TRNP Management Effectiveness Evaluation Workshop

Alpha Hall, Best Western The Ivywall Hotel | 5 December 2018

PRELIMINARIES

Participants started to arrive at the venue at 8:15 am. The opening program started at 9:08 am through a prayer led by Ptr. Jehu Cayaon, President of Tambuli ta mga Kagayanen, and also a regular member of the Tubbataha Protected Area Management Board (TPAMB). Welcome remarks was delivered by Ms. Jean Jontilla, permanent alternate of Dr. Elsa Manarpaac, of the Western Philippines University (WPU). In her message, she recalled that the last Management Effectiveness Evaluation workshop she was able to attend was in 2010. She said that it is good to do this workshop again, in order to see where we are now.

Ms. Angelique Songco, Protected Area Superintendent, gave an overview on 'why we are doing this workshop and what were the other tools used?' She asked the participants what tools they use in their agencies to evaluate performance. Dr. Roger Dolorosa said that they used the Civil Service form IPCR for individual performance and OPCR to measure office accomplishment. He added that they have to come up with targets at the start of the year, and these are evaluated at the end of the year. Lt. Jazmin of Coast Guard District – Palawan, also a TPAMB member, added that not only physical accomplishments but financial accomplishments are also evaluated. Ptr. Jehu Cayaon also said that Philippine National Police has also the same process of evaluation through the Performance Government System.

Ms. Songco, using a powerpoint presentation, explained that ME is said to be 'the degree to which management actions are achieving the goals and objectives of a protected area'. She added that three aspects of the management were measured in the past – Biophysical, Socio-economic, and Governance indicators. She stressed that we hope to be able to gauge if the management of Tubbataha brings benefits to people. She added that the MEE could result in improvements in management through learning, adaptation, and diagnosis of issues, and provides a way to show accountability for the management of Tubbataha.

PASu Angelique Songco presenting the tools TPAMB/TMO used to evaluate its management effectiveness.

Ms. Songco also presented the history of the TRNP MEE program saying that Tubbataha participated in the pilot testing of the MEE tool in 2002, through WWF-Philippines' Ms. Marivel Dygico, which resulted in the publication of the 'How is your MPA doing? Guidebook. The MEE framework was first introduced to TPAMB/TMO in 2003 when the vision, goals and objectives, and indicators were identified. In 2004, the first MEE workshop was conducted and integrated in the TRNP Management Plan. The simplified evaluation tool (which scored parameters with +, -, 0,?) was formulated during the second MEE in 2005. During the third MEE in 2006, indicators were reduced from 35 to 22. The next MEE was in 2009, utilizing the data/information from 2007 and 2008. The last MEE was in 2010 when three new indicators were added, increasing the number of indicators to 25.

In 2011, Conservation-international conducted the MEE using the Management Effectiveness Assessment Tool (MEAT). In early 2014, Management Effectiveness Assessment Tool (METT) and were used to assess management. Tubbataha Reefs scored 98%, which is high for a marine protected area, and by 2016 scored 100.

Ms. Songco further said that TMO explored other MEE tools to generate more comprehensive and contextualized results. Thus, in the same year, the tool employed by the Great Barrier Reef Marine Park Authority (GBR) during its 2013 MEE was used by TMO. Ms. Songco presented the six elements of the GBR framework and the scoring system. She said that the topic which had the highest score were in biodiversity protection and fishing. Shipping got the lowest score because at that time Tubbataha was still not a Particularly Sensitive Sea Area.

Participants discuss issues during the plenary at the beginning of the workshop.

The last MEE was in 2016 spearheaded by the GIZ using the MEAT/METT tool where Tubbataha got the perfect score of 100%. She concluded her presentation by observing that the MEAT/MET were least responsive of the tools, while the GBR one captures the textures and nuances of park management but is very tedious to undertake. The *How is your MPA doing?* guidebook is an intermediate tool and will be used during this workshop.

At 9:35 am, participants were asked to introduce themselves. The microphone was passed around the table. Retch Pagliawan, Research Officer of Tubbataha Management Office (TMO), presented the highlights of the 2010 MEE workshop. She explained the scoring used in this tool: plus (+) sign means the change is positive/increasing; minus (-) means the trend is declining/negative; zero (0) means no change; and question mark (?) for no data or the trend could not be established.

The book *'How is your MPA doing?'* has identified 16 indicators for both the socio-economic and governance, and 10 for biophysical aspects. The MEE teams in the past picked seven (7) indicators each for biophysical and socio-economic and eight (8) for governance.

She also presented the highlights of the MEE results in 2010. The governance aspect has positive scores in all the indicators. This is mainly attributed to the enactment of the Republic Act 10067, the establishment of the TPAMB and the Tubbataha Adjudication Board, as well as the presence of a Management Plan. However, some issues were also noted, i.e., TMO having no legal identity and the depleting contingency fund.

On the socio-economic aspect, Ms. Pagliawan said that the data gathered from Cagayancillo, the nearest municipality in the park, by the WWF-Phils., were used to measure the indicators. Most of the scores under this this aspect were positive attributed to the increase in the income of the fishers and seaweed farmers from 2004 to 2007, the active dissemination of information through the Information, education and communication campaign program of the Tubbataha Management Office, and collection of local user fee due to visiting tourists. For the biophysical aspect, most of the indicators were positive but other indicators such as cetaceans, marine turtles, seagrass, and sharks were lacking data.

Mr. John Pontillas of PCSDS suggested that since Tubbataha boasts of its Outstanding Universal Value, the stakeholders should not only be limited to the Cagayancillo and Palawan, but beyond. He added that it would be beneficial to look at socio-economic aspect in other perspectives, not only immediately outside Tubbataha.

The participants were grouped into three to work on the three topics of the MEE.

Governance:
1. Lt. Christian Jazmin PCG
2. ENS Harvey Cerdena PCG
3. Dino Pangioni, MY Sakura
4. Ray-ray Bonoan, MY Zamerdius
5. John Pontillas, PCSDS
6. Angelique Songco, TMO
7. Jezza Padrigo, TMO
8. Anatalia Lui, TMO

Socio-economic:
1. Marivel Dygico, WWF-Phils
2. Jean Beth Jontila, WPU
3. Joseph Padul, LGU Cagayancillo
4. Jehu Cayaon, Tambuli Ta mga Kagayanen
5. Haydee Favila, LGU Cagayancillo
6. Robert Natividad, PGP
7. Arnold Buňag, LGU Cagayancillo
8. Jobert Gabo, DSWD KALAHI

Biophysical:
1. Dr. Teri Aquino, MWWP
2. Dr. Roger Dolorosa, WPU
3. Dr. Ronald Ona, PSU
4. Elena Basaya, BFAR
5. Vivian Soriano, DENR
6. Glenda Cadigal, PCSDS
7. Rowell Alarcon, TMO
8. Gerlie Gedoria, TMO
9. Retchie Pagliawan, TMO

Breakout groups during the workshop – Governance, Socio-economic and Biophysical – doing the evaluation.

PRESENTATION OF THE RESULTS

After each team finished the evaluation, the results were presented in the plenary. The following were the suggestions, comments and recommendations for each component of the MEE:

Socio-economic Indicators

- The group reported its intention to conduct a separate workshop to measure the socio-economic indicators in more detail using data from DSWD KALAHI. They reported the need to review and re-align the goals and objectives of the indicators with those of Tubbataha. This will be considered during the socio-economic workshop to be conducted.
- It was suggested that the direct and indirect values of the park to the stakeholders be documented/evaluated. Direct values may be applicable to the nearest community, Cagayancillo, while tourists may be considered as stakeholder for the indirect value. The information may be culled from tourists through questionnaires or exit surveys.

