



TRNP MANAGEMENT EFFECTIVENESS EVALUATION WORKSHOP

3-4 DECEMBER 2020



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PRELIMINARIES

The participatory evaluation was held through Zoom, with participants joining the online meeting at 8:45am. The program started with a prayer led by Ms. Anatalia Liu, HR/Budget Officer, TMO, followed by welcome remarks from PASu Angelique Songco, and introduction of the participants.

Ms. Songco gave a brief introduction of the Management Effectiveness Evaluation, she simplified the activity as responding to the question, 'are actions achieving the goals and objectives for Tubbataha?' She added that MEE is conducted every two years with 2018 as the most recent one. She thanked the participants and noted that some of 7 of those present were also in the last MEE.

Ms. Songco explained the objectives for the park:

- to protect the biological and ecological balance of Tubbataha;
- to provide benefits to communities; and,
- to inspire other people to protect the marine environment.

She added that for the office to fulfill those objectives four management programs are implemented:

- conservation management
- conservation awareness,
- ecosystem research and monitoring,
- and sustainable resource management.

Ms. Songco articulated that the evaluation is being done to learn new things and new ways of doing, to be able to adapt, to diagnose where the weak points are, and to establish accountability. She then introduced the three groups of indicators of effectiveness - Governance, Biophysical, and Socio-economic. She mentioned that these are selected by a multi-sectoral body. In some of the 13 MEE workshops conducted since 2002, the indicators went through several changes as evaluators sought more relevant and realistic indicators that are measurable. She said that the answers to the biophysical indicators will tell if the management maintained the biological and ecological balance of Tubbataha, while the socio-economic indicators could measure if Cagayancillo benefits from the protection of the Park. The measuring of governance indicators could help determine the efficacy of the management structure to achieve the first two objectives.

Ms. Songco said the TMO is seeking the help of the participants in measuring the indicators because they can look at the situation with new eyes and therefore bring new perspectives. She shared a quote from Alanna Shaikh, a global health expert, about the current situation the world is facing.

Ms. Shaikh said that this pandemic will not be the last major outbreak we are going to see. It is related to climate change; a warmer climate is more hospitable to viruses and bacteria. We are playing a huge part in it. Making remote places less remote will result in more outbreaks. Therefore, it is so critical to maintain the natural systems. She closed by saying that evaluating management actions we can learn what works and what does not work so that we can protect the wilderness that is Tubbataha.

The list of participants in the three groups of indicators is below.

Governance:

1. Mr. Deo Gabinete, M/Y Zamerdius
2. Mr. Dirk Harring, M/Y Azalea
3. Mr. Dino Pangione, M/Y Sakura
4. Ms. Lydia & Frank Kessner, M/Y Narayana
5. Ms. Karen Chan, Private Diving Sector
6. Ms. Cristy Barrameda, PCSSD
7. Col. Louie DS Villanueva PA (GSC), WESCOM
8. Ms. Marlyn Cruz, PGP
9. Ms. Ria Salazar, DENR
10. LCDR Severino Destura PCG, CDG - Pal
11. Ms. Angelique Songco, TMO
12. Ms. Anthea Kristha Valenzuela, TMO
13. Ms. Elizabeth Ordas, TMO
14. Ms. Anatalia Liu, TMO

Biophysical:

1. Dr. Teri Aquino, MWWP
2. Dr. Roger Dolorosa, WPU
3. Dr. Ronald Ona, PSU
4. Ms. Ma. Elena Basaya, BFAR
5. Ms. Ma. Retchie Pagliawan, TMO
6. Ms. Gerlie Gedoria, TMO
7. Mr. Rowell Alarcon, TMO
8. Ms. Edora Precinillo, TMO

Socio-economic

1. Ms. Jean Beth Jontilla, WPU
2. Mayor Sergio Tapalla, LGU - Cagayancillo
3. Mr. Jotham Tapalla, LGU - Cagayancillo
4. Mr. Narciso Magbanua, LGU - Cagayancillo
5. Mr. Aris Bonales, LGU - Cagayancillo
6. Mr. Joseph Padul, LGU - Cagayancillo
7. Mr. Arnold Buñag, LGU - Cagayancillo
8. Ms. Marivel Dygico, WWF - Philippines
9. Ms. Joan Pecson, WWF - Philippines
10. Ms. Sheila Mae Oriente, WWF - Philippines
11. Ms. Mary Grace D. Barber - TMO
12. Ms. Emmalyn N. Tura - TMO
13. Ms. Rose Lyn Magbanua - TMO
14. Ms. Lyka Mae Irang - TMO
15. Mr. Karl Joriel A. Amurao - TMO

Presentation of Results

In the afternoon of the second day, 4 December 2020, after all the groups were finished with their evaluation, the results were presented to TMO staff. The rating scheme used was:

+ positive change

- negative change

0 no change

? No data

Ms. Elizabeth Ordas reported the results for the governance group, saying that it decided on a score of eight out of the eight indicators measured. Ms. Retchie Pagliawan from Biophysical group reported that of the 48 sub-indicators, 18 were positive, 1 negative, 10 unchanged, and 19 had no data. Ms. Val Ungson from the socio-economic group reported that out of seven (7) indicators measured last 2018, only four (4) were retained. These four are the most relevant in helping determine the impact of the management of Tubbataha in Cagayancillo. Three indicators were rated positive and 1 had no data. The details of the results are presented below.

GOVERNANCE INDICATOR MATRIX

Goals	Objectives	Governance Indicators	2020 Results	Remarks	Evidence
1. Resource use conflicts managed and reduced	User conflict managed and/or reduced: 1) within and between user groups, and/or 2) between user groups and the local community or between the community and people outside it	1. Level of resource conflict	+		Proposals for funding, communications with DBM/AFP/ Dive operators Partnerships w/ other agencies eg. PDRRMO
2. Effective management structures and strategies	Decision-making and management bodies present, effective, and accountable	2. Existence of a decision-making and management body	+	Debriefing with dive operators conducted in June 2019 LGU rangers deputized	Dive Operators' Meeting Report 19 July 2019 TPAMB Reso. 20-019
3. Effective management structures and strategies maintained	Management planning implemented and process effective	3. Existence and adoption of a management plan	+	Following-up decision on TMO institutional standing with DBM	Letters to DBM, Office of the President
4. Effective legal structures and strategies for management maintained	Existence of adequate legislation ensured National and/or local legislation effectively incorporates rights and obligations set out in International legal instruments Enforceability of arrangement ensured	4. Existence and adequacy of enabling legislation	+	RA 10067 is adequate for the protection of TRNP. Park not mentioned in Cagayancillo CLUP because Tubbataha is now under the jurisdiction of the national government	RA 10067
5. Effective management structures and strategies maintained	Human and financial resources sufficient and used efficiently and effectively	5. Availability and allocation for TRNP administrative resources	+	Follow up sea ambulance/ hyperbaric chamber	Records and letters
6. Management plan compliance by resource users enhanced	Willingness and acceptance of people increased to behave in ways that allow for sustainable management	6. Degree of interaction between managers and stakeholders	+	Diving industry should be represented in the TPAMB to improve interaction	

