48	25	100.00	23	92.00	36	100.00	149	98.03
	Yes	1	1.52	0	0	2	8.00	0	0.00	3	1.97
	Total	66	100.00	25	100.00	25	100.00	36	100.00	152	100.00
Displaced from land	No	65	98.48	25	100.00	23	100.00	36	100.00	149	99.33
	Yes	1	1.52	0	0	0	0	0	0.00	1	0.67
	Total	66	100.00	25	100.00	23	100.00	36	100.00	150	100.00
Other (specify below)	No	64	98.46	25	100.00	23	100.00	34	97.14	146	98.65
	Yes	1	1.54	0	0	0	0	1	2.86	2	1.35
	Total	65	100.00	25	100.00	23	100.00	35	100.00	148	100.00

13. Imported vegetables	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	26	96.30	15	88.24	3	50.00	12	92.31	56	88.89
	Yes	1	3.70	2	11.76	3	50.00	1	7.69	7	11.11
	Total	27	100.00	17	100.00	6	100.00	13	100.00	63	100.00
Extreme heat	No	13	52.00	5	27.78	4	40.00	7	53.85	29	43.94
	Yes	12	48.00	13	72.22	6	60.00	6	46.15	37	56.06
	Total	25	100.00	18	100.00	10	100.00	13	100.00	66	100.00
Saltwater inundation (intrusion)	No	22	88.00	17	100.00	4	66.67	11	91.67	54	90.00
	Yes	3	12.00	0	0	2	33.33	1	8.33	6	10.00
	Total	25	100.00	17	100.00	6	100.00	12	100.00	60	100.00
Lack of water (etc.)	No	20	80.00	14	73.68	4	80.00	11	84.62	49	79.03
	Yes	5	20.00	5	26.32	1	20.00	2	15.38	13	20.97
	Total	25	100.00	19	100.00	5	100.00	13	100.00	62	100.00
Cyclones/hurricanes	No	19	76.00	17	100.00	4	100.00	12	100.00	52	89.66
	Yes	6	24.00	0	0	0	0	0	0.00	6	10.34
	Total	25	100.00	17	100.00	4	100.00	12	100.00	58	100.00
Heavy rains	No	21	87.50	9	50.00	4	44.44	7	53.85	41	64.06
	Yes	3	12.50	9	50.00	5	55.56	6	46.15	23	35.94
	Total	24	100.00	18	100.00	9	100.00	13	100.00	64	100.00
Landslides	No	25	100.00	17	100.00	4	80.00	13	100.00	59	98.33
	Yes	0	0.00	0	0	1	20.00	0	0.00	1	1.67
	Total	25	100.00	17	100.00	5	100.00	13	100.00	60	100.00
Difficulty predicting when the rainy season will come	No	23	92.00	14	82.35	4	66.67	13	100.00	54	88.52
	Yes	2	8.00	3	17.65	2	33.33	0	0.00	7	11.48
	Total	25	100.00	17	100.00	6	100.00	13	100.00	61	100.00
Drought	No	19	76.00	10	55.56	4	100.00	7	53.85	40	66.67
	Yes	6	24.00	8	44.44	0	0	6	46.15	20	33.33
	Total	25	100.00	18	100.00	4	100.00	13	100.00	60	100.00
Increased threats to crops from pests and disease	No	21	84.00	16	84.21	4	44.44	11	91.67	52	80.00
	Yes	4	16.00	3	15.79	5	55.56	1	8.33	13	20.00
	Total	25	100.00	19	100.00	9	100.00	12	100.00	65	100.00
Invasive species	No	22	88.00	15	83.33	4	40.00	12	92.31	53	80.30
	Yes	3	12.00	3	16.67	6	60.00	1	7.69	13	19.70
	Total	25	100.00	18	100.00	10	100.00	13	100.00	66	100.00
Plant diseases	No	20	80.00	9	50.00	4	40.00	11	84.62	44	66.67
	Yes	5	20.00	9	50.00	6	60.00	2	15.38	22	33.33
	Total	25	100.00	18	100.00	10	100.00	13	100.00	66	100.00
Coastal erosion	No	25	100.00	16	94.12	4	100.00	12	100.00	57	98.28
	Yes	0	0.00	1	5.88	0	0	0	0.00	1	1.72
	Total	25	100.00	17	100.00	4	100.00	12	100.00	58	100.00
Riverbank erosion	No	25	100.00	17	100.00	4	80.00	13	100.00	59	98.33
	Yes	0	0.00	0	0	1	20.00	0	0.00	1	1.67
	Total	25	100.00	17	100.00	5	100.00	13	100.00	60	100.00
Displaced from land	No	25	100.00	17	100.00	4	80.00	13	100.00	59	98.33
	Yes	0	0.00	0	0	1	20.00	0	0.00	1	1.67
	Total	25	100.00	17	100.00	5	100.00	13	100.00	60	100.00
Other (specify below)	No	24	96.00	17	100.00	4	80.00	13	100.00	58	96.67
	Yes	1	4.00	0	0	1	20.00	0	0.00	2	3.33
	Total	25	100.00	17	100.00	5	100.00	13	100.00	60	100.00

14. Locally grown/collected fruits	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	48	96.00	21	91.30	17	62.96	32	84.21	118	85.51
	Yes	2	4.00	2	8.70	10	37.04	6	15.79	20	14.49
	Total	50	100.00	23	100.00	27	100.00	38	100.00	138	100.00
Extreme heat	No	18	36.00	8	32.00	7	23.33	15	37.50	48	33.10
	Yes	32	64.00	17	68.00	23	76.67	25	62.50	97	66.90
	Total	50	100.00	25	100.00	30	100.00	40	100.00	145	100.00
Saltwater inundation (intrusion)	No	43	86.00	23	100.00	19	76.00	34	87.18	119	86.86
	Yes	7	14.00	0	0	6	24.00	5	12.82	18	13.14
	Total	50	100.00	23	100.00	25	100.00	39	100.00	137	100.00
Lack of water (etc.)	No	34	68.00	20	80.00	19	76.00	28	75.68	101	73.72
	Yes	16	32.00	5	20.00	6	24.00	9	24.32	36	26.28
	Total	50	100.00	25	100.00	25	100.00	37	100.00	137	100.00
Cyclones/hurricanes	No	38	76.00	23	100.00	20	90.91	38	100.00	119	89.47
	Yes	12	24.00	0	0	2	9.09	0	0.00	14	10.53
	Total	50	100.00	23	100.00	22	100.00	38	100.00	133	100.00
Heavy rains	No	36	72.00	13	56.52	13	46.43	22	57.89	84	60.43
	Yes	14	28.00	10	43.48	15	53.57	16	42.11	55	39.57
	Total	50	100.00	23	100.00	28	100.00	38	100.00	139	100.00
Landslides	No	50	100.00	23	100.00	20	90.91	38	100.00	131	98.50
	Yes	0	0.00	0	0	2	9.09	0	0.00	2	1.50
	Total	50	100.00	23	100.00	22	100.00	38	100.00	133	100.00
Difficulty predicting when the rainy season will come	No	37	74.00	21	87.50	21	87.50	31	79.49	110	80.29
	Yes	13	26.00	3	12.50	3	12.50	8	20.51	27	19.71
	Total	50	100.00	24	100.00	24	100.00	39	100.00	137	100.00
Drought	No	32	64.00	15	65.22	19	82.61	27	71.05	93	69.40
	Yes	18	36.00	8	34.78	4	17.39	11	28.95	41	30.60
	Total	50	100.00	23	100.00	23	100.00	38	100.00	134	100.00
Increased threats to crops from pests and disease	No	28	56.00	19	79.17	13	43.33	19	48.72	79	55.24
	Yes	22	44.00	5	20.83	17	56.67	20	51.28	64	44.76
	Total	50	100.00	24	100.00	30	100.00	39	100.00	143	100.00
Invasive species	No	43	86.00	14	58.33	13	44.83	32	80.00	102	71.33
	Yes	7	14.00	10	41.67	16	55.17	8	20.00	41	28.67
	Total	50	100.00	24	100.00	29	100.00	40	100.00	143	100.00
Plant diseases	No	24	48.00	17	70.83	9	29.03	25	62.50	75	51.72
	Yes	26	52.00	7	29.17	22	70.97	15	37.50	70	48.28
	Total	50	100.00	24	100.00	31	100.00	40	100.00	145	100.00
Coastal erosion	No	50	100.00	21	91.30	22	95.65	38	100.00	131	97.76
	Yes	0	0.00	2	8.70	1	4.35	0	0.00	3	2.24
	Total	50	100.00	23	100.00	23	100.00	38	100.00	134	100.00
Riverbank erosion	No	50	100.00	23	100.00	22	91.67	38	100.00	133	98.52
	Yes	0	0.00	0	0	2	8.33	0	0.00	2	1.48
	Total	50	100.00	23	100.00	24	100.00	38	100.00	135	100.00
Displaced from land	No	50	100.00	23	100.00	22	100.00	38	100.00	133	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	50	100.00	23	100.00	22	100.00	38	100.00	133	100.00
Other (specify below)	No	50	100.00	23	100.00	22	100.00	38	100.00	133	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	50	100.00	23	100.00	22	100.00	38	100.00	133	100.00

15. Imported fruits	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	13	86.67	3	75.00	5	83.33	10	90.91	31	86.11
	Yes	2	13.33	1	25.00	1	16.67	1	9.09	5	13.89
	Total	15	100.00	4	100.00	6	100.00	11	100.00	36	100.00
Extreme heat	No	11	73.33	1	25.00	4	57.14	8	72.73	24	64.86
	Yes	4	26.67	3	75.00	3	42.86	3	27.27	13	35.14
	Total	15	100.00	4	100.00	7	100.00	11	100.00	37	100.00
Saltwater inundation (intrusion)	No	15	100.00	3	100.00	4	80.00	10	90.91	32	94.12
	Yes	0	0.00	0	0	1	20.00	1	9.09	2	5.88
	Total	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00
Lack of water (etc.)	No	14	93.33	2	50.00	4	66.67	10	90.91	30	83.33
	Yes	1	6.67	2	50.00	2	33.33	1	9.09	6	16.67
	Total	15	100.00	4	100.00	6	100.00	11	100.00	36	100.00
Cyclones/hurricanes	No	12	80.00	3	100.00	4	100.00	11	100.00	30	90.91
	Yes	3	20.00	0	0	0	0	0	0.00	3	9.09
	Total	15	100.00	3	100.00	4	100.00	11	100.00	33	100.00
Heavy rains	No	12	85.71	1	33.33	4	80.00	9	81.82	26	78.79
	Yes	2	14.29	2	66.67	1	20.00	2	18.18	7	21.21
	Total	14	100.00	3	100.00	5	100.00	11	100.00	33	100.00
Landslides	No	15	100.00	3	100.00	4	80.00	11	100.00	33	97.06
	Yes	0	0.00	0	0	1	20.00	0	0.00	1	2.94
	Total	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00
Difficulty predicting when the rainy season will come	No	13	86.67	2	50.00	4	80.00	11	100.00	30	85.71
	Yes	2	13.33	2	50.00	1	20.00	0	0.00	5	14.29
	Total	15	100.00	4	100.00	5	100.00	11	100.00	35	100.00
Drought	No	13	86.67	1	33.33	4	80.00	8	72.73	26	76.47
	Yes	2	13.33	2	66.67	1	20.00	3	27.27	8	23.53
	Total	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00
Increased threats to crops from pests and disease	No	13	86.67	2	50.00	4	66.67	11	100.00	30	83.33
	Yes	2	13.33	2	50.00	2	33.33	0	0.00	6	16.67
	Total	15	100.00	4	100.00	6	100.00	11	100.00	36	100.00
Invasive species	No	14	93.33	2	66.67	4	57.14	9	81.82	29	80.56
	Yes	1	6.67	1	33.33	3	42.86	2	18.18	7	19.44
	Total	15	100.00	3	100.00	7	100.00	11	100.00	36	100.00
Plant diseases	No	14	93.33	4	100.00	4	66.67	8	72.73	30	83.33
	Yes	1	6.67	0	0	2	33.33	3	27.27	6	16.67
	Total	15	100.00	4	100.00	6	100.00	11	100.00	36	100.00
Coastal erosion	No	15	100.00	3	100.00	4	100.00	11	100.00	33	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	15	100.00	3	100.00	4	100.00	11	100.00	33	100.00
Riverbank erosion	No	15	100.00	3	100.00	4	80.00	11	100.00	33	97.06
	Yes	0	0.00	0	0	1	20.00	0	0.00	1	2.94
	Total	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00
Displaced from land	No	15	100.00	3	100.00	4	80.00	11	100.00	33	97.06
	Yes	0	0.00	0	0	1	20.00	0	0.00	1	2.94
	Total	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00
Other (specify below)	No	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	15	100.00	3	100.00	5	100.00	11	100.00	34	100.00

16. Lime/ lemon	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	45	95.74	40	86.96	31	64.58	44	80.00	160	81.63
	Yes	2	4.26	6	13.04	17	35.42	11	20.00	36	18.37
	Total	47	100.00	46	100.00	48	100.00	55	100.00	196	100.00
Extreme heat	No	18	38.30	14	29.79	19	33.93	22	36.07	73	34.60
	Yes	29	61.70	33	70.21	37	66.07	39	63.93	138	65.40
	Total	47	100.00	47	100.00	56	100.00	61	100.00	211	100.00
Saltwater inundation (intrusion)	No	42	89.36	45	97.83	33	70.21	45	80.36	165	84.18
	Yes	5	10.64	1	2.17	14	29.79	11	19.64	31	15.82
	Total	47	100.00	46	100.00	47	100.00	56	100.00	196	100.00
Lack of water (etc.)	No	40	85.11	32	68.09	36	83.72	44	80.00	152	79.17
	Yes	7	14.89	15	31.91	7	16.28	11	20.00	40	20.83
	Total	47	100.00	47	100.00	43	100.00	55	100.00	192	100.00
Cyclones/hurricanes	No	23	48.94	46	100.00	36	90.00	55	100.00	160	85.11
	Yes	24	51.06	0	0	4	10.00	0	0.00	28	14.89
	Total	47	100.00	46	100.00	40	100.00	55	100.00	188	100.00
Heavy rains	No	38	80.85	20	43.48	26	54.17	41	73.21	125	63.45
	Yes	9	19.15	26	56.52	22	45.83	15	26.79	72	36.55
	Total	47	100.00	46	100.00	48	100.00	56	100.00	197	100.00
Landslides	No	46	97.87	44	95.65	37	86.05	54	96.43	181	94.27
	Yes	1	2.13	2	4.35	6	13.95	2	3.57	11	5.73
	Total	47	100.00	46	100.00	43	100.00	56	100.00	192	100.00
Difficulty predicting when the rainy season will come	No	36	76.60	44	95.65	38	86.36	47	83.93	165	85.49
	Yes	11	23.40	2	4.35	6	13.64	9	16.07	28	14.51
	Total	47	100.00	46	100.00	44	100.00	56	100.00	193	100.00
Drought	No	27	57.45	33	71.74	30	68.18	32	56.14	122	62.89
	Yes	20	42.55	13	28.26	14	31.82	25	43.86	72	37.11
	Total	47	100.00	46	100.00	44	100.00	57	100.00	194	100.00
Increased threats to crops from pests and disease	No	35	74.47	34	72.34	17	24.64	36	61.02	122	54.95
	Yes	12	25.53	13	27.66	52	75.36	23	38.98	100	45.05
	Total	47	100.00	47	100.00	69	100.00	59	100.00	222	100.00
Invasive species	No	44	93.62	36	76.60	24	35.82	42	71.19	146	66.36
	Yes	3	6.38	11	23.40	43	64.18	17	28.81	74	33.64
	Total	47	100.00	47	100.00	67	100.00	59	100.00	220	100.00
Plant diseases	No	25	53.19	29	60.42	10	13.89	34	54.84	98	42.79
	Yes	22	46.81	19	39.58	62	86.11	28	45.16	131	57.21
	Total	47	100.00	48	100.00	72	100.00	62	100.00	229	100.00
Coastal erosion	No	47	100.00	44	95.65	38	95.00	54	100.00	183	97.86
	Yes	0	0.00	2	4.35	2	5.00	0	0.00	4	2.14
	Total	47	100.00	46	100.00	40	100.00	54	100.00	187	100.00
Riverbank erosion	No	47	100.00	44	95.65	36	81.82	54	100.00	181	94.76
	Yes	0	0.00	2	4.35	8	18.18	0	0.00	10	5.24
	Total	47	100.00	46	100.00	44	100.00	54	100.00	191	100.00
Displaced from land	No	47	100.00	46	100.00	36	90.00	54	100.00	183	97.86
	Yes	0	0.00	0	0	4	10.00	0	0.00	4	2.14
	Total	47	100.00	46	100.00	40	100.00	54	100.00	187	100.00
Other (specify below)	No	47	100.00	45	97.83	38	97.44	51	96.23	181	97.84
	Yes	0	0.00	1	2.17	1	2.56	2	3.77	4	2.16
	Total	47	100.00	46	100.00	39	100.00	53	100.00	185	100.00

17. Tangerine	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	42	100.00	6	100.00	25	69.44	18	85.71	91	86.67
	Yes	0	0.00	0	0	11	30.56	3	14.29	14	13.33
	Total	42	100.00	6	100.00	36	100.00	21	100.00	105	100.00
Extreme heat	No	23	53.49	2	33.33	14	35.90	13	61.90	52	47.71
	Yes	20	46.51	4	66.67	25	64.10	8	38.10	57	52.29
	Total	43	100.00	6	100.00	39	100.00	21	100.00	109	100.00
Saltwater inundation (intrusion)	No	39	90.70	6	100.00	25	78.13	20	100.00	90	89.11
	Yes	4	9.30	0	0	7	21.88	0	0.00	11	10.89
	Total	43	100.00	6	100.00	32	100.00	20	100.00	101	100.00
Lack of water (etc.)	No	36	83.72	5	83.33	27	84.38	18	90.00	86	85.15
	Yes	7	16.28	1	16.67	5	15.63	2	10.00	15	14.85
	Total	43	100.00	6	100.00	32	100.00	20	100.00	101	100.00
Cyclones/hurricanes	No	25	58.14	6	100.00	28	96.55	20	100.00	79	80.61
	Yes	18	41.86	0	0	1	3.45	0	0.00	19	19.39
	Total	43	100.00	6	100.00	29	100.00	20	100.00	98	100.00
Heavy rains	No	34	79.07	4	66.67	20	52.63	13	65.00	71	66.36
	Yes	9	20.93	2	33.33	18	47.37	7	35.00	36	33.64
	Total	43	100.00	6	100.00	38	100.00	20	100.00	107	100.00
Landslides	No	43	100.00	6	100.00	27	84.38	20	100.00	96	95.05
	Yes	0	0.00	0	0	5	15.63	0	0.00	5	4.95
	Total	43	100.00	6	100.00	32	100.00	20	100.00	101	100.00
Difficulty predicting when the rainy season will come	No	34	79.07	6	100.00	28	84.85	18	85.71	86	83.50
	Yes	9	20.93	0	0	5	15.15	3	14.29	17	16.50
	Total	43	100.00	6	100.00	33	100.00	21	100.00	103	100.00
Drought	No	30	69.77	5	83.33	23	71.88	14	66.67	72	70.59
	Yes	13	30.23	1	16.67	9	28.13	7	33.33	30	29.41
	Total	43	100.00	6	100.00	32	100.00	21	100.00	102	100.00
Increased threats to crops from pests and disease	No	31	72.09	6	85.71	15	34.09	16	76.19	68	59.13
	Yes	12	27.91	1	14.29	29	65.91	5	23.81	47	40.87
	Total	43	100.00	7	100.00	44	100.00	21	100.00	115	100.00
Invasive species	No	39	90.70	6	100.00	20	48.78	17	85.00	82	74.55
	Yes	4	9.30	0	0	21	51.22	3	15.00	28	25.45
	Total	43	100.00	6	100.00	41	100.00	20	100.00	110	100.00
Plant diseases	No	21	48.84	4	66.67	7	15.56	14	63.64	46	39.66
	Yes	22	51.16	2	33.33	38	84.44	8	36.36	70	60.34
	Total	43	100.00	6	100.00	45	100.00	22	100.00	116	100.00
Coastal erosion	No	43	100.00	6	100.00	29	93.55	20	100.00	98	98.00
	Yes	0	0.00	0	0	2	6.45	0	0.00	2	2.00
	Total	43	100.00	6	100.00	31	100.00	20	100.00	100	100.00
Riverbank erosion	No	43	100.00	6	100.00	28	84.85	20	100.00	97	95.10
	Yes	0	0.00	0	0	5	15.15	0	0.00	5	4.90
	Total	43	100.00	6	100.00	33	100.00	20	100.00	102	100.00
Displaced from land	No	43	100.00	6	100.00	29	93.55	20	100.00	98	98.00
	Yes	0	0.00	0	0	2	6.45	0	0.00	2	2.00
	Total	43	100.00	6	100.00	31	100.00	20	100.00	100	100.00
Other (specify below)	No	43	100.00	5	83.33	29	96.67	20	100.00	97	97.98
	Yes	0	0.00	1	16.67	1	3.33	0	0.00	2	2.02
	Total	43	100.00	6	100.00	30	100.00	20	100.00	99	100.00

18. Black pepper (peppercorn)	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	11	100.00	6	100.00	5	55.56	7	100.00	29	87.88
	Yes	0	0.00	0	0	4	44.44	0	0.00	4	12.12
	Total	11	100.00	6	100.00	9	100.00	7	100.00	33	100.00
Extreme heat	No	8	72.73	2	33.33	4	33.33	7	100.00	21	58.33
	Yes	3	27.27	4	66.67	8	66.67	0	0.00	15	41.67
	Total	11	100.00	6	100.00	12	100.00	7	100.00	36	100.00
Saltwater inundation (intrusion)	No	8	72.73	6	100.00	6	75.00	7	100.00	27	84.38
	Yes	3	27.27	0	0	2	25.00	0	0.00	5	15.63
	Total	11	100.00	6	100.00	8	100.00	7	100.00	32	100.00
Lack of water (etc.)	No	10	90.91	4	66.67	6	66.67	7	100.00	27	81.82
	Yes	1	9.09	2	33.33	3	33.33	0	0.00	6	18.18
	Total	11	100.00	6	100.00	9	100.00	7	100.00	33	100.00
Cyclones/hurricanes	No	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
Heavy rains	No	11	100.00	4	66.67	6	54.55	7	100.00	28	80.00
	Yes	0	0.00	2	33.33	5	45.45	0	0.00	7	20.00
	Total	11	100.00	6	100.00	11	100.00	7	100.00	35	100.00
Landslides	No	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
Difficulty predicting when the rainy season will come	No	9	81.82	6	100.00	7	100.00	7	100.00	29	93.55
	Yes	2	18.18	0	0	0	0	0	0.00	2	6.45
	Total	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
Drought	No	10	90.91	4	66.67	5	71.43	7	100.00	26	83.87
	Yes	1	9.09	2	33.33	2	28.57	0	0.00	5	16.13
	Total	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
Increased threats to crops from pests and disease	No	11	100.00	6	100.00	6	54.55	7	100.00	30	85.71
	Yes	0	0.00	0	0	5	45.45	0	0.00	5	14.29
	Total	11	100.00	6	100.00	11	100.00	7	100.00	35	100.00
Invasive species	No	10	90.91	3	50.00	5	45.45	7	100.00	25	71.43
	Yes	1	9.09	3	50.00	6	54.55	0	0.00	10	28.57
	Total	11	100.00	6	100.00	11	100.00	7	100.00	35	100.00
Plant diseases	No	9	81.82	4	66.67	5	41.67	7	100.00	25	69.44
	Yes	2	18.18	2	33.33	7	58.33	0	0.00	11	30.56
	Total	11	100.00	6	100.00	12	100.00	7	100.00	36	100.00
Coastal erosion	No	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
Riverbank erosion	No	11	100.00	6	100.00	7	87.50	7	100.00	31	96.88
	Yes	0	0.00	0	0	1	12.50	0	0.00	1	3.13
	Total	11	100.00	6	100.00	8	100.00	7	100.00	32	100.00
Displaced from land	No	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
	Yes	0	0.00	0	0	0	0	0	0.00	0	0.00
	Total	11	100.00	6	100.00	7	100.00	7	100.00	31	100.00
Other (specify below)	No	11	100.00	6	100.00	8	88.89	7	100.00	32	96.97
	Yes	0	0.00	0	0	1	11.11	0	0.00	1	3.03
	Total	11	100.00	6	100.00	9	100.00	7	100.00	33	100.00