Governance Indicators

- Create a venue for the stakeholders and diving community after every season to address issues and other matters.
- Deputize the rangers from the LGU-Cagayancillo for purposes of enforcement.
- Secure research data and other information of TMO remotely.
- Create a platform for research data that can be presented both temporally or spatially.

Biophysical Indicators

- No recommendations, comments, or questions were raised for the Biophysical indicators other than those in the notes prepared by Mr. Rowell Alarcon.

Mr. Pontillas recommended to correlate the results of three components in the final report, e.g., oil and grease value beyond acceptable level (biophysical) vs. the increase in shipping activities (governance). PASu Songco said that the results of the MEE will be incorporated in the Management Plan which is due for review next year.

2018 management effectiveness evaluators

BIOPHYSICAL GOALS AND OBJECTIVES

GOAL 1	**Marine resources sustained or protected**
1A	Populations of target species for extractive or non-extractive use restored to or maintained at desired reference points
1B	Losses to biodiversity and ecosystem functioning and structure prevented
1C	Populations of target species for extractive or non-extractive use protected from harvest at sites and/or life history stages where they become vulnerable
1D	Over-exploitation of living and/or non-living marine resources minimized, prevented or prohibited entirely
1E	Catch yields improved or sustained in fishing areas adjacent to the MPA
1F	Replenish rate of fishery stocks increased or sustained within the MPA
GOAL 2	**Biological diversity protected**
2A	Resident ecosystems, communities, habitats, species, and gene pools adequately represented and protected
2B	Ecosystem functions maintained
2C	Rare, localized or endemic species protected
2D	Areas protected that are essential for life history phases of species
2E	Unnatural threats and human impacts eliminated or minimized inside and/or outside the MPA
2F	Risk from unmanageable disturbances adequately spread across the MPA
2G	Alien and invasive species and genotypes removed or prevented from becoming established
GOAL 3	**Individual species protected**
3A	Focal species abundance increased or maintained
3B	Habitat and ecosystem functions required for focal species' survival restored or maintained
3C	Unnatural threats and human impacts eliminated or minimized inside and/or outside the MPA
3D	Alien and invasive species and genotypes removed from area or prevented from becoming established
GOAL 4	**Habitat protected**
4A	Habitat quality and/or quantity restored or maintained
4B	Ecological processes essential to habitat existence protected
4C	Unnatural threats and human impacts eliminated or minimized inside and/or outside the MPA
4D	Alien and invasive species and genotypes removed or prevented from becoming established
GOAL 5	**Degraded areas restored**
5A	Populations of native species restored to desired reference points
5B	Ecosystem functions restored
5C	Habitat quality and/or quantity restores or rehabilitated
5D	Unnatural threats and human impacts eliminated or minimized inside and/or outside the MPA
5E	Alien and invasive species and genotypes removed or prevented from becoming established

Indicators	1 Focal species abundance	2 Focal species population structure	3 Habitat distribution and complexity	4 Composition and structure of the community	5 Water Quality	6 Area showing signs of recovery	7 Area under no or reduced human impact
GOAL 1							
1A	●	●					
1B			●	●	●		
1C	●	●		●		●	●
1D	●	●		●			●
1E	●					●	●
1F	●	●				●	
GOAL 2							
2A				●		●	●
2B						●	
2C	●	●		●			
2D		●	●				
2E				●	●		●
2F							
2G	●			●			
GOAL 3							
3A	●	●	●			●	
3B			●	●	●	●	
3C							●
3D	●	●		●			
GOAL 4							
4A			●	●	●	●	
4B			●	●	●	●	
4C			●	●	●		●
4D	●		●	●	●		
GOAL 5							
5A	●					●	
5B	●	●		●	●	●	
5C		●	●	●	●	●	
5D	●			●	●	●	●
5E	●			●		●	

BIOPHYSICAL MATRIX

Biophysical Indicators:		Parameters	2010 Results	Remarks	Changes in Parameters	2018 Results	Remarks
1. Focal species abundance and diversity	Seabirds	Diversity	0	99 species		-	Diversity is stable. Fluctuations in the diversity can be influenced by seasonal changes and climate change.
	Seabirds: Abundance (breeding adults)	RFB	+	trend decreasing		+	Decline in RFB population is seen as positive. Overall decline since 2015.
		BB	+	trend increasing		0	There is only a slight difference between years. Overall trend increasing.
		GCT	+	trend increasing		0	Increase between years is minimal. Increasing trend over the years.
		ST	+	trend increasing		+	Overall trend is increasing but appears to be affected by ENSO
		BRN	+	trend increasing		-	Overall trend is increasing.
		BLN	+	trend increasing		-	Trend is decreasing.
	Turtles	Diversity	0	2 species		0	Only 2 species are recorded in Tubbataha.
	Turtles	Abundance	?	Study on going		?	No data.
	Cetaceans	Diversity	+	13 species (2010 survey)		?	No data.
	Cetaceans	Abundance	?	Study conducted but data not enough to determine abundance		?	No study. Species are transitory; thus abundance is hard to estimate.
	Reef fish	Biomass	?	biomass reduced for sharks were not included		-	Overall trend is decreasing. Life cycle of fishes may play a role in the oscillation of data. There is a need to consider impacts immediate outside of the park (e.g., FADs)

	Reef fish	Density	?	population abundance of key species not done		0	General trend is decreasing
	Indicator fish (Chaetodontidae)	Biomass Density	- +	But trend is generally increasing		0 0	Slight difference between two years (2017-2018). Long term trend stable.
	Top Predators:	Diversity: Sharks Skates and rays Abundance: Sharks Grey Reef shark Skates and rays	 + 	 12 sharks 3 rays and skates		? ?	Long term trend could not be established for both diversity and abundance of sharks and rays.
	Top Predators: Abundance	Whitetip reef shark	+	Only for white tip-9467 ind./ha		?	Trend could not be established.
	Mollusks	Density: *Trochus niloticus* Tridacnids	 - +	*Trochus niloticus* –trend generally decreasing Additional species being monitored .e.g Cassis		?	No data.
	Corals	Diversity Deep Shallow	?	No study conducted		 0 0	No change in number of genera. Nature of software (random sampling) used in the data analysis may affect the record of diversity.
	Seagrass	Diversity	?	No study conducted		?	No data.
2. Focal species population structure	Breeding data: sub-adults, pullus, juveniles, eggs	Breeding data RFB	 +			 0	Overall trend is declining.
		BB	+			0	Overall trend is stable.
		GCT	+			0	Overall trend is increasing.
		ST	+			+	Overall trend is slightly increasing.
		BRN	+			0	Overall trend is increasing
		BLN	+			+	Increase between 2 years is relatively significant. Overall trend increasing

	Turtles	Population structure	+	Study conducted. Data on population structure are available.		?	Based on the size structure in 2016, population structure follows normal distribution.
	Cetaceans	Cetaceans	+	Study conducted but data not enough to determine abundance		?	No data.
	Mollusks	Mollusks	?			?	No data.
3. Habitat distribution and Complexity	Coastal and Terrestrial	Corals	+		Coastal Benthic Composition Deep Hard corals Soft corals Mortalities Algae Others Abiotic	 + - - + + + +	Overall positive because most of the components are positive (mortalities, algae, others, and abiotic). The increase in the coralline algae is considered positive because they provide substrate for hard corals to grow. However, it may also suggest that a disturbance has occurred. Change of method from Benthos point intercept (2017) to Photo-transect (2018) may have influenced the decline in hard coral cover in 2018. While change of method from Lifeform (2012) to Reef check (2013) influence the low cover of algae in 2013.
		COTs	+	COTs study conducted by Marianne Pan	Shallow Hard corals Soft corals Mortalities Algae Others Abiotic	- - - - + + -	Overall negative as most components are negative. The increase in algal cover can be influenced by change in method from Benthos point intercept to Photo transect, or other disturbances (e.g., storms) Noted also is the La salle results that the long term trend is decreasing in hard corals, similar with the TMO results on hard corals.
					Seagrass	?	No data on seagrass.
					Terrestrial (Vegetation) North Islet	 ?	Determine the changes in the number of trees, percentage crown/canopy, and grass cover over the years.