7. Effective legal structures and strategies for management maintained Management plan compliance by resource users enhanced	Enforceability of arrangement ensured Surveillance and monitoring of coastal areas enhanced	7. Clearly defined enforcement procedures	+	Enforcement procedures clear, weather conditions limit ability to patrols	
		8. Degree of information dissemination to encourage stakeholder compliance	+	Conduct safety training for diving professionals/ Identify a brand ambassador for Tubbataha Use hashtags #reefsforkeeps, #tubbatahareefs	an online survey of past guests; a discussion on training for dive operators to improve the degree of information dissemination; a brand ambassador for Tubbataha; use of hashtags

GOVERNANCE NARRATIVE

To determine the rating to be given for each indicator, guide questions gleaned from the manual, *How is Your MPA Doing?*, were selected and administered to respondents. Responses by dive operators, members of the TPAMB, and information from TMO files were used to answer the guide questions. The answers were then validated during the online workshop and ratings were agreed upon with the participants.

1. Level of resource conflict

Conflict Assessment Matrix

Conflict Areas	Issue	Stakeholder/ Leader	Time Period	Intensity 1-low 2-medium 3-high	Scale 1- localized 2- national 3- international	How/who managed/ resolved
Ex. Fishing	Potential conflict	Fisherfolks	Present-ongoing	3	2	TMO
Shipping/Local & Intl.	Risk of pollution	Shipping companies	Present-ongoing	2	3	DFA
Tourism	Agrounding	Business sector	2019	3	1	Dive operator/ TMO
	Non-payment/ late of fees	Business sector	2019	2	1	Dive operator/ TMO
	Late Permit to Operate	Business sector	2019	2	1	Dive operator/ TMO
Conflict with the other agencies	Administrative issue	TMO	Present-ongoing	2	2	DOJ/National government Agency
Funding	No secure funding	TMO/Tourism/National govt		3	3	National govt. for funding/ LGU (PGP)
Security	Threat of hostage-taking	Tourism/AFP / Enforcers	Ongoing	2	AFP	
COVID	Tourism/TMO	2020-onwards	Ongoing	3	Dive operator/ TMO/LGU/ National govt.	

The following additional conflicts and issues were brought up by the participants and added to the 2018 matrix.

- **Merchandising.** Ms. Karen Chan inquired if merchandising can be considered a conflict. Ms. Marlyn Cruz of PGP agreed that it would be a conflict for TMO to sell merchandise because it is considered to be a government office. Government agencies are not allowed to generate income from sales. However, she stated that since merchandising is now in the form of donation and is managed by an NGO, it is no longer considered as a conflict.
- **Funding.** The absence of regular government allocation/appropriation for the conservation of Tubbataha was identified as an issue. It is a conflict area because TMO will be unable to continue its work unless stable funding is received. The PASu reported that tourism revenues for 2020 was only around ₱700,000.00 and were it not for savings generated in the past years, the Office will be unable to operate in 2021. Mr. Dino advised that TMO must seriously consider lack of funding and loss of tourism revenues and come up with some sort of survival plan. The PASu reported that TMO is finding ways and looking for new partners to address this issue.
- **Security.** Mr. Dino Pangione of M/Y Sakura suggested that security be considered as a conflict issue as it affects the dive industry, the AFP, and the rangers. He recommended that proactive security measures be implemented. Sir Villanueva of WESCOM agreed and explained that the AFP is responsible for security. He also mentioned that WESCOM is implementing a security protocol to deter hostage-taking and the like.
- **Pandemic.** Mr. Deo Gabinete of M/Y Zamerdius stated the pandemic as a conflict affecting TMO and the tourism industry. He said that the pandemic will have negative impacts on the permitting and operation of vessels. The PASu agreed that the pandemic will cause major changes in operation but TMO will have no other option but to follow guidelines issued by the government regarding tourism operations.

Rating: A positive (+) rating was agreed upon the grounds that TMO was able to find solutions to the conflicts in coordination and partnership with other agencies and sought assistance from other agencies for the conflicts it is unable to respond to.

2. Existence of a decision-making and management body

Checklist of Roles and Functions of the TPAMB

Roles and Functions	Are roles and functions carried out? (Yes/No)	If yes, how? If no, why not? Evidence
Decide matters relating to planning, resource use and protection, and general administration of the area in accordance with the Management Plan	Yes	Management Plan Annual Work and Financial Plan
Approve budget allocations, proposals, work plans, action plans, guidelines for management of the TRNP in accordance with the Management Plan and its policies	Yes	Annual Work and Financial Plan
Establish productive partnership, with national and local agencies, local government units, local communities, the academe, non-governmental organizations, and such other institutions to ensure the conservation and management of the TRNP;	Yes	The TPAMB is a partnership; It is composed of 21 agencies, national, local, government, non-government Partnership with scientists and foundations
Initiate the implementation of the delineation of the boundaries of the TRNP	Yes	Park boundaries delineated in NAMRIA Chart No. 4357
Issue rules and regulations, including the imposition of penalties, in pursuit of the conservation, preservation, management and sustainable use of the TRNP	Yes	Rules in RA. 10067 and IRR
Ensure the implementation and enforcement of laws, rules and regulations, policies, programs and projects within the TRNP	Yes	Accomplishment Reports
Control and regulate construction, operation and maintenance of structure and utilities within the TRNP	Yes	Lighthouse and ranger station construction
Monitor and evaluate the performance of the TMO and all those implementing activities and projects in TRNP	Yes	Through physical and financial accomplishment reports (June and Nov)
Appoint the TRNP PASu, and, upon recommendation of the PASu, appoint management personnel based on internal selection criteria and decide on their compensation and benefits	Yes	2019, 2020 PASu contract
Generate funds and accept donations, grants, appropriate and disburse the same, and exercise accountability over all funds that may accrue to the TRNP	Yes	Funds generated through park fees and donations. Financial records as evidence
Manage the TRNP Trust Fund, as herein provided	Yes	TRNP Trust Fund established with DBP