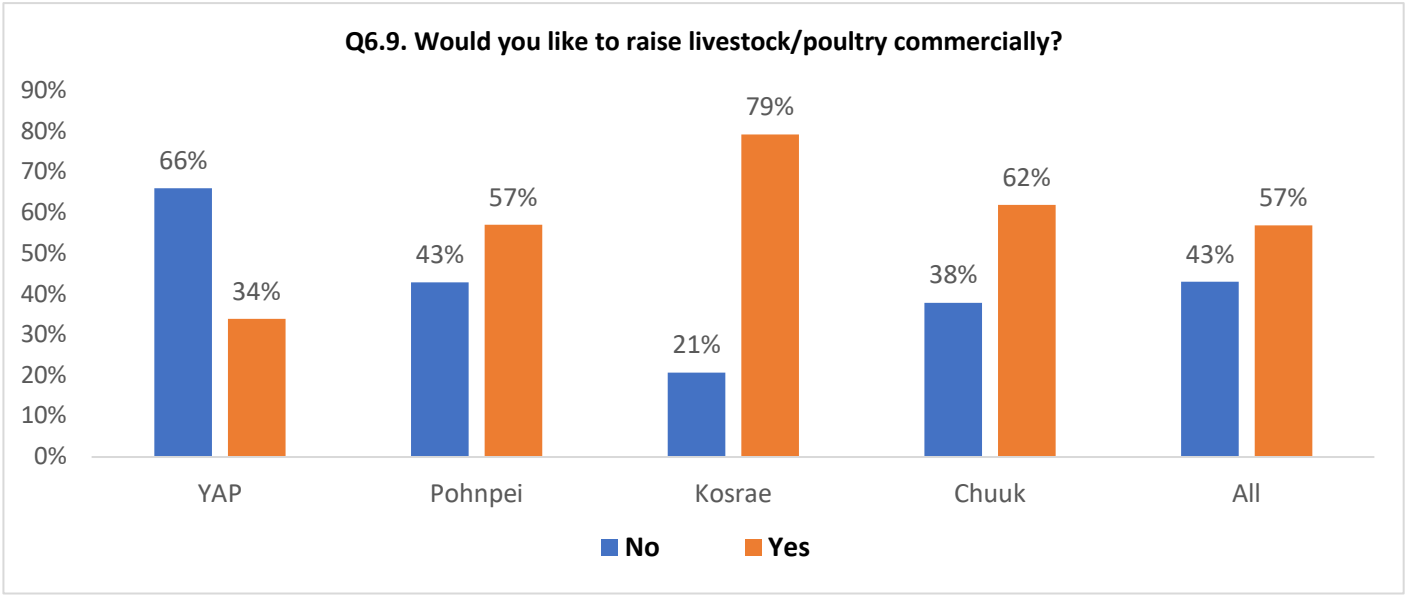
19. Hot pepper	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	59	95.16	22	84.62	20	55.56	29	69.05	130	78.31
	Yes	3	4.84	4	15.38	16	44.44	13	30.95	36	21.69
	Total	62	100.00	26	100.00	36	100.00	42	100.00	166	100.00
Extreme heat	No	28	45.16	10	38.46	7	12.50	22	47.83	67	35.26
	Yes	34	54.84	16	61.54	49	87.50	24	52.17	123	64.74
	Total	62	100.00	26	100.00	56	100.00	46	100.00	190	100.00
Saltwater inundation (intrusion)	No	59	95.16	25	96.15	26	81.25	34	79.07	144	88.34
	Yes	3	4.84	1	3.85	6	18.75	9	20.93	19	11.66
	Total	62	100.00	26	100.00	32	100.00	43	100.00	163	100.00
Lack of water (etc.)	No	52	85.25	23	85.19	26	68.42	36	85.71	137	81.55
	Yes	9	14.75	4	14.81	12	31.58	6	14.29	31	18.45
	Total	61	100.00	27	100.00	38	100.00	42	100.00	168	100.00
Cyclones/hurricanes	No	51	82.26	26	100.00	26	89.66	41	97.62	144	90.57
	Yes	11	17.74	0	0	3	10.34	1	2.38	15	9.43
	Total	62	100.00	26	100.00	29	100.00	42	100.00	159	100.00
Heavy rains	No	56	90.32	15	57.69	17	42.50	31	72.09	119	69.59
	Yes	6	9.68	11	42.31	23	57.50	12	27.91	52	30.41
	Total	62	100.00	26	100.00	40	100.00	43	100.00	171	100.00
Landslides	No	61	98.39	26	100.00	28	90.32	40	93.02	155	95.68
	Yes	1	1.61	0	0	3	9.68	3	6.98	7	4.32
	Total	62	100.00	26	100.00	31	100.00	43	100.00	162	100.00
Difficulty predicting when the rainy season will come	No	55	88.71	26	96.30	28	87.50	38	90.48	147	90.18
	Yes	7	11.29	1	3.70	4	12.50	4	9.52	16	9.82
	Total	62	100.00	27	100.00	32	100.00	42	100.00	163	100.00
Drought	No	39	62.90	18	69.23	22	61.11	23	51.11	102	60.36
	Yes	23	37.10	8	30.77	14	38.89	22	48.89	67	39.64
	Total	62	100.00	26	100.00	36	100.00	45	100.00	169	100.00
Increased threats to crops from pests and disease	No	39	62.90	15	55.56	15	32.61	29	65.91	98	54.75
	Yes	23	37.10	12	44.44	31	67.39	15	34.09	81	45.25
	Total	62	100.00	27	100.00	46	100.00	44	100.00	179	100.00
Invasive species	No	50	80.65	20	76.92	15	29.41	40	90.91	125	68.31
	Yes	12	19.35	6	23.08	36	70.59	4	9.09	58	31.69
	Total	62	100.00	26	100.00	51	100.00	44	100.00	183	100.00
Plant diseases	No	36	58.06	17	62.96	10	21.28	27	60.00	90	49.72
	Yes	26	41.94	10	37.04	37	78.72	18	40.00	91	50.28
	Total	62	100.00	27	100.00	47	100.00	45	100.00	181	100.00
Coastal erosion	No	60	98.36	24	92.31	28	100.00	40	97.56	152	97.44
	Yes	1	1.64	2	7.69	0	0	1	2.44	4	2.56
	Total	61	100.00	26	100.00	28	100.00	41	100.00	156	100.00
Riverbank erosion	No	61	98.39	25	96.15	28	90.32	41	100.00	155	96.88
	Yes	1	1.61	1	3.85	3	9.68	0	0.00	5	3.13
	Total	62	100.00	26	100.00	31	100.00	41	100.00	160	100.00
Displaced from land	No	61	98.39	26	100.00	28	93.33	41	100.00	156	98.11
	Yes	1	1.61	0	0	2	6.67	0	0.00	3	1.89
	Total	62	100.00	26	100.00	30	100.00	41	100.00	159	100.00
Other (specify below)	No	61	98.39	26	100.00	26	96.30	41	100.00	154	98.72
	Yes	1	1.61	0	0	1	3.70	0	0.00	2	1.28
	Total	62	100.00	26	100.00	27	100.00	41	100.00	156	100.00

20. Sakau (Kava)	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Flooding	No	10	100.00	66	78.57	14	77.78	9	90.00	99	81.15
	Yes	0	0.00	18	21.43	4	22.22	1	10.00	23	18.85
	Total	10	100.00	84	100.00	18	100.00	10	100.00	122	100.00
Extreme heat	No	8	80.00	20	23.53	8	40.00	6	60.00	42	33.60
	Yes	2	20.00	65	76.47	12	60.00	4	40.00	83	66.40
	Total	10	100.00	85	100.00	20	100.00	10	100.00	125	100.00
Saltwater inundation (intrusion)	No	10	100.00	83	98.81	16	94.12	9	90.00	118	97.52
	Yes	0	0.00	1	1.19	1	5.88	1	10.00	3	2.48
	Total	10	100.00	84	100.00	17	100.00	10	100.00	121	100.00
Lack of water (etc.)	No	10	100.00	78	91.76	13	76.47	8	80.00	109	89.34
	Yes	0	0.00	7	8.24	4	23.53	2	20.00	13	10.66
	Total	10	100.00	85	100.00	17	100.00	10	100.00	122	100.00
Cyclones/hurricanes	No	10	100.00	83	98.81	16	100.00	10	100.00	119	99.17
	Yes	0	0.00	1	1.19	0	0	0	0.00	1	0.83
	Total	10	100.00	84	100.00	16	100.00	10	100.00	120	100.00
Heavy rains	No	10	100.00	52	60.47	15	75.00	8	80.00	85	67.46
	Yes	0	0.00	34	39.53	5	25.00	2	20.00	41	32.54
	Total	10	100.00	86	100.00	20	100.00	10	100.00	126	100.00
Landslides	No	10	100.00	71	82.56	16	94.12	10	100.00	107	86.99
	Yes	0	0.00	15	17.44	1	5.88	0	0.00	16	13.01
	Total	10	100.00	86	100.00	17	100.00	10	100.00	123	100.00
Difficulty predicting when the rainy season will come	No	9	90.00	77	90.59	16	88.89	10	100.00	112	91.06
	Yes	1	10.00	8	9.41	2	11.11	0	0.00	11	8.94
	Total	10	100.00	85	100.00	18	100.00	10	100.00	123	100.00
Drought	No	9	90.00	53	59.55	14	82.35	8	80.00	84	66.67
	Yes	1	10.00	36	40.45	3	17.65	2	20.00	42	33.33
	Total	10	100.00	89	100.00	17	100.00	10	100.00	126	100.00
Increased threats to crops from pests and disease	No	10	100.00	69	81.18	13	65.00	8	80.00	100	80.00
	Yes	0	0.00	16	18.82	7	35.00	2	20.00	25	20.00
	Total	10	100.00	85	100.00	20	100.00	10	100.00	125	100.00
Invasive species	No	9	90.00	66	77.65	10	45.45	10	100.00	95	74.80
	Yes	1	10.00	19	22.35	12	54.55	0	0.00	32	25.20
	Total	10	100.00	85	100.00	22	100.00	10	100.00	127	100.00
Plant diseases	No	9	90.00	55	63.22	8	36.36	10	100.00	82	63.57
	Yes	1	10.00	32	36.78	14	63.64	0	0.00	47	36.43
	Total	10	100.00	87	100.00	22	100.00	10	100.00	129	100.00
Coastal erosion	No	10	100.00	82	97.62	16	94.12	10	100.00	118	97.52
	Yes	0	0.00	2	2.38	1	5.88	0	0.00	3	2.48
	Total	10	100.00	84	100.00	17	100.00	10	100.00	121	100.00
Riverbank erosion	No	10	100.00	82	97.62	16	88.89	10	100.00	118	96.72
	Yes	0	0.00	2	2.38	2	11.11	0	0.00	4	3.28
	Total	10	100.00	84	100.00	18	100.00	10	100.00	122	100.00
Displaced from land	No	10	100.00	84	100.00	16	94.12	10	100.00	120	99.17
	Yes	0	0.00	0	0	1	5.88	0	0.00	1	0.83
	Total	10	100.00	84	100.00	17	100.00	10	100.00	121	100.00
Other (specify below)	No	10	100.00	84	100.00	16	94.12	10	100.00	120	99.17
	Yes	0	0.00	0	0	1	5.88	0	0.00	1	0.83
	Total	10	100.00	84	100.00	17	100.00	10	100.00	121	100.00

Question	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Q6.1 Are you raising livestock and/or poultry?	No	76	46.63	17	10.63	53	35.81	23	15.44	169	27.26
	Yes	87	53.37	143	89.38	95	64.19	126	84.56	451	72.74
	Total	163	100.00	160	100.00	148	100.00	149	100.00	620	100.00
Q6.2 Do you have access to adequate land for rearing livestock and/or poultry?	No	17	17.89	32	22.22	9	8.91	37	28.68	95	20.26
	Yes	78	82.11	112	77.78	92	91.09	92	71.32	374	79.74
	Total	95	100.00	144	100.00	101	100.00	129	100.00	469	100.00
Q6.3 Do you feel:	It is enough	82	88.17	108	76.60	75	75.76	91	70.54	356	77.06
	Not enough	11	11.83	33	23.40	24	24.24	38	29.46	106	22.94
	Total	93	100.00	141	100.00	99	100.00	129	100.00	462	100.00
Q6.4 Do you want more land?	No	78	78.79	91	63.19	43	43.88	88	68.22	300	63.83
	Yes	21	21.21	53	36.81	55	56.12	41	31.78	170	36.17
	Total	99	100.00	144	100.00	98	100.00	129	100.00	470	100.00
Q6.5 Is the land you have access to shared (including family members)?	No	41	42.71	26	17.81	30	30.61	8	6.20	105	22.39
	Yes	55	57.29	120	82.19	68	69.39	121	93.80	364	77.61
	Total	96	100.00	146	100.00	98	100.00	129	100.00	469	100.00

Q6.6 What kind of livestock do you raise?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Chickens	No	30	31.58	30	20.83	34	45.33	46	40.71	140	32.79
	Yes	65	68.42	114	79.17	41	54.67	67	59.29	287	67.21
	Total	95	100.00	144	100.00	75	100.00	113	100.00	427	100.00
Pigs	No	14	14.74	6	4.14	5	5.26	9	7.14	34	7.38
	Yes	81	85.26	139	95.86	90	94.74	117	92.86	427	92.62
	Total	95	100.00	145	100.00	95	100.00	126	100.00	461	100.00
Goats	No	94	98.95	136	100.00	51	100.00	97	98.98	378	99.47
	Yes	1	1.05	0	0	0	0	1	1.02	2	0.53
	Total	95	100.00	136	100.00	51	100.00	98	100.00	380	100.00
Dogs	No	68	71.58	19	13.29	38	57.58	33	30.00	158	38.16
	Yes	27	28.42	124	86.71	28	42.42	77	70.00	256	61.84
	Total	95	100.00	143	100.00	66	100.00	110	100.00	414	100.00
Deer	No	94	98.95	135	99.26	51	100.00	95	100.00	375	99.47
	Yes	1	1.05	1	0.74	0	0	0	0	2	0.53
	Total	95	100.00	136	100.00	51	100.00	95	100.00	377	100.00
Bovine	No	94	98.95	136	100.00	51	100.00	96	100.00	377	99.74
	Yes	1	1.05	0	0	0	0	0	0	1	0.26
	Total	95	100.00	136	100.00	51	100.00	96	100.00	378	100.00
Other	No	93	97.89	132	97.06	50	100.00	93	93.94	368	96.84
	Yes	2	2.11	4	2.94	0	0	6	6.06	12	3.16
	Total	95	100.00	136	100.00	50	100.00	99	100.00	380	100.00

Q6.7 In the last 10 years, have you noticed a change in raising animals:		YAP		Pohnpei		Kosrae		Chuuk		All	
	Response	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
	No	49	51.58	61	41.78	41	44.57	56	44.44	207	45.10
	Yes	9	9.47	45	30.82	12	13.04	49	38.89	115	25.05
	Stayed the same	37	38.95	40	27.40	39	42.39	21	16.67	137	29.85
	Total	95	100.00	146	100.00	92	100.00	126	100.00	459	100.00



Questions		YAP		Pohnpei		Kosrae		Chuuk		All	
	Resp.	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Q7.1 Do you harvest marine or freshwater fish/organisms?	No	59	35.54	46	29.11	24	16.33	37	24.83	166	26.77
	Yes	107	64.46	112	70.89	123	83.67	112	75.17	454	73.23
	Total	166	100.00	158	100.00	147	100.00	149	100.00	620	100.00
Q7.2 In terms of access to marine resources, do you feel:	It is enough	67	60.91	70	61.40	99	79.20	68	60.71	304	65.94
	Not enough	43	39.09	44	38.60	26	20.80	44	39.29	157	34.06
	Total	110	100.00	114	100.00	125	100.00	112	100.00	461	100.00

Q7.2 How often do you fish or collect food from this location?

1. Mangrove	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Once a day	9	9.09	5	4.31	9	8.18	6	6.67	29	6.99
Several times a week	4	4.04	15	12.93	18	16.36	16	17.78	53	12.77
Once a week	13	13.13	14	12.07	11	10.00	9	10.00	47	11.33
Once a month	21	21.22	22	18.97	31	28.18	9	10.00	83	20.00
Once every three months or more	19	19.19	19	16.38	15	13.64	7	7.78	60	14.46
Never	33	33.33	41	35.34	26	23.64	43	47.78	143	34.46
Total	99	100	116	100.00	110	100.00	90	100.00	415	100.00

2. Inner reef (lagoon)	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Once a day	6	5.71	3	2.59	4	3.39	16	14.68	29	6.47
Several times a week	14	13.33	39	33.62	50	42.37	50	45.87	153	34.15
Once a week	34	32.38	24	20.69	18	15.25	18	16.51	94	20.98
Once a month	31	29.52	32	27.59	31	26.27	8	7.34	102	22.77
Once every three months or more	14	13.33	13	11.21	12	10.17	6	5.50	45	10.04
Never	6	5.71	5	4.31	3	2.54	11	10.09	25	5.58
Total	105	100.00	116	100.00	118	100.00	109	100.00	448	100.00

3. Outer reef	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Once a day	7	6.86	4	3.48	3	2.65	9	9.28	23	5.39
Several times a week	5	4.90	23	20.00	52	46.02	31	31.96	111	26.00
Once a week	15	14.71	15	13.04	16	14.16	9	9.28	55	12.88
Once a month	32	31.37	20	17.39	24	21.24	11	11.34	87	20.37
Once every three months or more	22	21.57	11	9.57	6	5.31	6	6.19	45	10.54
Never	21	20.59	42	36.52	12	10.62	31	31.96	106	24.82
Total	102	100.00	115	100.00	113	100.00	97	100.00	427	100.00

4. Open Ocean	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Once a day	8	7.84	3	2.59	6	5.36	9	9.89	26	6.18
Several times a week	4	3.92	13	11.21	38	33.93	28	30.77	83	19.71
Once a week	7	6.86	15	12.93	20	17.86	12	13.19	54	12.83
Once a month	21	20.59	13	11.21	13	11.61	8	8.79	55	13.06
Once every three months or more	23	22.55	17	14.66	14	12.50	5	5.49	59	14.01
Never	39	38.24	55	47.41	21	18.75	29	31.87	144	34.20
Total	102	100.00	116	100.00	112	100.00	91	100.00	421	100.00

5. River	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Once a day	0	0.00	2	1.75	4	4.08	2	2.67	8	2.19
Several times a week	0	0.00	7	6.14	10	10.20	0	0	17	4.66
Once a week	0	0.00	1	0.88	6	6.12	0	0	7	1.92
Once a month	2	2.56	6	5.26	21	21.43	0	0	29	7.95
Once every three months or more	6	7.69	8	7.02	11	11.22	0	0	25	6.85
Never	70	89.74	90	78.95	46	46.94	73	97.33	279	76.44
Total	78	100.00	114	100.00	98	100.00	75	100.00	365	100.00

Q7.2.2 Is it shared (by geographical area)?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
1. Mangrove	No	18	24.32	14	15.38	8	8.79	40	63.49	80	25.08
	Yes	56	75.68	77	84.62	83	91.21	23	36.51	239	74.92
	Total	74	100.00	91	100.00	91	100.00	63	100.00	319	100.00
2. Inner Reef (lagoon)	No	19	18.27	17	15.32	2	1.77	46	45.54	84	19.58
	Yes	85	81.73	94	84.68	111	98.23	55	54.46	345	80.42
	Total	104	100.00	111	100.00	113	100.00	101	100.00	429	100.00
3. Outer Reef	No	16	17.78	12	13.95	5	4.72	41	53.95	74	20.67
	Yes	74	82.22	74	86.05	101	95.28	35	46.05	284	79.33
	Total	90	100.00	86	100.00	106	100.00	76	100.00	358	100.00
4. Open Ocean	No	16	21.05	14	18.67	7	6.80	36	49.32	73	22.32
	Yes	60	78.95	61	81.33	96	93.20	37	50.68	254	77.68
	Total	76	100.00	75	100.00	103	100.00	73	100.00	327	100.00
5. River	No	18	56.25	19	38.78	13	19.12	25	89.29	75	42.37
	Yes	14	43.75	30	61.22	55	80.88	3	10.71	102	57.63
	Total	32	100.00	49	100.00	68	100.00	28	100.00	177	100.00

Q7.2.4 In the last 10 years, have these food sources (aquatic species):

1. Mangrove	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Increased in number	3	4.62	10	11.90	2	2.33	14	29.79	29	10.28
Decreased in number	49	75.38	69	82.14	52	60.47	29	61.70	199	70.57
Stayed the same	13	20.00	5	5.95	32	37.21	4	8.51	54	19.15
Total	65	100.00	84	100.00	86	100.00	47	100.00	282	100.00

2. Inner reef (lagoon)	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Increased in number	9	10.00	4	3.70	10	8.85	21	23.33	44	10.97
Decreased in number	73	81.11	92	85.19	75	66.37	58	64.44	298	74.31
Stayed the same	8	8.89	12	11.11	28	24.78	11	12.22	59	14.71
Total	90	100.00	108	100.00	113	100.00	90	100.00	401	100.00

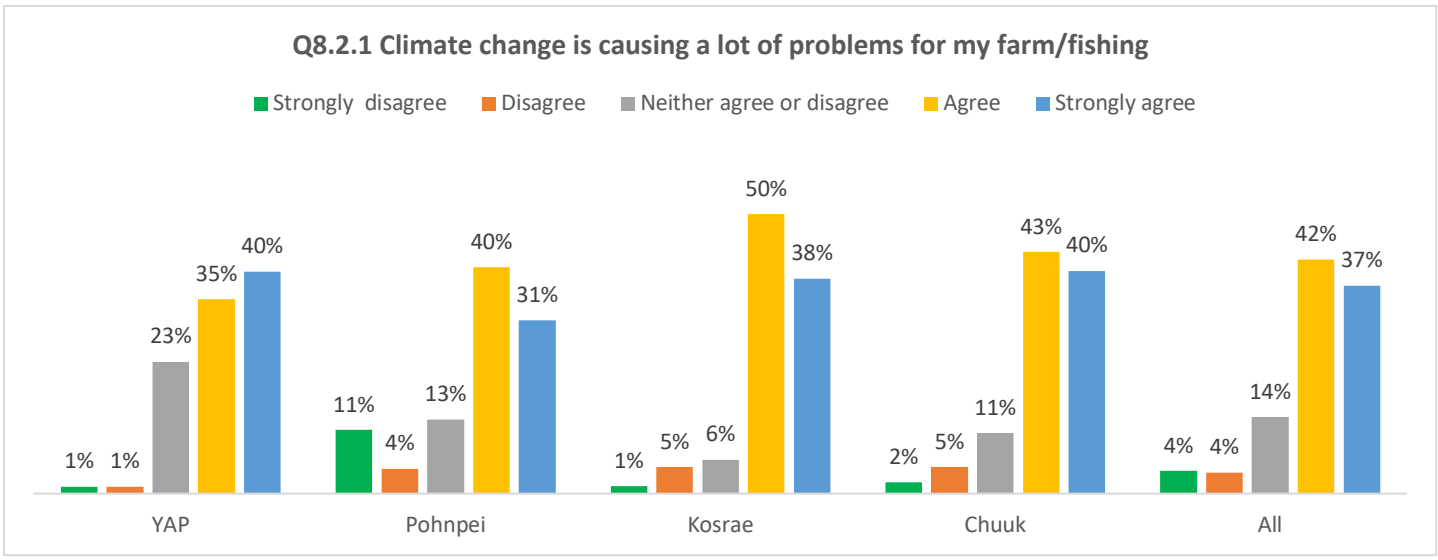
3. Outer reef	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Increased in number	6	8.57	1	1.35	4	3.88	13	20.97	24	7.77
Decreased in number	54	77.14	67	90.54	74	71.84	39	62.90	234	75.73
Stayed the same	10	14.29	6	8.11	25	24.27	10	16.13	51	16.50
Total	70	100.00	74	100.00	103	100.00	62	100.00	309	100.00

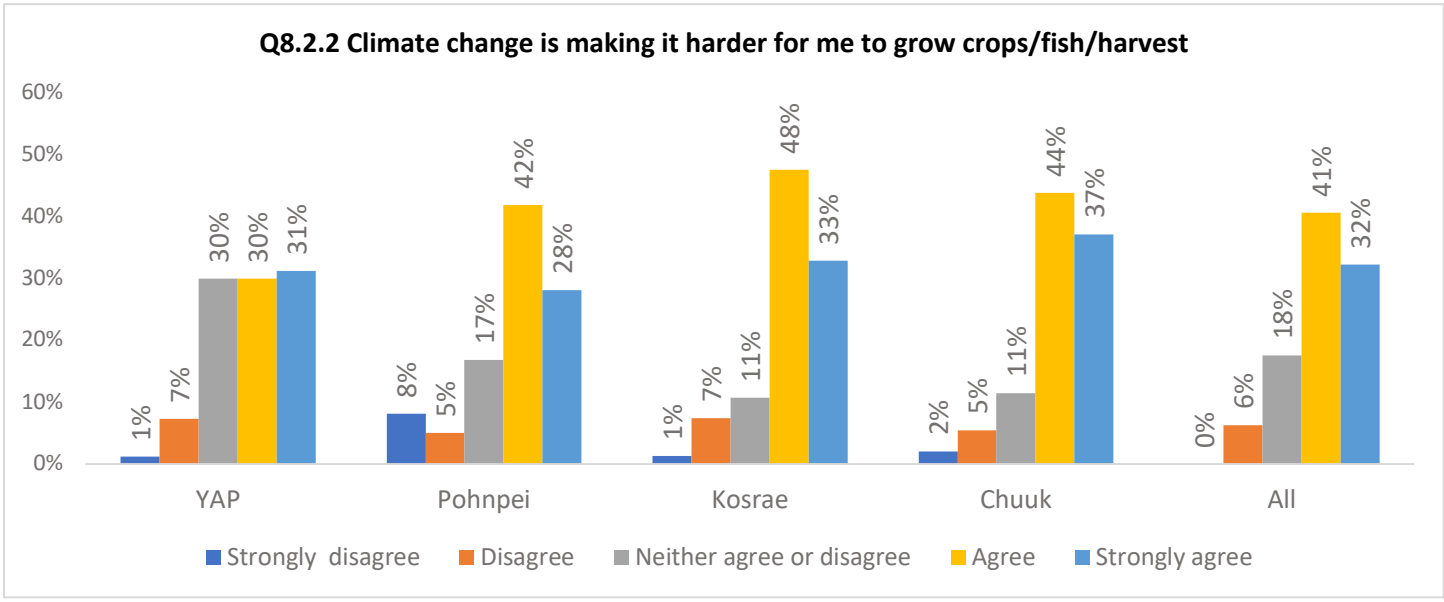
4. Open Ocean	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Increased in number	5	9.80	0	0.00	1	1.08	12	18.75	18	6.62
Decreased in number	40	78.43	57	89.06	71	76.34	39	60.94	207	76.10
Stayed the same	6	11.76	7	10.94	21	22.58	13	20.31	47	17.28
Total	51	100.00	64	100.00	93	100.00	64	100.00	272	100.00

