

Report on Evaluation of Conservation Benefits Tool Saipan, CNMI

Prepared by Micronesia Islands Nature Alliance

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The Nature Conservancy (TNC) developed an evaluation tool for marine protected areas management effectiveness (MPAME) and has begun to implement it in all Micronesia Challenge jurisdictions. The tool has been implemented in Palau, Yap, Chuuk, Pohnpei, Kosrae, and Republic of the Marshall Islands. Rare Campaign Coordinators in CNMI and Guam have also been trained in its use. TNC has been in the process of developing an extension of the MPAME tool to measure conservation benefits, and tested it in CNMI. On December 1, 2015 partners from CNMI government agencies, NGOs, and community members gathered to review the draft conservation benefits tool provided by The Nature Conservancy. The focus group was an opportunity to bring together different perspectives and insight to critique the existing tool and provide suggestions on how to strengthen it. Those in attendance were:

- Jihan Buniag, Coral Reef Outreach Coordinator, Division of Coastal Resources Management, Bureau of Environmental and Coastal Quality
- Ryan Okano, CNMI Water Quality Branch Manager, Division of Environmental Quality, Bureau of Environmental and Coastal Quality
- Britta Baechler, Marine Protected Area Coordinator, Division of Fish and Wildlife, Department of Lands and Natural Resources
- Frank Ada, CNMI Forestry, Department of Lands and Natural Resources
- Rebecca Skeelee, Planner, Division of Coastal Resources Management, Bureau of Environmental and Coastal Quality
- Kodep Ogumoro-Uludong, Program Manager, Micronesia Islands Nature Alliance
- Jolly Ann Cruz, Program Coordinator, Micronesia Islands Nature Alliance
- Elizabeth Furey, Program Manager, Micronesia Islands Nature Alliance
- Wayne Dawe, Community member and Tasi Watch Ranger
- Brooke Nevitt, Executive Director, Micronesia Islands Nature Alliance

First, Brooke Nevitt welcomed the participants and expressed the appreciation of MINA and TNC for their time and active participation. The welcome was followed by an overview of the tool by Kodep Ogumoro-Uludong. Kodep shared with the group some experiences from the MPAME tool and how this tool was an effort to understand the benefits of conservation for communities throughout the region. He then turned it over to Brooke who explained the process for the focus group.

First, the room would be divided into groups of three. Each group was asked to go through the entire tool together and make comments on each question. In addition, they were asked to make comments on the tool as a whole. While working through the questions, the groups were asked to consider the following questions:

1. Does the question make sense?
2. Is the question clear? (How could you make it more clear?)
3. Is the question vague? (How could you make it more specific?)
4. Is the question relevant for the region? (How could it be more relevant?)
5. Are the answer options appropriate? (What are better answer options?)
6. Are there questions missing from the section? (What questions should be added?)
7. Are there sections missing from the tool? (What sections should be added?)
8. How could you improve the overall tool?

The teams split up and worked on going through the tool for two hours. They were provided packets with the printed tool and space following each question for notes.

After they went through the questions in the tool as break out groups, the entire group reconvened and we went through the tool together. Each group was asked to lead the review of one of the tool's five sections. As we went through the tool all participants were asked to share their comments and suggestion for each question. These comments and suggestions were captured on flip chart paper as Brooke Nevitt took notes.

Finally, following the review of each question, participants were asked to share their comments and suggestions for the overall tool.

Comments and Recommendations

Individual Questions

MINA went through the comments received for each question and edited the tool after considering the intent of the question and the feedback received. In the tool (see appendices) we have attached the original DRAFT tool, the tool that includes comments from the focus group, the tool that incorporates suggested edits, and finally a revised DRAFT tool. We felt this was the most effective and transparent means through which to provide feedback. Following is a review of each question, the comments made, and MINA's suggested adjustments. ***To follow the suggestions, refer to "MINA feedback" tab on the excel sheet and in the attachments.*** The question numbers coincide with that sheet. Italicized statements apply generally to tool.

WATER

Q#1: This was removed, as the following question would still address the issue without being redundant. The phrase “public water system” is also vague.