Exercise quasi-judicial functions for adjudicating cases of violations of this Act and impose fines and fees for violations of guidelines, rules and regulations within the TRNP	Yes	Establishment of the Tubbataha Adjudication Board, hearings held
Deputize individuals for the enforcement of laws, rules and regulations governing conduct within the TRNP, and prescribe the necessary qualifications therefore	Yes	TPAMB Resolution issued
Designate collecting officers for funds generated by the TRNP, and formulate procedure for the disbursement thereof in accordance with accounting and auditing rules and regulations	Yes	PASu designated as collecting officer
Retain legal counsel to defend cases against the TPAMB and the Office of the PASu whenever they are sued in connection with the performance of their duties under this Act, guidelines, and rules and regulations pertaining to the TRNP	Yes	Legal counsel retained through NGO funding
Provide adequate measures to ensure consultation and participation of stakeholders	Yes	Multi-sectoral planning, evaluation
Determine, based on existing scientific evidence, laws, rules and regulations, international instruments, traditional resource utilization, management modalities in the area, carrying capacity, and observing precautionary principle, the modes of utilization of the TRNP and all the resources found therein. Permits shall only be issued for such modes of utilization and enjoyment as the TPAMB and this Act shall allow	Yes	Modes of utilization articulated in RA 10067
Possess authority to issue permits and conditions thereto, and determine and collect fees, for the utilization and enjoyment of the TRNP and the resources therein: Provided, That the TPAMB may delegate to the PASu the authority to issue permits, and collect fees for temporary access to the TRNP such as, visiting or diving, subject to the limits as may be determined by the TPAMB: Provided, however, That entry into the TRNP for emergency reasons shall not be subject to permit and users' fees	Yes	Permitting delegated to PASu TPAMB Reso No.

Guide Questions:

What is the legal and formal or informal basis of authority of the management body? **RA 10067**

Are there regular meetings? What is the frequency? **Yes. Quarterly for TPAMB, monthly for ExeCom**

What is the record of attendance of the members of the TPAMB? (average number of attendance/total number of members) **70%** (2019), **65%** (2020).

Checklist of Roles and Functions of TMO/PASu

Roles and Functions	Are roles and functions carried out? (Yes/No)	If yes, how? If no, why not?
Prepare the Management Plan and its successor plans	Yes	2011-2021 Management Plan
Serve as Secretary to the TPAMB with the duty to provide the TPAMB with all the information necessary to make appropriate decisions for the implementation of the management plan	Yes	Secretariat of TPAMB and ExeCom
Hire non-management personnel of the TRNP, and recommend management personnel to the TPAMB	Yes	20 personnel hired
Supervise TRNP personnel in the performance of their duties and functions	Yes	Functions of personnel performed
Coordinate and implement with national and local agencies, local government units, local communities, the academe, non-governmental organizations, and such other institutions to ensure the conservation and management of the TRNP	Yes	Biophysical results show resources are well conserved
Develop and implement park information, interpretation, education and other visitor programs	Yes	Info activities for tourists and schools conducted/minimal info activities in 2020
Enforce the laws, rules and regulations and TPAMB resolutions relevant to the TRNP, file complaints, and assist in the prosecution of offenses	Yes	Ranger accomplishment reports show enforcement activities done
Monitor all activities within the TRNP in conformity with the Management Plan	Yes	Same as above
Ensure that consultative and participatory mechanisms are maximized in decision-making	Yes	Multi-sectoral planning and evaluation

Rating: A positive (+) rating was given because there is proof of the existence of a decision-making and management body and that they are performing all the functions assigned to them.

3. Existence and Adoption of a Management Plan

- Measure of the existence of a document which states the overall MPA goals and objectives to be achieved, the management structure, systems, and measures, and whether the plan is enforceable.

Checklist	Presence or absence (√/x)	Description Remarks
1. Actual existence of plan in printed form		
2. The Plan is reviewed based on:		
a) current plan (date of formulation)	√	2011-2021 MP
b) formal/informal adoption of plan (legislation or agreement; date of adoption, signatories)	√	2011-2021 MP adopted 12 Jan 2011 thru TPAMB Reso 11-008,
c) updated plan (date of adoption, signatories)	√	2015-2021 formulated with stakeholders. Update due 2021
3. Completeness of the plan		
a) goals	√	2011-2021 MP
b) objectives	√	2011-2021 MP
c) management strategies	√	2011-2021 MP
d) administration (*staffing pattern, budget)	X	To be included in 2021-2030 plan
e) surveillance and enforcement	√	2011-2021 MP
f) monitoring and evaluation of plan effectiveness	√	Biennial evaluation being conducted
4. Enforceability of the plan		
Is there a legislation at the national or local level to provide a legal basis for the plan to enforce management measures?	√	RA 10067
a) What laws are in place? (Date of legislation)	√	RA 10067, enacted in 2010
b) Institution or body in place to implement the laws	√	TPAMB/TMO (Sec 10 and 14, RA 10067)
c) Are there legal provisions/sufficient penalties for violators?	√	Sec 19 to 30, RA 10067)
d) Are the laws sufficient to support Tubbataha?	√	Yes

In the above checklist, only item (d) was not done, however, the subsequent management plan will include administration (staffing pattern and budget). The management plan was adopted but review was delayed in anticipation of changes in the institutional standing of TMO under the Office of the President.

Rating: A positive (+) rating was given for this indicator because a management plan is in place and it contains the necessary features of an MPA management plan.

4. Existence and Adequacy of Enabling Legislation

- Measure of formal legislation in place to provide the MPA with a sound legal foundation so that the goals and objectives of the MPA can be recognized, explained, respected, accomplished and enforced.
- Formal legislation is necessary to ensure that the management plan can be implemented successfully.

Checklist of Laws relative to the MPA

Pertinent Laws in Place	Who implements the Law?	Year approved/ passed	Coverage of Application (local,province, national)	Is it compatible with the Mgt Plan? 1-a little 2- mostly 3- very much	Is it supportive of the MPA management activities and interventions? 1-a little 2-mostly 3-very much
TRNP Act	TPAMB	2010	National	3	3
NIPAS	DENR	1992	National	3	3
SEP	PCSD	1992	National	3	3
WILDLIFE ACT	PCSD/DENR	2001	National	2	2
FISHERIES CODE	BFAR	1998, 2015	National	2	2
LOCAL GOV'T /CLUP	LGU	1991	National	2	2

Rating: The rating given was positive (+) because there are adequate laws to protect the Park.

5. Availability and Allocation of Administrative Resources

- Measure of the capacity of the management team to administer and complete its various activities through time
- Based on the degree of access to and level of enabling human, equipment and financial sources.

1. Staff (regular/permanent, experience). TMO has no regular/permanent staff
20 contractual staff members:

PASu –	Length of Service: 20 years
Enforcement staff (4)	Average length of service: 12 years
Research staff (3)	Average length of service: 10 years
Admin staff (2)	Average length of service: 10 years
Finance staff (4)	Average length of service: 3 years
Tourism and Info (3)	Average length of service: 5 years
Others (3)	Average length of service: 1 year

35% of staff (7) with an average of 15 years in service

30% of staff (6) with an average of 5 years in service

35% of staff (7) with an average of 1.4 years in service

2. Non-staff workers (from community, volunteers)

Cagayancillo auxiliary rangers (10), 4 Tubbataha youth ambassadors (2019)

3. Kind and level of training provided to staff and non-staff

Attendance in training and conferences. These are counted under training.