					South Islet	?	
					Habitat Distribution	?	No updated habitat extent map/data available. Recommend the formulation of habitat map for 2020.
4. Composition and structure of the community	Species richness and evenness	Hard corals	-	Overall trend slightly increasing.	Corals Relative frequency of genera	 ?	No data for relative frequency of genera.
		Soft corals	+		Fish Species Richness Species evenness	 0 0	Long-term trend stable.
					Seabirds Species Richness Species evenness	 0 0	Trend is stable. Species presence can be affected by season, timing, breeding cycle, and climate change. Thus, lower species encounter during seabird surveys (May every year) does not necessarily mean that other species are not present in other months of the year. Further, rangers generally only record breeding species and seldom record migratory species, due to issues with accuracy of identification. Trend stable.
		Seagrass	?	Study conducted by MSI. Report to be submitted next year		?	Not enough data.
5. Water quality			0	No study conducted	Oil and Grease Total Coliform Fecal coliform	? ? ?	Oil and grease and Fecal coliform components from 2017 are beyond the acceptable value for Class SA (Protected Waters/Fishery Water Class II) per DAO No. 2016-08. Oil and grease quantity of

							TRNP fall under Class SC or water fit for recreational activities such as boating and fishing. Fecal Coliform value fall under Class SB or those fit for ecotourism/recreational activities and intended for primary contact such as swimming, skin diving, and other similar activities.
6. Area showing signs of recovery		Coral cover North Islet South Islet Jessie Beazley Seagrass Seaweeds	 + + - ? ?	Study conducted by MSI. Report to be submitted next year	Hard coral cover USSG	 0	 Overall trend is increasing.
					MPY	+	Overall trend decreasing because of the unstable substrate.
					Bird Islet Land area (m^2)	0	There is no change in the land area of the bird islet between years. The vegetation is not recovering despite assisted regeneration with indigenous beach forest.
7. Area under no or reduced human impact			+	Park area increased + buffer zone	Buffer Zone Shipping	 ?	 Proposed a study on correlation of shipping with the water quality and marine debris volume.
					FADs	?	No data available.
					Tourism	?	Trend on tourist data should be established to determine carrying capacity vs. the number of tourists.
					Reef Area Grounding incidents	-	There were grounding incidents (dive boats): M/Y Resolute in 2017 damaging a total area of 110.85 m^2 and P/Y Atlantis Azores in 2018 with 72.5m^2 of coral damage.

Biophysical Results, Notes

- Ms. Pagliawan started the session on biophysical indicators by reviewing the scoring scheme for the indicators. The data that were presented include those from 2010 to 2018 to understand the long-term trends and reflect the monitoring data in TRNP. The group agreed that they will score based on the 2017 and 2018 data, but additional remarks will be given on the long-term trend to reflect the data from 2010 to 2018.
- Furthermore, Dr. Teri Aquino explained the importance of looking back at the eight years' worth of data to come up with conclusive results and determine what happened between these years.

1. Focal Species

Seabird Diversity

- The group agreed that long term data showed no difference, but data between 2017-2018 decreased. Dr. Dolorosa mentioned it might be affected by the timing of survey since the monitoring was done annually, which could mean that other species could not be recorded.
- Dr. Ona further suggest that the fluctuation might be affected by climate change and seasonal visit of other seabirds in TRNP.

Abundance (Adults seabird)

- Red-footed bobby (RFB) - The population is considered overabundant, as it competes with other tree-breeding species, the Black Noddy which is an endemic subspecies only found to breed in the Cagayan Ridge. The group agreed that the population of RFB over the years is declining, and this may be favorable to the Black Noddy. The group considered this decline as a positive change.
- Brown Bobby (BRB) – There were no changes between 2017 and 2018, although the population showed an increasing trend.
- Great crested Tern (GCT) - Positive change with its population is increasing over time.
- Sooty Tern (ST) – General trend showed no change for this species. Ms. Basaya suggested a positive score, since the population fluctuation in most years could have been caused by the changes in breeding season and the timing of the surveys. Dr. Aquino added an observation that the breeding of Sooty Terns might have been affected by the El-Niño Southern Oscillation (ENSO).
- Brown Noddy (BRN) – There was a decrease in the population and all agreed to give a negative score, but noted that the overall trend is increasing.
- Black Noddy (BLN) – The group scored negative due to vegetation loss in the islets and the habitat use conflict with the Red-footed Booby.
- Turtle – only 2 species are recorded in TRNP; thus, the score was '0' and there was no data for abundance.
- Cetacean – both abundance and diversity score (?) because there are no data for these parameters

Reef fishes

- The group agreed that biomass had decreased over the years and between 2017 and 2018.
- Dr. Dolorosa mentioned that the decrease is alarming, but it might also be affected by the several factors such as a long-term pattern which might have caused the oscillation; migration to other areas; possible fishing inside and outside the park; and the effects of FADs.
- Density between years also decreased.
- Indicator fishes remain the same over the years and the trend is stable.

Top Predator

Sharks

- In terms of species diversity, there were a few years where the number of species have been noted in the reports submitted by LAMAVE. However, in the recent years, research by LAMAVE has prioritized putting satellite and acoustic tags on select shark species, and not on underwater visual surveys anymore. Thus, the group scored this (?) because there were not enough data on species diversity in the recent years.

Benthic mollusks

- *Tectus niloticus* – The group gave a (?) score, because there was no consistent effort to monitor this species. Dr. Dolorosa suggested to include this in TRNP monitoring as an indicator species, together with the Tridacnids. For Tridacnids, Dr. Dolorosa suggested to monitor just the areas where Tridacnids are known to thrive (use a standard 100 meter transect for monitoring), and this can be done by the rangers.
- Upon the advice of Dr. Dolorosa, the group agreed to remove *T. pyramis* from the list of indicators, since it is not a species of special concern and it is also hard to monitor, due to its small size.

Corals

- Coral diversity was based on generic identification only. The group agreed that the number of genera at both depths are stable. Trend could not be established since phototransect method was only introduced in 2014 by DLSU, while TMO only employed this method in 2017 and 2018.
- The group presumed that changes in diversity may be affected by the methods used, transect orientation and the computer-generated randomization in the scoring the photos.

Seagrass

- The group noted this as a (?) due to intermittent monitoring of seagrasses in TRNP. Dr. Dolorosa and Dr. Aquino suggested to include this as an indicator to be monitored by TMO and in doing so, it should also consider random sampling to lessen the biases.

2. Focal Species population structure

Seabirds

- Most of the breeding seabirds were in stable populations. Observed fluctuations between years might be affected by the timing of the survey and ENSO patterns. Only BLN and ST had positive scores because there were significant increases observed.