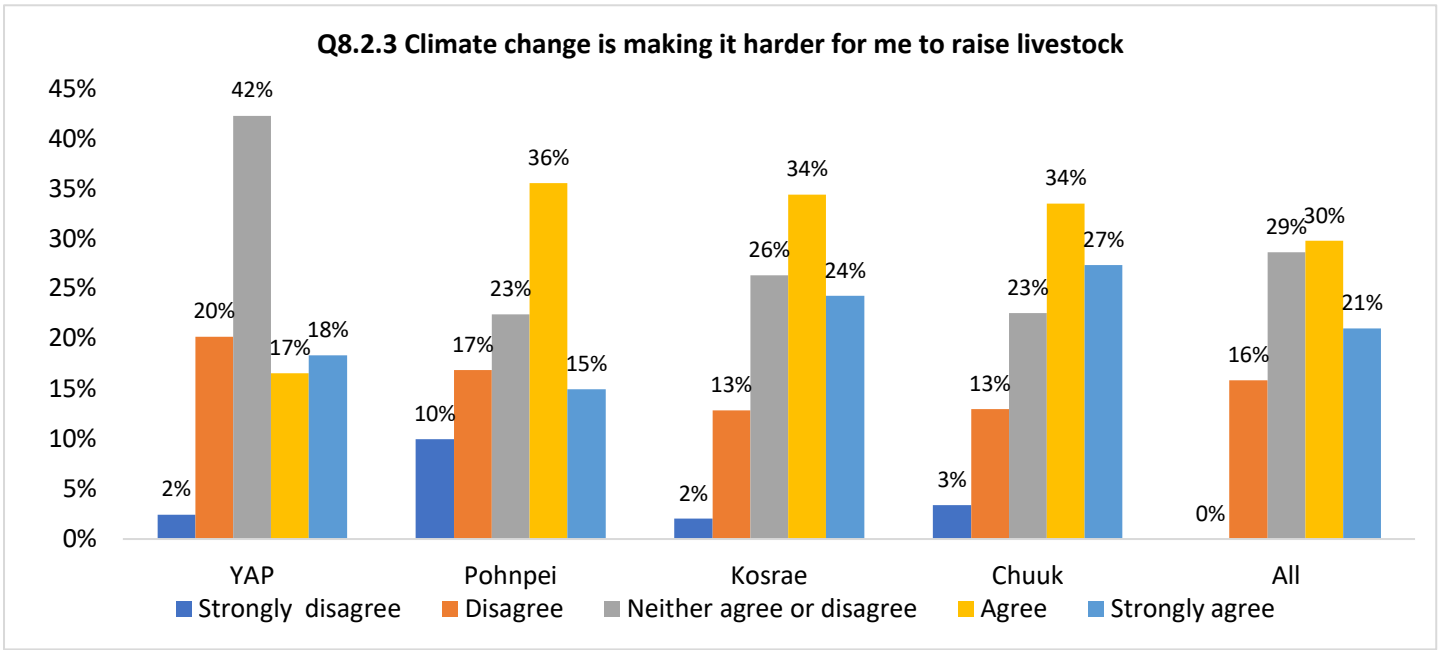
5. River	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Increased in number	0	0.00	3	10.34	1	1.79	1	20.00	5	4.95
Decreased in number	8	72.73	18	62.07	32	57.14	4	80.00	62	61.39
Stayed the same	3	27.27	8	27.59	23	41.07	0	0	34	33.66
Total	11	100.00	29	100.00	56	100.00	5	100.00	101	100.00

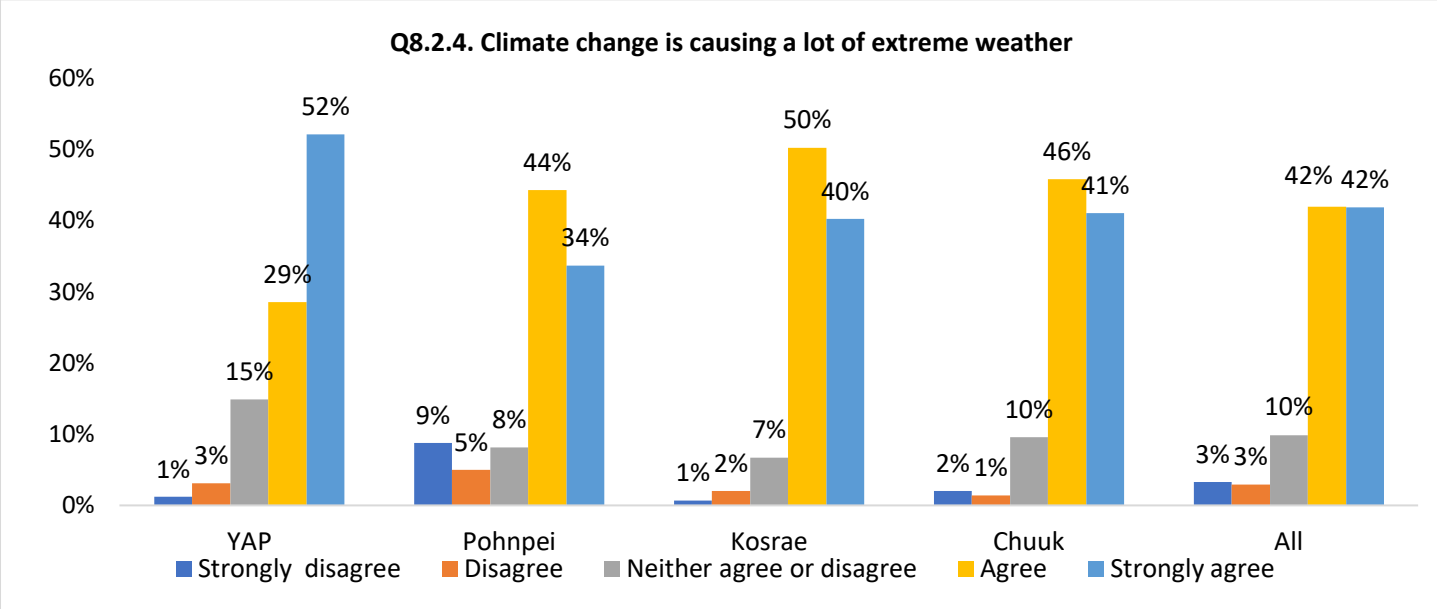
Q8.1 Would you grow/fish/harvest more food or raise more livestock if you could?		YAP		Pohnpei		Kosrae		Chuuk		All	
	Resp.	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	No	60	38.71	61	38.85	15	10.14	29	19.59	165	27.14
	Yes	95	61.29	96	61.15	133	89.86	119	80.41	443	72.86
	Total	155	100.00	157	100.00	148	100.00	148	100.00	608	100.00

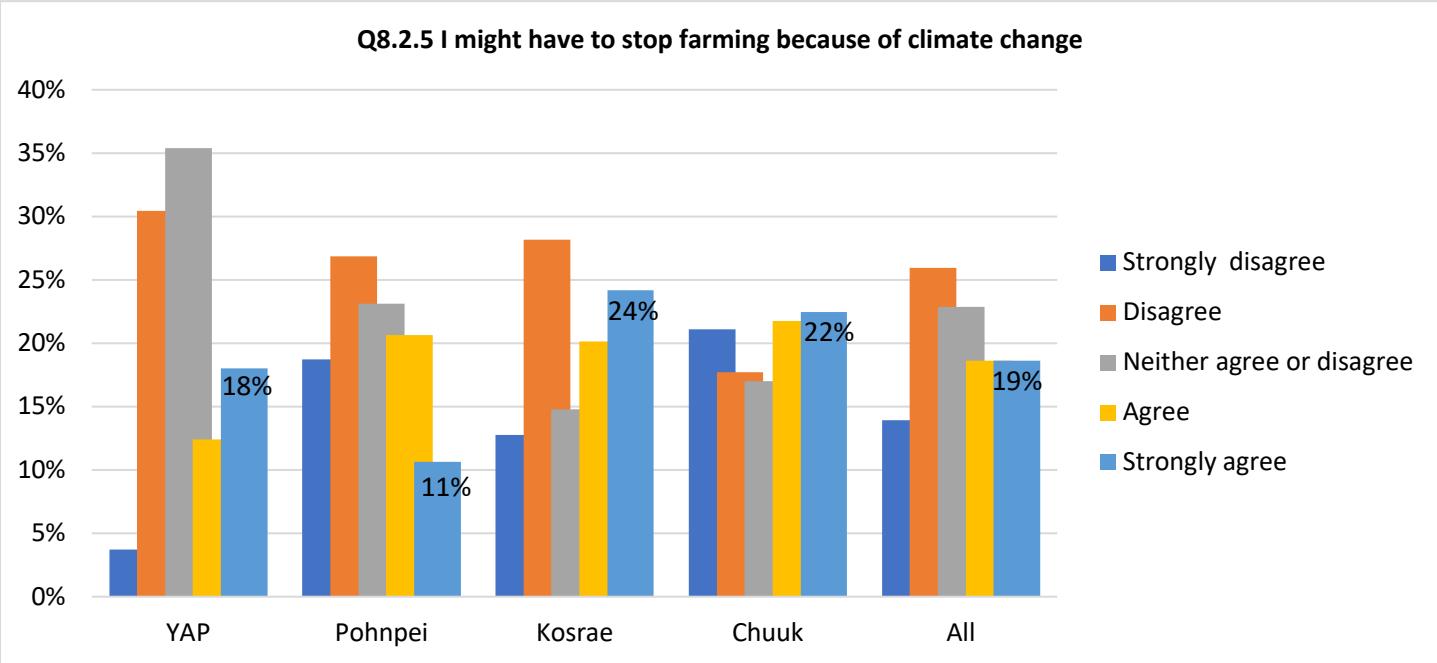
Q8.1.2 If yes, what barriers are preventing you from doing so?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
No barrier	No	92	91.09	86	89.58	48	64.00	73	75.26	299	81.03
	Yes	9	8.91	10	10.42	27	36.00	24	24.74	70	18.97
	Total	101	100.00	96	100.00	75	100.00	97	100.00	369	100.00
Lack of production resources/tools (greenhouses, tractors, aquaculture, etc.)	No	29	28.43	21	21.88	13	12.87	37	35.58	100	24.81
	Yes	73	71.57	75	78.13	88	87.13	67	64.42	303	75.19
	Total	102	100.00	96	100.00	101	100.00	104	100.00	403	100.00
Lack of the source of finance	No	33	32.35	28	29.47	8	8.08	60	62.50	129	32.91
	Yes	69	67.65	67	70.53	91	91.92	36	37.50	263	67.09
	Total	102	100.00	95	100.00	99	100.00	96	100.00	392	100.00
No land or ocean available	No	82	80.39	75	81.52	42	59.15	75	81.52	274	76.75
	Yes	20	19.61	17	18.48	29	40.85	17	18.48	83	23.25
	Total	102	100.00	92	100.00	71	100.00	92	100.00	357	100.00
Lack of management skills	No	54	52.94	56	58.95	24	27.59	62	67.39	196	52.13
	Yes	48	47.06	39	41.05	63	72.41	30	32.61	180	47.87
	Total	102	100.00	95	100.00	87	100.00	92	100.00	376	100.00
Difficulty getting to the land or sea	No	91	89.22	*79*	85.87	44	62.86	77	86.52	291	82.44
	Yes	11	10.78	*13*	14.13	26	37.14	12	13.48	62	17.56
	Total	102	100.00	92	100.00	70	100.00	89	100.00	353	100.00
Lack of the market to sell the produce	No	93	91.18	70	75.27	34	45.95	79	89.77	276	77.31
	Yes	9	8.82	23	24.73	40	54.05	9	10.23	81	22.69
	Total	102	100.00	93	100.00	74	100.00	88	100.00	357	100.00
Lack of ways to keep my foods fresh	No	85	83.33	72	76.60	29	38.16	66	66.67	252	67.92
	Yes	17	16.67	22	23.40	47	61.84	33	33.33	119	32.08
	Total	102	100.00	94	100.00	76	100.00	99	100.00	371	100.00
Lack of ways to process and dry the foods	No	87	85.29	70	74.47	31	42.47	79	89.77	267	74.79
	Yes	14	14.71	24	25.53	42	57.53	9	10.23	89	24.93
	Total	102		94	100.00	73	100.00	88	100.00	357	100.00
Lack of storage to hold and keep food for home use and/or sale (refrig.)	No	75	73.53	70	74.47	26	31.33	67	72.04	238	63.98
	Yes	27	26.47	24	25.53	57	68.67	26	27.96	134	36.02
	Total	102	100.00	94	100.00	83	100.00	93	100.00	372	100.00
Lack of new tech & infrastructure	No	82	80.39	65	67.71	25	29.07	83	91.21	255	68.00
	Yes	20	19.61	31	32.29	61	70.93	8	8.79	120	32.00
	Total	102	100.00	96	100.00	86	100.00	91	100.00	375	100.00
Transportation to market	No	90	88.24	79	84.95	41	59.42	77	86.52	287	81.30
	Yes	12	11.76	14	15.05	28	40.58	12	13.48	66	18.70
	Total	102	100.00	93	100.00	69	100.00	89	100.00	353	100.00
Disease or pest infestation	No	65	63.73	70	74.47	24	30.00	74	79.57	233	63.14
	Yes	37	36.27	24	25.53	56	70.00	19	20.43	136	36.86
	Total	102	100.00	94	100.00	80	100.00	93	100.00	369	100.00
Permit/regulation issues	No	94	92.16	79	85.87	41	58.57	84	96.55	298	84.90
	Yes	8	7.84	13	14.13	29	41.43	3	3.45	53	15.10
	Total	102	100.00	92	100.00	70	100.00	87	100.00	351	100.00
Weather issues	No	63	61.76	63	66.32	34	41.98	49	50.52	209	55.73
	Yes	39	38.24	32	33.68	47	58.02	48	49.48	166	44.27
	Total	102	100.00	95	100.00	81	100.00	97	100.00	375	100.00
Labor	No	52	50.98	51	53.13	25	29.07	68	71.58	196	51.72
	Yes	50	49.02	45	46.88	61	70.93	27	28.42	183	48.28
	Total	102	100.00	96	100.00	86	100.00	95	100.00	379	100.00
Time	No	38	37.62	59	62.77	26	29.55	48	50.00	171	45.12
	Yes	63	62.38	35	37.23	62	70.45	48	50.00	208	54.88
	Total	101	100.00	94	100.00	88	100.00	96	100.00	379	100.00
Other	No	101	98.06	86	94.51	51	100.00	85	97.70	323	97.29
	Yes	2	1.94	5	5.49	0	0	2	2.30	9	2.71
	Total	103	100.00	91	100.00	51	100.00	87	100.00	332	100.00

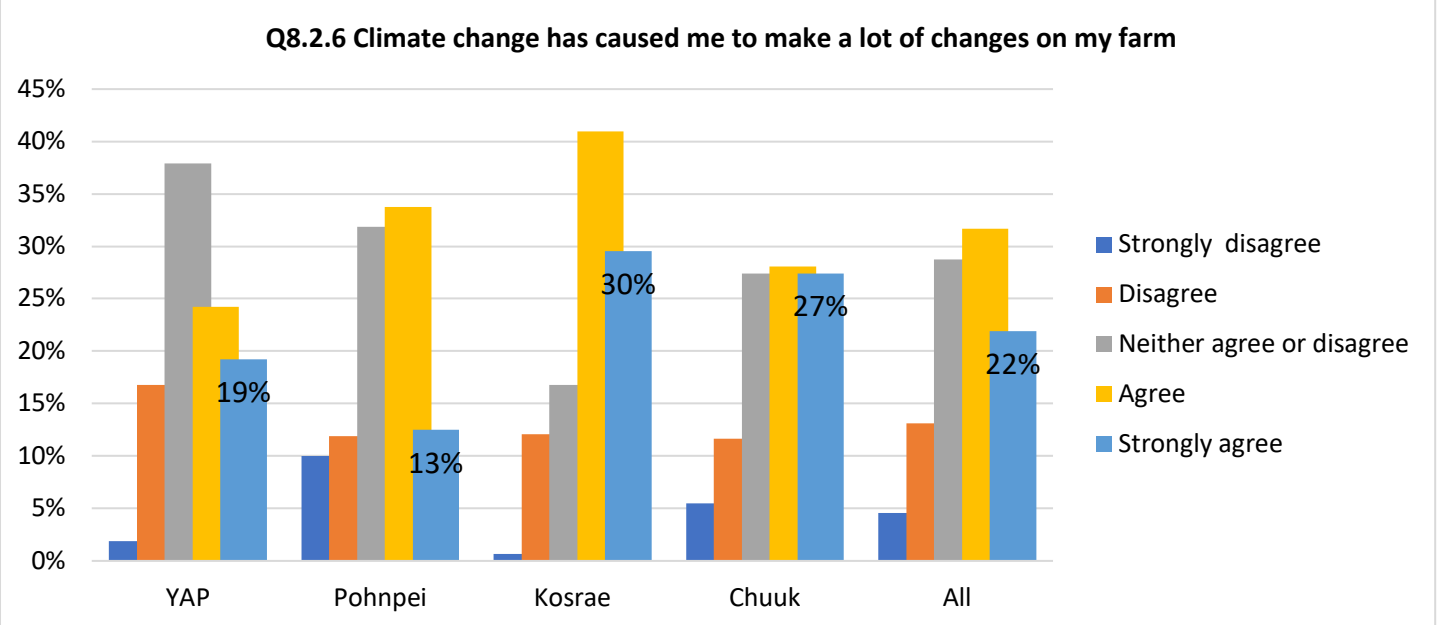

Q8.2.1 Climate change is causing a lot of problems for my farm/fishing
Strongly disagree
Disagree
Neither agree or disagree
Agree
Strongly agree
1% 1% 23% 35% 40%
11% 4% 13% 40% 31%
1% 5% 6% 50% 38%
2% 5% 11% 43% 40%
4% 4% 14% 42% 37%
YAP
Pohnpei
Kosrae
Chuuk
All

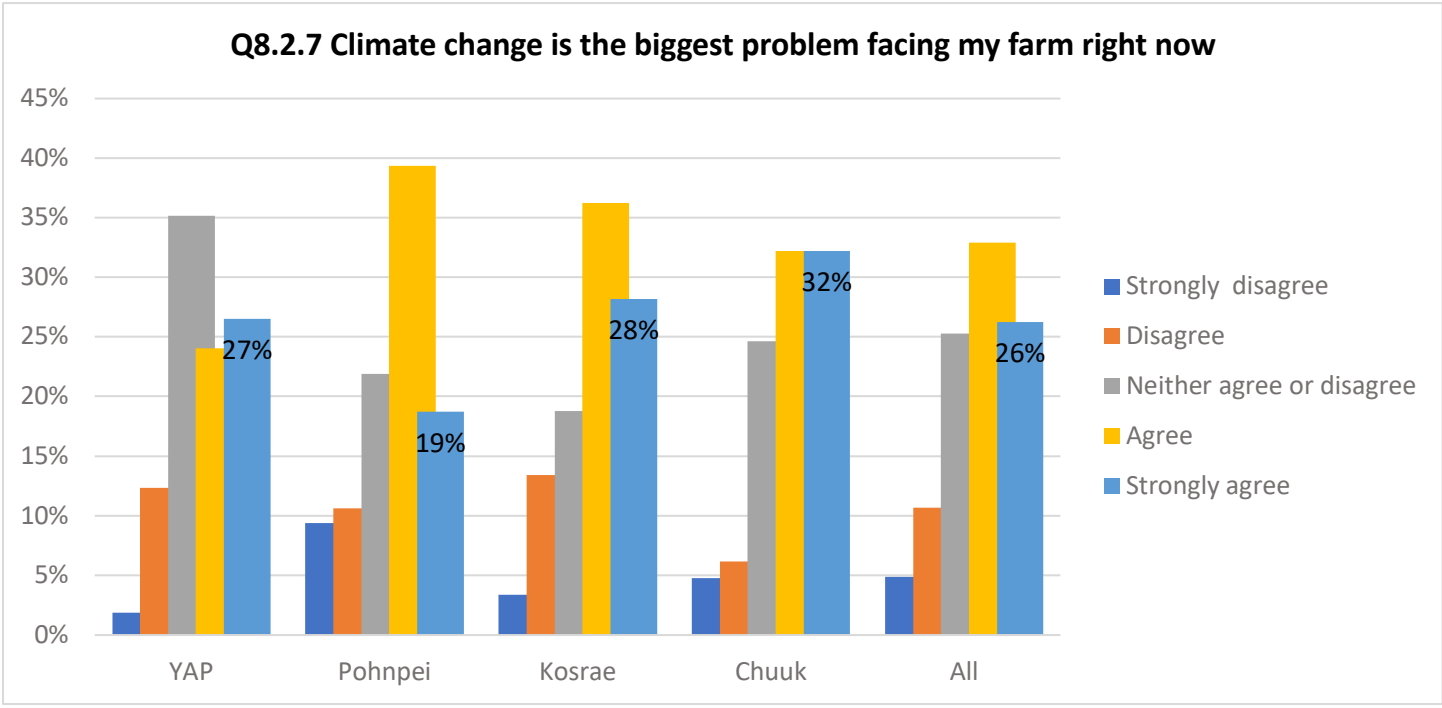

Q8.2.2 Climate change is making it harder for me to grow crops/fish/harvest
60%
50%
40%
30%
20%
10%
0%
1% 7% 30% 30% 31%
8% 5% 17% 42% 28%
1% 7% 11% 48% 33%
2% 5% 11% 44% 37%
0% 6% 18% 41% 32%
YAP
Pohnpei
Kosrae
Chuuk
All
Strongly disagree
Disagree
Neither agree or disagree
Agree
Strongly agree


Q8.2.3 Climate change is making it harder for me to raise livestock
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
2% 20% 42% 17% 18%
10% 17% 23% 36% 15%
2% 13% 26% 34% 24%
3% 13% 23% 34% 27%
0% 16% 29% 30% 21%
YAP
Pohnpei
Kosrae
Chuuk
All
Strongly disagree
Disagree
Neither agree or disagree
Agree
Strongly agree


Q8.2.4. Climate change is causing a lot of extreme weather
60%
50%
40%
30%
20%
10%
0%
1%
3%
15%
29%
52%
9%
5%
8%
44%
34%
1%
2%
7%
50%
40%
2%
1%
10%
46%
41%
3%
3%
10%
42%
42%
YAP
Pohnpei
Kosrae
Chuuk
All
Strongly disagree
Disagree
Neither agree or disagree
Agree
Strongly agree


Q8.2.5 I might have to stop farming because of climate change
40%
35%
30%
25%
20%
15%
10%
5%
0%
18%
11%
24%
22%
19%
YAP
Pohnpei
Kosrae
Chuuk
All
Strongly disagree
Disagree
Neither agree or disagree
Agree
Strongly agree


Q8.2.6 Climate change has caused me to make a lot of changes on my farm
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
19%
13%
30%
27%
22%
YAP
Pohnpei
Kosrae
Chuuk
All
Strongly disagree
Disagree
Neither agree or disagree
Agree
Strongly agree



Q8.3.1 Has a change in climate impacted your access to clean fresh water?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	No	136	83.44	81	50.63	101	70.63	51	34.46	369	60.10
	Yes	27	16.56	79	49.38	42	29.37	97	65.54	245	39.90
	Total	163	100.00	160	100.00	143	100.00	148	100.00	614	100.0

Q8.4.1 Have you changed crop types (including marine) in the past 10 years?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	No	10	58.82	12	41.38	4	23.53	21	44.68	47	42.73
	Yes	7	41.18	17	58.62	13	76.47	26	55.32	63	57.27
	Total	17	100.00	29	100.00	17	100.00	47	100.00	110	100.00

Q8.4.2 Was climate change an important reason for changing crop types?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	No	10	58.82	12	41.38	4	23.53	21	44.68	47	42.73
	Yes	7	41.18	17	58.62	13	76.47	26	55.32	63	57.27
	Total	17	100.00	29	100.00	17	100.00	47	100.00	110	100.00

Q8.4.4 Have you changed/adapted any of your farming practices (including fishing) in the past 10 years?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	No	45	78.95	92	77.31	20	35.71	70	69.31	227	76.43
	Yes	12	21.05	27	22.69	56	100.00	31	30.69	126	42.42
	Total	57	100.00	119	100.00	20	35.71	101	100.00	297	100.00

Q8.4.5 Was climate change an important reason for changing/ adapting your farming practices (including fishing)?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
	No	6	33.33	25	48.08	6	25.00	13	33.33	50	37.59
	Yes	12	66.67	27	51.92	18	75.00	26	66.67	83	62.41
	Total	18	100.00	52	100.00	24	100.00	39	100.00	133	100.00

Q9.1.1 Where do you get most of your food?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Wild places such as forests, freshwater, rivers, and/or the ocean	No	43	26.22	34	21.66	7	5.04	66	54.55	150	25.82
	Yes	121	73.78	123	78.34	132	94.96	55	45.45	431	74.18
	Total	164	100.00	157	100.00	139	100.00	121	100.00	581	100.00
Cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	47	28.66	63	40.91	21	16.67	49	34.27	180	30.66
	Yes	117	71.34	91	59.09	105	83.33	94	65.73	407	69.34
	Total	164	100.00	154	100.00	126	100.00	143	100.00	587	100.00
Informal markets such as street vendors and kiosks	No	120	73.17	90	59.60	59	56.73	60	49.59	329	60.93
	Yes	44	26.83	61	40.40	45	43.27	61	50.41	211	39.07
	Total	164	100.00	151	100.00	104	100.00	121	100.00	540	100.00
Formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	73	44.79	52	33.55	30	23.81	64	47.41	219	37.82
	Yes	90	55.21	103	66.45	96	76.19	71	52.59	360	62.18
	Total	163	100.00	155	100.00	126	100.00	135	100.00	579	100.00
Supplemental food assistance such as government food rations, food from churches, schools and community organizations, etc.	No	154	93.90	138	93.24	71	87.65	99	90.00	462	91.85
	Yes	10	6.10	10	6.76	10	12.35	11	10.00	41	8.15
	Total	164	100.00	148	100.00	81	100.00	110	100.00	503	100.00
Relatives and extended families	No	78	47.56	119	80.95	36	32.73	57	42.86	290	52.35
	Yes	86	52.44	28	19.05	74	67.27	76	57.14	264	47.65
	Total	164	100.00	147	100.00	110	100.00	133	100.00	554	100.00
Other	No	154	93.90	144	97.30	75	96.15	107	98.17	480	96.19
	Yes	10	6.10	4	2.70	3	3.85	2	1.83	19	3.81
	Total	164	100.00	148	100.00	78	100.00	109	100.00	499	100.00

Q9.1.2 How do you usually travel to get your food?