Training on research comprises most of those attended.

Trainings on administration and finance

Communications training for staff and TYAs

4. Budget for the activity

Training Organizer	# of trngs/ Workshops	Cost	% of Budget
2019			
Other agencies	25	PhP402,625.28	85% of training budget
TMO	3	316,596.83	Externally funded
2020			
Other agencies	32	92,724.56	100%
TMO	1	18,000.00	100%

5. Equipment available Ranger station

Communications equipment

2 patrol boats, one dinghy

AIS, radar, SSB radio, Marine band radio

6. Age and/or condition of equipment used

Ranger station is 20 years old, needs replacement

Communications equipment new and periodically upgraded

Patrol boats and dinghy annual repairs and with engine upgrade every 3-5 years

AIS new, radar regularly serviced

7. Equipment maintenance. Equipment is functional and relatively well maintained.

8. Record-keeping procedures. Financial record-keeping being improved and made consistent with government guidelines.

TRNP Action Plan (List of Activities)	Resources to undertake tasks (internal source)	Resources to undertake tasks (external source)
Conservation Management		
Capacity building	√	√
Tourism management	√	√
Compliance management	√	√
Conservation Awareness		
Develop and implement a public outreach program	√	√
Develop information materials and other products	√	√
Ecosystem Research and Monitoring		
Conduct regular monitoring activities	√	√
Carry out researches for management decision-making (*carrying capacity)		√
Encourage the participation of external research institutions in the conduct of research (University of Guam)		√
Sustainable Resource Management	√	√
10% share from tourism revenue of Cagayancillo	√	√
Engage LGU personnel as MPRs	√	√
Promote community-based livelihood products	√	√

Rating: Rate was positive (+) because despite the absence of regular government funding allocation, the staff is maintained, and equipment provided and well maintained.

It was recommended that the purchase of a sea ambulance for emergencies be pursued and the operation of the hyperbaric chamber maintained.

6. Degree of Interaction Between Managers and Stakeholders

- Measure of the number of regularly scheduled meetings between MPA managers and staff and stakeholders to discuss compliance with MPA management plans.
- Discussion, input, and participation from stakeholders with MPA staff about compliance with MPA management plans will lead to greater compliance, reduced cost, and increased success of the MPA.

Guide Questions:

Are there regularly scheduled meetings with MPA staff to discuss issues of compliance? **Yes**

Do you feel that your views are listened to and acted upon by the MPA staff? **Yes**

Are these meetings open and transparent to all stakeholders? **Yes**

Are you allowed to participate in the making of rules and regulations? **Yes/No**

Rating: A positive (+) rating was given by the participants. Dive operators recommended that the industry be represented in the TPAMB to further increase interaction between managers and the sector. Mr. Pangione admitted that choosing a person to represent the industry could be a challenge, adding that it would be easier to identify a representative from the local dive operators.

7. Clearly Defined Enforcement Procedures and Coverage

- Measure of the existence and description of guidelines and procedures developed for staff charged with enforcement responsibilities and how they are to act depending on the type of offence encountered.
- This will also allow for a review of enforcement guidelines and procedures to ensure that they are implemented in a fair and equitable manner.
- Identify from the management plan the section which describes the monitoring, control, surveillance, and enforcement program for the MPA. Section on Management Strategies of the TRNP Management Plan. contained in 2012 Compliance and Enforcement Plan
- Review patrol records- schedule and procedures. Patrols for 2019 and 2020 exceeded the minimum requirement. Recorded in Daily Accomplishment Report of marine park rangers

Guide Questions:

Do formal enforcement guidelines and procedures exist? **Yes. 2012 Compliance and Enforcement Plan (CEP)**

Do informal enforcement guidelines and procedures exist? **Yes. Customary practice, e.g., all agencies join patrol activities**

Who prepared those guidelines and procedures? **PASu and MPRs**

Describe the guidelines and procedures. **c/o CEP, e.g., 20 patrols/tour of duty**

Are they periodically reviewed and updated? **Yes, updates based on ranger recommendation**

Are staff trained in the guidelines and procedures? **Yes**

Is there coordination of the guidelines and procedures with other enforcement agencies? **Yes**

Are the enforcement guidelines and procedures appropriate to the task? **Yes**

Number of reported violations. **No illegal fishing cases in 2019 and 2020. In tourism, 94% compliance, late payment of conservation fee was the most common violation**

Number of successful prosecutions due to clearly defined enforcement procedures – **Since 2006: 112/112**

Number of attempted prosecutions that failed due to technicalities that are caused by failure in procedure
- **None**

Accessibility and availability of enforcement guidelines. **CEP copy provided in Ranger Station and guidelines discussed before deployment to TRNP**

Calculation of patrol effort in terms of:

Man-hours	Minimum of 5 MPRs/patrol = about 1200 man-hrs
Total hours	2019: 220.06 Hours 2020: 426 Hours
Number of patrols	2019: 130 out of 100 2020: 127 out of 100
Variation in temporal and spatial patterns of patrols	2019: 57 to North Atoll, 57 to South Atoll, 13 to Jessie Beazley 2020: 72 to North Atoll, 43 to South Atoll, 14 to Jessy Beazley
Distance covered	2019: 2297nm 2020: 2213nm
Patrol area	97,030 has
Number and type of infractions per patrol	none
Number of unauthorized visitors caught and/or noticed	none

Are there problems and needs identified in the conduct of patrols? **None, aside from limitations due to weather conditions**

Rating: A positive (+) rating was given by the participant because enforcement procedures are clear, and the entire park is protected.

8. Degree of Information Dissemination to Encourage Stakeholder Compliance

- Measure of the number and effectiveness of capacity-building efforts for stakeholders on the objectives and benefits, rules and regulations and enforcement arrangements of the MPA.
- Training and education (IEC) will increase stakeholder knowledge about the MPA in order to change behavior and attitudes and increase compliance.

Checklist of Trainings, Information, and Education Activities

Training and Education Activities	Budget	Who identified the activity? Why?	Participants	Satisfaction Rating-interview sample participants (Yes/No)
2019				
Tubbataha Youth Ambassador's Training for Trainors (c/o PSFI)	38, 188.00	TMO, to develop future conservation leaders	Tubbataha Youth Ambassador	Yes, from training eval
20th Comprehensive Marine Park Ranger Training	278,408.83	TMO, to generate common understanding of MPR role	LGU, PN, PCG, TMO	Yes, from training eval
Familiarization Trip (c/o PSFI)	120,000	IEC	TPAMB, Donors & Partners	Yes
Tourist briefings	50,000	Tourism Officer	Tourists	Yes, from exit survey
Dive operator' consultation	40,000	DO/TMO	DO/PCG/WESCOM	Yes, from informal survey
Use social media for info dissemination/ online survey for tourists		TMO	TMO	Yes, reaction from followers

Note: It was decided that instead of merely providing a Checklist of Trainings and Education Activities, Information activities be also considered, hence, a modification in the title of this table.