Turtles

- It was given a (?) because no surveys were done for 2017-2018. Dr. Aquino mentioned that TRNP is a "developmental area for green sea turtle", because of the high number of juveniles. Dr. Dolorosa added that based on data presented (2016), the sizes fall under the normal distribution which implies a healthy population in TRNP.
- On another note, the high number of juveniles (2016 graph) might be affected by the method according to Dr. Dolorosa. Dr. Aquino added that data might have been bias because turtles in in this size are easier to catch compared to the very small and big ones.

Cetaceans

- No data was presented for this indicator, (?) was noted for this indicator

Mollusks

- The group suggested that data be collected annually on *T. niloticus,* as one of the priority indicators.

3. Habitat distribution and complexity

- Initially, hard corals was the parameter for this indicator. However, upon review of the definition of the indicator, the group proposed that the data to be considered for this indicator must also include the other benthic categories e.g. soft corals, mortalities, others (fauna) abiotic and algae. All benthic categories must be considered and be generalized for scoring this indicator.
- The group suggested to change the term "complexity" into "composition" because they find that the data presented (benthic composition) is not enough to answer the term "complexity".
- Ms. Cadigal further added that in order to determine reef complexity, a resource map can be used to track changes over time. This will be useful to know the extent of the different habitats in TRNP, e.g. instead of just benthos composition, try to check aquatic (hard corals, soft coral, seagrass area etc.) and terrestrial vegetation (islets vegetation for seabird). The group agreed to consider this for the next MEE workshop.
- Dr. Dolorosa proposed to use Google Earth Pro to check the vegetation for TRNP in the past years.

COTs

- It was suggested to transfer the 'COTs' in the indicator 'focal species abundance and diversity' and to monitor their presence and abundance in TRNP. It was scored with a (?) because no data were collected last year.

4. Composition & structure of the community

Species richness and evenness

- Initially, for corals at both depths (genera), negative score was given due to the drop in the number of genera observed in 2018. The transects are laid in the same vicinity in each monitoring station, however, since they are not permanent, the possibility of some deviation in the position of the transect is high. However, we do not discount the possibility that some coral genera previously recorded were not present this year.
- Ms. Cadigal added that this topic could also be answered by exploring the use of Shannon index to be able to cover diversity, richness and evenness. Dr. Dolorosa added that we should compare the data between years in order to find which genera are present or absent (use Relative frequency of genera), and to see if we are losing rare species.
- Fish - both indices are stable.
- Seabird – trend is stable for both indices. The fluctuations in the data could be due to survey timing, seasonality and migration of the seabird, and climate change. Dr. Dolorosa suggested to include year-round data collected by the rangers, while Dr. Aquino stressed that rangers should only collect data on our main concern which are the breeding species.
- Seagrass (?) – no data for this year

5. Water Quality

- We presented to the group the proposed parameters to be scored, which we think have important implications for TRNP and all agreed to these parameters.
- Although no survey was carried out by TMO this year, data may be available from the UP-MSI team that conducted ARMS retrieval and tested some water quality parameters in the TMO monitoring station in June 2018. However, the UP-MSI team are still analyzing the data.

6. Area showing recovery

Hard corals

- We proposed to consider the grounding sites in this indicator. The coral cover in USSG almost did not change between 2017 and 2018, although the overall trend is increasing. MPY, on the other hand, has impr[illegible] from last year, however, the over trend in its hard coral cover/recruitent is decreasing due to the unstable substrate in the impact site.
- The group unanimously agreed to remove seagrass and seaweeds as parameters under this indicator, due to irrelevance.
- Dr. Aquino added to include the Bird Islet as one of the indicators due to the loss of vegetation and unstable islet which might affect the seabirds population.

7. Area under no or reduced human impact

- The group agreed to remove *T. niloticus* from this indicator because the data for this parameters is already used to score indicators 1 and 2.

<u>Group Members:</u>
Dr. Teri Aquino, TMO
Dr. Roger Dolorosa, WPU
Dr. Ronald Ona, PSU
Ms. Elena Basaya, BFAR
Ms. Vivian Soriano, DENR
Ms. Glenda Cadigal, PCSDS
Gerlie Gedoria , TMO
Rowell Alarcon, TMO
Retch Pagliawan, TMO

SOCIO-ECONOMIC MATRIX

Goal	Objective	Socio-economic Indicators:	2009 Results	Remarks	2018 Results	Remarks
1. Livelihoods enhanced/maintained	1. Economic status and relative wealth of coastal residents and/or resource users improved 2. Household occupational and income structure stabilized or diversified through reduced marine resource dependency	1. Local marine resource use patterns	+	Legal basis impacts positively on enforcement (2007-approval of SEP-ECAN)	+	Presence of seaweeds farming area zoning; Increased number of MPAs from 5 to 9; Increase in size of Marine reserve, from 200 ha to 500ha; Increased number of tourists; Increasing tourism market Popularize local products (suka, manamsi) in Puerto Princesa
		2. Household income distribution by source	+	Fishers & seaweed farmers increased from 29% in 2004 to 44% in 2007; and cash income increased from P3,812/mo in 2004 to P4,813/month in 2007	+	Increased household income from 4,813 (2007) to 24,000 (2015); Ave household income above poverty threshold
		3. Number and nature of markets	+	Other than the 10% share Cagayancillo get from TRNP, local user fee collection is in place because growing number of tourists visit Cagayancillo; thus, increasing demand for local services (food catering/vending,	+	Increased tourism fee collection from 50k to 200k; Presence of one lodging house + 3 homestay; Increased number of seaweed buyers ; seaweed farmers can now directly deliver to processors mostly in Cebu (needs actual data) • Decreased number of middle men (market chain shortened)

				homestay, transport, laundry, tour guiding)		
2. Non-monetary benefits to society enhanced or maintained	1. Aesthetic, existence, wilderness values enhanced or maintained 2. Recreation opportunities cultural and ecological services value enhanced or maintained	4.Perceptions of non-market and non-use values (TRNP)	?	Consider this for TRNP only and not for Cagayancillo yet; use donations and gifts as measure of the indicator	?	Integrate survey questionnaires to cover TRNP tourists and Cagayancillo tourists and locals
3. Benefits from MPA equitably distributed	1. Non-monetary benefits distributed equitably to and through coastal communities	4. Perceptions of non-market and non-use values (TRNP) Perception on local resource harvest*	?		?	Integrate survey questionnaires to TRNP tourists and Cagayancillo tourists and locals
5. Compatibility between management and local culture maximized (?)	1. Adverse effects on traditional practices and relationships or social systems avoided or minimized	3. Perceptions of non-market and non-use values (TRNP) Local marine resource use patterns* Local values and beliefs about	?		?	Traditional weaving of mats become less due to change in hobbies/nature of past time work (more on cell phones and TV) Revive sailboat (Dondonay) for tourism Farming methods remained the same; pesticide free (needs data from interview/survey ?)