Q#2: If the answer to this question is “No”, respondent can skip to next section. [IF NO SKIP TO NEXT SECTION] was added. For flow purposes, this question was moved to follow subsequent question. In addition, zero (0) points were assigned to each option (yes or no) because if a protected area is not a source of fresh water it is not any less valuable.

Where necessary, questions were made into subsidiary questions due to their relevance to the previously-asked question.

The term “conservation” area was changed to “protected” area throughout to provide for consistency.

Q#3: A subsidiary question was asked to allow for answers to this question. In rating, point value was switched - 1 point for “no” and 0 points for “yes.”

Q#4: For simplicity, the term “quantity” was changed to “amount.” The phrase “your community” needs to be clarified, perhaps with each audience when this survey is conducted. The following two questions were made into subsidiary questions under this question.

Q#6: The terms “small” and “large” were deemed vague and subjective, so they were replaced with the terms “significant” and “insignificant” as better gauges. The rating options were also amended to reflect this change, with a range of options to allow for more accurate scoring.

Q#7: This question was also amended similar to Q#4 with the same type of subsidiary questions.

Q#10: This question was split into two separate open-ended questions to allow for more targeted and organized responses.

FOOD SECURITY

Q#11: The term “contribute” is vague; it was replaced with “impact.” Similarly, the term “accessibility” was replaced with “community’s access to” for clarity. This question’s scoring was also removed. The following question, changed into a subsidiary question, was too complex; to simplify, “level of contribution” was replaced with “impact,” and “accessibility” with “community’s access to.” The rating options as percentages were deemed too complex so options were changed to significantly/slightly negative and positive.

Since the level of protection varies across conservation sites, questions were added in the appropriate section to clarify whether or not specific activities are permitted in the protected area, including fishing, gleaning, farming and hunting. Questions in this section were standardized so they asked the same of all four activities.

Q#13: “Perceive” was changed to “noticed” for clarity. No points given for either answer.

Q#14: The intent of this question was vague – is it referencing food fish in the protected area? Outside of it? Fish caught? Fish sold? Final recommended version references food fish being caught.

Q#15: This question was removed, as the perception of any increase or decrease in fish would in fact affect accessibility.

Q#16: This question, and subsequent ones with the same terms, was clarified with the addition of “food” before “invertebrates” to align it further with food security issues.

Q#17: In this question the rating was also adjusted to provide a more accurate score.

Q#22: In this question the rating was also adjusted to provide a more accurate score.

Q#27: In this question the rating was also adjusted to provide a more accurate score.

Q#31: This open ended question was split to provide for answers for threats to the availability of food from each activity.

LIVELIHOOD

Q#32: “Management” was removed so as to make the question community focused, and to capture any employment opportunities arising outside of management/regulatory functions; this was added as a subsidiary open-ended question. The same was done (removing “management”) for subsequent questions with the same line of questioning. A second subsidiary question was included to gauge whether these employment opportunities were impactful.

Q#34: Changed the word “contribute” to “impact” because “contribution” already has a positive connotation. We also adjusted the rating for this question since it is a neutral question.

Q#35: Removed the word “contribution” and replaced with “impact” as in the previous question. Rating options were amended similarly as previous section on food security.

HISTORICAL, CULTURAL & SPIRITUAL

The term “historical” was added to section title to clarify this distinction from other two values.

Questions in this section were amended for clarity, with any unnecessary terms removed, and clarifying terms added.

Q#42: “or cultural” was added to ensure the question is comprehensive. 42A was added to allow for further explanation. No scoring is associated with the listing, it is meant to provide information for management.

Q#43: For clarity, the wording was changed.

Q#45: This question was removed because it was covered in the food security section.

Q#46: Wording was changed for clarity

Q#ADDED: This question was added to provide a deeper understanding of traditional or cultural sites associated with the area.

Q#48: This question was edited for clarity

Q#49: This question was removed because it was addressed in the food security section.

Q#50: Words were added to clarify the intent of the question and provide opportunity for deeper information to be gleaned from the process.