Rating: A positive (+) rating was given by the participants because they were satisfied with efforts made by TMO to inform its stakeholders.

RECOMMENDATIONS:

1. Purchase of a sea ambulance for emergencies be pursued and the operation of the hyperbaric chamber maintained.
2. Scuba diving industry be represented in the TPAMB to further increase interaction between managers and the sector.

BIOPHYSICAL INDICATOR MATRIX

Biophysical Indicators:			2020 Appraisal based on 2019-2020 data	Remarks	Evidence
1. Focal species abundance and diversity	Seabirds	Diversity	+	2019: 6 breeding species; 2020: 7 breeding species, including Masked Booby	Ecosystem Research and Monitoring (ERM) Reports (2019 and 2020)
	Seabirds: breeding adults	Red-footed Booby	+	Decline in population of RFB is seen as positive because of habitat competition with Black Noddy	ERM Reports (2019 and 2020)
		Brown Booby	-	Decline in BRB population	ERM Reports (2019 and 2020)
		Great Crested Tern	+	Increase in GCT population	ERM Reports (2019 and 2020)
		Sooty Tern	+	Increase in ST population	ERM Reports (2019 and 2020)
		Brown Noddy	+	Increase in population	ERM Reports (2019 and 2020)
		Black Noddy	+	Increase in population	ERM Reports (2019 and 2020)
	*Turtles:	Turtle Diversity	0	2 species	TMO species database, 2019 Turtle Report
	*Turtles	Turtle Abundance	?	Not monitored annually because of lack of funding; low recruitment rate	
	*Cetaceans	Cetacean diversity	?	Not monitored annually because of lack of funding	
	*Cetaceans	Cetacean abundance	?	No study. Species are transitory; thus, abundance is hard to estimate. Encounter rates low.	
	Reef fish	Diversity	0	Slight increase in the number of species sighted, but the difference is not significant; No new species recorded in 2020	ERM Reports (2019 and 2020)
		Biomass	+	Slight increase in biomass in 2020	ERM Reports (2019 and 2020)
		Density	0	Slight increase, not significant; could be due to sampling error/bias	ERM Reports (2019 and 2020)

	Indicator fish (Chaetodontidae)	Biomass	+	Increased from 2019 to 2020	ERM Reports (2019 and 2020)
		Density	0	The slight decrease could have indicated an increase in the sizes of the Butterflyfishes, but the difference was not significant, because it may have been due to sampling bias. *Include SE in data presented	ERM Reports (2019 and 2020)
	*Top Predators	Diversity	?	No new species recorded; no targeted survey was done	
		Abundance (Sharks and Rays)	?	No targeted survey was done; Shark research done by LAMAVE	
	*Mollusks	Density (<i>Trochus niloticus</i>)	?	No targeted survey was done	
		Density (<i>Tridacnids</i>)	?	Monitor the status and number of <i>Tridacna gigas</i> over the years	
	Corals	Coral Diversity	0	No incidence of massive bleaching during monitoring and COT outbreak; difference in TAUs could be due to sampling bias	ERM Reports (2019 and 2020)
	*Seagrass	Diversity: Seagrass	?	No research done	
	*COT	Outbreak (0.006 ind/sqm, Moran 1990 in Pan <i>et al.</i> 2010)	+	No major outbreak in 2019 and 2020	ERM Reports (2019 and 2020)
2. Focal species population structure	Seabirds	Red-footed Booby	+	Decrease in the number of eggs, nests, immature and pullus	ERM Reports (2019 and 2020)
		Brown Booby	0	2020 data showed the stable number of offspring	
		Great Crested Tern	+	Significant increase in the number of adults and offspring	
		Sooty Tern	+	Increase in the number of adults and offspring	
		Brown Noddy	+	Significant increase in the number of eggs and nests	

		Black Noddy	+	Stable number of eggs and nests, significant increase in adults	
	*Turtles	Green Sea Turtle	?	2019 data available, no data for 2020, thus, comparison not possible	Turtle Report 2019
	*Cetaceans	Cetaceans	?	Data not available	
	*Mollusks	Mollusks	?	Data not available	
3. Habitat distribution and Composition	Habitat Distribution	Habitat Map	?	Data on habitat extent (habitat map) not available	
		Benthic Composition (Deep)	0	All: Slight increase/decrease not significant; may be due to sampling bias	ERM Reports (2019 and 2020)
		Benthic Composition (Shallow)	0	All: Changes not insignificant	ERM Reports (2019 and 2020)
		Seagrass	?	No study	
		Terrestrial (Vegetation) Bird Islet South Islet	?	TMO planted 430 saplings of native trees in Bird and South Islets in June 2020. However, this information is currently insufficient to be able to compare changes from the previous year; Mitigating measure, e.g, beach reforestation, done in 2020. Too early to conclude impacts on the stability of the islets	
4. Composition and structure of the community	Species richness and evenness	Fish Species Richness and Evenness	0	Stable species richness and evenness for reef fish	ERM Reports (2019 and 2020)
		Seabirds Species Richness	+	Addition of Masked Booby in the list of breeding species is significant for TRNP; 1 pullus produced in 2020	ERM Reports (2019 and 2020)
		Seagrass	?	No survey conducted	
5. Water quality		Oil and Grease; Total and Fecal Coliform	?	No data for 2018 and 2019, comparison with 2020 data not possible	
6. Area showing signs of recovery	Hard coral cover	USSG	+	Increase in ground zero and impact border, however, decrease in adjacent control site monitored. The adjacent control is located on one side of the grounding site, could have a different result if additional plots are sampled around the grounding area	ERM Reports (2019 and 2020)

		MPY	0	Difference in HCC in impact zone not significant	ERM Reports (2019 and 2020)
	Land area	Bird Islet	+	Increased size of Bird Islet significant	ERM Reports (2019 and 2020)
7. Area under no or reduced human impact	Buffer Zone	Shipping	?	Standardize AIS data collection and analyze	
		FADs	?	*Look for GIS data on FADs in Google Earth/VIIRS/Sentinel Tool	
	Tourism	Carrying Capacity	?	*Trend on tourist data should be established to answer the carrying capacity vs. the number of tourists; diver impact study to be conducted	
	Reef Area	Grounding incidents	+	1 grounding incident in 2019 and none in 2020	Tubbataha Adjudication Board Resolution 19-09

Summary of Scores:

	2020
+	18
-	1
0	10
?	19
Total # of parameters	48

BIOPHYSICAL NARRATIVE

1. Focal species abundance and density

Seabird:

Diversity. Dr. Aquino said that since the focus of the diversity of the count are the breeding species and the Masked Booby did not breed until July 2020, the count should only be 6 species for 2019. The evaluators scored the addition of Masked Booby as positive (+) since in the Philippines, it is currently only known to breed in Tubbataha.