		marine resources * (optional)				
6. Environmental awareness and knowledge enhanced	1. Public understanding of environmental and social sustainability improved 2. Level of scientific knowledge held by public increased	1. Level of understanding of human impacts on resources	+	25% in 2000 to 60% in 2007	+	Less enforcement effort because of deeper understanding (self-regulation) about MPA Increased compliance on rules and regulations on MPAs (needs actual/quantitative data) • Suggestion: to conduct pre-test and post-test for quantitative evaluation; conduct random survey in the community
		2. Distribution of formal knowledge to community	+	Panagat Festival, the theme of which is marine resources and conservation is well participated by local folks since 2006; Summer fellowship involves students from universities nationwide and community members, CI conducts IEC activities in the barangays.	+	WWF conducted environmental awareness program on MPAs (500 participants: students, LGU, women) Integration in school curriculum (K-12) Livelihood training for fishers conducted (Reef Food Fish)
	3. Scientific understanding expanded through Research and Monitoring	2. Distribution of formal knowledge to community	+	Panagat Festival, the theme of which is on marine resources and conservation is well participated by local folks since 2006; Summer fellowship involves students from universities nationwide and		Conducted environmental awareness program on MPAs (500 participants: students, LGU, women) Integration in school curriculum (K-12) Livelihood training for fishers conducted (Reef Food Fish)

				community members, CI conducts IEC activities in the barangays.		
6. Marine resources sustained or protected	1. Population of target species for extractive or non-extractive use restored to or maintained at desired reference points 2.Population of target species for extractive or non-extractive use protected from harvest at sites and/or life history stages where they become vulnerable 3. Overexploitation of living and/non living marine resources minimized, prevented or prohibited entirely Catch yields improved or sustained in fishing	2[illegible]e, level and return on fishing effort	+	Except that increase in fish population threatens seaweed production	+	Increased tariff collection from fishing products Decrease fishing pressure due to other economic supports/activities (4Ps) ○ Percentage of fishers decreased due to expansion of seaweed farming ○ Rank 2 (next to Agutaya) seaweed producer ○ (others went to school-k12;); needs quantitative data/survey Return to biophysical but data to be gathered from Cagayancillo

	areas adjacent to MPA 5. Replenishment rate of fisheries stock increased or sustained within the MPA					

*Indicators added from guidebook

Cluster conclusion: to conduct further session/workshop to improve assessment

Suggestions:

- Objective/indicators should be based on the goal of TRNP GMP
- Economic data should come from CBMS; Kalahi data limited to privacy policy, on-going MOA w/ LGU
- Use data source
- Kalahi data needs further study
- Socio eco indicators needs revision adapting Cagayancillo developments; follow-up session/workshop
- Conduct exit survey from TRNP tourist

Group Members:
Jean Beth Jontila, WPU
Marivel Dygico, WWF
Jehu Cayaon, Tambuli Ta mga Kagayanen
Jojo Padul, LGU Cagayancillo
SB Haydie Favila, Cagayancillo
Robert Natividad, PGP
Jobert Gabo, DSWD Kalahi
Grace Barber, TMO

GOVERNANCE MATRIX

Goals	Objectives	Governance Indicators	2010 Results	Remarks	2018 Results	Remarks
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	+	Enactment of the TRNP Act Definite penal provisions for poaching and other offenses Lessen violations due to effective IEC and enforcement TPAMB to prepare position paper on establishment of archipelagic sea lane to DFA	+	Fishing, shipping and business interests (able to respond to conflicts)
2. Effective management structures and strategies maintained	Decision-making and management bodies present, effective, and accountable	2. Existence of a decision-making and management body	+	Existence of the governing body as defined in TRNP Act Approved and published IRR which also provides for the creation of TAB Despite outstanding performance of TMO, the legal personality needs to be established	+	TMO to create a venue to debrief diving community after the season Cagayancillo Rangers need to be deputized
3. Effective management structures and strategies maintained	Management planning implemented and process effective	3. Existence and adoption of a management plan	+	Final copy of Mgt Plan will be printed after Jan 2011 National workshop MEE results show + implementation of the plan Establishment of database management info system	+	Management Plan adopted but review, scheduled for 2018, cannot be conducted while awaiting developments on the standing of TMO under the 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	+	TRNP Act was enacted on April 6, 2010	+	Is TRNP mentioned in the Comprehensive Land/Water Use Plan of Cagayancillo?
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	+	Funds still available for 2011 but the contingency fund is being depleted Generation of funds from internal and external sources Provincial Gov't provided funds from 2009-2010 Funds support for 2011? Enhance marketing and promotion strategy to get outside funding Establish linkages with BIMP-EAGA and improve partnership with Provincial Tourism Office in tourism promotion	+	Establish a mechanism to respond to tourism emergencies, e.g., security deposit from dive operators to cover cost of evacuations, etc.
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	+	MEE met twice in 2009; dive operators meeting; IEC visited 5 municipalities; Bright skies Program of Cebu Pacific and WWF; new partner- Global Mala and continuing partnership with UNESCO	+	National government agencies to be clearly identified Information and education dissemination for fishers operating outside TR

				Continuing support to the Local Government of Cagayancillo		Add academe to the list of stakeholders
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	+	Review enforcement procedures involving government entities conducting legitimate operations The creation of TAB provides venue for admin cases and discussion of arising issues	+	Limitations posed by weather conditions on ability to conduct patrols

Governance Results, Narrative

The Governance group was composed of representatives from the Philippine Coast Guard, dive operators, PCSDS, and TMO. The matrices and information provided in this section follow those recommended in the guidebook *How is your MPA Doing?* Responses were culled from the group members and from dive operators, some through email.

1. Level of Resource Conflict. 'Conflict' clash of interests or ideas, existence of group/s whose interests are in with opposition to those of the MPA

Conflict Assessment Matrix

Conflict	Issues	Stakeholder/ Leader	Time Period	Intensity 1-low 2-medium 3-high	Scale 1- localized 2- national 3- int'l	How/who managed/ resolved
Example:	Rules on holding tanks	Dive operator	2014	2	1	Dive optrs, TPAMB
Fishing	Fishing	Fisherfolks	Present-ongoing	1-3	1-3	TMO
Shipping, local & intl	Risk/potential of pollution	Shipping companies	Present-ongoing	1-2	1-2	IMO/TMO/ PCG
Business *vis a vis* conservation	Business interest of tourism sector may conflict with conservation goals	Tourism sector TMO	Present-ongoing	1	1	Tourism sector TMO
Conflict with other agencies	Administrative issues	TMO	Present-ongoing	1-2	2	DOJ opinion of 19 Nov 2018 may serve as first step toward managing administrative issues

Although fishing has been largely controlled, it is considered a conflict because the threat of encroachment by fishers is ever-present. The intensity was rated from low to high because the occurrence of fishing is low since 2010, but when and if fishing occurs, its intensity as a conflict is high for two reasons: 1) cases need to be filed to demonstrate that violations are dealt with severely, and filing a case and seeing it through resolution is a time-consuming and costly process, and, 2) impacts of the environment could be high. This issue is largely managed by TMO through the law enforcement activities in TRNP.

Local and international shipping was viewed as a conflict because of its potential to cause pollution.

Business vis a vis conservation was raised as a conflict because of the possibility that the private sector would cut corners and negatively affect the environment in order to maximize profits, e.g., allow guests to touch animals to get positive reviews and repeat customers, etc. Its intensity was viewed as low because most of the dive operators are currently compliant and supportive of environmental goals.

Conflict with other agencies here emanates from the issues that TMO face in complying with the guidelines of other government agencies, e.g., COA rules, DENR guidelines on reporting, etc. This issue is mostly administrative and deals with how TMO conducts its business, e.g., whether to use government or private procedures. It is believed that the DOJ opinion stating that TMO is under the Office of the President is a major development in solving this issue.