ECOSYSTEM SERVICES

Please see below

Overall feedback

It was mentioned several times throughout the focus group on the importance of having a facilitator who is familiar with the respective site and is versed in the intent of each question. These questions can be interpreted in multiple ways and a skilled facilitator can help guide the process. Once the tool is finalized, it is recommended that a training be implemented and a guide developed that thoroughly explains the purpose of the tool, the implementation process, and an in-depth description of each question.

In addition, it is important to select a group of participants who are able to answer the questions. Several times, focus group participants requested an “I don’t know” option. However, after discussion, it was felt that a strength of the tool is in its call for groups to agree on an answer. Thus, it is critical to bring together a group of community members who are confident in their knowledge of their community and the respective protected area.

For the section on ecosystem services, the focus group agreed that this section is not appropriate for this tool that focuses on the community. Because of the highly technical aspect of this section, it is appropriate for a more technical tool such as the Marine Protected Area Management Effectiveness Tool.

Throughout the tool, the questions and answer options were edited (where necessary) to simplify to ensure clarity, particularly with the “community” audience in mind.

The focus group also struggled with the scoring system. During the review, the scoring options were edited to better serve the intent of each question.

Appendices:

1. Tool with comments
2. Revised tool

1. Tool with Comments		
		<div>RATING</div> <div>SCORE</div>
WATER		
1	Is the public water system the main source of water to your community?	Need options here
	This question needs clarification: what does this refer to - drinking water? Public utility-provided water?	
	Add in: "If no, then what is the source?"	
	"If no, then stop here."	
2	Does the source of your community's public water system come from the protected area (s)?	<div>(0) No</div> <div>(1) Yes</div>
3	Are there any threats to your community's public freshwater?	<div>(0) No</div> <div>(1) Yes</div>
	Clarify or provide examples. (ie. in CNMI there is no public freshwater system, only utilities-provided)	
	Add in: "If there are threats, what are they?"	
	What is this referring to?	
4	Have the conservation areas changed the quantity of publicly available freshwater for your community?	<div>(0) No</div> <div>(1) Yes</div>
	Need consistency in term use: protected area or conservation area?	
	Substitute QUANTITY with AMOUNT.	
	What community does this reference? Island wide, CNMI wide, just village?	
5	{If yes} Have the conservation area (s) increased or decreased the quantity of publicly available freshwater for your community?	<div>(0) Decreased</div> <div>(1) Increased</div>
6	{If yes} Has the change in the quantity of publicly available freshwater for your community been small or large?	<div>(0) Small</div> <div>(1) Large</div>
	Small/large: vague/subjective	
7	Have the conservation areas changed the quality of publicly available freshwater for your community?	<div>(0) No</div> <div>(1) Yes</div>
8	{If yes} Have the conservation area (s) increased or decreased the quality of publicly available freshwater for your community?	<div>(0) Decreased</div> <div>(1) Increased</div>
9	{If yes} Has the change in the quality of publicly available freshwater for your community been small or large?	<div>(0) Small</div> <div>(1) Large</div>

10	Please name the top 3 threats to the protected area that affects the quality or quantity of publicly available freshwater	-----	
	These are two separate questions / ID threats to each one.		
	This should follow previous threat question		
FOOD SECURITY - when addressing PA questions, they should be more specific pertaining to within MPA or around, as there might be different answers to each			
11	Does the protected area contribute to the accessibility of food fish to your community?	(0) No (1) Yes	
	Accessibility = availability?		
	Unclear what accessibility vs. abundance is, including next question		
	Good question, but should be worded in a way to capture potential spillover effect.		
12	{If yes} What is the level of contribution from the protected area in terms of accessibility of food fish?	(0) Less than 25% (1) Between 25-50% (2) Between 50-75% (3) 75% and above	
	Options are too complex, simplify (ie. a lot? A little?)		
	Confusing question		
	Rephrase, including previous question, maybe "how much of an increase?"		
	What about if answer is NO/NONE?		
13	Do you perceive change in the abundance of food fish in or around the protected area?	(0) No (1) Yes	1
14	{If yes} Have the conservation area (s) increased or decreased the abundance of food fish?	(0) Decreased (1) Increased	1
	Outside PA? Food fish being caught? Being sold?		
15	{If yes} does the increase or decrease in fish affect the accessibility to food fish to your community?	(0) No (1) Yes	1
	Add "in/around protected area"		
16	Do you perceive change in the abundance of food invertebrates in or around the protected area?	(0) No (1) Yes	1
	"Invertebrates" too big of a word?		
17	{If yes} Have the conservation area (s) increased or decreased the abundance of food invertebrates?	(0) Decreased (1) Increased	1
18	Does the protected area contribute to the accessibility (availability?) of food invertebrates to your community?	(0) No (1) Yes	
	This question is similar to question after next.		
19	{If yes} What is the level of contribution from the protected area to the accessibility of food invertebrates?	(0) Less than 25% (1) Between 25-50% (2) Between 50-75%	