Red Footed Booby breeding adults. There was a decline of almost half of the population of Red-footed Booby from 2019-2020. In 2018, the evaluators scored this same decline as positive because this species competes with the endemic Black Noddy for habitat. Dr. Aquino suggested that the same positive score be applied this year. This was seconded by Ms. Basaya and Dr. Ona.

Brown Booby breeding adults. The data showed a decline from 2019 to 2020. A negative (-) appraisal was unanimously agreed upon by the evaluators.

Great Crested Tern breeding adults. The evaluators scored the breeding data for GCT as positive (+) as the population showed an increase from 2019-2020.

Sooty Tern breeding adults. A positive (+) score was given to this species due to the evident increase in the number of breeding adults from 2019 to 2020.

Brown Noddy breeding adults. A positive score was given due to the increase in the number of breeding adults.

Black Noddy breeding adults. Since the data from 2019-2020 showed an increase, the evaluators scored the parameter a positive (+).

Marine Turtle

Diversity. A score of '0' was given to turtle diversity because there are still two marine turtles in TRNP.

Abundance. No data (?) was available for this indicator. The evaluators mentioned that this study need not be done annually because of the low recruitment rates in green sea turtles, based on previous studies

Cetaceans

There is no data for diversity and abundance for cetaceans for the past 10 years, thus the evaluators scored the parameters as no data (?). Dr. Aquino asked TMO to check the year when Mr. Conales published the sighting of the Melon-headed whale and if it fell within the evaluation period (2019-2020). Upon confirmation of Ms. Pagliawan, the said sighting was reported in 2016. Furthermore, Dr. Aquino stressed that abundance for cetaceans is hard to estimate since the species are transitory.

Reef Fishes

Diversity. Data showed that there was a minimal increase of 4 species. The evaluators asked the TMO researchers to check these four (4) species and include in the remarks should they be rare, threatened, or new species. Upon review of the TMO species list, the four species mentioned in the data were found to be not new to Tubbataha.

Density. A graph was presented for the density showing that there was an increase of 12 individuals from 2019-2020. The evaluators gave a 0 score (stable) as this difference might be attributed to sampling bias.

Biomass. The evaluators gave a positive (+) score for the biomass because there was a significant increase in the value from 2019-2020.

Reef Fishes: Indicator (Chaetodontidae)

Biomass. The evaluators gave a positive (+) score because of the increase.

Density. The graph showed a decline in density from 2019 to 2020. Dr. Dolorosa said that the difference might also be due to sampling bias. He recommended that in the next MEE, charts must be presented with standard error to serve as a gauge for significance of differences. Furthermore, the evaluators also said that the decrease could imply that the butterflyfish was growing, however, it could be also due to sampling error. The group agreed to give a stable (0) score for this parameter.

Top Predator (Sharks and Rays)

Diversity and Abundance. The evaluators scored the parameters as (?) because no study was conducted for these parameters in the past two years. The shark study is considered targeted research and was conducted mainly by LAMAVE.

Mollusk

No data was available for mollusks since 2018. Dr. Dolorosa advised TMO to account for the increase in sightings of Giant Clam (*Tridacna gigas*) over the previous years. He also mentioned checking the status of the relocated *T. gigas* for stress, bleaching, etc.

Corals

Diversity. Diversity in corals was measured using the Taxonomic Amalgamation Units (TAUs) and not species. A few differences were recorded between the number of coral TAUs between 2019 and 2020, and this was seen by the evaluators as stable (0). The evaluators suggested that coral bleaching and COT should be monitored as well.

Seagrass

Diversity. No data was available for seagrass diversity.

Crown-of-Thorns

Dr. Dolorosa said to replace the 'presence and absence' parameters with 'outbreak'. Dr. Aquino added that the term 'outbreak' should be also defined, e.g., average density/m² (Pan et al. 2011). No COT outbreak was recorded in TRNP in the last two years.

2. Focal Species Population Structure

Seabirds. Dr. Dolorosa said that the population structure of seabirds could be presented by separating the counts for each age group. This was done during the meeting.

Marine turtles. The trend could not be established since only 2019 data was available. The 2020 study did not push through due to the pandemic.

Cetaceans and Mollusks. No data were available.

3. Habitat and distribution and composition

Habitat Map. Ms. Pagliawan explained that this category will also be answered by the resource map which will hopefully be updated next year, with the help of Antipara Exploration.

Benthic Cover of Deep and Shallow. The evaluators gave a stable (0) score for both deep and shallow benthic communities because the changes in the percent cover of each benthic component were very small and not significant and may be attributed to sampling biases.

Ms. Pagliawan also mentioned that an average annual decline of 1.1% in hard coral cover was noted in the four monitoring sites in Tubbataha atolls (Sites 1-4) by Dr. Wilfredo Licuanan.

Seagrass. No study was conducted in 2019 and 2020.

Bird and South Islets. TMO planted a total of 430 saplings of native plants in both islets. The evaluators noted the mitigating measure conducted by the management through beach reforestation this year. However, they said that it is too early to conclude impacts on the stability of the islets and their survival.

4. Composition and structure of the community

Reef fishes. Both parameters were scored stable (0) by the evaluators.

Seabirds. Only the breeding species were considered in this parameter. The addition of the Masked Booby was seen as significant because the species was thought to be extirpated in the Philippines for many years. TMO noted that the Masked Booby pair has already produced an offspring this year. The evaluators gave a positive (+) score for this parameter.

Seagrass. No survey was conducted for seagrass in the last two years. The group gave the parameter a '?' score.

5. Water Quality

The evaluators gave a '?' (trend could not be established) for three water quality parameters (oil and grease, total coliform, and fecal coliform) since the data was only available for 2020. This monitoring is not conducted annually.

6. Area showing signs of recovery

USS guardian grounding site. TMO presented the data on the hard coral cover of the three (3) permanent quadrats monitored in 2019-2020 in USS Guardian. The evaluators gave a positive (+) score for this indicator because the data showed an increase in hard coral cover in the ground zero and impact border. However, a decline in the hard coral cover in the adjacent control site was noted. The evaluators suggested combining the data of ground zero and the impact border to see the improvement per year.

Noting the decline in the adjacent control plot, which the TMO researchers confirmed to be only one sampling plot, the evaluators suggested the possibility of adding a sampling plot around the impact zone. This is to see if the hard coral cover in the surrounding area, other than the adjacent control plot, is also declining.