2. Existence of a Decision-Making and Management Body

Roles and Functions	**Are roles and functions carried out?** (Yes/No)	**If yes, how? If no, why not?**
Decide matters relating to planning, resource use and protection, and general administration of the area in accordance with the Management Plan	Yes	Thru regular meetings and deliberations, consensus-building
Approve budget allocations, proposals, work plans, action plans, guidelines for management of the TRNP in accordance with the Management Plan and its policies	Yes	Thru ExeCom approval and endorsement to TPAMB
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	Thru TMO collaborations, TPAMB-member interventions, volunteers/donors
Initiate the implementation of the delineation of the boundaries of the TRNP	Yes	Done in 2010, when NAMRIA issued nautical chart of TRNP
Issue rules and regulations, including the imposition of penalties, in pursuit of the conservation, preservation, management and sustainable use of the TRNP	Yes	Thru resolutions of the TPAMB *en banc*
Ensure the implementation and enforcement of laws, rules and regulations, policies, programs and projects within the TRNP	Yes	Thru TMO enforcement initiatives
Control and regulate construction, operation and maintenance of structure and utilities within the TRNP	Yes	Thru TMO
Monitor and evaluate the performance of the TMO and all those implementing activities and projects in TRNP	Yes	No formal performance evaluation conducted Performance evaluated based on achievements against Annual Work Plan
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	Annual TPAMB Reso appointing the PASu
Generate funds and accept donations, grants, appropriate and disburse the same, and exercise accountability over all funds that may accrue to the TRNP	Yes	Thru contributions from partners, request for grants by TMO TMO reports to the TPAMB on fund utilization
Manage the TRNP Trust Fund, as herein provided	Yes	Thru TMO, which reports regularly
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	Thru the Tubbataha Adjudication Board
Deputize individuals for the enforcement of laws, rules and regulations governing conduct within the TRNP, and prescribe the necessary qualifications therefore	No formal deputation made	Deputation process to be determined

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 thru TPAMB Reso 15-10 dtd 11 Aug 2015
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	Private counsel retained
Provide adequate measures to ensure consultation and participation of stakeholders	Yes	Thru formal and informal meetings/communications with stakeholders on issues
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 determined by the TPAMB, e.g., collection of specimens for research Tourism and research are the only allowed uses of TRNP
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	TMO delegated to issue permits TPAMB determines fees

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) **59%**

Checklist of Roles and Functions: 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	Mgmt Plan prepared, review due; DOJ opinion needs to be taken into consideration
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	Regular reports to ExeCom and TPAMB
Hire non-management personnel of the TRNP, and recommend management personnel to the TPAMB	Yes	What are management and non-management personnel? Those with supervisory roles are management personnel.
Supervise TRNP personnel in the performance of their duties and functions	Yes	Discussions with staff on achievement of TMO targets

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	Collaboration with TPAMB member agencies on Plan implementation
Develop and implement park information, interpretation, education and other visitor programs	Yes	Information, education, and communication activities target tourists, children, and the youth
Enforce the laws, rules and regulations and TPAMB resolutions relevant to the TRNP, file complaints, and assist in the prosecution of offenses	Yes	Rules enforced, criminal and administrative cases filed
Monitor all activities within the TRNP in conformity with the Management Plan	Yes	Monitoring thru regular communications with marine park rangers
Ensure that consultative and participatory mechanisms are maximized in decision-making	Yes	Various sectors consulted, eg., tourism sector, LGU, PN, PCG

The current TMO organizational structure, and the roles and functions of staff may slightly change as a result of recent DOJ opinion that TMO is under the Office of the President.

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	√	Next year
2. The Plan is reviewed based on:		
a) current plan (date of formulation)	2011	Review once every three years
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, signed by Acting Chair, Atty. Noel Aquino
c) updated plan (date of adoption, signatories)		2015-2021 formulated with stakeholders, but not formally adopted by TPAMB. Due for review 2018 but developments re DOJ opinion expected to affect staffing and functions
3. Completeness of the plan		
a) goals	√	
b) objectives	√	Not clearly stated,
c) management strategies	√	
d) administration **(*staffing pattern, budget)**		Not included in the plan, needs to be in the plan
e) surveillance and enforcement	√	
f) monitoring and evaluation of plan effectiveness	√	
4. Enforceability of the plan		

Is there a legislation at the national or local level to provide legal basis for the plan to enforce management measures?		Note: Provide information materials at the Yacht club
a) What laws are in place? (Date of legislation)		RA 10067, April 2010
b) Institution or body in place to implement the laws		TPAMB
c) Are there legal provisions/sufficient penalties for violators?	√	
d) Are the laws sufficient to support the CRM/MPA?	√	

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.

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	3	3

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 resources.

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)**	√-internally funded	√-
Encourage the participation of external research institutions in the conduct of research **(University of Guam)**	√	√
Sustainable Resource Management		
Conduct studies to improve understanding of local resource use and socio-economic factors that contribute to resource depletion in TRNP **(WWF-Phils)**	?	?
Conduct community-based resource management activities including the establishment and management of local reserves **(WWF-Phils)**	?	?
Implement community-based livelihood projects linked with sustainable resource management **(WWF-Phils)**	?	?

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.

Guide Questions: (5 respondents from tourism sector)

Are there regularly scheduled meetings with MPA staff to discuss issues of compliance? **Yes, for 5 dive operators**

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? **Not really, but management open to suggestions and comments**

Suggestion: Dive operators must be represented in the TPAMB

The stakeholders that are interested in the future of Tubbataha are:

The Provincial Government of Palawan

The Palawan Council for Sustainable Development

Relevant national government agencies

Non-government organizations and the international conservation community

The Municipality of Cagayancillo, which exercises political jurisdiction over Tubbataha

Tourism operators who promote scuba diving tours in TRNP

Fishers operating outside the boundaries of the Tubbataha Reefs benefiting from its rich and diverse marine resources

Non-users, who are interested in the bequest values of TRNP, Subade (2006)

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.

Identify from the management plan the section which describes the monitoring, control, surveillance and enforcement program for the MPA. **Contained in 2012 Compliance and Enforcement Plan (CEP)**

Review patrol records- schedule and procedures. **Patrols exceed the minimum requirement set in CEP**

Guide Questions:

Do formal enforcement guidelines and procedure exist? **Yes. 2012 CEP**

Do informal enforcement guidelines and procedures exits? **Yes**

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

Describe the guidelines and procedures. **c/o CEP**

Are they periodically reviewed and updated? **No update, regularly implemented**

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. **1 in 2017, none in 2018**

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. **Copy provided in Ranger Station and guidelines discussed before deployment to TRNP**

Calculate the patrol effort in terms of:

Man-hours (minimum of 5 MPRs/patrol = about 1200 man-hrs)

Total hours (240 hrs)

Number of patrols (111 out of 100)

Variation in temporal and spatial patterns of patrols: 53 to North Atoll, 46 to South Atoll, 12 to Jessie Beazley

Distance covered – 2,045.1nm

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 posed by weather conditions**

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.