19		(3) 75% and above	
	Simplify options		
	Weird phrasing / confusing question.		
20	Does the increase or decrease in abundance affect the accessibility (availability?) of food invertebrates?	(0) No (1) Yes	1
21	Does the protected area have a positive or negative impact on farming?	(0) Negative (1) Positive	
	3rd option: No effect		
	Need consistency with terms PA/CA.		
22	Does the protected area contribute to the accessibility of food from farming to your community?	(0) No (1) Yes	
23	{If yes} What is the level of contribution from the protected area to the accessibility of food from farming?	(0) Less than 25% (1) Between 25-50% (2) Between 50-75% (3) 75% and above	
	Simplify options		
24	{If yes} Have the conservation area (s) increased or decreased your availability of food from farming for your community?	(0) Decreased (1) Increased	
	3rd option: I don't know		
25	{If yes} Has the change in the availability of food from farming for your community been small or large?	(0) Small (1) Large	
	Perhaps phrase differently; use 1-5 scale?		
26	Do you perceive change in the abundance of food from hunting in or around the protected area?	(0) No (1) Yes	1
	Clarify difference between abundance and accessibility with next question.		
27	Does the protected area contribute to the accessibility of food from hunting to your community?	(0) No (1) Yes	
28	{If yes} What is the level of contribution from the protected area to the accessibility of food from hunting?	(0) Less than 25% (1) Between 25-50% (2) Between 50-75% (3) 75% and above	
	Simplify options		
	Confusing phrasing		
29	{If yes} Have the conservation area (s) increased or decreased the abundance of food from hunting?	(0) Decreased (1) Increased	
	Abundance vs. accessibility issue again.		
30	{If yes} Have the conservation area (s) increased or decreased the accessibility of food from hunting?	(0) Decreased (1) Increased	

31	Please name the top 3 threats to the availability of food from fishing fish, invertebrates, farming and hunting	-----	
	Three threats for each? Good word choice (AVAILABILITY), consider using in other questions?		
	Consider splitting		
	Each could have their own three threats.		
LIVELIHOOD			
32	Does the management of the protected area provide employment opportunities to your community?	(0) No (1) Yes	1
	Remove "MANAGEMENT" from question; stick to community level only (same as following two questions)		
33	Is employment of protected area staff of minor or major importance for the economy?	(0) Minor (1) Major	1
	Remove PROTECTED AREA STAFF from question		
	What about staff not directly associated with PA? Like local agencies, enforcement, NGO's, etc.		
34	Does the management of the protected area contribute to your income?	(0) No (1) Yes	
	Remove "MANAGEMENT" from question		
35	{If yes} What is the level of contribution?	(0) Between 1-10% (1) Between 11-25% (2) 26% and above	
	Simplify range		
	% of income?		
36	Is the protected area used for tourism and recreation?	(0) No (1) Yes	
37	Are the tourism and recreational activities from the protected area contributing to your community members income?	(0) No (1) Yes	1
	Vague - rephrase; what about associated activities (ie. vendors?); income is broadly-scoped		
38	{If yes} What is the level of contribution to your community member's income?	(0) 1-10% (1) 11-25% (2) 26% and above	
	Does this reference % income?		
	Simplify range		
39	Is the protected area of minor or major importance as a source of revenue?	(0) Minor (1) Major	1
	For whom?		
	Community's revenue?		
40	Increase in income due to greater fish catch and farming harvest	(0) Decreased	