Min Ping Yu grounding site. The evaluators considered the data on the small and large fragment plots. Although there was a decrease in the small fragment from 2019 to 2020, the evaluators considered this slight difference as insignificant, thus scoring the indicator as '0' (stable).

Bird Islet Land Area. The size of the land area in 2020 was bigger by 1000m² than in 2019. The measurement was done at the highest tide around the perimeter of the islet. Ms. Basaya suggested scoring this as '+' (positive), with concurrence from other evaluators, since there was possible natural dumping of sand contributing to the increase in size. Ms. Pagliawan also mentioned that there were no major erosions observed during the survey in 2020. Dr. Aquino added that sand cays were forming around the islet.

7. Area under no or reduced human impact

Shipping data. AIS data needs to be analyzed as the two teams of ranger collect different information. No radar sighting data for 2019-2020 because the equipment was broken.

Fish Aggregating Device (FADs). There was no data for FADS for the last two years. According to the TRNP Buffer Zone Management Plan, FADs are not allowed in the buffer zone. Dr. Dolorosa recommended looking for satellite images to check for the color variation in the Sulu Sea, which could be FADs. VIIRS could be also explored as a potential tool to quantify the presence of FADs inside the buffer zone. Dr. Dolorosa also introduces the Sentinel tool which is also a satellite-based tool to check remotely sensed images in the Sulu Sea.

Tourism. The carrying capacity study was not carried out due to the unavailability of experts in 2019 and the pandemic in 2020. This will be scheduled in the next year.

Grounding incident. Only one grounding incident occurred in 2019 and none in 2020.

Recommendations:

1. Look for GIS data on FADs in Google Earth/VIRS/Sentinel Tool
2. Standardize AIS data collection
3. Conduct carrying capacity study
4. Update habitat map
5. Look at the possibility of adding a sampling area for 'adjacent control' in USSG due to a decrease in hard coral cover
6. Secure funds, look for partners to conduct targeted research, e.g., cetaceans, mollusks, sharks, turtles, and seagrass
7. Chart must be presented with standard error to serve as a gauge for significance of differences

SOCIO-ECONOMIC INDICATOR MATRIX

Socio-economic Indicators:	2020 Appraisal	Remarks	Evidence
1. Local marine resource use patterns	+	<ul style="list-style-type: none"> - Number of seaweeds farmers and area maintained. - Increased number of registered fisherfolk, fish catch is regulated through an ordinance - 9 MPAs maintained - Increased tourism revenues 2018-2019 from ₱50,000 to ₱100,000; increased entry fees from PhP300/person for 3 days to PhP700/person for the first 3 days and PhP300/day thereafter - Alternative livelihood introduced: <ul style="list-style-type: none"> - production of plushies by Sewmates, Cagayancillo Women's Organization, in partnership with TMO for promotion and sale to tourists - Work opportunity provided to local craftsmen who were trained by WWF in the construction of ferrocement water tanks - Benefits from TRNP share: <ul style="list-style-type: none"> - Provision of seed capital for Sewmates to produce plushies - Concreting of farm to market road - Programs/measures implemented/practiced protecting and manage marine resources: <ul style="list-style-type: none"> - 1M hectare MPA established - WWF studies in selected areas showed that management efforts had positive effects 	<ul style="list-style-type: none"> - Zoning Maps, MAO Office - No. of fisherfolks registered with BFAR (auxiliary invoice, locally managed MPA profile) - Registry of revenue and other receipts - Municipal Ordinance No. 044-S-2018 - Project proposal for 2019 share from TRNP - Pictures of farm to market road constructed - Municipal Ordinance No. 01-S-2009

2. Level of understanding of human impacts on resources	+	<ul style="list-style-type: none"> - regulated commercial fishing through a municipal ordinance - on-going formulation of Solid Waste Management Plan for Cagayancillo - Live fish trade is prohibited through an ordinance, no local opposition to a ban in live-fish trading 	<ul style="list-style-type: none"> - Municipal Ordinance No. 11 Series of 2002 Article V - Municipal Resolution No. 089-S-2019
3. Perceptions of non-market and non-use values	?	<ul style="list-style-type: none"> - no survey conducted 	
4. Distribution of formal knowledge to community	+	<ul style="list-style-type: none"> - WWF studies on marine ecosystem and species are made known to the communities - WWF conducted IEC activity. <ul style="list-style-type: none"> a. number of participants reached: 28 LGU officials; 25 fishermen and teachers. b. WWF conducted citizen science training with 8 participants, locals can now collect data to aid decision-makers in crafting regulations - Assignment of LGU rangers to TRNP translates to capacity building, better understanding of MPA management and value developed 	<ul style="list-style-type: none"> - Documentation, Report, Video and Photos from WWF - Documentation Report, Video and Photo Slides - Attendance sheet & vouchers with TMO; DAR

SOCIO-ECONOMIC NARRATIVE

Out of seven (7) indicators measured in 2018, only four (4) were retained. Ms. Dygico explained that the 7 indicators identified in 2018 MEE were based on the old TRNP General Management Plan (GMP), which is no longer relevant in the current context. The 4 indicators are within the framework of the 2015-2021 GMP and are consistent with the annual targets of TMO. The indicators that were removed pertain to household income, number, and nature of market, which are already captured in the LGU Management Plan for the MPAs. The team believes that what needs to be measured are only indicators that connect Cagayancillo to the management of TRNP, hence, the retention of only the following indicators:

1. Local marine resource use patterns
2. Level of understanding of human impacts on resources
3. Perceptions of non-market and non-use values
4. Distribution of formal knowledge to community

Below are the guide questions for each indicator formulated by Ms. Dygico with the participation of the other members of the team:

1. Local marine resource use patterns:

What are the sources of income in Cagayancillo?

- Aside from fishing and seaweed farming, WWF introduced alternative livelihoods to diversify sources of income:
 - Production of plushies by Sewmates are coordinated with TMO for marketing and promotion to TRNP guests;
 - Local craftsmen were trained in the construction of ferrocement water tank
- Cagayancillo Municipal Agriculture Officer, Jojo Padul, reported that the seaweed farming areas were zoned prior to 2018 and the number of farmers remained stable. A potential area of at least 3,000 hectares for more seaweed farms has been identified. These can be distributed to 600 households of active farmers at $\frac{1}{4}$ hectare per farmer.
- The nine MPAs reported in 2018 are still existing and maintained. He noticed an increased number of registered fisherfolks. A municipal ordinance regulating fish catch and on the purchasing system for the icers was passed.