Particular	Response	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Personal car	No	39	23.78	45	28.48	12	8.22	72	58.54	168	28.43
	Yes	125	76.22	113	71.52	134	91.78	51	41.46	423	71.57
	Total	164	100.00	158	100.00	146	100.00	123	100.00	591	100.00
Walk	No	36	22.09	24	15.19	19	15.08	13	9.29	92	15.67
	Yes	127	77.91	134	84.81	107	84.92	127	90.71	495	84.33
	Total	163	100.00	158	100.00	126	100.00	140	100.00	587	100.00
Someone else's car	No	118	72.39	122	80.26	63	74.12	77	65.25	380	73.36
	Yes	45	27.61	30	19.74	22	25.88	41	34.75	138	26.64
	Total	163	100.00	152	100.00	85	100.00	118	100.00	518	100.00
Boat	No	110	67.48	89	58.94	32	29.63	72	56.25	303	55.09
	Yes	53	32.52	62	41.06	76	70.37	56	43.75	247	44.91
	Total	163	100.00	151	100.00	108	100.00	128	100.00	550	100.00

Carpool	No	147	90.18	146	97.33	72	93.51	102	92.73	467	93.40
	Yes	16	9.82	4	2.67	5	6.49	8	7.27	33	6.60
	Total	163	100.00	150	100.00	77	100.00	110	100.00	500	100.00
Bike	No	160	98.16	150	100.00	74	92.50	108	99.08	492	98.01
	Yes	3	1.84	0	0.00	6	7.50	1	0.92	10	1.99
	Total	163	100.00	150	100.00	80	100.00	109	100.00	502	100.00
Other (specify)	No	156	95.71	140	93.33	76	100.00	108	98.18	480	96.19
	Yes	7	4.29	10	6.67	0	0	2	1.82	19	3.81
	Total	163	100.00	150	100.00	76	100.00	110	100.00	499	100.00

Q9.1.3 How long does it take you to reach the location where you get a majority of the food that you produce/ harvest?

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Not much time	46	28.75	34	21.52	47	31.33	47	31.33	174	28.16
5-30 minutes	64	40.00	59	37.34	52	34.67	43	28.67	218	35.28
30-45 minutes	36	22.50	35	22.15	33	22.00	35	23.33	139	22.49
More than 45 minutes	14	8.75	30	18.99	18	12.00	25	16.67	87	14.08
Total	160	100.0	158	100.00	150	100.00	150	100.00	618	100.00

Q9.1.4 How long does it take you to reach the location where you get a majority of the food that you're purchase?

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Not much time	40	24.69	30	19.11	38	25.33	28	18.92	136	22.04
5-30 minutes	60	37.04	41	26.11	51	34.00	30	20.27	182	29.50
30-45 minutes	32	19.75	27	17.20	39	26.00	45	30.41	143	23.18
More than 45 minutes	30	18.52	59	37.58	22	14.67	45	30.41	156	25.28
Total	162	100.00	157	100.00	150	100.00	148	100.00	617	100.00

Q9.1.6. What barriers (if any) prevent you from attaining healthy, nutritious food?

Question		YAP		Pohnpei		Kosrae		Chuuk		All	
	Resp.	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
None	No	92	56.79	89	58.94	36	32.14	60	48.39	277	50.46
	Yes	70	43.21	62	41.06	76	67.86	64	51.61	272	49.54
	Total	162	100.00	151	100.00	112	100.00	124	100.00	549	100.00
Too far to walk, and do not have other means of transportation	No	145	90.06	118	78.15	42	67.74	96	82.76	401	81.84
	Yes	16	9.94	33	21.85	20	32.26	20	17.24	89	18.16
	Total	161	100.00	151	100.00	62	100.00	116	100.00	490	100.00
Health problems interfere with ability to walk or harvest crops (including marine)	No	135	83.85	129	85.43	47	78.33	89	80.18	400	82.82
	Yes	26	16.15	22	14.57	13	21.67	22	19.82	83	17.18
	Total	161	100.00	151	100.00	60	100.00	111	100.00	483	100.00
Lack of assistance from relatives or extended families	No	140	86.96	135	87.66	49	84.48	92	76.67	416	84.38
	Yes	21	13.04	19	12.34	9	15.52	28	23.33	77	15.62
	Total	161	100.00	154	100.00	58	100.00	120	100.00	493	100.00
Affordability	No	113	70.19	95	62.91	36	47.37	54	43.55	298	58.20
	Yes	48	29.81	56	37.09	40	52.63	70	56.45	214	41.80
	Total	161	100.00	151	100.00	76	100.00	124	100.00	512	100.00
Availability	No	109	67.70	94	62.67	24	29.63	55	45.08	282	54.86
	Yes	52	32.30	56	37.33	57	70.37	67	54.92	232	45.14
	Total	161	100.00	150	100.00	81	100.00	122	100.00	514	100.00

Other	No	139	86.34	136	91.28	52	86.67	103	95.37	430	89.96
	Yes	22	13.66	13	8.72	8	13.33	5	4.63	48	10.04
	Total	161	100.00	149	100.00	60	100.00	108	100.00	478	100.00

Q9.2.1 (I/we) were worried (I/we) wouldn't have enough healthy and nutritious food to eat.

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Never	62	37.58	78	49.37	48	32.65	25	17.36	213	34.69
Rarely (only 1 or 2 months)	30	18.18	30	18.99	45	30.61	41	28.47	146	23.78
Sometimes (some months, but not every month)	60	36.36	44	27.85	44	29.93	60	41.67	208	33.88
Often (almost every month or more)	13	7.88	6	3.80	10	6.80	18	12.50	47	7.65
Total	165	100.00	158	100.00	147	100.00	144	100.00	614	100.00

Q9.2.2 (I/we) couldn't afford to eat healthy and nutritious food.

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Never	73	44.24	87	55.06	55	37.16	29	19.86	244	39.55
Rarely (only 1 or 2 months)	29	17.58	31	19.62	46	31.08	36	24.66	142	23.01
Sometimes (some months, but not every month)	56	33.94	30	18.99	42	28.38	68	46.58	196	31.77
Often (almost every month or more)	7	4.24	10	6.33	5	3.38	13	8.90	35	5.67
Total	165	100.00	158	100.00	148	100.00	146	100.00	617	100.00

Q9.2.3 (I/we) couldn't afford to eat the foods (I/we) prefer and had to eat different types of foods.

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Never	60	36.59	84	53.16	39	26.53	25	17.12	208	33.82
Rarely (only 1 or 2 months)	30	18.29	32	20.25	51	34.69	43	29.45	156	25.37
Sometimes (some months, but not every month)	65	39.63	34	21.52	47	31.97	60	41.10	206	33.50
Often (almost every month or more)	9	5.49	8	5.06	10	6.80	18	12.33	45	7.32
Total	164	100.00	158	100.00	147	100.00	146	100.00	615	100.00

Q9.2.4 (I/we) skipped meals because there wasn't enough money for food.

	YAP		Pohnpei		Kosrae		Chuuk		All	
Particulars	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Never	116	70.30	138	87.90	39	26.53	41	28.08	334	54.31
Rarely (only 1 or 2 months)	19	11.52	8	5.10	51	34.69	45	30.82	123	20.00
Sometimes (some months, but not every month)	26	15.76	9	5.73	47	31.97	56	38.36	138	22.44
Often (almost every month or more)	4	2.42	2	1.27	10	6.80	4	2.74	20	3.25
Total	165	100.00	157	100.00	147	100.00	146	100.00	615	100.00

Q9.2.5 (I/we) ate less than preferred because there wasn't enough money for food.

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	100	60.61	130	82.80	64	43.24	33	22.60	327	53.08
Rarely (only 1 or 2 months)	26	15.76	15	9.55	50	33.78	43	29.45	134	21.75
Sometimes (some months, but not every month)	37	22.42	8	5.10	27	18.24	62	42.47	134	21.75
Often (almost every month or more)	2	1.21	4	2.55	7	4.73	8	5.48	21	3.41
Total	165	100.00	157	100.00	148	100.00	146	100.00	616	100.00

Q9.2.6 (I/we) were hungry because there wasn't enough money for food.

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	117	70.91	142	89.87	92	62.16	35	23.97	386	62.56
Rarely (only 1 or 2 months)	15	9.09	9	5.70	30	20.27	45	30.82	99	16.05
Sometimes (some months, but not every month)	32	19.39	4	2.53	22	14.86	61	41.78	119	19.29
Often (almost every month or more)	1	0.61	3	1.90	4	2.70	5	3.42	13	2.11
Total	165	100.00	158	100.00	148	100.00	146	100.00	617	100.00

Q9.2.7 (I/we) went a whole day without eating.

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	137	83.03	151	97.42	119	80.41	90	61.64	497	80.94
Rarely (only 1 or 2 months)	16	9.70	2	1.29	14	9.46	32	21.92	64	10.42
Sometimes (some months, but not every month)	12	7.27	1	0.65	14	9.46	22	15.07	49	7.98
Often (almost every month or more)	0	0	1	0.65	1	0.68	2	1.37	4	0.65
Total	165	100.00	155	100.00	148	100.00	146	100.00	614	100.00

Q9.3 (1 – 40) Consumption Frequency

1. Rice

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	1	0.61	1	0.63	1	0.68	6	4.00	9	1.45
1-4 times a week	39	23.78	20	12.58	21	14.19	28	18.67	108	17.39
5-7 times a week	29	17.68	12	7.55	24	16.22	18	12.00	83	13.37
multiple times a day	95	57.93	126	79.25	102	68.92	98	65.33	421	67.79
Total	164	100.00	159	100.00	148	100.00	150	100.00	621	100.00

2. Taro

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	3	1.85	28	35.71	4	2.68	7	4.70	42	6.83
1-4 times a week	104	64.20	104	42.86	120	80.54	92	61.74	420	68.29
5-7 times a week	46	28.40	14	19.05	16	10.74	27	18.12	103	16.75
multiple times a day	9	5.56	9	5.81	9	6.04	23	15.44	50	8.13
Total	162	100.00	155	100.00	149	100.00	149	100.00	615	100.00

3. Breadfruit

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	19	14.39	7	4.46	0	0	3	2.01	29	4.72
1-4 times a week	113	71.52	84	53.50	101	67.79	92	61.74	390	63.52
5-7 times a week	20	12.66	45	28.66	34	22.82	29	19.46	128	20.85
multiple times a day	7	4.43	21	13.38	14	9.40	25	16.78	67	10.91
Total	158	100.00	157	100.00	149	100.00	149	100.00	614	100.00

4. Banana

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	5	3.07	3	1.90	1	0.67	3	2.00	12	1.94
1-4 times a week	113	69.33	78	49.37	76	51.01	75	50.00	342	55.16
5-7 times a week	37	22.70	39	24.68	50	33.56	37	24.67	163	26.29
multiple times a day	8	4.91	38	24.05	22	14.77	35	23.33	103	16.61
Total	163	100.00	158	100.00	149	100.00	150	100.00	620	100.00

5. Coconut

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	9	4.96	12	7.69	5	3.45	7	4.90	33	5.55
1-4 times a week	111	73.51	88	56.41	111	76.55	92	64.34	402	67.56
5-7 times a week	25	16.56	27	17.31	16	11.03	28	19.58	96	16.13
multiple times a day	6	3.97	29	18.59	13	8.97	16	11.19	64	10.76
Total	151	100.00	156	100.00	145	100.00	143	100.00	595	100.00

6. Copra

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	12	8.11	73	48.67	6	4.26	33	24.26	124	21.57
1-4 times a week	106	71.62	38	25.33	104	73.76	84	61.76	332	57.74
5-7 times a week	22	14.86	20	13.33	15	10.64	9	6.62	66	11.48
multiple times a day	8	5.41	19	12.67	16	11.35	10	7.35	53	9.22
Total	148	100.00	150	100.00	141	100.00	136	100.00	575	100.00

7. Yam

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	25	18.25	13	8.23	40	29.20	74	63.79	152	27.74
1-4 times a week	93	67.88	110	69.62	90	65.69	37	31.90	330	60.22
5-7 times a week	14	10.22	23	14.56	4	2.92	2	1.72	43	7.85
multiple times a day	5	3.65	12	7.59	3	2.19	3	2.59	23	4.20
Total	137	100.00	158	100.00	137	100.00	116	100.00	548	100.00

8. Sweet potatoes

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	42	28.76	103	67.76	49	36.30	25	19.53	42	28.76
1-4 times a week	82	56.16	39	25.66	79	58.52	84	65.63	82	56.16
5-7 times a week	18	12.33	6	3.95	6	4.44	13	10.16	18	12.33
multiple times a day	4	2.74	4	2.63	1	0.74	6	4.69	4	2.74
Total	146	100.00	152	100.00	135	100.00	128	100.00	146	100.00

9. Tapioca

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	31	21.83	64	41.29	49	36.30	22	16.54	166	29.38
1-4 times a week	92	64.79	72	46.45	79	58.52	81	60.90	324	57.35
5-7 times a week	18	12.68	13	8.39	6	4.44	18	13.53	55	9.73
multiple times a day	1	0.70	6	3.87	1	0.74	12	9.02	20	3.54
Total	142	100.00	155	100.00	135	100.00	133	100.00	565	100.00

10. Soursop

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	57	44.88	63	40.65	54	40.91	21	16.54	195	36.04
1-4 times a week	58	45.67	78	50.32	75	56.82	81	63.78	292	53.97
5-7 times a week	10	7.87	11	7.10	2	1.52	20	15.75	43	7.95
multiple times a day	2	1.57	3	1.94	1	0.76	5	3.94	11	2.03
Total	127	100.00	155	100.00	132	100.00	127	100.00	541	100.00

11. Locally grown/collected fresh vegetables

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	26	17.80	62	39.49	5	3.57	27	20.61	120	20.91
1-4 times a week	84	57.53	68	43.31	87	62.14	73	55.73	312	54.36
5-7 times a week	29	19.86	15	9.55	36	25.71	23	17.56	103	17.94
multiple times a day	7	4.79	12	7.64	12	8.57	8	6.11	39	6.79
Total	146	100.00	157	100.00	140	100.00	131	100.00	574	100.00

12. Imported fresh vegetables

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	27	19.57	57	36.08	30	22.39	41	31.06	155	27.58
1-4 times a week	72	52.17	82	51.90	85	63.43	73	55.30	312	55.52
5-7 times a week	32	23.19	10	6.33	14	10.45	12	9.09	68	12.10
multiple times a day	7	5.07	9	5.70	5	3.73	6	4.55	27	4.80
Total	138	100.00	158	100.00	134	100.00	132	100.00	562	100.00

13. Vegetables: Canned/processed

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	43	30.94	68	43.59	32	23.88	56	45.53	199	36.05
1-4 times a week	64	46.04	71	45.51	86	64.18	53	43.09	274	49.64
5-7 times a week	22	15.83	12	7.69	13	9.70	10	8.13	57	10.33
multiple times a day	10	7.19	5	3.21	3	2.24	4	3.25	22	3.99
Total	139	100.00	156	100.00	134	100.00	123	100.00	552	100.00

14. Local Fresh Fruits

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	24	16.78	35	22.58	1	0.72	14	10.29	74	12.94
1-4 times a week	93	65.03	93	60.00	85	61.59	85	62.50	356	62.24
5-7 times a week	20	13.99	16	10.32	34	24.64	26	19.12	96	16.78
multiple times a day	6	4.20	11	7.10	18	13.04	11	8.09	46	8.04
Total	143	100.00	155	100.00	138	100.00	136	100.00	572	100.00

15. Imported fresh fruits

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	49	36.29	48	30.97	25	18.94	34	26.36	156	28.31
1-4 times a week	68	50.37	85	54.84	89	67.42	76	58.91	318	57.71
5-7 times a week	12	8.89	19	12.26	15	11.36	13	10.08	59	10.71
multiple times a day	6	4.44	3	1.94	3	2.27	6	4.65	18	3.27
Total	135	100.00	155	100.00	132	100.00	129	100.00	551	100.00

16. Fruits: Canned/Processed

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	52	39.19	70	44.59	34	25.56	52	41.60	208	37.96
1-4 times a week	63	47.37	71	45.22	80	60.15	61	48.80	275	50.18
5-7 times a week	14	10.53	13	8.28	16	12.03	8	6.40	51	9.31
multiple times a day	4	3.01	3	1.91	3	2.26	4	3.20	14	2.55
Total	133	100.00	157	100.00	133	100.00	125	100.00	548	100.00

17. Local citrus

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	40	31.50	43	27.56	4	2.76	68	56.67	155	28.28
1-4 times a week	72	56.69	64	41.03	80	55.17	43	35.83	259	47.26
5-7 times a week	11	8.66	22	14.10	39	26.90	4	3.33	76	13.87
multiple times a day	4	3.15	27	17.31	22	15.17	5	4.17	58	10.58
Total	127	100.00	156	100.00	145	100.00	120	100.00	548	100.00

18. Imported citrus

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	79	62.21	88	57.52	36	26.87	78	66.10	281	52.82
1-4 times a week	40	31.50	47	30.72	78	58.21	33	27.97	198	37.22
5-7 times a week	6	4.72	11	7.19	17	12.69	5	4.24	39	7.33
multiple times a day	2	1.57	7	4.58	3	2.24	2	1.69	14	2.63
Total	127	100.00	153	100.00	134	100.00	118	100.00	532	100.00

19. Open Ocean fish

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	20	13.79	20	12.74	0	0	7	5.04	47	8.01
1-4 times a week	96	66.21	94	59.87	45	30.82	67	48.20	302	51.45
5-7 times a week	23	15.86	33	21.02	46	31.51	39	28.06	141	24.02
multiple times a day	6	4.14	10	6.37	55	37.67	26	18.71	97	16.52
Total	145	100.00	157	100.00	146	100.00	139	100.00	587	100.00

20. Reef fish

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	12	8.28	15	9.55	2	1.38	7	4.90	36	6.10
1-4 times a week	99	68.28	79	50.32	46	31.72	66	46.15	290	49.15
5-7 times a week	26	17.93	47	29.94	40	27.59	42	29.37	155	26.27
multiple times a day	8	5.52	16	10.19	57	39.31	28	19.58	109	18.47
Total	145	100.00	157	100.00	145	100.00	143	100.00	590	100.00

21. Sea cucumbers

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	112	91.80	74	47.44	94	91.26	19	13.29	299	57.06
1-4 times a week	5	4.10	71	45.51	9	8.74	95	66.43	180	34.35
5-7 times a week	4	3.28	8	5.13	0	0	19	13.29	31	5.92
Multiple times a day	1	0.82	3	1.92	0	0	10	6.99	14	2.67
Total	122	100.00	156	100.00	103	100.00	143	100.00	524	100.00

22. Clams/oysters

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	62	45.25	56	35.90	70	53.44	24	17.02	212	37.52
1-4 times a week	68	49.64	83	53.21	57	43.51	96	68.09	304	53.81
5-7 times a week	5	3.65	13	8.33	1	0.76	11	7.80	30	5.31
Multiple times a day	2	1.46	4	2.56	3	2.29	10	7.09	19	3.36
Total	137	100.00	156	100.00	131	100.00	141	100.00	565	100.00

23. Crustaceans such as shrimp, lobster, mangrove crabs

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	49	34.51	35	22.44	11	7.53	26	18.71	121	20.75
1-4 times a week	77	54.23	95	60.90	99	67.81	94	67.63	365	62.61
5-7 times a week	11	7.75	21	13.46	27	18.49	11	7.91	70	12.01
Multiple times a day	5	3.52	5	3.21	9	6.16	8	5.76	27	4.63
Total	142	100.00	156	100.00	146	100.00	139	100.00	583	100.00

24. Octopus and squid

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	72	53.73	47	30.13	55	39.01	18	12.59	192	33.45
1-4 times a week	54	40.30	95	60.90	77	54.61	101	70.63	327	56.97
5-7 times a week	7	5.22	12	7.69	4	2.84	13	9.09	36	6.27
multiple times a day	1	0.75	2	1.28	5	3.55	11	7.69	19	3.31
Total	134	100.00	156	100.00	141	100.00	143	100.00	574	100.00

25. Meat and meat products: fresh/local

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	18	12.00	22	14.01	1	0.68	17	12.06	58	9.76
1-4 times a week	93	62.00	97	61.78	97	66.44	80	56.74	367	61.78
5-7 times a week	30	20.00	26	16.56	29	19.86	24	17.02	109	18.35
multiple times a day	9	6.00	12	7.64	19	13.01	20	14.18	60	10.10
Total	150	100.00	157	100.00	146	100.00	141	100.00	594	100.00

26. Meat and meat products: processed

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	11	7.33	32	20.51	2	1.36	34	24.46	79	13.34
1-4 times a week	85	56.67	72	46.15	68	46.26	85	61.15	310	52.36
5-7 times a week	35	23.33	39	25.00	33	22.45	15	10.79	122	20.61
multiple times a day	19	12.67	13	8.33	44	29.93	5	3.60	81	13.68
Total	150	100.00	156	100.00	147	100.00	139	100.00	592	100.00

27. Dairy (milk, cheese, yogurt)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	41	29.08	36	23.08	16	11.43	48	36.09	141	24.74
1-4 times a week	72	51.06	84	53.85	100	71.43	69	51.88	325	57.02
5-7 times a week	16	11.35	28	17.95	16	11.43	9	6.77	69	12.11
multiple times a day	12	8.51	8	5.13	8	5.71	7	5.26	35	6.14
Total	141	100.00	156	100.00	140	100.00	133	100.00	570	100.00

28. Eggs

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	21	14.58	12	7.64	1	0.68	34	24.46	68	11.58
1-4 times a week	84	58.33	97	61.78	94	63.95	85	61.15	360	61.33
5-7 times a week	27	18.75	40	25.48	37	25.17	15	10.79	119	20.27
multiple times a day	12	8.33	8	5.10	15	10.20	5	3.60	40	6.81
Total	144	100.00	157	100.00	147	100.00	139	100.00	587	100.00

29. Black Pepper

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	49	40.17	66	42.31	23	16.67	70	57.85	208	38.73
1-4 times a week	46	37.70	64	41.03	77	55.80	46	38.02	233	43.39
5-7 times a week	14	11.48	17	10.90	19	13.77	5	4.13	55	10.24
multiple times a day	13	10.66	9	5.77	19	13.77	0	0.00	41	7.64
Total	122	100.00	156	100.00	138	100.00	121	100.00	537	100.00

30. Hot peppers

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	40	31.01	42	26.92	11	7.59	27	21.43	120	21.58
1-4 times a week	65	50.39	55	35.26	81	55.86	63	50.00	264	47.48
5-7 times a week	12	9.30	24	15.38	23	15.86	28	22.22	87	15.65
multiple times a day	12	9.30	35	22.44	30	20.69	8	6.35	85	15.29
Total	129	100.00	156	100.00	145	100.00	126	100.00	556	100.00

31. Sodas

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	25	18.52	23	14.74	7	4.79	27	21.43	82	14.56
1-4 times a week	60	44.44	91	58.33	81	55.48	63	50.00	295	52.40
5-7 times a week	20	14.81	24	15.38	34	23.29	28	22.22	106	18.83
multiple times a day	30	22.22	18	11.54	24	16.44	8	6.35	80	14.21
Total	135	100.00	156	100.00	146	100.00	126	100.00	563	100.00

32. Candies, cakes, cookies, sugary foods

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	30	20.27	30	18.87	11	7.64	23	16.08	94	15.82
1-4 times a week	67	45.27	92	57.86	90	62.50	84	58.74	333	56.06
5-7 times a week	26	17.57	20	12.58	29	20.14	25	17.48	100	16.84
multiple times a day	25	16.89	17	10.69	14	9.72	11	7.69	67	11.28
Total	148	100.00	159	100.00	144	100.00	143	100.00	594	100.00

33. Coffee and tea

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	22	15.38	19	12.03	1	0.68	7	4.90	49	8.31
1-4 times a week	56	39.16	65	41.14	44	30.14	66	46.15	231	39.15
5-7 times a week	30	20.98	38	24.05	22	15.07	25	17.48	115	19.49
multiple times a day	35	24.48	36	22.78	79	54.11	45	31.47	195	33.05
Total	143	100.00	158	100.00	146	100.00	143	100.00	590	100.00