40		(1) Increased	1
	What is the question? Incomplete/rephrase; word more properly		
	Please name the top 3 threats to your livelihood		
41	What's the intent of this question?		100
	This question should be preceded by a question identifying livelihood.		
HISTORICAL, CULTURAL & SPIRITUAL			
42	Are there any historical or cultural values associated with your protected area (s)?	(0) No (1) Yes	
	Redundant (see next question); what's difference between this and next question?		
43	Does the protected area have cultural and historical values on land or sea (e.g. archaeology, historic buildings including temples, pilgrimage routes and/or historic/culturally important land use patterns)?	(0) No (1) Yes	1
	Add in relevant examples: ie. burial sites, wreckage sites		
44	Does the protected area include sacred natural sites or landscapes (e.g. sacred groves, waterfalls and/or mountains)?	(0) No (1) Yes	1
	Is "NATURAL" necessary? Add cultural examples.		
45	Is the hunting of wild game permitted in the protected area?	(0) No (1) Yes	1
	Is this different than earlier hunting question?		
46	Is the use of wild food or medicinal plants permitted in the protected area?	(0) No (1) Yes	1
	Term USE is vague. Collection? Gathering?		
	Forest question?		
47	Is traditional agriculture (i.e. use of locally adapted crops (landraces) and/or practices)undertaken legally (weird phrasing - maybe ALLOWED AND PRACTICED?) in the protected area?	(0) No (1) Yes	1
	Replace UNDERTAKEN with ALLOWED & PRACTICED		
	What about traditional hunting and fishing?		
48	Are you able to access, carry out, or apply those (remove THOSE) cultural or spiritual values or practices associated with your protected area?	(0) No (1) Yes	1
49	Is livestock grazing and fodder collection permitted in the protected area?	(0) No (1) Yes	
	Is this a cultural question or more food security/farming?		
50	Top 3 threats		

50	To what?		
51	Has analysis been undertaken to determine the extent and impact of ecosystem services the MPA is effectively conserving/enabling?	(0) No	
		(1) Yes	
	Only MARINE?		
ECOSYSTEM SERVICES - This section needs more explanation/instruction.			
	<u>Climate and Gas Regulation</u> - the regulation of both the chemical composition of the gas in the environment; for example CO2 and O2 and also regulation of the temperature, greenhouse gases and other biological processes that mediate the climate. For example a mangrove area is able to sequester the CO2 from the atmosphere which reduces greenhouse gases.		2
	<u>Disturbance Regulation</u> - the ability to reduce any disturbances from storms, floods, droughts, wave intensity. For example: mangroves or barrier reef		3
	<u>Water regulation and supply</u> - providing water for irrigation or industrial processes as well as the ability to provide water for storage such as watersheds or aquifers. An example of this is the protected area in ...what?		
	<u>Erosion control and sediment retention</u> - prevention of erosion or sedimentation. This can be mangrove areas or even seagrass beds because of the ability to filter the sediments the (that) flow into the lagoons.		3
	<u>Soil formation and nutrient cycling</u> - the formation of soil can be through the biological breakdown of organic and inorganic matter into soil and the physical processes that form soil. Nutrient cycling is not only involved in breakdown of organic matter, nitrogen fixation, and the process in which coral reefs and algae use photosynthesis to fix carbon and then nitrogen is passed between the algae and the corals		4
	<u>Waste treatment</u> - Waste in the form of toxins, pollutants and nutrients can be filtered through the soils, thus treating the water before it hits the watersheds or even corals. For example the mangroves and seagrass are the filterers of the coastal ecosystem and they provide healthy water for fish, corals and other organisms to live in.		2
	<u>Biological processes</u> - Biological processes can include anything from the food cycle, habitats for migratory birds or harvested fish, nurseries. An example of a protected area that protects the biological process is one that protects maybe a parotfish which helps scrape off the turf and other types of algae that can cover the corals, keeping the ecosystem healthy.		6