- He believes that tourism is a good alternative livelihood in Cagayancillo, adding that their municipal tourism plan is for immediate review. There was a ₱50,000 recorded increase in tourism collection from 2018 to 2019. Mayor Tapalla confirmed that a municipal ordinance increasing the rate of conservation fee to 700/person for the first 3 days and 300 thereafter is currently being implemented.
- A seed fund of ₱150,000 from the TRNP share of the LGU was allotted for the Sewmates projects. However, the fund has not yet been released pending submission of a work and financial plan required by the Municipal Accountant.
- Mayor Tapalla said that law enforcement rules will be strictly imposed to discourage illegal fishers.

What are the benefits from the use of the share from TRNP?

- TMO organized a training for Cagayancillo women, now called Sewmates
- Provided seed capital for Sewmates to produce plushies; TMO helps promote and sell the products to TRNP visitors;
- Concreting of farm to market road;

What are the programs or measures implemented/practiced to protect and manage marine resources?

- Ms. Dygico apprised the participants about the establishment of the 1 Million-hectare MPA to manage multiple uses of marine resources and identified previously established marine reserves to serve as core areas. The areas near the municipality are being protected and managed by the LGU. Moreover, WWF conducted studies in the selected areas in Cagayancillo and they observed that aside from natural calamities/phenomena, management efforts showed positive effects.

Rating: + (MAO, MPDC, WWF, LGU)

2. Level of understanding of human impacts on resources

What evidence is there that level of understanding is improving?

- The community's improved understanding of conservation was translated into a local ordinance, regulating commercial fishing and live-fish trade in Cagayancillo. A survey on banning live-fish trade was conducted and showed that the majority of residents were against the live-fish industry. Mayor Tapalla commented that the live-fish industry has caused the disappearance of native seaweed species in their municipality, although no study has been conducted to support this theory.
- MPDC Arnold Buñag shared about the ongoing formulation of the municipal Solid Waste Management Plan patterned after the Waste Analysis and Characterization Study (WACS).
- Mayor Tapalla disclosed that a fund is allotted from the 20% Municipal Development Fund to cover the manpower cost of MPA enforcement.

Rating: + (Ms. Vel, Mayor, Joan, MPDC)

3. Perception of non-market value

- Ms. Vel proposed that the survey questionnaire needs to be developed through a workshop and flagged as an urgent matter for 2021.
- Dr. Jontilla suggested that a possible survey question is about ecosystem services particularly on cultural aspects. She further suggested that TMO update the list of TRNP ecosystem services.

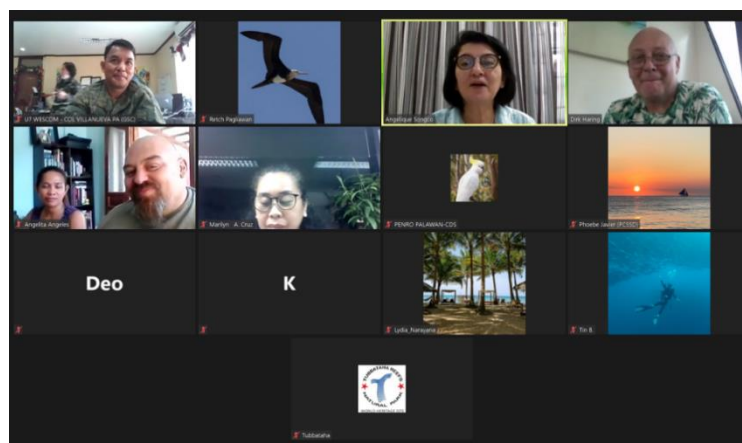
Rating: ? (No data)

4. Distribution of formal knowledge to community

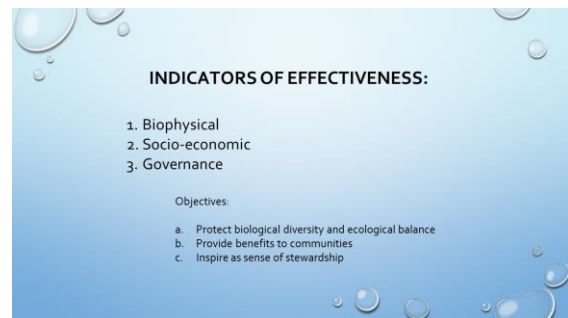
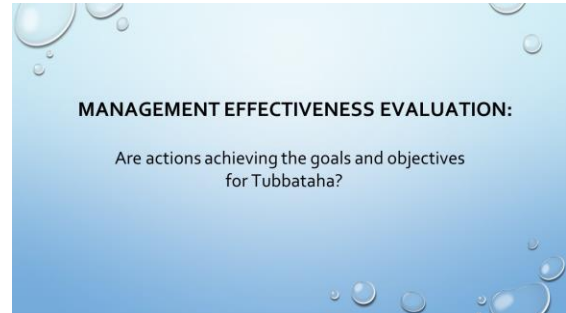
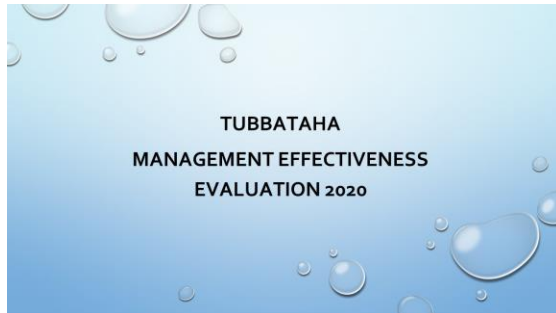
- In August 2020, WWF conducted an IEC outreach in Cagayancillo reaching 28 LGU officials and 25 fishermen and teachers. WWF also presented the results of their scientific studies to the community. Locals were trained in citizen science, enabling them to collect data that will aid decision makers in crafting local regulations.
- Assignment of LGU personnel as TRNP Marine Park Ranges capacitates them in MPA management.
- The following suggestions were raised:
 - Mayor: The academe needs to be more active in the conservation awareness program
 - MPDC: Train the teachers in the conduct IEC
 - MAO: Increase range of IEC programs to include neighboring places/provinces, e.g., Region 6

Rating: + (Sheila, Mayor, MPDC, MAO, Jean)

Annex 1. Photos of Zoom meeting



Annes 2. Presentations



Annex 2. Presentations



- Alanna Shaikh, Global Health Expert

This is **not** the last major outbreak we are going to see.

That's not a **maybe**. That's a **given**.

Part of that is about **climate change** and the way a warmer climate makes the world **more hospitable** to viruses and bacteria.

Also us pushing the **last wild places** in our planet. As long as we keep making our remote places **less remote**, the outbreaks will keep coming.

Thank you very much for your help!

GOVERNANCE INDICATORS

1. Level of resource use conflict
2. Existence of decision-making and management body
3. Existence and adoption of management plan
4. Existence and adequacy of enabling legislation
5. Availability and allocation of administrative resources
6. Degree of interaction between managers and stakeholder
7. Clearly defined enforcement procedures and coverage
8. Degree of information dissemination to encourage stakeholder compliance