

Participatory Futures Project

This paper highlights talking points from a podcast produced by Selena Scola: Fall 2022

Prompt: What would you change about humanity to ensure that we all survive and thrive in the future?

Food Insecurities And Uneven Food Distribution

Research Summary: Research shows a strong correlation between food insecurities, racial discrimination, those living in rural areas, those living below the poverty line, and or experiencing unemployment. Local and government food programs, land programs, and other incentives have been implemented globally with moderate success, though there is room for further improvement. NGOs and foreign services interested in providing services must be aware of preexisting services successfully addressing prevailing issues and understand the core problems these communities face at a local level to provide effective solutions. Surveys have been a reliable tool for collecting data to serve and assist underserved communities.

Access To Clean Water

Research Summary: Water scarcity, distribution, and guaranteed access to clean water are complex global concerns. The leading causes of water scarcity are climate change, water mismanagement, pollution, poverty, and population growth.

Climate change and natural disasters, such as flooding and droughts, pollute portable drinking water and create excess demand on the water supply to sustain global and local food security. Water mismanagement and water withdrawal from rural pipelines that distribute water to urban areas for domestic and commercial use negatively impact the ecological environment by draining rivers, wetlands, lakes, streams, and groundwater, thus creating sinkholes and disrupting wildlife habitats.

Outside of the developed world, millions of people are starving and are socioeconomically disadvantaged, living in impoverished conditions because they cannot afford to build primitive portable water storage facilities for water collection and agricultural needs.

Fortunately, we have a few options to help us navigate the complexities of this landscape. Water recycling and reuse efforts reuse and repurpose water for sustainable agricultural practices and commercial use. Technology such as water desalination and atmospheric water harvesting makes inaccessible water accessible. Installing rainwater collection structures provides urban areas with additional portable water, reducing the need for and impact of water withdrawal from rural areas —lastly, and best for long-term sustainability, is reforestation to combat the harsh impacts of climate change.

Creating And Delivering Sustainable Energy Supply

Research Summary: In all transparency, hybrid systems (gas/oil and renewables) are best until we figure out better power storage solutions, have reliable microgrids, and mitigate other outstanding risks such as (local/global) weather and security. To make the transitions globally, governments must develop regulatory frameworks and identify synergies between the sectors to create competitive advantages for specialized industry-specific products and services. This transition will increase employment and economic growth globally over time.

Interconnected energy systems deliver crucial societal resources, such as food and water. Establishing clear linkages between sustainability and resilience is necessary, as well as quantitative measures to define the relationships in a cost-competitive manner. Designing resilient energy supply chains is critical in the transition toward sustainable energy. Using established best practices in multi-scale processes allows flexibility to adapt to disruptions. Repurposable and modular units allow resilience-weighted profit KPIs to navigate potential risk while comparing several alternative energy supply chain designs for sustainability, safety, reliability, and resilience performance. Data-driven methodologies and continuous re-engineering are needed for decision-making processes to identify accurate forecasting models; this may be costly in the short term, though it will yield returns for stakeholders and clients in the long term.

Internet Access And Connectivity

Research Summary: The Internet is the foundational cornerstone upon which modern society stands. It facilitates digital services, business ecosystems, and economic growth, creating employment opportunities. Therefore, unreliable or unavailable Internet access has a negative impact and costly consequences on economic growth, employment, education, and access to health and wellness resources.

In rural or impoverished countries, there is little to no incentive to invest in infrastructure to improve Internet access as these regions are not generating value in the form of goods and services that directly or indirectly impact global or regional economic wealth creation.

Internet and infrastructure upgrades become a priority in rural or low-economic-status communities when global suppliers are presented with profitable investment opportunities, coupled with high growth potential for large-scale facilities that offer cost-effective energy solutions in a politically favorable climate with relaxed enforcement of ecological or environmental protections.

Infrastructure investments by large service-sector firms usually come with trade-offs that degrade local communities while exploiting residents and the natural resources of nearby communities. Often the employment opportunities consist of low-paying hourly jobs such as manual labor, grueling digital services jobs, or gig economy jobs laden with exploitative labor practices creating byproducts that pollute the natural environment.

Starlink is the most notable company working to create a connected world with reliable, reasonably priced high-speed internet access. Starlink's internet service enables remote communities to access health and educational services, remote employment opportunities, and global online communities.