2. Proposed revised tool

Community / village / municipality / state: _____		RATING	SCORE
WATER			
1	Does the source of your community's public water system come from the protected area? [If NO, skip to next section]	(0) No (1) Yes	
2	Are there any threats to your community's public freshwater?	(0) No (1) Yes	
	2a. If YES, what are they?		
3	Has the protected area changed the amount of publicly available freshwater for your community?	(0) No (0) Yes	
	3a. If YES: Has the protected area increased or decreased the amount of publicly available freshwater for your community?	(0) Decreased (1) Increased	
	3b. If YES: Has the change in the amount of publicly available freshwater for your community been significant or insignificant?	(-1) Decreased significantly (-0.5) Decreased insignificantly (0.5) Increased insignificantly (1) Increased significantly	
4	Has the protected area changed the quality of publicly available freshwater for your community?	(0) No (0) Yes	
	4a. If YES: Has the protected area increased or decreased the quality of publicly available freshwater for your community?	(0) Decreased (1) Increased	
	4b. If YES: Has the change in the quality of publicly available freshwater for your community been significant or insignificant?	(-1) Decreased significantly (-0.5) Decreased insignificantly (0.5) Increased insignificantly (1) Increased significantly	
5	Please name the top 3 threats to the protected area that affects the amount of publicly available freshwater.		
6	Please name the top 3 threats to the protected area that affects the quality of publicly available freshwater.		
FOOD SECURITY			
7	Does the protected area impact your community's access to food fish?	(0) No (0) Yes	
	7a. If YES: What is the impact from the protected area on your community's access to food fish?	(-1) significantly negative (-0.5) slightly negative (0.5) slightly positive (1) significantly positive	
8	Is fishing permitted in the protected area?	(0) Yes (1) No	
9	Have you noticed a change in the abundance of food fish in or around the protected area?	(0) No (0) Yes (0) Decreased	

	9a. If YES: Has the protected area increased or decreased the amount of food fish being caught?	(1) Increased	
10	Does the protected area impact your community's access to food invertebrates?	(0) No	
		(0) Yes	
	10a. If YES: What is the impact from the protected area on your community's access to food invertebrates?	(-1) significantly negative	
		(-0.5) slightly negative	
		(0.5) slightly positive	
		(1) significantly positive	
11	Is gleaning permitted in the protected area?	(1) No	
		(0) Yes	
12	Have you noticed a change in the abundance of food invertebrates in or around the protected area?	(0) No	
		(0) Yes	
	12a. If yes, has the protected area increased or decreased the amount of food invertebrates being caught/gleaned?	(0) Decreased	
		(1) Increased	
13	Does the protected area impact your community's access to food from farming?	(0) No	
		(0) Yes	
	13a. If YES: What is the impact from the protected area on your community's access to food from farming?	(-1) significantly negative	
		(-0.5) slightly negative	
		(0.5) slightly positive	
		(1) significantly positive	
14	Is farming permitted in the protected area?	(1) No	
		(0) Yes	
15	Have you noticed a change in the abundance of food from farming in or around the protected area?	(0) No	
		(0) Yes	
	15a. If YES: Has the protected area increased or decreased the amount of food from farming?	(0) Decreased	
		(1) Increased	
16	Does the protected area impact your community's access to food from hunting?	(0) No	
		(0) Yes	
	16a. If YES: What is the impact from the protected area on your community's access to food from hunting?	(-1) significantly negative	
		(-0.5) slightly negative	
		(0.5) slightly positive	
		(1) significantly positive	
17	Is the hunting of wild game permitted in the protected area?	(1) No	
		(0) Yes	
18	Have you noticed a change in the abundance of food from hunting in or around the protected area?	(0) No	
		(0) Yes	
	18a. If YES: Has the protected area increased or decreased the amount of food from hunting?	(0) Decreased	
		(1) Increased	
19	Please name the top 3 threats to the availability of food from:		
	a. Fishing		
	b. Invertebrate gleaning		
	c. Farming		
	d. Hunting		
LIVELIHOOD			