34. Bread, crackers, biscuit

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	15	10.10	25	15.82	2	1.39	10	6.99	52	8.78
1-4 times a week,	75	51.02	77	48.73	82	56.94	74	51.75	308	52.03
5-7 times a week	30	20.41	33	20.89	34	23.61	27	18.88	124	20.95
multiple times a day	27	18.37	23	14.56	26	18.06	32	22.38	108	18.24
Total	147	100.00	158	100.00	144	100.00	143	100.00	592	100.00

35. Pasta and ramen noodles

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	13	8.67	28	17.72	1	0.69	20	14.39	62	10.47
1-4 times a week	73	48.67	60	37.97	80	55.17	72	51.80	285	48.14
5-7 times a week	29	19.33	34	21.52	46	31.72	24	17.27	133	22.47
multiple times a day	35	23.33	36	22.78	18	12.41	23	16.55	112	18.92
Total	150	100.00	158	100.00	145	100.00	139	100.00	592	100.00

36. Boxed cereal

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	47	32.87	46	30.07	26	19.12	64	50.00	183	32.68
1-4 times a week	56	39.16	74	48.37	81	59.56	50	39.06	261	46.61
5-7 times a week	25	17.48	22	14.38	25	18.38	11	8.59	83	14.82
multiple times a day	15	10.49	11	7.19	4	2.94	3	2.34	33	5.89
Total	143	100.00	153	100.00	136	100.00	128	100.00	560	100.00

37. Sakau (Kava)

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	104	92.03	30	19.35	112	88.19	105	87.50	351	68.16
1-4 times a week	7	6.19	62	40.00	15	11.81	15	12.50	99	19.22
5-7 times a week	0	0.00	41	26.45	0	0	0	0.00	41	7.96
multiple times a day	2	1.77	22	14.19	0	0	0	0.00	24	4.66
Total	113	100.00	155	100.00	127	100.00	120	100.00	515	100.00

38. Imported juice

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	48	33.57	46	29.30	33	23.57	37	27.82	164	28.62
1-4 times a week,	53	37.06	83	52.87	92	65.71	71	53.38	299	52.18
5-7 times a week	21	14.69	18	11.46	10	7.14	18	13.53	67	11.69
multiple times a day	21	14.69	10	6.37	5	3.57	7	5.26	43	7.50
Total	143	100.00	157	100.00	140	100.00	133	100.00	573	100.00

39. Imported coconut milk

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	69	53.08	107	69.03	90	68.70	79	62.20	345	63.54
1-4 times a week	35	26.92	32	20.65	37	28.24	42	33.07	146	26.89
5-7 times a week	16	12.31	11	7.10	3	2.29	4	3.15	34	6.26
multiple times a day	10	7.69	5	3.23	1	0.76	2	1.57	18	3.31
Total	130	100.00	155	100.00	131	100.00	127	100.00	543	100.00

40. Other

Particulars	YAP		Pohnpei		Kosrae		Chuuk		All	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Never	20	100.00	33	84.62	2	66.67	0	0.00	55	77.46
1-4 times a week	0	0	6	15.38	1	33.33	9	100.00	16	22.54
5-7 times a week	0	0	0	0.00	0	0	0	0.00	0	0.00
multiple times a day	0	0	0	0.00	0	0	0	0.00	0	0.00
Total	20	100.00	39	100.00	3	100.00	9	100.00	71	100.00

Q9.3.2 Is this a favorite food?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Rice	No	55	33.54	34	21.38	27	18.62	86	58.90	202	32.90
	Yes	109	66.46	125	78.62	118	81.38	60	41.10	412	67.10
	Total	164	100.00	159	100.00	145	100.00	146	100.00	614	100.00
Taro	No	7	4.35	38	26.95	42	28.77	19	13.01	106	17.85
	Yes	154	95.65	103	73.05	104	71.23	127	86.99	488	82.15
	Total	161	100.00	141	100.00	146	100.00	146	100.00	594	100.00
Breadfruit	No	45	29.61	14	9.09	18	12.33	6	4.03	83	13.81
	Yes	107	70.39	140	90.91	128	87.67	143	95.97	518	86.19
	Total	152	100.00	154	100.00	146	100.00	149	100.00	601	100.00
Banana	No	34	21.25	11	6.96	7	4.79	11	7.33	63	10.26
	Yes	126	78.75	147	93.04	139	95.21	139	92.67	551	89.74
	Total	160	100.00	158	100.00	146	100.00	150	100.00	614	100.00
Coconut	No	17	11.33	16	10.60	44	31.21	9	6.34	86	14.73
	Yes	133	88.67	135	89.40	97	68.79	133	93.66	498	85.27
	Total	150	100.00	151	100.00	141	100.00	142	100.00	584	100.00
Copra (coconut product)	No	24	16.78	31	31.31	45	32.37	33	28.45	133	26.76
	Yes	119	83.22	68	68.69	94	67.63	83	71.55	364	73.24
	Total	143	100.00	99	100.00	139	100.00	116	100.00	497	100.00
Yam	No	29	23.58	9	5.81	45	38.79	60	65.22	143	29.42
	Yes	94	76.42	146	94.19	71	61.21	32	34.78	343	70.58
	Total	123	100.00	155	100.00	116	100.00	92	100.00	486	100.00
Sweet potatoes	No	15	12.93	51	55.43	36	33.33	43	34.40	145	32.88
	Yes	101	87.07	41	44.57	72	66.67	82	65.60	296	67.12
	Total	116	100.00	92	100.00	108	100.00	125	100.00	441	100.00
Tapioca	No	23	19.17	34	28.57	35	28.46	37	28.91	129	26.33
	Yes	97	80.83	85	71.43	88	71.54	91	71.09	361	73.67
	Total	120	100.00	119	100.00	123	100.00	128	100.00	490	100.00
Soursop	No	42	44.21	23	19.33	52	50.00	44	36.36	161	36.67
	Yes	53	55.79	96	80.67	52	50.00	77	63.64	278	63.33
	Total	95	100.00	119	100.00	104	100.00	121	100.00	439	100.00
Locally grown/collected fresh vegetables	No	14	10.45	27	21.43	14	10.07	33	27.27	88	16.92
	Yes	120	89.55	99	78.57	125	89.93	88	72.73	432	83.08
	Total	134	100.00	126	100.00	139	100.00	121	100.00	520	100.00
Imported fresh vegetables	No	24	20.17	36	27.48	27	23.48	56	50.91	143	30.11
	Yes	95	79.83	95	72.52	88	76.52	54	49.09	332	69.89
	Total	119	100.00	131	100.00	115	100.00	110	100.00	475	100.00

Vegetables: Canned/ processed	No	47	43.93	55	44.72	55	47.41	64	65.31	221	49.77
	Yes	60	56.07	68	55.28	61	52.59	34	34.69	223	50.23
	Total	107	100.00	123	100.00	116	100.00	98	100.00	444	100.00
Local fresh fruits	No	15	11.54	12	8.63	11	8.03	27	21.26	65	12.20
	Yes	115	88.46	127	91.37	126	91.97	100	78.74	468	87.80
	Total	130	100.00	139	100.00	137	100.00	127	100.00	533	100.00
Imported fresh fruits	No	35	33.98	34	25.95	25	21.55	61	54.95	155	33.62
	Yes	68	66.02	97	74.05	91	78.45	50	45.05	306	66.38
	Total	103	100.00	131	100.00	116	100.00	111	100.00	461	100.00
Fruits: Canned/ processed	No	47	48.96	50	40.98	41	35.96	68	67.33	206	47.58
	Yes	49	51.04	72	59.02	73	64.04	33	32.67	227	52.42
	Total	96	100.00	122	100.00	114	100.00	101	100.00	433	100.00
Local citrus	No	30	30.00	21	15.79	17	12.14	53	60.23	121	26.25
	Yes	70	70.00	112	84.21	123	87.86	35	39.77	340	73.75
	Total	100	100.00	133	100.00	140	100.00	88	100.00	461	100.00
Imported citrus	No	45	56.96	49	44.14	35	31.82	68	80.00	197	51.17
	Yes	34	43.04	62	55.86	75	68.18	17	20.00	188	48.83
	Total	79	100.00	111	100.00	110	100.00	85	100.00	385	100.00
Open Ocean fish	No	12	9.02	16	10.81	9	6.29	7	5.22	44	7.89
	Yes	121	90.98	132	89.19	134	93.71	127	94.78	514	92.11
	Total	133	100.00	148	100.00	143	100.00	134	100.00	558	100.00
Reef Fish	No	11	7.80	11	7.24	11	7.69	5	3.62	38	6.62
	Yes	129	92.20	141	92.76	132	92.31	133	96.38	535	93.21
	Total	141	100.00	152	100.00	143	100.00	138	100.00	574	99.83
Sea cucumbers	No	36	73.47	35	30.70	78	87.64	27	19.85	176	45.36
	Yes	13	26.53	79	69.30	11	12.36	109	80.15	212	54.64
	Total	49	100.00	114	100.00	89	100.00	136	100.00	388	100.00
Clams/oysters	No	21	22.34	27	21.43	47	43.52	26	20.31	121	26.54
	Yes	73	77.66	99	78.57	61	56.48	102	79.69	335	73.46
	Total	94	100.00	126	100.00	108	100.00	128	100.00	456	100.00
Crustaceans such as shrimp, lobster, mangrove crabs	No	12	11.65	12	8.63	17	12.14	24	18.18	65	12.65
	Yes	91	88.35	127	91.37	123	87.86	108	81.82	449	87.35
	Total	103	100.00	139	100.00	140	100.00	132	100.00	514	100.00
Octopus and squid	No	14	17.72	31	23.31	43	34.40	19	14.29	107	22.77
	Yes	65	82.28	102	76.69	82	65.60	114	85.71	363	77.23
	Total	79	100.00	133	100.00	125	100.00	133	100.00	470	100.00
Meat and meat products: fresh/ local	No	5	3.70	19	13.10	10	7.04	28	21.37	62	11.21
	Yes	130	96.30	126	86.90	132	92.96	103	78.63	491	88.79
	Total	135	100.00	145	100.00	142	100.00	131	100.00	553	100.00
Meat and meat products: processed	No	21	14.79	46	32.17	24	16.90	54	42.52	145	26.17
	Yes	121	85.21	97	67.83	118	83.10	73	57.48	409	73.83
	Total	142	100.00	143	100.00	142	100.00	127	100.00	554	100.00
Dairy (milk, cheese, yogurt)	No	28	25.00	34	25.56	32	24.81	72	66.06	166	34.37
	Yes	84	75.00	99	74.44	97	75.19	37	33.94	317	65.63
	Total	112	100.00	133	100.00	129	100.00	109	100.00	483	100.00
Eggs	No	24	18.75	15	9.87	12	8.45	57	45.97	108	19.78
	Yes	104	81.25	137	90.13	130	91.55	67	54.03	438	80.22
	Total	128	100.00	152	100.00	142	100.00	124	100.00	546	100.00
Black pepper	No	29	33.33	30	25.86	34	26.15	65	72.22	158	37.35
	Yes	58	66.67	86	74.14	96	73.85	25	27.78	265	62.65
	Total	87	100.00	116	100.00	130	100.00	90	100.00	423	100.00
Hot peppers	No	33	32.35	28	21.21	27	19.85	47	40.17	135	27.72
	Yes	69	67.65	104	78.79	109	80.15	70	59.83	352	72.28
	Total	102	100.00	132	100.00	136	100.00	117	100.00	487	100.00
Sodas	No	23	20.35	51	35.42	37	26.24	67	51.94	178	33.78
	Yes	90	79.65	93	64.58	104	73.76	62	48.06	349	66.22
	Total	113	100.00	144	100.00	141	100.00	129	100.00	527	100.00
Candies, cakes,	No	25	20.49	56	40.29	43	31.85	64	48.85	188	35.67

cookies, sugary foods	Yes	97	79.51	83	59.71	92	68.15	67	51.15	339	64.33
	Total	122	100.00	139	100.00	135	100.00	131	100.00	527	100.00
Coffee and tea	No	19	14.84	25	17.36	12	8.51	41	29.50	97	17.57
	Yes	109	85.16	119	82.64	129	91.49	98	70.50	455	82.43
	Total	128	100.00	144	100.00	141	100.00	139	100.00	552	100.00
Bread, crackers, biscuit	No	22	16.54	31	21.99	25	18.12	37	27.41	115	21.02
	Yes	111	83.46	110	78.01	113	81.88	98	72.59	432	78.98
	Total	133	100.00	141	100.00	138	100.00	135	100.00	547	100.00
Pasta and ramen noodles	No	22	15.94	37	26.06	26	18.57	66	51.16	151	27.50
	Yes	116	84.06	105	73.94	114	81.43	63	48.84	398	72.50
	Total	138	100.00	142	100.00	140	100.00	129	100.00	549	100.00
Boxed cereal	No	16	15.53	44	34.65	34	27.64	71	71.72	165	36.50
	Yes	87	84.47	83	65.35	89	72.36	28	28.28	287	63.50
	Total	103	100.00	127	100.00	123	100.00	99	100.00	452	100.00
Sakau (Kava)	No	32	65.31	27	19.85	69	70.41	66	86.84	194	54.04
	Yes	17	34.69	109	80.15	29	29.59	10	13.16	165	45.96
	Total	49	100.00	136	100.00	98	100.00	76	100.00	359	100.00
Imported juice	No	29	27.62	47	35.07	35	28.69	66	56.41	177	37.03
	Yes	76	72.38	87	64.93	87	71.31	51	43.59	301	62.97
	Total	105	100.00	134	100.00	122	100.00	117	100.00	478	100.00
Imported coconut milk	No	35	42.17	64	62.75	60	56.60	77	77.78	236	60.51
	Yes	48	57.83	38	37.25	46	43.40	22	22.22	154	39.49
	Total	83	100.00	102	100.00	106	100.00	99	100.00	390	100.00
Other	No	5	83.33	32	96.97	5	83.33	21	87.50	63	91.30
	Yes	1	16.67	1	3.03	1	16.67	3	12.50	6	8.70
	Total	6	100.00	33	100.00	6	100.00	24	100.00	69	100.00

Q9.3.3 (1-40) Is there often a shortage	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Rice	No	118	72.39	108	71.52	61	42.36	56	38.10	343	56.69
	Yes	45	27.61	43	28.48	83	57.64	91	61.90	262	43.31
	Total	163	100.00	151	100.00	144	100.00	147	100.00	605	100.00
Taro	No	104	65.00	105	77.78	110	76.92	54	37.24	373	63.98
	Yes	56	35.00	30	22.22	33	23.08	91	62.76	210	36.02
	Total	160	100.00	135	100.00	143	100.00	145	100.00	583	100.00
Breadfruit	No	52	35.14	81	55.10	76	52.78	41	27.52	250	42.52
	Yes	96	64.86	66	44.90	68	47.22	108	72.48	338	57.48
	Total	148	100.00	147	100.00	144	100.00	149	100.00	588	100.00
Banana	No	93	58.13	113	75.84	95	66.43	58	38.67	359	59.63
	Yes	67	41.88	36	24.16	48	33.57	92	61.33	243	40.37
	Total	160	100.00	149	100.00	143	100.00	150	100.00	602	100.00
Coconut	No	106	73.61	107	75.35	120	86.96	86	60.99	419	74.16
	Yes	38	26.39	35	24.65	18	13.04	55	39.01	146	25.84
	Total	144	100.00	142	100.00	138	100.00	141	100.00	565	100.00
Copra (coconut product)	No	104	75.36	81	82.65	117	86.03	78	66.67	380	77.71
	Yes	34	24.64	17	17.35	19	13.97	39	33.33	109	22.29
	Total	138	100.00	98	100.00	136	100.00	117	100.00	489	100.00
Yam	No	47	39.83	93	63.70	85	72.65	47	56.63	272	58.62
	Yes	71	60.17	53	36.30	32	27.35	36	43.37	192	41.38
	Total	118	100.00	146	100.00	117	100.00	83	100.00	464	100.00
Sweet potatoes	No	44	40.00	69	77.53	73	67.59	55	45.83	241	56.44
	Yes	66	60.00	20	22.47	35	32.41	65	54.17	186	43.56
	Total	110	100.00	89	100.00	108	100.00	120	100.00	427	100.00
Tapioca	No	50	43.86	87	76.99	88	71.54	51	41.13	276	58.23
	Yes	64	56.14	26	23.01	35	28.46	73	58.87	198	41.77
	Total	114	100.00	113	100.00	123	100.00	124	100.00	474	100.00

Soursop	No	40	46.51	90	78.26	77	72.64	62	52.10	269	63.15
	Yes	46	53.49	25	21.74	29	27.36	57	47.90	157	36.85
	Total	86	100.00	115	100.00	106	100.00	119	100.00	426	100.00
Locally grown/collected fresh vegetables	No	66	51.97	85	70.83	74	53.62	55	44.35	280	55.01
	Yes	61	48.03	35	29.17	64	46.38	69	55.65	229	44.99
	Total	127	100.00	120	100.00	138	100.00	124	100.00	509	100.00
Imported fresh Vegetables	No	52	45.61	86	69.92	66	54.55	48	44.86	252	54.19
	Yes	62	54.39	37	30.08	55	45.45	59	55.14	213	45.81
	Total	114	100.00	123	100.00	121	100.00	107	100.00	465	100.00
Vegetables: Canned/ processed	No	65	65.00	90	77.59	72	61.02	61	65.59	288	67.45
	Yes	35	35.00	26	22.41	46	38.98	32	34.41	139	32.55
	Total	100	100.00	116	100.00	118	100.00	93	100.00	427	100.00
Local fresh fruits	No	49	39.84	84	63.16	79	59.40	53	41.41	265	51.26
	Yes	74	60.16	49	36.84	54	40.60	75	58.59	252	48.74
	Total	123	100.00	133	100.00	133	100.00	128	100.00	517	100.00
Imported fresh fruits	No	55	57.29	80	67.23	70	58.82	50	45.87	255	57.56
	Yes	41	42.71	39	32.77	49	41.18	59	54.13	188	42.44
	Total	96	100.00	119	100.00	119	100.00	109	100.00	443	100.00
Fruits: Canned/ processed	No	62	69.66	90	80.36	68	58.12	61	63.54	281	67.87
	Yes	27	30.34	22	19.64	49	41.88	35	36.46	133	32.13
	Total	89	100.00	112	100.00	117	100.00	96	100.00	414	100.00
Local citrus	No	37	40.22	84	66.67	67	48.20	46	52.87	234	52.70
	Yes	55	59.78	42	33.33	72	51.80	41	47.13	210	47.30
	Total	92	100.00	126	100.00	139	100.00	87	100.00	444	100.00
Imported citrus	No	42	60.87	69	70.41	60	51.28	44	54.32	215	58.90
	Yes	27	39.13	29	29.59	57	48.72	37	45.68	150	41.10
	Total	69	100.00	98	100.00	117	100.00	81	100.00	365	100.00
Open Ocean fish	No	55	41.98	90	63.83	77	54.61	63	47.37	285	52.20
	Yes	76	58.02	51	36.17	64	45.39	70	52.63	261	47.80
	Total	131	100.00	141	100.00	141	100.00	133	100.00	546	100.00
Reef fish	No	54	40.00	90	62.94	75	53.19	67	48.91	286	51.44
	Yes	81	60.00	53	37.06	66	46.81	70	51.09	270	48.56
	Total	135	100.00	143	100.00	141	100.00	137	100.00	556	100.00
Sea cucumbers	No	29	70.73	87	79.82	78	82.98	77	56.62	271	71.32
	Yes	12	29.27	22	20.18	16	17.02	59	43.38	109	28.68
	Total	41	100.00	109	100.00	94	100.00	136	100.00	380	100.00
Clams/oysters	No	44	50.00	92	78.63	71	66.36	66	51.97	273	62.19
	Yes	44	50.00	25	21.37	36	33.64	61	48.03	166	37.81
	Total	88	100.00	117	100.00	107	100.00	127	100.00	439	100.00
Crustaceans such as shrimp, lobster, mangrove crabs	No	47	47.47	88	68.22	89	63.57	66	51.16	290	58.35
	Yes	52	52.53	41	31.78	51	36.43	63	48.84	207	41.65
	Total	99	100.00	129	100.00	140	100.00	129	100.00	497	100.00
Octopus and squid	No	42	56.00	86	69.92	88	71.54	66	50.00	282	62.25
	Yes	33	44.00	37	30.08	35	28.46	66	50.00	171	37.75
	Total	75	100.00	123	100.00	123	100.00	132	100.00	453	100.00
Meat and meat products: fresh/ local	No	57	43.18	89	65.93	88	62.86	59	44.70	293	54.36
	Yes	75	56.82	46	34.07	52	37.14	73	55.30	246	45.64
	Total	132	100.00	135	100.00	140	100.00	132	100.00	539	100.00
Meat and meat products: processed	No	76	54.68	88	66.17	69	48.94	56	43.41	289	53.32
	Yes	63	45.32	45	33.83	72	51.06	73	56.59	253	46.68
	Total	139	100.00	133	100.00	141	100.00	129	100.00	542	100.00
Dairy (milk, cheese, yogurt)	No	61	55.96	87	70.16	69	53.49	53	50.00	270	57.69
	Yes	48	44.04	37	29.84	60	46.51	53	50.00	198	42.31
	Total	109	100.00	124	100.00	129	100.00	106	100.00	468	100.00
Eggs	No	49	39.20	73	50.69	63	45.00	45	36.59	230	43.23
	Yes	76	60.80	71	49.31	77	55.00	78	63.41	302	56.77
	Total	125	100.00	144	100.00	140	100.00	123	100.00	532	100.00

Black pepper	No	53	63.10	81	75.00	83	64.84	50	58.82	267	65.93
	Yes	31	36.90	27	25.00	45	35.16	35	41.18	138	34.07
	Total	84	100.00	108	100.00	128	100.00	85	100.00	405	100.00
Hot peppers	No	67	70.53	93	75.00	84	63.16	65	55.08	309	65.74
	Yes	28	29.47	31	25.00	49	36.84	53	44.92	161	34.26
	Total	95	100.00	124	100.00	133	100.00	118	100.00	470	100.00
Sodas	No	71	64.55	109	80.15	93	68.38	66	51.16	339	66.34
	Yes	39	35.45	27	19.85	43	31.62	63	48.84	172	33.66
	Total	110	100.00	136	100.00	136	100.00	129	100.00	511	100.00
Candies, cakes, cookies, sugary foods	No	75	63.56	109	81.95	97	72.93	58	43.94	339	65.70
	Yes	43	36.44	24	18.05	36	27.07	74	56.06	177	34.30
	Total	118	100.00	133	100.00	133	100.00	132	100.00	516	100.00
Coffee and tea	No	81	65.85	105	77.78	91	65.00	57	41.01	334	62.20
	Yes	42	34.15	30	22.22	49	35.00	82	58.99	203	37.80
	Total	123	100.00	135	100.00	140	100.00	139	100.00	537	100.00
Bread, crackers, biscuit	No	85	65.38	99	76.15	93	67.88	55	40.74	332	62.41
	Yes	45	34.62	31	23.85	44	32.12	80	59.26	200	37.59
	Total	130	100.00	130	100.00	137	100.00	135	100.00	532	100.00
Pasta and ramen noodles	No	82	60.29	105	78.95	94	67.63	60	46.88	341	63.62
	Yes	54	39.71	28	21.05	45	32.37	68	53.13	195	36.38
	Total	136	100.00	133	100.00	139	100.00	128	100.00	536	100.00
Boxed cereal	No	64	64.65	91	75.83	85	68.55	61	64.21	301	68.72
	Yes	35	35.35	29	24.17	39	31.45	34	35.79	137	31.28
	Total	99	100.00	120	100.00	124	100.00	95	100.00	438	100.00
Sakau (Kava)	No	31	72.09	89	68.46	80	76.92	53	75.71	253	72.91
	Yes	12	27.91	41	31.54	24	23.08	17	24.29	94	27.09
	Total	43	100.00	130	100.00	104	100.00	70	100.00	347	100.00
Imported juice	No	64	63.37	95	75.40	79	63.71	62	53.91	300	64.38
	Yes	37	36.63	31	24.60	45	36.29	53	46.09	166	35.62
	Total	101	100.00	126	100.00	124	100.00	115	100.00	466	100.00
Imported coconut milk	No	61	79.22	69	77.53	79	71.82	63	67.02	272	73.51
	Yes	16	20.78	20	22.47	31	28.18	31	32.98	98	26.49
	Total	77	100.00	89	100.00	110	100.00	94	100.00	370	100.00
Other	No	8	88.89	13	92.86	11	91.67	13	100.00	45	32.37
	Yes	1	11.11	1	7.14	1	8.33	0	0.00	3	2.16
	Total	9	100.00	14	100.00	12	100.00	13	100.00	139	34.53