To exist in a world where everyone thrives and survives, it is critical for local and global governments' policy initiatives to be explicitly designed to reinforce resilience, incentivize climate and environmentally-friendly energy-efficient practices, and optimize for disaster recovery. When implemented, unbiased and uncompromised initiatives such as regulatory compliance policies, Impact Benefit Agreements (IBAs), environmental and social impact reports, digital and field surveys, and dedicated focus groups have the transformative power to ensure local residents of rural communities and remote countries thrive.

This authentic commitment to a transparent forward-thinking digital future will create reliable revenue while providing industry stakeholders with accurate information to build flexible and profitable models that directly benefit from their investments in everyone's future.

Citations

Food Insecurities

- Dejene, Melisew , and Cochrane, Logan . "Safety nets as a means of tackling chronic food insecurity in rural southern Ethiopia: what is constraining programme contributions?" *Canadian Journal of Development Studies*, 2021, <https://doi.org/10.1080/02255189.2021.1914559>
- Odoms-Young, Angela Dr. "Examining the Impact of Structural Racism on Food Insecurity: Implications for Addressing Racial/Ethnic Disparities." *HHS Author Manuscripts*, 2021, <https://doi.org/10.1097/FCH.000000000000183>
- KENDALL, ANNE, et al. "Relationship of Hunger and Food Insecurity to Food Availability and Consumption." *Journal of the American Dietetic Association*, vol. 96, no. 10, 1996, pp. 1019-1024, [https://doi.org/10.1016/S0002-8223\(96\)00271-4](https://doi.org/10.1016/S0002-8223(96)00271-4)

Water

- Williamson, Claudette. "What Causes a Lack Of Clean Water?" Oasense, 28 Jul. 2021, www.oasense.com/post/what-causes-a-lack-of-clean-water .
- Zhou, Qing, et al. "Impacts of water scarcity on socio-economic development: A case study of Gaotai County, China." *Physics and Chemistry of the Earth, Parts A/B/C*, vol. 101, 2017, pp. 204-213, <https://doi.org/10.1016/j.pce.2017.03.009>

Sustainable Energy

- (Zarnikau, Jay, et al. "System Energy Assessment (SEA), Defining a Standard Measure of EROI for Energy Businesses as Whole Systems." 2011, <https://doi.org/10.3390/su3101908>
- Luthra, Sunil, et al. "Adoption of smart grid technologies: An analysis of interactions among barriers." *Renewable and Sustainable Energy Reviews*, vol. 33, 2014, pp. 554-565, <https://doi.org/10.1016/j.rser.2014.02.030>
- Elavarasan, Rajvikram, et al. "A State-of-the-Art Review on the Drive of Renewables in Gujarat, State of India: Present Situation, Barriers and Future Initiatives." *Energies*, vol. 13, no. 1, Dec. 2019, p. 40. Crossref, <https://doi.org/10.3390/en13010040>
- Lund, Henrik, et al. "Smart energy Denmark. A consistent and detailed strategy for a fully decarbonized society." *Renewable and Sustainable Energy Reviews*, vol. 168, 2022, p. 112777, <https://doi.org/10.1016/j.rser.2022.112777>
- Chrisandina, N.J., et al. "Multi-scale integration for enhanced resilience of sustainable energy supply chains: Perspectives and challenges." *Computers & Chemical Engineering*, vol. 164, 2022, p. 107891, <https://doi.org/10.1016/j.compchemeng.2022.107891>

Internet access

- Sovacool, Benjamin, et al. "Making the internet globally sustainable: Technical and policy options for improved energy management, governance and community acceptance of Nordic datacenters." *Renewable and Sustainable Energy Reviews*, vol. 154, 2022, p. 111793, <https://doi.org/10.1016/j.rser.2021.111793>
- VOGELS, EMILY . "Some digital divides persist between rural, urban and suburban America." Pew Research Center, 19 Aug. 2021, www.pewresearch.org/fact-tank/2021/08/19/some-digital-divides-persist-between-rural-urban-and-suburban-america
- DiMaggio, Paul, et al. "Digital inequality: From unequal access to differentiated use." *Social inequality* (2004): 355-400.
- Research 4: "FSET - SpaceX Starlink Installation in Pikangikum." YouTube, uploaded by Upriver Media Inc., 18 Mar. 2021, www.youtube.com/watch?v=I10s9VsNnH0
- ("FSET - SpaceX Starlink Installation in Pikangikum" 0:52:)