20	Does the protected area provide employment opportunities to your community?	(0) No	
		(1) Yes	
	20a. If YES: what kinds of opportunities does it provide?		
21	20b. If YES: Are these employment opportunities (ie. management staff/NGO's/businesses) impactful to your community's economy?	(0) No	
		(1) Yes	
	Does the protected area impact your income or livelihood?	(0) No	
21a. If YES: What is the impact of the protected area's contribution to your income?		(0) Yes	
		(-1) significantly negative	
		(-0.5) slightly negative	
		(0.5) slightly positive	
22		(1) significantly positive	
	Is the protected area used for tourism and/or recreation?	(0) No	
23		(1) Yes	
	Are any tourism and/or recreational activities from the protected area contributing to your community members' income?	(0) No	
		(1) Yes	
23a. If YES: What is the impact of the protected area's contribution to your community members' income?		(-1) significantly negative	
		(-0.5) slightly negative	
		(0.5) slightly positive	
		(1) significantly positive	
24	Have you noticed an increase in income due to greater fish catch and/or farming harvest from or around the protected area?	(0) No	
		(1) Yes	
25	If your income and/or livelihood is impacted by the protected area, are there any threats to that income or livelihood?	(1) No	
		(0) Yes	
	25a. If YES: Please list the top three threats to your income and/or livelihood.		
HISTORICAL, CULTURAL & SPIRITUAL			
26	Are there any historical or cultural values associated with your protected area (s)?	(0) No	
		(1) Yes	
26a. If YES: please list them: [DO NOT READ - e.g. archaeology, graves, historic buildings including temples, pilgrimage routes and/or historic/culturally important land use patterns]		(0) No	
		(1) Yes	
27	Does the protected area include sacred natural sites or landscapes (e.g. sacred groves, waterfalls and/or mountains)?	(0) No	
		(1) Yes	
28	Is the collection/gathering of medicinal plants permitted in the protected area?	(0) No	
		(1) Yes	
29	Is traditional agriculture (i.e. use of locally adapted crops (landraces) and/or practices) allowed/practiced in the protected area?	(0) No	
		(1) Yes	
30	Are there any other traditional or cultural practices associated with the protected area?	(0) No	
		(1) Yes	
	30a. If YES: Please list these practices.		
31	Are you able to access, carry out, or apply any of these cultural/spiritual values/practices associated with your protected area?	(0) No	
		(1) Yes	
32	Are there any threats to historical/cultural values/practices associated with your protected area?	(1) No	
		(0) Yes	
	32a. If YES: What are they?		

ECOSYSTEM SERVICES			
33	Has analysis been undertaken to determine the extent and impact of ecosystem services the MPA is effectively conserving/enabling?	(0) No	
	Has analysis been undertaken to determine the extent and impact of ecosystem services the protected area is effectively conserving/enabling?	(1) Yes	
34	<u>Climate and Gas Regulation</u> - the regulation of both the chemical composition of the gas in the environment; for example CO2 and O2 and also regulation of the temperature, greenhouse gases and other biological processes that mediate the climate. For example a mangrove area is able to sequester the CO2 from the atmosphere which reduces greenhouse gases.		
35	<u>Disturbance Regulation</u> - the ability to reduce any disturbances from storms, floods, droughts, wave intensity. For example: mangroves or barrier reef		
36	<u>Water regulation and supply</u> - providing water for irrigation or industrial processes as well as the ability to provide water for storage such as watersheds or aquifers. An example of this is the protected area in ...what?		
37	<u>Erosion control and sediment retention</u> - prevention of erosion or sedimentation. This can be mangrove areas or even seagrass beds because of the ability to filter the sediments the (that) flow into the lagoons.		
38	<u>Soil formation and nutrient cycling</u> - the formation of soil can be through the biological breakdown of organic and inorganic matter into soil and the physical processes that form soil. Nutrient cycling is not only involved in breakdown of organic matter, nitrogen fixation, and the process in which coral reefs and algae use photosynthesis to fix carbon and then nitrogen is passed between the algae and the corals		
39	<u>Waste treatment</u> - Waste in the form of toxins, pollutants and nutrients can be filtered through the soils, thus treating the water before it hits the watersheds or even corals. For example the mangroves and seagrass are the filterers of the coastal ecosystem and they provide healthy water for fish, corals and other organisms to live in.		
40	<u>Biological processes</u> - Biological processes can include anything from the food cycle, habitats for migratory birds or harvested fish, nurseries. An example of a protected area that protects the biological process is one that protects maybe a parrotfish which helps scrape off the turf and other types of algae that can cover the corals, keeping the ecosystem healthy.		