Q9.3.5.1-40 Has a changing climate impacted the availability of this food?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Rice	No	117	85.40	115	74.19	60	56.60	61	43.26	353	65.49
	Yes	20	14.60	40	25.81	46	43.40	80	56.74	186	34.51
	Total	137	100.00	155	100.00	106	100.00	141	100.00	539	100.00
Taro	No	72	53.73	90	65.22	47	46.53	41	29.29	250	48.73
	Yes	62	46.27	48	34.78	54	53.47	99	70.71	263	51.27
	Total	134	100.00	138	100.00	101	100.00	140	100.00	513	100.00
Breadfruit	No	61	44.53	85	57.43	38	34.55	44	30.34	228	42.22
	Yes	76	55.47	63	42.57	72	65.45	101	69.66	312	57.78
	Total	137	100.00	148	100.00	110	100.00	145	100.00	540	100.00
Banana	No	76	54.68	102	66.67	41	39.05	49	33.79	268	49.45
	Yes	63	45.32	51	33.33	64	60.95	96	66.21	274	50.55
	Total	139	100.00	153	100.00	105	100.00	145	100.00	542	100.00
Coconut	No	81	68.64	95	65.97	62	60.78	69	51.11	307	61.52
	Yes	37	31.36	49	34.03	40	39.22	66	48.89	192	38.48
	Total	118	100.00	144	100.00	102	100.00	135	100.00	499	100.00

Copra (coconut product)	No	76	69.72	81	75.00	62	61.39	66	59.46	285	66.43
	Yes	33	30.28	27	25.00	39	38.61	45	40.54	144	33.57
	Total	109	100.00	108	100.00	101	100.00	111	100.00	429	100.00
Yam	No	44	41.12	91	61.07	50	55.56	42	54.55	227	53.66
	Yes	63	58.88	58	38.93	40	44.44	35	45.45	196	46.34
	Total	107	100.00	149	100.00	90	100.00	77	100.00	423	100.00
Sweet potatoes	No	42	41.18	79	77.45	49	58.33	49	43.36	219	54.61
	Yes	60	58.82	23	22.55	35	41.67	64	56.64	182	45.39
	Total	102	100.00	102	100.00	84	100.00	113	100.00	401	100.00
Tapioca	No	42	40.78	87	74.36	54	57.45	53	44.17	236	54.38
	Yes	61	59.22	30	25.64	40	42.55	67	55.83	198	45.62
	Total	103	100.00	117	100.00	94	100.00	120	100.00	434	100.00
Soursop	No	39	51.32	96	81.36	48	60.00	56	49.12	239	61.60
	Yes	37	48.68	22	18.64	32	40.00	58	50.88	149	38.40
	Total	76	100.00	118	100.00	80	100.00	114	100.00	388	100.00
Locally grown/collected fresh vegetables	No	58	51.33	87	69.60	36	33.03	44	37.61	225	48.49
	Yes	55	48.67	38	30.40	73	66.97	73	62.39	239	51.51
	Total	113	100.00	125	100.00	109	100.00	117	100.00	464	100.00
Imported fresh vegetables	No	81	76.42	93	72.66	50	54.35	42	41.58	266	62.30
	Yes	25	23.58	35	27.34	42	45.65	59	58.42	161	37.70
	Total	106	100.00	128	100.00	92	100.00	101	100.00	427	100.00
Vegetables: Canned/ processed	No	73	77.66	96	78.69	57	61.96	52	57.78	278	69.85
	Yes	21	22.34	26	21.31	35	38.04	38	42.22	120	30.15
	Total	94	100.00	122	100.00	92	100.00	90	100.00	398	100.00
Local fresh fruits	No	49	42.61	95	68.84	42	40.38	49	40.50	235	49.16
	Yes	66	57.39	43	31.16	62	59.62	72	59.50	243	50.84
	Total	115	100.00	138	100.00	104	100.00	121	100.00	478	100.00
Imported fresh fruits	No	70	75.27	94	73.44	57	62.64	45	42.86	266	63.79
	Yes	23	24.73	34	26.56	34	37.36	60	57.14	151	36.21
	Total	93	100.00	128	100.00	91	100.00	105	100.00	417	100.00
Fruits: Canned/ processed	No	69	81.18	99	83.19	57	60.64	51	56.04	276	70.95
	Yes	16	18.82	20	16.81	37	39.36	40	43.96	113	29.05
	Total	85	100.00	119	100.00	94	100.00	91	100.00	389	100.00
Local citrus	No	45	51.14	95	74.22	38	33.63	46	58.97	224	55.04
	Yes	43	48.86	33	25.78	75	66.37	32	41.03	183	44.96
	Total	88	100.00	128	100.00	113	100.00	78	100.00	407	100.00
Imported citrus	No	57	80.28	90	82.57	50	54.35	47	64.38	244	70.72
	Yes	14	19.72	19	17.43	42	45.65	26	35.62	101	29.28
	Total	71	100.00	109	100.00	92	100.00	73	100.00	345	100.00
Open Ocean fish	No	58	47.93	92	63.89	38	34.23	43	34.40	231	46.11
	Yes	63	52.07	52	36.11	73	65.77	82	65.60	270	53.89
	Total	121	100.00	144	100.00	111	100.00	125	100.00	501	100.00
Reef fish	No	54	41.86	89	60.54	36	32.73	48	36.92	227	43.99
	Yes	75	58.14	58	39.46	74	67.27	82	63.08	289	56.01
	Total	129	100.00	147	100.00	110	100.00	130	100.00	516	100.00
Sea cucumbers	No	28	63.64	86	74.14	43	59.72	49	38.89	206	57.54
	Yes	16	36.36	30	25.86	29	40.28	77	61.11	152	42.46
	Total	44	100.00	116	100.00	72	100.00	126	100.00	358	100.00
Clams/oysters	No	46	52.27	90	73.17	47	55.95	43	35.54	226	54.33
	Yes	42	47.73	33	26.83	37	44.05	78	64.46	190	45.67
	Total	88	100.00	123	100.00	84	100.00	121	100.00	416	100.00
Crustaceans such as shrimp, lobster, mangrove crabs	No	47	47.47	98	71.53	51	51.00	41	33.88	237	51.86
	Yes	52	52.53	39	28.47	49	49.00	80	66.12	220	48.14
	Total	99	100.00	137	100.00	100	100.00	121	100.00	457	100.00
Octopus and squid	No	38	54.29	100	75.19	54	60.67	43	34.13	235	56.22
	Yes	32	45.71	33	24.81	35	39.33	83	65.87	183	43.78
	Total	70	100.00	133	100.00	89	100.00	126	100.00	418	100.00
Meat and meat	No	77	60.16	103	73.05	55	53.92	54	42.52	289	58.03

products: fresh/ local	Yes	51	39.84	38	26.95	47	46.08	73	57.48	209	41.97
	Total	128	100.00	141	100.00	102	100.00	127	100.00	498	100.00
Meat and meat products: processed	No	98	74.24	104	73.76	61	57.01	46	37.70	309	61.55
	Yes	34	25.76	37	26.24	46	42.99	76	62.30	193	38.45
	Total	132	100.00	141	100.00	107	100.00	122	100.00	502	100.00
Dairy (milk, cheese, yogurt)	No	76	72.38	100	76.92	59	62.77	44	44.00	279	65.03
	Yes	29	27.62	30	23.08	35	37.23	56	56.00	150	34.97
	Total	105	100.00	130	100.00	94	100.00	100	100.00	429	100.00
Eggs	No	86	71.07	106	73.61	63	57.80	46	39.32	301	61.30
	Yes	35	28.93	38	26.39	46	42.20	71	60.68	190	38.70
	Total	121	100.00	144	100.00	109	100.00	117	100.00	491	100.00
Black pepper	No	54	78.26	102	87.18	61	65.59	46	56.79	263	73.06
	Yes	15	21.74	15	12.82	32	34.41	35	43.21	97	26.94
	Total	69	100.00	117	100.00	93	100.00	81	100.00	360	100.00
Hot peppers	No	53	66.25	104	80.00	49	47.57	52	46.85	258	60.85
	Yes	27	33.75	26	20.00	54	52.43	59	53.15	166	39.15
	Total	80	100.00	130	100.00	103	100.00	111	100.00	424	100.00
Sodas	No	79	78.22	115	82.14	68	68.00	53	44.54	315	68.48
	Yes	22	21.78	25	17.86	32	32.00	66	55.46	145	31.52
	Total	101	100.00	140	100.00	100	100.00	119	100.00	460	100.00
Candies, cakes, cookies, sugary foods	No	89	81.65	114	82.61	66	68.04	52	42.28	321	68.74
	Yes	20	18.35	24	17.39	31	31.96	71	57.72	146	31.26
	Total	109	100.00	138	100.00	97	100.00	123	100.00	467	100.00
Coffee and tea	No	90	81.82	116	82.27	70	66.67	52	40.31	328	67.63
	Yes	20	18.18	25	17.73	35	33.33	77	59.69	157	32.37
	Total	110	100.00	141	100.00	105	100.00	129	100.00	485	100.00
Bread, crackers, biscuit	No	99	83.90	113	82.48	65	65.00	51	39.53	328	67.77
	Yes	19	16.10	24	17.52	35	35.00	78	60.47	156	32.23
	Total	118	100.00	137	100.00	100	100.00	129	100.00	484	100.00
Pasta and ramen noodles	No	101	81.45	112	80.58	67	66.34	49	41.18	329	68.12
	Yes	23	18.55	27	19.42	34	33.66	70	58.82	154	31.88
	Total	124	100.00	139	100.00	101	100.00	119	100.00	483	100.00
Boxed cereal	No	71	76.34	101	79.53	61	66.30	49	55.06	282	70.32
	Yes	22	23.66	26	20.47	31	33.70	40	44.94	119	29.68
	Total	93	100.00	127	100.00	92	100.00	89	100.00	401	100.00
Sakau (Kava)	No	32	76.19	97	71.85	51	65.38	47	73.44	227	71.16
	Yes	10	23.81	38	28.15	27	34.62	17	26.56	92	28.84
	Total	42	100.00	135	100.00	78	100.00	64	100.00	319	100.00
Imported juice	No	76	79.17	109	81.95	63	67.02	44	41.12	292	67.91
	Yes	20	20.83	24	18.05	31	32.98	63	58.88	138	32.09
	Total	96	100.00	133	100.00	94	100.00	107	100.00	430	100.00
Imported coconut milk	No	62	83.78	88	84.62	59	71.08	43	53.09	252	73.68
	Yes	12	16.22	16	15.38	24	28.92	38	46.91	90	26.32
	Total	74	100.00	104	100.00	83	100.00	81	100.00	342	100.00
Other	No	8	88.89	33	100.00	10	90.91	12	75.00	63	91.30
	Yes	1	11.11	0	0.00	1	9.09	4	25.00	6	8.70
	Total	9	100.00	33	100.00	11	100.00	16	100.00	69	100.00

Q9.3.6.1-40 Has a changing climate impacted the affordability of this food?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Rice	No	89	66.92	110	70.97	63	59.43	48	33.33	310	57.62
	Yes	44	33.08	45	29.03	43	40.57	96	66.67	228	42.38
	Total	133	100.00	155	100.00	106	100.00	144	100.00	538	100.00

Taro	No	109	82.58	99	71.74	68	66.67	45	31.91	321	62.57
	Yes	23	17.42	39	28.26	34	33.33	96	68.09	192	37.43
	Total	132	100.00	138	100.00	102	100.00	141	100.00	513	100.00
Breadfruit	No	109	80.15	89	60.14	68	64.76	48	32.88	314	58.69
	Yes	27	19.85	59	39.86	37	35.24	98	67.12	221	41.31
	Total	136	100.00	148	100.00	105	100.00	146	100.00	535	100.00
Banana	No	109	81.34	107	69.93	68	64.76	51	35.17	335	62.38
	Yes	25	18.66	46	30.07	37	35.24	94	64.83	202	37.62
	Total	134	100.00	153	100.00	105	100.00	145	100.00	537	100.00
Coconut	No	93	82.30	95	66.43	76	73.79	77	56.62	341	68.89
	Yes	20	17.70	48	33.57	27	26.21	59	43.38	154	31.11
	Total	113	100.00	143	100.00	103	100.00	136	100.00	495	100.00
Copra (coconut product)	No	87	83.65	87	79.82	78	76.47	74	66.67	326	76.53
	Yes	17	16.35	22	20.18	24	23.53	37	33.33	100	23.47
	Total	104	100.00	109	100.00	102	100.00	111	100.00	426	100.00
Yam	No	79	73.15	94	62.67	64	71.11	48	63.16	285	67.22
	Yes	29	26.85	56	37.33	26	28.89	28	36.84	139	32.78
	Total	108	100.00	150	100.00	90	100.00	76	100.00	424	100.00
Sweet potatoes	No	68	69.39	80	78.43	63	72.41	53	46.49	264	65.84
	Yes	30	30.61	22	21.57	24	27.59	61	53.51	137	34.16
	Total	98	100.00	102	100.00	87	100.00	114	100.00	401	100.00
Tapioca	No	73	73.00	87	75.00	69	73.40	58	48.33	287	66.74
	Yes	27	27.00	29	25.00	25	26.60	62	51.67	143	33.26
	Total	100	100.00	116	100.00	94	100.00	120	100.00	430	100.00
Soursop	No	59	73.75	95	81.90	65	74.71	59	52.21	278	70.20
	Yes	21	26.25	21	18.10	22	25.29	54	47.79	118	29.80
	Total	80	100.00	116	100.00	87	100.00	113	100.00	396	100.00
Locally grown/collected fresh vegetables	No	71	66.36	89	72.36	60	55.56	49	41.18	269	58.86
	Yes	36	33.64	34	27.64	48	44.44	70	58.82	188	41.14
	Total	107	100.00	123	100.00	108	100.00	119	100.00	457	100.00
Imported fresh vegetables	No	55	55.00	93	73.23	62	67.39	39	37.86	249	59.00
	Yes	45	45.00	34	26.77	30	32.61	64	62.14	173	41.00
	Total	100	100.00	127	100.00	92	100.00	103	100.00	422	100.00
Vegetables: Canned/ processed	No	55	63.22	94	75.81	63	68.48	49	55.68	261	66.75
	Yes	32	36.78	30	24.19	29	31.52	39	44.32	130	33.25
	Total	87	100.00	124	100.00	92	100.00	88	100.00	391	100.00
Local fresh fruits	No	77	70.00	93	66.43	65	63.11	52	42.62	287	60.42
	Yes	33	30.00	47	33.57	38	36.89	70	57.38	188	39.58
	Total	110	100.00	140	100.00	103	100.00	122	100.00	475	100.00
Imported fresh fruits	No	53	60.92	93	73.23	65	72.22	42	40.78	253	62.16
	Yes	34	39.08	34	26.77	25	27.78	61	59.22	154	37.84
	Total	87	100.00	127	100.00	90	100.00	103	100.00	407	100.00
Fruits: Canned/ processed	No	49	61.25	98	83.05	67	71.28	48	54.55	262	68.95
	Yes	31	38.75	20	16.95	27	28.72	40	45.45	118	31.05
	Total	80	100.00	118	100.00	94	100.00	88	100.00	380	100.00
Local citrus	No	66	75.86	93	72.66	57	50.00	47	58.02	263	64.15
	Yes	21	24.14	35	27.34	57	50.00	34	41.98	147	35.85
	Total	87	100.00	128	100.00	114	100.00	81	100.00	410	100.00
Imported citrus	No	45	69.23	90	82.57	65	69.15	44	58.67	244	71.14
	Yes	20	30.77	19	17.43	29	30.85	31	41.33	99	28.86
	Total	65	100.00	109	100.00	94	100.00	75	100.00	343	100.00
Open Ocean fish	No	68	58.62	93	64.14	59	53.15	42	33.60	262	52.72
	Yes	48	41.38	52	35.86	52	46.85	83	66.40	235	47.28
	Total	116	100.00	145	100.00	111	100.00	125	100.00	497	100.00
Reef fish	No	74	59.68	90	61.22	57	51.35	48	37.21	269	52.64
	Yes	50	40.32	57	38.78	54	48.65	81	62.79	242	47.36
	Total	124	100.00	147	100.00	111	100.00	129	100.00	511	100.00

Sea cucumbers	No	29	72.50	86	75.44	56	75.68	55	44.00	226	64.02
	Yes	11	27.50	28	24.56	18	24.32	70	56.00	127	35.98
	Total	40	100.00	114	100.00	74	100.00	125	100.00	353	100.00
Clams/oysters	No	56	67.47	84	68.85	59	71.08	47	39.17	246	60.29
	Yes	27	32.53	38	31.15	24	28.92	73	60.83	162	39.71
	Total	83	100.00	122	100.00	83	100.00	120	100.00	408	100.00
Crustaceans such as shrimp, lobster, mangrove crabs	No	62	68.13	92	66.67	67	67.00	46	37.70	267	59.20
	Yes	29	31.87	46	33.33	33	33.00	76	62.30	184	40.80
	Total	91	100.00	138	100.00	100	100.00	122	100.00	451	100.00
Octopus and squid	No	45	64.29	95	71.43	65	73.86	48	38.10	253	60.67
	Yes	25	35.71	38	28.57	23	26.14	78	61.90	164	39.33
	Total	70	100.00	133	100.00	88	100.00	126	100.00	417	100.00
Meat and meat products: fresh/ local	No	82	67.77	101	71.63	65	63.11	51	40.80	299	61.02
	Yes	39	32.23	40	28.37	38	36.89	74	59.20	191	38.98
	Total	121	100.00	141	100.00	103	100.00	125	100.00	490	100.00
Meat and meat products: processed	No	69	55.65	98	70.00	68	62.96	48	39.67	283	57.40
	Yes	55	44.35	42	30.00	40	37.04	73	60.33	210	42.60
	Total	124	100.00	140	100.00	108	100.00	121	100.00	493	100.00
Dairy (milk, cheese, yogurt)	No	54	55.67	96	75.00	65	67.71	44	43.56	259	61.37
	Yes	43	44.33	32	25.00	31	32.29	57	56.44	163	38.63
	Total	97	100.00	128	100.00	96	100.00	101	100.00	422	100.00
Eggs	No	63	53.85	101	68.71	66	60.55	45	38.79	275	56.24
	Yes	54	46.15	46	31.29	43	39.45	71	61.21	214	43.76
	Total	117	100.00	147	100.00	109	100.00	116	100.00	489	100.00
Black pepper	No	51	73.91	96	82.76	69	71.88	49	57.65	265	72.40
	Yes	18	26.09	20	17.24	27	28.13	36	42.35	101	27.60
	Total	69	100.00	116	100.00	96	100.00	85	100.00	366	100.00
Hot peppers	No	61	78.21	105	80.15	68	63.55	57	51.82	291	68.31
	Yes	17	21.79	26	19.85	39	36.45	53	48.18	135	31.69
	Total	78	100.00	131	100.00	107	100.00	110	100.00	426	100.00
Sodas	No	55	55.56	114	80.85	73	71.57	56	46.67	298	64.50
	Yes	44	44.44	27	19.15	29	28.43	64	53.33	164	35.50
	Total	99	100.00	141	100.00	102	100.00	120	100.00	462	100.00
Candies, cakes, cookies, sugary foods	No	65	61.90	111	79.86	72	74.23	56	44.44	304	65.10
	Yes	40	38.10	28	20.14	25	25.77	70	55.56	163	34.90
	Total	105	100.00	139	100.00	97	100.00	126	100.00	467	100.00
Coffee and tea	No	67	63.21	111	79.29	73	70.19	57	43.85	308	64.17
	Yes	39	36.79	29	20.71	31	29.81	73	56.15	172	35.83
	Total	106	100.00	140	100.00	104	100.00	130	100.00	480	100.00
Bread, crackers, biscuit	No	68	60.71	109	80.15	75	74.26	54	41.22	306	63.75
	Yes	44	39.29	27	19.85	26	25.74	77	58.78	174	36.25
	Total	112	100.00	136	100.00	101	100.00	131	100.00	480	100.00
Pasta and ramen noodles	No	70	59.83	107	76.98	75	72.82	52	42.62	304	63.20
	Yes	47	40.17	32	23.02	28	27.18	70	57.38	177	36.80
	Total	117	100.00	139	100.00	103	100.00	122	100.00	481	100.00
Boxed cereal	No	52	57.78	97	76.98	69	75.00	49	53.85	267	66.92
	Yes	38	42.22	29	23.02	23	25.00	42	46.15	132	33.08
	Total	90	100.00	126	100.00	92	100.00	91	100.00	399	100.00
Sakau (Kava)	No	32	71.11	89	66.42	59	75.64	49	74.24	229	70.90
	Yes	13	28.89	45	33.58	19	24.36	17	25.76	94	29.10
	Total	45	100.00	134	100.00	78	100.00	66	100.00	323	100.00
Imported juice	No	52	59.09	104	78.79	69	73.40	50	45.45	275	64.86
	Yes	36	40.91	28	21.21	25	26.60	60	54.55	149	35.14
	Total	88	100.00	132	100.00	94	100.00	110	100.00	424	100.00
Imported coconut milk	No	43	66.15	79	76.70	66	79.52	47	54.02	235	69.53
	Yes	22	33.85	24	23.30	17	20.48	40	45.98	103	30.47
	Total	65	100.00	103	100.00	83	100.00	87	100.00	338	100.00

Other	No	7	87.50	34	100.00	12	80.00	16	80.00	69	89.61
	Yes	1	12.50	0	0.00	3	20.00	4	20.00	8	10.39
	Total	8	100.00	34	100.00	15	100.00	20	100.00	77	100.00

Q9.4.2 Due to climate change, have the places you get food from (e.g., wild places, cultivated places, informal markets, formal markets, food aid) changed?		**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
	Resp.	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
	No	81	50.00	104	65.41	74	50.00	78	53.79	337	54.89
	Yes	81	50.00	55	34.59	74	50.00	67	46.21	277	45.11
	Total	162	100.00	159	100.00	148	100.00	145	100.00	614	100.00

Q9.4.3 If yes, where are you getting more food from?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
More from wild places such as forests, freshwater, rivers, and/or the ocean	No	41	48.81	10	18.18	15	22.39	27	50.94	93	35.91
	Yes	43	51.19	45	81.82	52	77.61	26	49.06	166	64.09
	Total	84	100.00	55	100.00	67	100.00	53	100.00	259	100.00
More from cultivated places such as fields, orchards, pastures, gardens, and/or aquaculture	No	38	44.71	40	72.73	19	30.16	17	29.82	114	43.85
	Yes	47	55.29	15	27.27	44	69.84	40	70.18	146	56.15
	Total	85	100.00	55	100.00	63	100.00	57	100.00	260	100.0
More from informal markets such as street vendors and kiosks	No	49	57.65	36	67.92	20	37.74	34	60.71	139	56.28
	Yes	36	42.35	17	32.08	33	62.26	22	39.29	108	43.72
	Total	85	100.00	53	100.00	53	100.00	56	100.00	247	100.0
More from formal markets such as farmers' markets, supermarkets, school meals, and restaurants	No	38	45.24	30	56.60	15	25.42	30	49.18	113	43.97
	Yes	46	54.76	23	43.40	44	74.58	31	50.82	144	56.03
	Total	84	100.00	53	100.00	59	100.00	61	100.00	257	100.0
More from supplemental food assistance such as government food rations, food from churches, schools, and community organizations, etc.	No	80	91.95	49	96.08	35	85.37	46	95.83	210	92.51
	Yes	7	8.05	2	3.92	6	14.63	2	4.17	17	7.49
	Total	87	100.00	51	100.00	41	100.00	48	100.00	227	100.0
More from relatives and extended families	No	52	60.47	41	78.85	25	55.56	*28*	50.00	146	61.09
	Yes	34	39.53	11	21.15	20	44.44	*28*	50.00	93	38.91
	Total	86	100.00	52	100.00	45	100.00	56	100.00	239	100.0
More from Other	No	84	97.67	46	97.87	33	94.29	*43*	95.56	206	96.71
	Yes	2	2.33	1	2.13	2	5.71	*2*	4.44	7	3.29
	Total	86	100.00	47	100.00	35	100.00	45	100.00	213	100.0

Questions	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Q9.4.4 If yes, is it more difficult or less difficult to access foods?	More difficult	29	35.80	18	29.03	19	26.03	39	59.09	105	37.23
	Less difficult	52	63.19	44	70.97	54	73.97	27	40.91	177	62.77
	Total	81	100.00	62	100.00	73	100.00	66	100.00	282	100.00

Q9.4.5 Are you concerned with how climate change will impact the foods that you eat?	No	32	19.88	51	32.69	34	23.13	21	14.38	138	22.62
	Yes	129	80.12	105	67.31	113	76.87	125	85.62	472	77.38
	Total	161	100.00	156	100.00	147	100.00	146	100.00	610	100.00

Q9.4.6 If yes: why? Is it because you feel climate change will impact	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Food availability	No	11	8.40	12	11.32	10	9.17	3	2.52	36	7.74
	Yes	120	91.60	94	88.68	99	90.83	116	97.48	429	92.26
	Total	131	100.00	106	100.00	109	100.00	119	100.00	465	100.00
Food affordability	No	47	36.15	30	29.13	23	24.21	20	16.67	120	26.79
	Yes	83	63.85	73	70.87	72	75.79	100	83.33	328	73.21
	Total	130	100.00	103	100.00	95	100.00	120	100.00	448	100.00
Food quality	No	27	20.77	13	12.26	7	6.36	14	12.50	61	13.32
	Yes	103	79.23	93	87.74	103	93.64	98	87.50	397	86.68
	Total	130	100.00	106	100.00	110	100.00	112	100.00	458	100.00
Food safety	No	38	29.46	26	24.76	15	15.00	16	14.04	95	21.21
	Yes	91	70.54	79	75.24	85	85.00	98	85.96	353	78.79
	Total	129	100.00	105	100.00	100	100.00	114	100.00	448	100.00
Other	No	128	98.46	93	97.89	54	100.00	89	96.74	364	98.11
	Yes	2	1.54	2	2.11	0	0	3	3.26	7	1.89
	Total	130	100.00	95	100.00	54	100.00	92	100.00	371	100.00