Checklist of Training and Education Activities

Training and Education Activities	**Budget**	**Who identified the activity? Why?**	**Participants**	**Satisfaction Rating- interview sample participants** (Yes/No)	**Compliance Behaviour-interview sample participants** (Yes/No)
Oceanography Seabird ID Dolphins and whales ID (2014)	40,000.00 (1%)	TMO, consultation	Diving professionals	Yes	N/A
Elasmobranch ID (2015)	60,000.00 (1%)	TMO	Diving professionals	Yes	
Diving Injuries OIWR (2016)	120,000.00 (1.5%)	PCSSD PCSSD	Diving professionals	Yes	
Coral & Fish ID Refresher OIWR (2017)	110,000.00 (1.2%)	TMO TMO	Diving professionals	Not quite Yes	
	PhP330,000.00			***14/15***	***Total yes/total interviewed***
Cagayancillo Rangers					
Pre-Departure Briefing of Tourists					

Group members:
Dino Pangioni, Sakura
John Francisco A. Pontillas, PCSDS
Rey- Ray Bonoan, Zameridius
Lt. Christian Jazmin, PCG
Ens Harvey Cerdena, PCG
Anatalia Liu, TMO
Jezza Jane Padrigo, TMO
Angelique M. Songco, TMO

TRNP MANAGEMENT EFFECTIVENESS EVALUATION (MEE) 2018

ANGELIQUE M. SONGCO
BEST WESTERN HOTEL, IVY WALL
5 DECEMBER 2018

1

Management effectiveness – the degree to which management actions are achieving the goals and objectives of a protected area.

- Can result in improvements in management through learning, adaptation, and diagnosis of issues;
- Provides a way toshow accountability for the management of an MPA

2

OVERVIEW OF TRNP MEE PROGRAM

- 2002 – TRNP chosen as pilot site for guidebook: *How is Your MPA Doing?*
- 2003 – Introduction of the MEE framework, rocess and methods to stakeholders TMO visioning, goal and objective-setting, selection of indicators
- 2004 – 1st MEE, integration into TRNP Management Plan
- 2005 – 2nd MEE workshop, introduction of simplified evaluation tool (+, -, 0, ?)
- 2006 – 3rd MEE workshop, indicators reduced from 35 to 22

3

- 2009 – 4th MEE workshop using *How is Your MPA Doing?* tool
- 2010 - 5th MEE using *How is Your MPA Doing?* tool
- 2011 – Marine Protected Area Management Effectiveness Assessment Tool (MEAT) used, CI initiative

4

- 2014 – GIZ-sponsored evaluation using MEAT and Management Effectiveness Tracking Tool (METT)
- 2014 - MEE workshop using Great Barrier Reef tool held in Asturias Hotel. With measurement of effectiveness in terms of maintenance of 'Outstanding Universal Value' (OUV) of Tubbataha
- 2016 – GIZ-sponsored evaluation using MEAT and METT

5

1.4.4	IEC activities coordinated by the management body?	0 or 1	1	Updated IEC Plan
	Have Information, Education, and Communication (IEC) activities been coordinated by the management body? Are signboards / billboards posted along the coastline / shoreline and visible to key stakeholders?			1)IEC plan or similar document 2)Minutes showing IEC activities 3)Reports on IEC activities 4)Photographs of billboards / signboards and IEC materials
1.4.5	MPA boundaries delineated	0 or 1	1	NAMRIA navigational map show delineated boundaries of no-take zone
	Are the MPA's boundaries properly delineated in the most appropriate manner and boundary markers installed? When possible, the MPA boundaries should be marked by anchor buoys made with appropriate and sturdy materials. For large areas like MPAS seascapes, information materials (e.g., banners, billboards, posters) that clearly show the boundaries of the protected area and zones established should be accessible and visible to key stakeholders.			1)Photograph of marker buoys showing status 2)Maps on billboards, banners, posters
1.4.6	MPA enforcers identified	0 or 1	1	PN, PCG, LGU, TMO
	Have the MPA enforcers already been identified?			1)Document showing names of enforcers (e.g., Barnay Dagat, PNP Maritime Group, Coast Guard, etc.); appointment papers
1.4.7	Biophysical monitoring activities coordinated by the management body	0 or 1	1	Annual Work and Financial Plan; Biannual State of Conservation Report to UNESCO WHC; Annual
	Are the biophysical monitoring activities coordinated by the management body?			1)Biophysical monitoring report 2)Resolutions approving monitoring activities
	TOTAL SCORE FOR LEVEL 1	**27**	**27**	
	Thresholds are in BLOCK CAPITALS. Minimum score of 18 points and all Thresholds should have been met to pass this Level.			

6

The scores for each of the six elements of the framework were then scaled to provide a total score out of 40. The following system was used to describe the performance of the management for each element in the framework.

Effective	Mostly effective	Partially effective	Ineffective
35-40	27-34	16-26	0-15

The six management elements are explained as follows:

CONTEXT	PLANNING	INPUT	PROCESSES	OUTPUT	OUTCOMES
Where are we now?	*Where do we want to be?*	*What do we need to do it?*	*How do we go about it?*	*What were the results?*	*What did we achieve?*
Significance / values *Threats* *Vulnerability* *Stakeholders* *National context*	*Protected area (PA) legislation and policy* *PA system design* *PA design* *Management Planning*	*Resources available to the agency* *Resources available to the protected area*	*Suitability of management processes and the extent to which established or accepted processes are being implemented*	*Results of management actions* *Services and products*	*Impacts: effects of management in relation to objectives*

7

MANAGEMENT TOPICS

Category: Values

BIODIVERSITY PROTECTION

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Effective	Effective	Effective	Effective	Effective	Effective Effective	Overall Biodiversity

COMMUNITY BENEFITS

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective	Effective Effective	Overall Biodiversity

8

Category: Impacts

FISHING

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Effective	Effective	Effective	Effective	Effective	Effective Effective	Overall Biodiversity

MARINE POLLUTION

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Mostly Effective	Mostly Effective	Partially Effective	Mostly Effective	Mostly Effective	Mostly Effective Mostly Effective	Overall Biodiversity

9

SHIPPING

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Partially Effective	Partially Effective	Partially Effective	Partially Effective	Partially Effective	Partially Effective Partially Effective	Overall Biodiversity

CLIMATE CHANGE

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective Mostly Effective	Overall Biodiversity

10

WATER QUALITY

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective	Mostly Effective Mostly Effective	Overall Biodiversity

11

Category: Uses

RESEARCH

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Mostly Effective	Mostly Effective	Partially Effective	Mostly Effective	Mostly Effective	Mostly Effective Mostly Effective	Overall Biodiversity

TOURISM

Effective	Mostly effective	Partially effective	Ineffective

Context	Planning	Inputs	Processes	Outputs	Outcomes	
Effective	Effective	Mostly effective	Effective	Effective	Effective Effective	Overall Biodiversity

12

CONCLUSION:

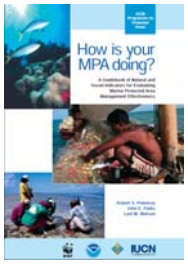
In the over all, the three evaluation tools used to measure effectiveness in the management of Tubbataha showed generally positive results.

Of the these tools, the MEAT/METT is the least responsive, while the tool developed by Hockings for the Great Barrier Reef (GBR) captures much of the texture and nuance of Park management.

The *How is Your MPA Doing?* tool is at the intermediate level, not too time consuming and offers enough depth to show areas needing improvement. Results can feed into the GBR MEE tool.

13

14



2010 MEE Results

'How is your MPA Doing?'