Questions	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Q10.1 During the COVID 19 pandemic, did your consumption of local foods change?	No	134	81.71	119	75.80	107	71.33	78	53.06	438	70.87
	Yes	30	18.29	38	24.20	43	28.67	69	46.94	180	29.13
	Total	164	100.00	157	100.00	150	100.00	147	100.00	618	100.00
If yes, how did it change?	Increase	7	22.58	15	35.71	1	2.27	37	51.39	60	31.91
	Decrease	19	61.29	18	42.86	26	59.09	31	43.06	94	50.00
	Stay the same	5	16.13	8	19.05	17	38.64	4	5.56	34	18.09
	Total	31	100.00	41	100.00	44	100.00	72	100.00	188	100.00
During the COVID 19 pandemic, did your production of local foods change?	No	132	80.98	111	71.15	113	75.84	86	59.72	442	72.22
	Yes	31	19.02	45	28.85	36	24.16	58	40.28	170	27.78
	Total	163	100.00	156	100.00	149	100.00	144	100.00	612	100.00
If yes, how did it change?	Increase	9	29.03	14	35.71	13	37.14	14	23.33	50	28.74
	Decrease	20	64.52	28	42.86	21	60.00	44	73.33	113	64.94
	Stay the same	2	6.45	6	19.05	1	2.86	2	3.33	11	6.32
	Total	31	100.00	48	100.00	35	100.00	60	100.00	174	100.00
During the COVID 19 pandemic, did demand for local food change?	No	136	82.42	105	66.88	98	66.67	77	52.74	416	67.64
	Yes	29	17.58	52	33.12	49	33.33	69	47.26	199	32.36
	Total	165	100.00	157	100.00	147	100.00	146	100.00	615	100.00

Q10.6 If yes, did it… 1.Increased for local consumption	No	11	34.38	16	30.77	6	14.29	13	22.03	46	24.86
	Yes	21	65.63	36	69.23	36	85.71	46	77.97	139	75.14
	Total	32	100.00	52	100.00	42	100.00	59	100.00	185	100.00
2. Decreased local consumption	No	28	82.35	40	78.43	27	75.00	35	60.34	130	72.63
	Yes	6	17.65	11	21.57	9	25.00	23	39.66	49	27.37
	Total	34	100.00	51	100.00	36	100.00	58	100.00	179	100.00
3. Increased for export	No	26	83.87	46	90.20	24	82.76	45	91.84	141	88.13
	Yes	5	16.13	5	9.80	5	17.24	4	8.16	19	11.88
	Total	31	100.00	51	100.00	29	100.00	49	100.00	160	100.00
4. Decreased for export	No	26	86.67	44	86.27	24	72.73	42	85.71	136	83.44
	Yes	4	13.33	7	13.73	9	27.27	7	14.29	27	16.56
	Total	30	100.00	51	100.00	33	100.00	49	100.00	163	100.00
5. Stayed the same	No	27	87.10	44	86.27	27	96.43	46	93.88	144	90.57
	Yes	4	12.90	7	13.73	1	3.57	3	6.12	15	9.43
	Total	31	100.00	51	100.00	28	100.00	49	100.00	159	100.00
Q10.7 During COVID-19, have you sent your food products overseas (both commercial and to family members)?	No	135	83.33	136	87.18	121	83.45	122	85.92	514	84.96
	Yes	27	16.67	20	12.82	24	16.55	20	14.08	91	15.04
	Total	162	100.00	156	100.00	145	100.00	142	100.00	605	100.00

Q10.8 If yes, which crops were in most demand?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Swamp taro	No	10	33.33	12	54.55	2	10.00	6	35.29	30	33.71
	Yes	20	66.67	10	45.45	18	90.00	11	64.71	59	66.29
	Total	30	100.00	22	100.00	20	100.00	17	100.00	89	100.00
Land taro	No	12	40.00	15	68.18	3	15.79	11	78.57	41	48.24
	Yes	18	60.00	7	31.82	16	84.21	3	21.43	44	51.76
	Total	30	100.00	22	100.00	19	100.00	14	100.00	85	100.00
Breadfruit	No	26	86.67	12	54.55	2	14.29	2	12.50	42	51.22
	Yes	4	13.33	10	45.45	12	85.71	14	87.50	40	48.78
	Total	30	100.00	22	100.00	14	100.00	16	100.00	82	100.00
Betelnut	No	5	16.67	16	72.73	9	81.82	13	92.86	43	55.84
	Yes	25	83.33	6	27.27	2	18.18	1	7.14	34	44.16
	Total	30	100.00	22	100.00	11	100.00	14	100.00	77	100.00
Banana	No	26	86.67	12	54.55	6	42.86	11	84.62	55	69.62
	Yes	4	13.33	10	45.45	8	57.14	2	15.38	24	30.38
	Total	30	100.00	22	100.00	14	100.00	13	100.00	79	100.00
Coconut	No	28	93.33	19	86.36	7	50.00	13	92.86	67	83.75
	Yes	2	6.67	3	13.64	7	50.00	1	7.14	13	16.25
	Total	30	100.00	22	100.00	14	100.00	14	100.00	80	100.00
Copra (coconut product)	No	27	90.00	20	90.91	6	50.00	12	92.31	65	84.42
	Yes	3	10.00	2	9.09	6	50.00	1	7.69	12	15.58
	Total	30	100.00	22	100.00	12	100.00	13	100.00	77	100.00
Yam	No	26	86.67	16	72.73	8	72.73	13	100.00	63	82.89
	Yes	4	13.33	6	27.27	3	27.27	0	0	13	17.11
	Total	30	100.00	22	100.00	11	100.00	13	100.00	76	100.00
Sweet potatoes	No	27	90.00	22	100.00	9	90.00	13	100.00	71	94.67
	Yes	3	10.00	0	0.00	1	10.00	0	0	4	5.33
	Total	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00

Tapioca	No	19	63.33	22	100.00	5	38.46	12	92.31	58	74.36
	Yes	11	36.67	0	0.00	8	61.54	1	7.69	20	25.64
	Total	30	100.00	22	100.00	13	100.00	13	100.00	78	100.00
Soursop	No	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00
	Yes	0	0.00	0	0.00	0	0	0	0	0	0.00
	Total	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00
Locally grown/ collected vegetables	No	26	86.67	22	100.00	9	75.00	13	100.00	70	90.91
	Yes	4	13.33	0	0.00	3	25.00	0	0	7	9.09
	Total	30	100.00	22	100.00	12	100.00	13	100.00	77	100.00
Imported Vegetables	No	29	96.67	22	100.00	10	100.00	13	100.00	74	98.67
	Yes	1	3.33	0	0.00	0	0	0	0	1	1.33
	Total	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00
Locally grown/ collected fruits	No	30	100.00	21	95.45	9	90.00	12	92.31	72	96.00
	Yes	0	0.00	1	4.55	1	10.00	1	7.69	3	4.00
	Total	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00
Imported fruits	No	30	100.00	22	100.00	9	90.00	13	100.00	74	98.67
	Yes	0	0.00	0	0.00	1	10.00	0	0	1	1.33
	Total	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00
Citrus	No	29	96.67	21	95.45	5	33.33	13	100.00	68	85.00
	Yes	1	3.33	1	4.55	10	66.67	0	0	12	15.00
	Total	30	100.00	22	100.00	15	100.00	13	100.00	80	100.00
Black pepper	No	30	100.00	21	95.45	9	90.00	12	92.31	72	96.00
	Yes	0	0.00	1	4.55	1	10.00	1	7.69	3	4.00
	Total	30	100.00	22	100.00	10	100.00	13	100.00	75	100.00
Hot peppers	No	30	100.00	21	95.45	3	20.00	13	100.00	67	83.75
	Yes	0	0.00	1	4.55	12	80.00	0	0	13	16.25
	Total	30	100.00	22	100.00	15	100.00	13	100.00	80	100.00
Sakau (Kava)	No	30	100.00	14	63.64	7	63.64	13	100.00	64	84.21
	Yes	0	0.00	8	36.36	4	36.36	0	0	12	15.79
	Total	30	100.00	22	100.00	11	100.00	13	100.00	76	100.00
Other	No	27	90.00	18	85.71	9	69.23	7	46.67	61	77.22
	Yes	3	10.00	3	14.29	4	30.77	8	53.33	18	22.78
	Total	30	100.00	21	100.00	13	100.00	15	100.00	79	100.00

Q11.1a What do you consider to be healthy and nutritious?	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Fresh vegetables	No	0	0.00	1	0.63	1	0.67	4	2.76	6	0.97
	Yes	165	100.00	157	99.37	148	99.33	141	97.24	611	99.03
	Total	165	100.00	158	100.00	149	100.00	145	100.00	617	100.00
Processed vegetables	No	153	92.73	118	77.12	63	67.74	83	73.45	417	79.58
	Yes	12	7.27	35	22.88	30	32.26	30	26.55	107	20.42
	Total	165	100.00	153	100.00	93	100.00	113	100.00	524	100.00
Fresh fruit	No	3	1.82	10	6.33	2	1.36	8	5.67	23	3.76
	Yes	162	98.18	148	93.67	145	98.64	133	94.33	588	96.24
	Total	165	100.00	158	100.00	147	100.00	141	100.00	611	100.00
Processed fruit	No	158	95.76	129	84.87	65	70.65	85	75.22	437	83.72
	Yes	7	4.24	23	15.13	27	29.35	28	24.78	85	16.28
	Total	165	100.00	152	100.00	92	100.00	113	100.00	522	100.00
Fresh fish / seafood	No	6	3.64	16	10.13	1	0.69	9	6.38	32	5.26
	Yes	159	96.36	142	89.87	143	99.31	132	93.62	576	94.74
	Total	165	100.00	158	100.00	144	100.00	141	100.00	608	100.00
Processed fish / seafood	No	155	93.94	126	82.35	67	73.63	86	76.79	434	83.30
	Yes	10	6.06	27	17.65	24	26.37	26	23.21	87	16.70
	Total	165	100.00	153	100.00	91	100.00	112	100.00	521	100.00
Fresh meat	No	11	6.67	29	18.47	5	3.45	27	20.93	72	12.08
	Yes	154	93.33	128	81.53	140	96.55	102	79.07	524	87.92

	Total	165	100.00	157	100.00	145	100.00	129	100.00	596	100.00
Processed meat	No	158	95.76	139	93.29	67	77.91	91	81.25	455	88.87
	Yes	7	4.24	10	6.71	19	22.09	21	18.75	57	11.13
	Total	165	100.00	149	100.00	86	100.00	112	100.00	512	100.00
Bread, crackers, biscuit	No	143	86.67	121	81.21	63	73.26	80	70.80	407	79.34
	Yes	22	13.33	28	18.79	23	26.74	33	29.20	106	20.66
	Total	165	100.00	149	100.00	86	100.00	113	100.00	513	100.00
Pasta and ramen noodles	No	154	93.33	144	97.30	71	87.65	91	84.26	460	91.63
	Yes	11	6.67	4	2.70	10	12.35	17	15.74	42	8.37
	Total	165	100.00	148	100.00	81	100.00	108	100.00	502	100.00
Dairy	No	125	75.76	110	73.33	60	61.22	84	72.41	379	71.64
	Yes	40	24.24	40	26.67	38	38.78	32	27.59	150	28.36
	Total	165	100.00	150	100.00	98	100.00	116	100.00	529	100.00
Eggs	No	60	36.36	47	30.72	26	20.47	63	52.50	196	34.69
	Yes	105	63.64	106	69.28	101	79.53	57	47.50	369	65.31
	Total	165	100.00	153	100.00	127	100.00	120	100.00	565	100.00
Coconut milk	No	48	29.09	77	51.33	37	31.62	56	46.28	218	39.42
	Yes	117	70.91	73	48.67	80	68.38	65	53.72	335	60.58
	Total	165	100.00	150	100.00	117	100.00	121	100.00	553	100.00
Candies, cakes, cookies, sugary foods	No	163	98.79	147	99.32	74	96.10	100	94.34	484	97.58
	Yes	2	1.21	1	0.68	3	3.90	6	5.66	12	2.42
	Total	165	100.00	148	100.00	77	100.00	106	100.00	496	100.00
Boxed cereal	No	161	97.58	141	94.63	73	87.95	102	94.44	477	94.46
	Yes	4	2.42	8	5.37	10	12.05	6	5.56	28	5.54
	Total	165	100.00	149	100.00	83	100.00	108	100.00	505	100.00
Soda	No	163	98.79	148	100.00	73	96.05	103	99.04	487	98.78
	Yes	2	1.21	0	0.00	3	3.95	1	0.96	6	1.22
	Total	165	100.00	148	100.00	76	100.00	104	100.00	493	100.00
Sakau (Kava)	No	163	99.39	117	79.05	73	92.41	101	95.28	454	91.35
	Yes	1	0.61	31	20.95	6	7.59	5	4.72	43	8.65
	Total	164	100.00	148	100.00	79	100.00	106	100.00	497	100.00
Coffee and tea	No	154	93.33	123	82.55	54	58.70	92	82.88	423	81.82
	Yes	11	6.67	26	17.45	38	41.30	19	17.12	94	18.18
	Total	165	100.00	149	100.00	92	100.00	111	100.00	517	100.00

Q11.1b What percentage of your diet is imported food?	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
	Freq.	**Percent**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Less than 25%	22	13.33	22	13.92	16	11.03	43	29.66	103	16.80
25-50%	56	33.94	34	21.52	60	41.38	45	31.03	195	31.81
50-75%	58	35.15	66	41.77	58	40.00	50	34.48	232	37.85
75-100%	29	17.58	36	22.78	11	7.59	7	4.83	83	13.54
Total	165	100.00	158	100.00	145	100.00	145	100.00	613	100.00

Questions	**Resp.**	**YAP**		**Pohnpei**		**Kosrae**		**Chuuk**		**All**	
		Freq	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**	**Freq**	**%**
Q11.2 Do you feel your diet is healthy and nutritious?	No	78	47.56	44	27.85	78	53.79	40	27.40	240	39.15
	Yes	86	52.44	114	72.15	67	46.21	106	72.60	373	60.85
	Total	164	100.00	158	100.00	145	100.00	146	100.00	613	100.0

Q11.3 Does your diet impact your health?	No	30	18.29	43	27.22	19	12.84	42	28.38	134	21.68
	Yes, I feel healthy	58	35.37	84	53.16	63	42.57	74	50.00	279	45.15
	Yes, I feel unhealthy	76	46.34	31	19.62	66	44.59	32	21.62	205	33.17
	Total	164	100	158	100.00	148	100.00	148	100.00	454	100.0
Q11.4 Would you be interested in consuming more locally sourced seafood and marine fish daily if they were more available and affordable?	No	2	1.12	4	2.55	5	3.40	6	4.14	17	2.77
	Yes	162	98.78	153	97.45	142	96.60	139	95.86	596	97.23
	Total	164	100.00	157	100.00	147	100.00	145	100.00	613	100.0
Q11.5 Would you be interested in consuming more locally sourced meat and meat products daily if they were more available and affordable?	No	5	3.05	12	7.59	1	0.67	8	5.44	26	4.20
	Yes	159	96.95	146	92.41	149	99.33	139	94.56	593	95.80
	Total	164	100.00	158	100.00	150	100.00	147	100.00	619	100.0
Q11.6 Would you be interested in replacing imported rice with local starch crops such as taro and breadfruit if they are more available and affordable?	No	42	25.77	44	27.67	24	16.22	18	12.24	128	20.75
	Yes	121	74.23	115	72.33	124	83.78	129	87.76	489	79.25
	Total	163	100.00	159	100.00	148	100.00	147	100.00	617	100.0
Q11.7 Would you be interested in consuming more locally produced coconut milk products daily if they were more available and affordable?	No	13	8.07	26	16.56	5	3.36	7	4.76	51	8.31
	Yes	148	91.93	131	83.44	144	96.64	140	95.24	563	91.69
	Total	161	100.00	157	100.00	149	100.00	147	100.00	614	100.0
Q11.8 Would you be willing to replace imported milk products with coconut milk products for cooking?	No	54	33.33	40	25.32	9	6.04	11	7.53	114	18.54
	Yes	108	66.67	118	74.68	140	93.96	135	92.47	501	81.46
	Total	162	100.00	158	100.00	149	100.00	146	100.00	615	100.0
Q11.9 Would you be interested in consuming more locally produced vegetables daily if they were more available and affordable?	No	5	3.07	5	3.16	3	2.00	3	2.04	16	2.59
	Yes	158	96.93	153	96.84	147	98.00	144	97.96	602	97.41
	Total	163	100.00	158	100.00	150	100.00	147	100.00	618	100.0
Q11.10 Would you be interested in consuming more locally produced fruits daily if they were more available and affordable?	No	3	1.84	13	8.23	1	0.68	2	1.38	19	3.09
	Yes	160	98.16	145	91.77	147	99.32	143	98.62	595	96.91
	Total	163	100.00	158	100.00	148	100.00	145	100.00	614	100.0
Q11.11 If you knew any of these locally produced foods were healthier than imported and/or processed foods, would you be more	No	24	14.81	28	17.83	6	4.05	25	17.48	83	13.61
	Yes	138	85.19	129	82.17	142	95.95	118	82.52	527	86.39
	Total	162	100.00	157	100.00	148	100.00	143	100.00	610	100.0

willing to buy these food items?											

Q11.12 If not, why do you find imported and/ or processed foods preferable?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
More convenient	No	6	20.00	10	34.48	1	5.00	16	51.61	33	30.00
	Yes	24	80.00	19	65.52	19	95.00	*15*	48.39	77	70.00
	Total	30	100.00	29	100.00	20	100.00	31	100.00	110	100.00
Less work to prepare	No	10	34.48	11	37.93	0	0	1	3.13	22	22.22
	Yes	19	65.52	18	62.07	9	100.00	31	96.88	77	77.78
	Total	29	100.00	29	100.00	9	100.00	32	100.00	99	100.00
Tastes better	No	11	37.93	21	70.00	0	0	18	78.26	50	56.18
	Yes	18	62.07	9	30.00	7	100.00	5	21.74	39	43.82
	Total	29	100.00	30	100.00	7	100.00	23	100.00	89	100.00
More affordable	No	24	85.71	20	71.43	3	60.00	20	76.92	67	77.01
	Yes	4	14.29	8	28.57	2	40.00	6	23.08	20	22.99
	Total	28	100.00	28	100.00	5	100.00	26	100.00	87	100.00
More available	No	25	89.29	17	58.62	1	14.29	13	43.33	56	59.57
	Yes	3	10.71	12	41.38	6	85.71	17	56.67	38	40.43
	Total	28	100.00	29	100.00	7	100.00	30	100.00	94	100.00
Higher status	No	27	96.43	28	96.55	3	75.00	21	91.30	79	94.05
	Yes	1	3.57	1	3.45	1	25.00	2	8.70	5	5.95
	Total	28	100.00	29	100.00	4	100.00	23	100.00	84	100.00
Other	No	28	100.00	26	100.00	2	66.67	***20***	86.96	76	95.00
	Yes	0	0.00	0	0.00	1	33.33	*3*	13.04	4	5.00
	Total	28	100.00	26	100.00	3	100.00	23	100.00	80	100.00

Q12.2 What solutions and/or resources do you feel can assist you with long term local food production goals?	Resp.	YAP		Pohnpei		Kosrae		Chuuk		All	
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Agriculture training	No	21	12.88	31	20.39	12	9.68	24	17.39	88	15.25
	Yes	142	87.12	121	79.61	112	90.32	114	82.61	489	84.75
	Total	163	100.00	152	100.00	124	100.00	138	100.00	577	100.00
Tools	No	16	9.82	31	20.39	8	5.88	17	12.59	72	12.29
	Yes	147	90.18	121	79.61	128	94.12	118	87.41	514	87.71
	Total	163	100.00	152	100.00	136	100.00	135	100.00	586	100.00
Greenhouses and aquaculture	No	71	43.56	66	43.71	10	7.58	5	55.56	152	33.41
	Yes	92	56.44	85	56.29	122	92.42	4	44.44	303	66.59
	Total	163	100.00	151	100.00	132	100.00	9	100.00	455	100.00
Climate resilience crops	No	73	44.79	81	53.29	17	12.88	65	51.18	236	41.11
	Yes	90	55.21	71	46.71	115	87.12	62	48.82	338	58.89
	Total	163	100.00	152	100.00	132	100.00	127	100.00	574	100.00
Disease resistant animals/chickens	No	102	62.58	76	50.33	20	16.26	91	82.73	289	52.83
	Yes	61	37.42	75	49.67	103	83.74	19	17.27	258	47.17
	Total	163	100.00	151	100.00	123	100.00	110	100.00	547	100.00
Affordable feed	No	84	51.53	64	42.38	15	11.90	81	69.83	244	43.88
	Yes	79	48.47	87	57.62	111	88.10	35	30.17	312	56.12
	Total	163	100.00	151	100.00	126	100.00	116	100.00	556	100.00
Refrigeration	No	126	77.30	105	72.41	28	24.35	85	77.27	344	64.54
	Yes	37	22.70	40	27.59	87	75.65	25	22.73	189	35.46
	Total	163	100.00	145	100.00	115	100.00	110	100.00	533	100.00
Access to market	No	141	86.50	95	65.97	30	27.78	98	88.29	364	69.20
	Yes	22	13.50	49	34.03	78	72.22	13	11.71	162	30.80

	Total	163	100.00	144	100.00	108	100.00	111	100.00	526	100.00
Transportation	No	127	77.91	86	59.31	29	26.61	83	69.75	325	60.63
	Yes	36	22.09	59	40.69	80	73.39	36	30.25	211	39.37
	Total	163	100.00	145	100.00	109	100.00	119	100.00	536	100.00
Post-harvest handling (drying and cooling for long term storage)	No	130	79.75	105	70.95	30	26.55	83	74.11	348	64.93
	Yes	33	20.25	43	29.05	83	73.45	29	25.89	188	35.07
	Total	163	100.00	148	100.00	113	100.00	112	100.00	536	100.00
Financial credit	No	111	67.68	75	52.08	20	16.39	93	85.32	299	55.47
	Yes	53	32.32	69	47.92	102	83.61	16	14.68	240	44.53
	Total	164	100.00	144	100.00	122	100.00	109	100.00	539	100.00
Veterinary doctor	No	135	82.32	112	77.78	37	35.24	103	97.17	387	74.57
	Yes	29	17.68	32	22.22	68	64.76	3	2.83	132	25.43
	Total	164	100.00	144	100.00	105	100.00	106	100.00	519	100.00
Other	No	157	95.73	128	94.81	66	95.65	95	92.23	446	94.69
	Yes	7	4.27	7	5.19	3	4.35	8	7.77	25	5.31
	Total	164	100.00	135	100.00	69	100.00	103	100.00	471	100.00

CROSS-STATE COMPARISON

FOCUS GROUPS

Overview: The focus group transcripts were analyzed for each state. The following document highlights quotes from the focus groups that capture differences and similarities experienced between the four states: Chuuk, Kosrae, Pohnpei, and Yap. The document begins with a table that outlines the file names associated with each focus group and the appendix where the full focus group transcript can be located. The document proceeds with each of the focus group discussion questions followed by a summary of quotes from each state. The quotes are labeled with a file name, found in the table below.

Focus group file name, community group, and associated appendix where each full focus group transcript can be located.

Focus Group File Name	Community Group	Appendix with full focus group transcript
Chuuk FG1	UFO Youth Farming	A.2.2
Chuuk FG2	CBDC Farming	A.2.2
Chuuk FG3	ReSouth Remedy Fishing	A.2.2
Chuuk FG4	Women's Group Farming	A.2.2
Chuuk FG5	UFO Youth Fishing	A.2.2
Kosrae FG1	Fishers Focus Group	A.2.3
Kosrae FG2	Youth Focus Group	A.2.3
Kosrae FG3	Women Focus Group	A.2.3
Kosrae FG4	Farmers Focus Group	A.2.3
Pohnpei FG1	Fisherman Group	A.2.4
Pohnpei FG2	Seinwar Youth	A.2.4
Pohnpei FG3	Metipw-U	A.2.4
Pohnpei FG4	Senipehn Group	A.2.4
Yap FG1	Women Community Group	A.2.5
Yap FG2	Women Island Group	A.2.5
Yap FG3	Small scale village producer (local and export)	A.2.5
Yap FG4	Retail and Agriculture Products	A.2.5
Yap FG5	Council of Pilung (COP) member	A.2.5
Yap FG6	Retail Agriculture products only (land and marine)	A.2.5
Yap FG7	Commercial Fisheries	A.2.5

1. What is your goal as a farmer (fisheries/aquaculture/ farming land-based crops, animals, poultry) over the next five years?

Chuuk

a) "The lands that are covered with other kinds of plants will be filled with food crops."

Kosrae

b) "I hope for youths today to lessen their reliance on imported goods and make use of what we have in our surroundings since they are much healthier" – Kosrae FG1

c) "I hope we can set up a fish sanctuary where fish can congregate and where they can eventually spill out to other areas for us to catch" – Kosrae FG1

d) The MPAs are good, but near the shore and on the reef flats. I think we should set up protected areas outside the reefs or in the open water." – Kosrae FG1

e) "I think having more FADs for all villages, not just some, would be very helpful to avoid traveling far to fish. It would also be helpful to make FADs from local products that are available to us for no or little costs" – Kosrae FG1

f) "In the outer reef, I am starting to see the crown of thorns (COTs) again. I hope that we can put in place some control and eradication measures to slow down or eliminate the COTs." – Kosrae FG1

g) "We lost so many of the mooring buoys that were installed around Kosrae's reef at one time. Without these buoys, anchors are thrown into the reefs" – Kosrae FG1

h) "It is harder to find fish in some fishing grounds because of the increased sedimentation and marine debris in these areas. The fish do not want to live in habitats that are polluted or dirty. So, the goal is to clean our reefs so fish can return, and therefore fishing will become easier." – Kosrae FG1

i) "The goal is to use crops we already have on the island to produce different kinds of cooking recipes or expand knowledge in their product development." – Kosrae FG2
j) "I have been seeing how home gardening is a very effective practice that we have today. Even growing simple vegetables that we see in markets. It would be great if we could encourage women to do it. This will help lessen our dependence on imported goods." – Kosrae FG3
k) "My hope as a livestock farmer is that resources and financial assistance from the government are made available to support livestock farming and production of local livestock products to ensure food security for our people and to earn income from export." – Kosrae FG4

Pohnpei
l) "Processing fish jerky and export to neighboring states" – Pohnpei FG1
m) "Materials to build a chicken farm in order to have access to fresh meat" – Pohnpei FG2
n) "EPA assisted Pehleng community with materials and built pig pens, and the purpose of this project is to control waste management." – Pohnpei FG2
o) "Its important is the increase of price for local crops and local produce in market." – Pohnpei FG3
p) "Less or no dredging, mangrove plastic free" – Pohnpei FG3

Yap
q) "Minimizing soil erosion, clearing rivers, rain catchment" – Yap FG1
r) "Develop our water. Restock marine resources (i.e., aquaculture to restock, giant clams as food stock and filtering water)" – Yap FG7
s) "Grow and become a major market with a lot of agricultural products sold locally and for export." – Yap FG6

2. Do you see any change in the environment that is impacting your farming and food production? If so, what?

Chuuk
a) "The rainy season is not when it is supposed to be anymore. High tides no longer happen during the actual months of high tides. The season for when crops should be bearing fruit, like breadfruit, is out of sync." – Chuuk FG2
b) "People destroy the mangroves to sell, and there are fewer areas for fish to breed, and fewer homes for the birds and marine life." – Chuuk FG5

Kosrae
c) "All channels in the reefs around Kosrae are in bad conditions. This is caused, I think, by the use of laundry detergents and Clorox. When these chemicals come in contact with the corals, the corals die, and this can be observed in our reefs along with other marine debris like used tires and plastics." – Kosrae FG1
d) "Based on our experience in farming so far, one issue we face today is Invasive Species such as the Giant African Snail and White flies that harm our crops. This issue is still new to us. The generations before never got to experience it. Another environmental change is salinity from sea level rise. Not every plant can tolerate salinity, so with this, we notice the impact it does on our farm. We see fewer bananas and more. Not just with our bananas, we've experienced saltwater inundation a lot in other locations." – Kosrae FG2
e) "Development projects that are happening on the island are changing the nature of our land too. In some areas, the drainage system is blocked because of sedimentation from these developments. With blocked drainage system, excess water remains and are affecting the farmlands and farm production." – Kosrae FG4

Pohnpei
f) "Yes, increase in temperature. As the temperature increases, it makes the soil dry and not fertile enough to grow food crops" – Pohnpei FG1
g) "Sea level rise damaging taro patches" – Pohnpei FG1
e) "20 years ago, a woman could collect 20 [bottles of fish] in a day…Recently we can only collect 2-3 [bottles of fish] in a day" – Pohnpei FG1
f) "Heavy rains cause runoffs. When too much rain, this washes away the fertile soil, and this also affects the growth of the food crops." – Pohnpei FG1
g) "The changes of environment like the wind, temperature and heavy rain delays the fruit trees to bear fruit." – Pohnpei FG1
h) "Scarcity of water issues; unable to feed pigs, animals, and farms" – Pohnpei FG2
i) "Before people could walk during low tide to fish close at the shore, now people need to take boats to go further out to fish" – Pohnpei FG3
j) "Littering in the mangrove and at the shore, most people living close to the shore use the mangrove as their place for putting their waste like plastic, cans and even heavier things like washing machines" – Pohnpei FG3
k) "White flies (invasive). Some are experiencing problems from white flies on the food crops like sakau" – Pohnpei FG3

Yap
l) "Dry season is longer, and there is more extreme heat" – Yap FG2
m) "There is a great change in the environment, how we view it, and what it is to us. This is changing; this has become more commercial" – Yap FG5
n) "No. Producers call regularly, and we discuss their agriculture products, and if we want to purchase, we do so." – Yap FG4
o) "Seasons are different times and more extreme. Farmers and fisherman report it is harder to predict production levels and generally harder to farm and fish." – Yap FG6

3. Will the next generation have it easier, harder or the same to maintain the life and culture?

Chuuk

a) "There is no more culture with this current generation of people. So, it is going to be hard for them to understand the culture." – Chuuk FG4

Kosrae

b) "The future of our children depends entirely on how we prepare them today. If we do not lead by example today, then it will be very hard for the next generations. So, what we need to do is to have educational programs to help prepare our children for the future" – Kosrae FG1

c) "I think it can be both. It could be easier, and it could also be harder. It all depends on how we, as parents, prepare our children today to have a better and easier life in the future." – Kosrae FG1

d) "As adults and decision-makers in the family, we also need education. We need to make sure we know how best to take care of our environment before we can pass on the knowledge to our kids properly." – Kosrae FG1

Pohnpei

e) "Now, most families depend on imported food and goods. They consider rice, canned meat, and frozen meat as food. [Many years ago] most meals were local food like banana, breadfruit, or taro" – Pohnpei FG1

f) "Most families now have kids [working in] the US. These kids work in the US and send money back to their families…Such families need to be reminded that even though the kids will send money for living, the value of planting own food crops is important" – Pohnpei FG1

g) "In the past years, Pohnpeians only used food crops like yam, sakau, pig, or any food crops from the land for feasts, offerings to the Nahnmarki (Kings), or even in extended family gatherings. Now, Pohnpeians buy goods from the store to offer or to use for feasts" – Pohnpei FG1

Yap

h) "Harder. The youth and generation now are not paying attention to culture and tradition. Less are learning the local ways, and most are off-island" – Yap FG1

i) "Most likely harder as fewer are learning the traditional lifestyle and most are opting for living outside of Yap because it is an easier lifestyle." – Yap FG2

j) "Generally, all things are easier because of technology, but values and the Yapese identity is very hard to maintain going into a modern life of convenience" – Yap FG5

k) "Based on our ongoing projects, it would be easier. I have seen that the community wanted to be involved. So, I can see that they would help us in our projects and bring in the marine catch for us to sell. I am confident because of their involvement in our shared efforts." -Yap FG7

l) "Easier. If we keep our traditional knowledge and pass it on, there is no reason one would not have food. Starving and livelihood is a choice. Most of my production is zero cost, traditional cultivation, and maintenance. If we have traditional knowledge, it is easy now and would probably be easier in the future with more technology." – Yap FG3

m) "If we have this traditional knowledge, it is easy now and would probably be easier in the future with more technology." – Yap FG3

n) "For our market, producers say the supply is decreasing, especially in the ocean. Also, there are plenty of traditional reserves and Marine protected areas, so this makes it harder for fishermen." -Yap FG6

o) "Volume order such as container from outside." – Yap FG2

4. How do you want to improve your business?

Chuuk

a) "Need to continue to learn from those who know more in farming, for example, Department of Agriculture, Chuuk Women's Council, and Small Business Development Center." – Chuuk FG2

b) "We need to take care of what we benefit from by 1) limiting excessive fishing that causes waste; 2) we need to understand our current situation; 3) we need to understand how to operate a business; 4) we must abide by the laws" – Chuuk FG3

Kosrae

c) "We need to first make sure that enforcement of relevant environmental laws is effective" – Kosrae FG1

d) "Policies that have to do with improving our fishing practices will be very helpful" – Kosrae FG1

e) "[By] building my own fishpond where I can raise fish. I know that if I am able to successfully build and operate it, then a lot of people will try to do the same and raise their own fish for consumption" – Kosrae FG1

f) "Since the law requires seasoning harvesting of turtles from the wild, if I have my own farm, I can raise and harvest turtles from the farm anytime" – Kosrae FG1

g) "I also think that we need to implement laws that require seasonal harvesting for high demand food fish in Kosrae" – Kosrae FG1

h) "It will be very helpful if fishermen learn not to fish too much in one particular area but rather to change fishing grounds regularly in order not to chase away the fish into the deeper waters. As fishermen, we also need to avoid taking too much off the reefs at one time. We need to be mindful that others also need fish, and not just us." – Kosrae FG1

i) "For the agriculture, we should strengthen the usage of greenhouses and relocate to upper lands if possible. Advise farmers to manage their farm to make sure its sustainable and effective." – Kosrae FG2

j) "I think another way to help farmers who want to export their products is for the government to provide a cold storage facility to store produce for export." – Kosrae FG4

Pohnpei

k) "Stop catching fish in the Marine Protected Area (MPA)" – Pohnpei FG1
l) "Knowledge to grow local crops to adapt to climate change" – Pohnpei FG2
m) "[Workers' wages] need to increase" – Pohnpei FG3
n) "People need to stop fishing with nets so we can still have more fish and be able to sell" – Pohnpei FG4
o) "If Pohnpei state government can look for opportunities from outside that can help support the fisherman on how to process the fish meat and ways to export." – Pohnpei FG1
p) "Fish price needs to increase since the fuel is very expensive." -Pohnpei FG3

Yap

q) "[Teach business as part of the] school curriculum" – Yap FG1
r) "Technical assistance in helping with organizing projects" – Yap FG2
p) "Finding a synergy through a co-op can help all businesses and agriculture activities in the community" – Yap FG5
s) "Make improvements to the port" – Yap FG7
t) "Work together. If all the commercial fisheries activities were linked on the island, then we would have a fully functional supply chain, but each organization is compartmentalized and divided currently" – Yap FG7
u) "I would like to know more about Value-added and niche markets. How can I keep production levels the same but make more money?" – Yap FG3
w) "More business in Guam as locally there is less money" – Yap FG6

5. What resources would be helpful to help improve your business?

Chuuk

a) "We need those who have the skills and knowledge for new and improved technology. If we plan to invest in marine life, then we will need the tools and equipment, the people who will lead the work, and first of all, we will need funding." - Chuuk FG5

Kosrae

b) "Funding is definitely a resource we need. We need funds to strengthen aquaculture activities in Kosrae as they do in Palau. In Palau, they do hatchery and rearing of fish as well as turtles. We need to do the same here in Kosrae." – Kosrae FG1
c) "I think capacity training for youth is a good way to help better improve our farming and fishing. For example, you catch a fish and use every part of that fish instead of just using some and then putting the rest to waste. Similar to farming, we train these youth on how to plant crops, cook its product and then make seeds on their own, like a recycling process. One problem we experience here on the island is the shortage of seeds. It is either none or stick to the ones that we prefer the least. So, if we do this capacity training, we can use every part of a cabbage from planting, cooking, eating it, extracting the seeds, and replanting it. Nothing goes to waste." – Kosrae FG2
d) "For those of us whose farms are located far from home, we need better access roads. When it is difficult to travel on access roads because of the poor condition, we become discouraged." – Kosrae FG3
e) "I have a dry-litter piggery (DLP), but I am struggling to operate this DLP because of the limitation of wood chips. I need a woodchipper, or at least I need to have access to a woodchipper." – Kosrae FG4
f) "Price Control Commission should do their part in controlling businesses from practicing price gouging." - Kosrae FG4

Pohnpei

g) "Loan or credit" – Pohnpei FG1
h) "Alternatives for fisherman to be able to sell fish like tuna during seasons" – Pohnpei FG1
i) "Policies; to enable farmers to name our price when selling local produce" – Pohnpei FG2
j) "Public transportation" – Pohnpei FG2
k) "Access to export" – Pohnpei FG2
l) "Training/education" – Pohnpei FG2
m) "Supplies and materials" – Pohnpei FG2
n) "Human resources (employee)" – Pohnpei FG3
o) "Food processing tools" – Pohnpei FG3
p) "Since the soil is not good like before, we need training for creating our own fertilizer." – Pohnpei FG4

Yap

q) "Technology and office computer, equipment, supplies to start communicating worldwide to source all that can help." – Yap FG2
r) "Council of Pilung (COP) member" – Yap FG5
s) "Generally, the whole operation would benefit from a dock renovation and improvements." – Yap FG7
t) "Logistics and paperwork assistance to have a regular customer in Guam." – Yap FG6
u) "Information, computer, YouTube. I don't have a computer, but I do have a phone, so more information about value-added products or niche markets and maybe a consultant that can help with some of these questions." – Yap FG3

6. What are the greatest limitations or obstacles to growing your business/making more money?

Chuuk

a) "At the moment, the produce from our gardens are not being sold." – Chuuk FG2

Kosrae

b) "Cost of fuel has increased significantly along with fishing gears and supplies. These prices seem to increase every time there is a new shipment of supplies into Kosrae. In the past, I could afford to fill up three fuel tanks when going out trolling. Today, I can only afford one tank due to the increase in price of fuel." – Kosrae FG1

c) “We harvest small fish today can also create limitations and an obstacle in the future in terms of fishing for good sized fish. If you catch a small fish, let it go.” – Kosrae FG1
d) “Some greatest obstacles we encountered are policies/ restrictions from our government. One example is you make an appointment for an equipment to clear drainage, you have to go through a very long process to get it done. Since most clearances require CT owners to sign off on it, with that, most CT’s requires signatures from people living abroad, who go through the process of acquiring signature on behalf of the deceased even if our lands are flooded. I really think there should be waived rights for situations like this. This is why I think it should be improved.” -Kosrae FG2
e) “When there are too many government requirements, it discourages people from engaging in developments.” -Kosrae FG4
f) “Invasive species are also an obstacle. Invasive can take over your farm if you don’t pay close attention to it, and it could be quite discouraging when you lose your crops and vegetables.” – Kosrae FG4
g) “One of the obstacles I face in raising my livestock is the limitation of local feed options. Since prices of imported feed are high, I try to buy local pig feed, but there is a shortage of supply too.” – Kosrae FG4

Pohnpei
h) “As a fisherman nowadays, it’s harder to catch fish at closer sites like near shore; people need to drive out to the reef to catch more fish” – Pohnpei FG1
i) “Cost more to catch fish for sale. The cost of running a business is too high. Low cost of selling fish due to low-income generation from buyers. As a fisherman, not enough income generation to maintain the fish market.” -Pohnpei FG1
j) “Lack of planting materials” – Pohnpei FG2
k) “Ladies focus more on tailoring because of the high demand, therefore not assisting with farming” – Pohnpei FG2
l) “Markets refuse to buy due to condition of crops” – Pohnpei FG2
m) “For sakau there are some people that are poaching or get sakau from other lands with no permission. Such things cause a person to lose a lot and do not have the energy to move forward with the sakau farming.” -Pohnpei FG3
n) “Every new shipment after a month or less the bigger stores increase the price of the stock (food and everything)” – Pohnpei FG3
o) “We can plant more sakau and yams or other crops, but sometimes almost half of them will die” – Pohnpei FG4

Yap
p) “Culture and tradition, limitations of women and men, levels of society” – Yap FG1
q) “Lack of communication between community and community especially when the community has not organized, and when a community is organized, harder to understand each other because different goals, understand, perspective.” – Yap FG1
r) “9-5 jobs. Jobs vs. traditional lifestyles living in the village and contributing to the community on a daily basis” – Yap FG5
s) “Bureaucracy…I feel like every meeting they say that fisheries are a priority area, but the action doesn’t follow suit with that statement” – Yap FG7
t) “Transportation, bad roads and taxis” – Yap FG3
“Ordering. Prefer off-island ordering. Not enough on the island to order and grow.” – Yap FG4

7.What type of public policies should be put in place that would strengthen or expand your business?

Chuuk
a) “The policy on paying for a business license must be strengthened. All must pay for a business license because the reality is that there are those who do not pay for a business license, yet they are still operating a business.” – Chuuk FG4

Kosrae
b) “Policy requiring mesh size for gill nets. Today we import gillnets with mesh sizes that are about 1 to 2 cm in size, and these nets can catch small-size fish. This size of gillnets should be banned from being imported into Kosrae. Those that are about an inch or more are better” – Kosrae FG1
c) “We should also control the size of lift nets” – Kosrae FG1
d) “I think that we should put in place a policy or a law that delineates areas where fishing boats can travel, especially outside the reef flats. This is to prevent potential accidents and collision with spear fishermen” – Kosrae FG1
e) “I think that we need to strengthen the enforcement of our existing laws and start prosecuting offenders so that others will avoid breaking the same laws and learn to comply with them.” -Kosrae FG1
f) “I was wondering if we can maybe implement new laws to have seasonal and rotational planting and harvesting of certain fruits/ vegetables just like KIRMA did with turtle and pigeon harvesting. Or a better way would be to assign groups to plant until harvest certain fruits and veggies and rotate until everyone can have a chance to plant and harvest. This will give us an idea to know the best time to plant certain fruits or vegetables.” - Kosrae FG3

Pohnpei
g) “Price control policy” – Pohnpei FG1
h) “Credit access. Need a policy in place that allows fishermen and farmers to access loans. A policy that can address the fish price when there is plenty of fish and less fish. For instance; when there are plenty fish bring to the market, market buy at a lower price like $1 per pound

and sell it at the same price like $2.95 or $3.00." - Pohnpei FG1
i) "Policy that can help with trading or exporting local produce to neighboring states and other countries" – Pohnpei FG3
j) "Policy to increase hourly [wages] in Pohnpei so workers can afford the price of everything on the island especially food, fuel and electricity" – Pohnpei FG3
k) "Fishing policies need to be enforced" – Pohnpei FG4
l) "Littering policies need to be enforced in the community" – Pohnpei FG4

Yap
m) "Liaison solution" – Yap FG1
n) "Resolve issue of lack of flow of communication with the community, across communities, and to the government" – Yap FG1
o) "Conflict resolution" – Yap FG1
p) "Minimize misunderstandings and gossip" – Yap FG1
q) "Organized communication plan" – Yap FG1
r) "Partnership and better communication between all gender-related organizations on the island, in the government, and within FSM" – Yap FG2
s) "Immediate one would be related to illegal fishing and specifically foreigners on island fishing. At least regulate or register for a license or something, so we all have papers to fish in our waters. Additionally, this affects local fishermen and their livelihood." – Yap FG7
t) "Importation vs. Exportation. Tax importation and make export easier and have a reward for businesses that are connecting to Guam economy or other and bring money on the island." – Yap FG6
u) "Sometimes there is a lot of activity in the village, but there is no follow through. I want more information about Yap government funding and how it is helping small-scale village producers (local & export), the agriculture sector at the community level, and preserving culture and tradition. I want a comparison of these activities and plans with previous plans and future plans." – Yap FG3
v) "Tax importation and make exportation easier and have rewards for businesses that are connecting to [outside economies] and bringing money to the island." – Yap FG6

8. How does climate change affect your business? How do you think it will in the future?

Kosrae
a) "The ocean currents are very strong nowadays and it is because of climate change. There is also more rain now than before. The changes we see today are really affecting our fishing, and I think it will continue to worsen in the future." – Kosrae FG1
b) "I do not know if climate change contributes to the fact that we see new species of mammals in our waters. Some fishermen have recently sighted what looks like Killer Whales in our territorial waters. We have never seen these kinds of whales in our waters before, but now we are seeing them." – Kosrae FG1
c) "I participated in a meeting in Palau some years ago, and one of the reports presented in that meeting indicated that because of climate change, the temperature of the ocean water is changing. And with this change, it was expected that pelagic fish such as tuna and skip jacks would likely migrate into our waters of Micronesia. So, perhaps climate change would not really affect trolling. But, when it comes to nearshore, we are impacted greatly. With increasing heat from the sun, small fish on our reefs' flats are dying. We need to seek advice from experts to help us prepare for and adapt to the impacts of climate change." – Kosrae FG1
d) "In some parts of the world, they recycle excess water from flowing directly into the marine environment. At times, we experience water shortages. Thus, recycling excess water can help provide water for household uses." – Kosrae FG1
e) "Heavy rains are affecting my farm greatly and damaging my crops. I see this mainly with my cucumbers." – Kosrae FG4
f) "Inland flooding is a problem in Malem." -Kosrae FG4
Pohnpei
g) "Immaturity of crops and [in the future] will continue to do so" – Pohnpei FG2
h) "Community-based cleaning projects need to implement to keep the ocean clean, so the young generation can still go fishing in the future." -Pohnpei FG4
Yap
i) "Tidal surge" – Yap FG1
j) "Extreme heat" – Yap FG1
k) "Ocean is reclaiming land through erosion. If there is no land reclamation or maintenance, then the ocean will come inland and turn areas near shoreline back into the ocean" – Yap FG2
l) "There is a lot of migration of people from the outer islands to the main island because of the move to 9-5 jobs" – Yap FG5
m) "Unpredictable weather, shifting seasons, changing conditions"– Yap FG5
n) "Weather is unpredictable. We go out weekly, but scheduling is shifting due to the weather window. We can plan with NAOO Yap Branch and other forecasting services. But out there is different. The forecast to reality is different. Luckily, we have some local captains that use their knowledge of the weather and our forecast to make a beer guess of the weather window. They are successful most of the time, but this is just the weather window. It does not mean there is fish. That is another shift. A shift in the location and pattern of weather to fishing." – Yap FG7
o) "Yes. But there are ways to maintain your crop/any crop to minimize its effects. Also, you want to have multiple products. Sometimes rope making is the best market; other times it'll be taro, and other times, it will be betelnut. You have to be able to shift crops/activities and maintain all your gardens (traditional best practice/work smarter) so that you can pull one plant from many gardens to make your weight or quota." – Yap FG3
p) "Climate affects my business. Hard to find how but generally, between climate change, Marine Protected areas, and Traditional Reserves, it is hard to stop fisherman's livelihood. Now more are going out further and spending more on gas." – Yap FG6

q) “Open ocean fishing is the only way to continue being a fisherman, and there has been a shift from inner reef fish to the barrier reef and outer reef fish or submerged reef fish. Fishermen can catch bigger fish and get to the weight they want faster but it is getting harder to keep regular quotas because of climate” – Yap FG6

9. What are the most important trainings you need to improve your production and farm?

Chuuk

a) “There are many kinds of important ways of learning about farming. There is a need to learn about saltwater-resistant taro. There is a need to learn about how to prevent heavy rainfall in our garden areas. There is also a need to learn which plants to plant and cultivate during which months.” – Chuuk FG2

Kosrae

b) “I think that we need training on preservation techniques for fish products” – Kosrae FG1
c) “I think that we also need training to be able to identify when each species of food fish or marine organism such as crabs are spawning so that we can protect them from being harvested during spawning seasons” – Kosrae FG1
d) “I think we also need training to be able to differentiate between male fish from female fish. This way, we can be a bit more selective and only catch the male fish while leaving the female fish to reproduce more.” – Kosrae FG1
e) “Training on how to make local FADS (fish aggregation device) that use only local materials that are available on the island” – Kosrae FG1
f) “I think we need trainings to control and manage to marine invasive species such as Crown of thorn, catfish, and others in our waters today.” -Kosrae FG2
g) “I want training in composting and in making local pig feed and fertilizer.” – Kosrae FG3
h) “Training for farmers to be able to identify rich and fertile soils for farming as well as the right mixes of sand, soil, and fertilizer for our farms.” – Kosrae FG4

Pohnpei

i) “Aquaculture: fish, invertebrates, and mangrove crabs” – Pohnpei FG1
j) “Financial management for farmers and fisherman” – Pohnpei FG1
k) “Training on how to grow crops due to the current situation” – Pohnpei FG2
l) “Training on how to operate a business” – Pohnpei FG2
m) “Since in Pohnpei there are lots of pigs, it will be great to have training on how to make pork and sell it” – Pohnpei FG3
n) “Training can be ways to process local food crops from spoiling or rotten.” – Pohnpei FG3

Yap

o) “Technical assistance training” – Yap FG1
p) “How to adapt agriculture products to climate change” – Yap FG1
q) “Grant writing and project management” – Yap FG2
r) “Consultant on digital e-commerce and how to market and sell traditional Yapese wares.” – Yap FG2
s) “Training in hatchery, especially in the early stages of the process. We have some basic training, but we can always do better” – Yap FG7
t) “Assessment of our waters and stock. Especially when we are doing a project, we need to have that assessment before and after the project” – Yap FG7
u) “I want to learn small-scale aquaculture, i.e. do a freshwater shrimp farm/eel and conduct in synergy with taro patch activities.” – Yap FG3
v) “The situation I am in is I am a middleman for exploitation activity that is most likely not sustainable but is hard to switch away from and maintain growth. On land, the weather is the weather, but maybe some aquaculture training would help to shift land production into the water as there is more water.” – Yap FG6

A4: List of Key State Partners and Abbreviations

Key Partner Contributors: Government, NGOs and other organizations.

Chuuk
Chuuk State Government
Chuuk Women's Council (CWC)
1627 Nepukos Street
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Kosrae
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Pohnpei
Pohnpei State Government
Dept. Resources & Development

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Yap
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Yap Catholic High School (YCHS)
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College of Micronesia Land Grant Cooperative Research & Extension (CRE) of the FSM

COM= College of Micronesia

CRE= Land Grant Cooperative Research & Extension (CRE)

CSP= Conservation Society of Pohnpei, Pohnpei

CWC= Chuuk Women's Council, Chuuk

DCO= Disaster Coordinating Office, Chuuk

DOA= Department of Agriculture, Chuuk

KCSO= Kosrae Conservation and Safety Organization, Kosrae

YCHS= Yap Catholic High School, Yap

A.5. List of References Cited as well as Literature, Relevant Documents and Reports Collected and Reviewed as Part of the GCF FSM Baseline Survey for Climate Resiliency Among Farming Households

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