1

Governance Indicators

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

2

Biophysical Indicators

1. Focal species abundance and diversity
2. Focal species population structure
3. Habitat distribution and complexity
4. Composition and structure
5. Water quality
6. Area showing signs of recovery
7. Area under no or reduced human impact

3

Socio-economic Indicators

1. Local marine resource use patterns
2. Type, level and return on fishing effort
3. Level of understanding of human impacts on resources
4. Perceptions of non-market and non-use values (include other economic values i.e. direct use value, indirect use value and option value to get total economic value)
5. Household income distribution by source
6. Number and nature of markets
7. Distribution of formal knowledge to community

4

Scoring

+ Positive change

- Negative change

0 No change

? No data

5

Scoring

Biophysical Indicators:		Score	Remarks
1. Focal species abundance and diversity	Seabirds Diversity	0	99 species
	Abundance		
	RB	+	trend decreasing
	BB	+	trend increasing
	GCT	+	trend increasing
	ST	+	trend increasing
	BRN	+	trend increasing
	BLN	+	trend increasing

6

Highlights of the MEE 2010 Results

7

Governance

1. Level of resource use conflict	• Enactment of the TRNP Act • Fewer violations due to effective IEC and enforcement
2. Existence of a decision-making and management body	• Existence of a decision-making and management body as defined in TRNP Act; Approved and published IRR and creation of TAB • Despite outstanding performance of TMO, the legal personality needs to be established
3. Existence and adoption of a management plan	• Updated Management Plan

8

Governance

4. Existence and adequacy of enabling legislation	• TRNP Act enacted on April 6, 2010
5. Availability and allocation for TRNP administrative resources	• Funds still available for 2011 but the contingency fund is being depleted • Generation of funds from internal and external sources • Support from Provincial Government
6. Degree of interaction between managers and stakeholders	• MEE conducted • Dive operators meeting; IEC activities with fisherfolks

9

Governance

7. Clearly defined enforcement procedures	• Review enforcement procedures involving government entities conducting legitimate operations • The creation of TAB provides venue for admin cases and discussion of arising issues
8. Degree of information dissemination to encourage stakeholder compliance	• Sustained IEC activities • Formulation of Volunteer Management Policy • Radio interviews • Production of Tubbataha Primers (2nd & 3rd Edition) and other info materials • Intensified pre departure dive boats briefings • Decrease in incidence of violations indicates effective IEC

10

Biophysical

1. Focal species abundance and diversity	Seabirds	Diversity	• 0 ; same number of species
		Abundance	• (+) for all 6 breeding species • Trend is increasing except for Red-footed Booby
	Turtles	Diversity	• 0 ; only 2 species
		Abundance	• (?) No study conducted

11

Biophysical

1. Focal species abundance and diversity	Cetaceans	Diversity	• (+) New record for Longman's beaked whale and Omura's wale
		Abundance	• ? ; Abundance hard to estimate for species are transitory.
	Fish	Diversity	• (+) 600 species
		Biomass	• (?) Biomass reduced due to removal of sharks

12

Biophysical

1. Focal species abundance and diversity	Indicator fish	Biomass Density	• (-) But trend is generally increasing • (+)
	Top predators	Diversity Abundance	• (+) 15 species of sharks and rays • (+) Whitetip reef shark
	Benthic mollusks	Density	• (-) *Tectus niloticus* generally decreasing in number
	Corals	Diversity	• ? ; No study
	Seagrass	Diversity	• ? ; No study

13

Biophysical

2. Focal species population structure	Seabirds	• (+) for all six breeding species
	Turtles	• (+) study conducted; data for population structure available
	Cetaceans	• (+) study conducted but data not enough to determine abundance
	Mollusks	• ? No data

14

Biophysical

3. Habitat distribution and Complexity	Corals Zonation COT	• (+) • (+) COT study conducted
4. Composition and structure of the community	Hard corals Soft corals	• (-) But overall trend slightly increasing • (+)
	Seagrass	• (+) Study conducted
5. Water quality		• 0 no study conducted

15

Biophysical

6. Area showing signs of recovery	Coral Cover	North atoll South Atoll Jessie Beazley Reef Seagrass Seaweeds	• (+) • (+) • (-) • ? • ?
7. Area under no or reduced human impact			• (+) Park area increased + buffer zone

16

Socio-economic (2009)

1. Local marine resource use patterns	+	• Legal basis impacts positively on enforcement (2007-approval of SEP-ECAN)
2. Type, level and return on fishing effort	+	• Except that increase in fish population threatens seaweed production
3. Level of understanding of human impacts on resources	+	• 25% in 2000 to 60% in 2007
4. Perceptions of non-market and non-use values (TRNP)	?	• Consider this for TRNP only and not for Cagayancillo yet; use donations and gifts as measure of the indicator

17

Socio-economic (2009)

5. Household income distribution by source	+	• Fishers & seaweed farmers increased from 29% in 2004 to 44% in 2007; cash income increased from P3,812/mo in 2004 to P4,813/month in 2007
6. Number and nature of markets	+	• Other than the 10% share Cagayancillo get from TRNP, local user fee collection is in place • Increasing demand for local services (food catering/vending, homestay, transport, laundry, tour guiding)

18

Socio-economic (2009)

7. Distribution of formal knowledge to community	+	• Panagat festival is well participated by local folks since 2006 • Summer fellowship involves students from universities nationwide and community members • NGOs conducts IEC activities in the barangays

19

Thank you!

20

TRNP Management Effectiveness Evaluation
05 December 2018
Best Western The Ivywall Hotel

Attendance

Name	Gender	Designation	Affiliation	Signature
1. Jean Beth G. Jontila	F	Faculty	WPU	[signature]
2. Roberto G. Dolorosa	M	faculty	WPU	[signature]
3. Dino Pangilinan	M		Sahuna	[signature]
4. ENS Marvin Cerdena PCG	M	PCG MBL		[signature]
5. Rey-Ray Bonoan	M	Rep.	SAMERDEUS	[signature]
6. Joseph C. Padul	M	M. Agriculturist	LGU-Cagayancillo	[signature]
7. Teri Aquino	F		MWWP	[signature]
8. LT Christian Jasmin	M	PCG-PAL	"	[signature]
9. Ma. Elena A. Barangan	F	Aqua. II	BFAR	[signature]
10. Jehu P. Cayaon	M	President, Tambali	Tambali ta mga Taga...	[signature]
11. Haydie C. Fayila	F	SB Member	LGU Cagayancillo	[signature]
12. Robert Natividad	M	Economist IV	PGP	[signature]
13. Ronald A. Ona	M	UPPO Director	PSU	[signature]
14. Arnold D. Bunas	M	MPDC	LGU-Cagayancillo	[signature]
15. John Francisco A. Pontillas	M	Head, Ecan Coastal and Marine Programs	PCSD	[signature]

TUBBATAHA REEFS NATURAL PARK
WORLD HERITAGE SITE

TRNP Management Effectiveness Evaluation
05 December 2018
Best Western The Ivywall Hotel

Attendance

	Name	Gender	Designation	Affiliation	Signature
16.	Marivel P. Dygico	F	PM	WWF-Phils	[signature]
17.	Ronald Alarcon	M	Researcher	TMO	[signature]
18.	MA. VIVIAN O. SORIANO	F	SR. EMS	CENRO PUERTO PRINCESA	[signature]
19.	Balbo, Joberl T	M	AZ DSWD Kalahi		[signature]
20.	Angelique Songco	F	PASu	TMO	[signature]
21.	Gedoria, Gerlie	F	TMO/Research	TMO	[signature]
22.	Maria Retchie Pagliawan	F	TMO/Research Officer	TMO	Pagliawan
23.	Anatalia M. Lii	F	TMO/Budget	TMO	[signature]
24.	Jezza Jane Padrigo	F	TMO/EA	TMO	[signature]
25.	Mary Gran Barlew	F	Admin Officer	TMO	[signature]
26.					
27.					
28.					
29.					
30.					