



Indicators for Monitoring Social Impacts of the Micronesia Challenge:

*An Addendum to SEM-Pasifika Regional Socioeconomic Monitoring
Guidelines*

FIRST DRAFT FOR PUBLIC CIRCULATION AND FIELD TESTING

SEPTEMBER 2013

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Cover Photo by Trina Leberer

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Author's note

These indicators to assess the socioeconomic aspect of the Micronesia Challenge are presented here as a first draft for field testing, circulation, and revision. Your comments are welcome and we look forward to improving the draft as necessary. Please send any suggestions to Brooke Nevitt, Pacific Marine Resources Institute, P.O. Box 10003 PMB 1156, Saipan, MP 96950 or via e-mail at sciencecom@pacmares.com.

Background

In 2006 the Chief Executives of the Republic of Palau, the Federated States of Micronesia, the Republic of the Marshall Islands, the Commonwealth of the Northern Mariana Islands, and Guam united to launch the Micronesia Challenge (MC), a regional conservation initiative. This shared commitment by the leaders of the region is to “effectively conserve at least 30% of the near-shore marine resources and 20% of the terrestrial resources across Micronesia by 2020” ([micnesiachallenge.org](http://micronesiachallenge.org), 2013).

In August of 2012, the First MC Socioeconomic Measures workshop was held. It was the fifth in a series of ongoing meetings of the MC Measures Working Group. The group has been working to identify measures of progress in achieving the goal of effective conservation. Over three days representatives from each of the MC jurisdictions met in Koror, Republic of Palau, to lay the foundations for socioeconomic monitoring of the Challenge.

The main purpose of the workshop was to identify a common set of socioeconomic indicators that each jurisdiction would be able to measure at their various MC sites. Indicators selected had to be relevant to all jurisdictions, are attributed to or contributed by MC efforts and feasible to measure. Together the participants, with the assistance of socioeconomic monitoring experts, were able to identify a core set of indicators that will be incorporated into the socioeconomic work being done in each jurisdiction. The indicators focus on the aspects of human wellbeing that the participants agree on as being most important for Micronesia Challenge and the process that are relevant to achieving them.

During the workshop participants identified and agreed on the three most important human wellbeing domains for MC efforts: Sustainable Livelihood, Good Governance, and Education/Built Capacity. The workshop participants discussed and agreed on the most prominent attributes of MC contributions in relation to each of these domains. Indicator areas related to these attributes were then discussed and agreed upon. Because the process of MC was identified as crucial for achieving human wellbeing objectives, participants also discussed and agreed on process indicator areas.

Through a number of rounds of comments and edits after the workshop, the initial indicators have been revised and tailored to best gauge the extent to which MC addresses the human wellbeing objectives and process to achieve them. Final indicators fall into 2 categories. The first includes indicators for human wellbeing outcomes, namely sustainable livelihood and good governance. The second focuses on process indicators that support MC in achieving these outcomes. While education and capacity building was identified as the third most important domain of human wellbeing related to MC efforts, it became clear during workshop discussions that there is considerable variation in the site objectives and activities of pertinent domain, making it difficult to establish common indicators that would be regionally applicable. Therefore, alternative steps have been suggested and summarized to develop indicators to track education and capacity-building impacts at the site level.

Purpose of this document

This document has been developed to serve the Micronesia Challenge community. It is meant to be used in conjunction with the larger SEM-Pasifika guide and to facilitate the implementation of the MC socioeconomic indicators. As such, these indicators are not intended to stand alone, rather they are meant to be incorporated into socioeconomic monitoring efforts that take place throughout the region. The indicators included in this addendum are those which were agreed upon by the participants at the First MC Challenge Socioeconomic Measures Meeting and should in no way limit the scope of assessments developed for each site.

What this document is

- A document following the work of the MC SEM working group. It responds to the human wellbeing attributes and indicators identified and agreed as being most relevant and important for MC by the 5 MC jurisdictions in the first socioeconomic measures workshop in 2012.
- A guide to facilitate monitoring the MC people-related indicators.
- An addendum that use the same indicator format and data collecting methods as SEM-Pasifika, which has been widely used in Micronesia.
- Limited to those indicators which were found feasible to implement across the Micronesia Challenge jurisdictions

What this document is not

- A complete guide that offers a comprehensive list of human wellbeing indicators and how to monitor them
- A guide that would fit the needs of socioeconomic monitoring for other regions
- An impact evaluation
- Exhaustive of what could be measured and assessed in relation to the Micronesia Challenge
- A restriction on the indicators or types of monitoring that individual site in Micronesia needs to follow

Who are the target users of this addendum?

This addendum is intended for resource managers, communities, and others working to implement the Micronesia Challenge within their jurisdiction and interested in understanding the progress of MC in improving human wellbeing.

The Indicators

Indicator Number	Indicator Names	Data Collection			Areas of Monitoring		
		Suggested Main Data Collecting Methods ³	Additional methods	Suggested Frequency of Data Collection (years)	Human Wellbeing Benefits	Process	
					Sustainable livelihood	Good governance	Educational
MC1	Perception of change in food availability	HH	KI	1	✓		
MC2	Household participation in MC management planning or decision making	HH, S		2-3		✓	
MC3	Number of community driven management plans endorsed by stakeholders	S	FG	2-3		✓	
MC4	Change in violations and illegal activities related to fishing, harvesting and use of natural resources	S, KI	HH	1		✓	
MC5	Education	SG, O		Depending on the project period			✓
MC6	Accessibility of reports to all stakeholders	SG		2-3			✓
MC7	Use of community input and scientific data in decision making of MC	SG	KI	2-3			✓
MC8	Community awareness of MC	HH		2-3			✓
MC9	Commitment support for MC	HH		2-3			✓
MC10	Commitment of the MC to human wellbeing objectives	SG, KI		2-3			✓
MC11	MC regional coordination effort	KI, FG, SG		2-3			✓

³ As in SEM-Pasifika guidelines, the following abbreviations are used for data collecting methods:

- FG = Focus group
- SG = Survey with special groups
- HH = Household survey
- KI = Key informant interview
- S = Secondary data
- O = Observation



Photo by Ami Vitale

Human Wellbeing Indicators

Through the minimum set of agreed MC-SEM indicators, we are hoping to begin to monitor these same specific human wellbeing outcomes and process related aspects of the Micronesia Challenge at the site level. However, because every site is unique, and as a result site specific socioeconomic assessments will vary greatly throughout the region, users of these guidelines may select the following indicators and develop new ones that are relevant to their site. In addition, it is highly recommended that users also refer to the main SEM-Pasifika guide to help further develop more complete assessments in which wider underlying socioeconomic drivers and stresses of resource use and management of the site can be better understood and addressed in adaptive management.

Aspects of human wellbeing outcomes and related processes often cannot be measured directly. Proxy indicators, or indirect indicators are therefore used to represent and approximate a situation or condition in the absence of a direct measure.⁴

⁴ For human wellbeing indicators, as well as all other indicators included in this guide, practitioners are encouraged to adapt them to best suit their sites and situations and to be as specific as possible when appropriate.

MC1: Perception of change in food availability

What it is

The communities of Micronesia have long relied on their surroundings for sustenance. Sustainable livelihood has been identified by the MC jurisdictions as the most important benefit of MC to the people. The level of food coming from marine and terrestrial MC sites has been identified as the most critical indicator. By inquiring about *perception in change of food availability* community members are invited to share their awareness and knowledge based on observations of the changes (if any) they have noticed in the abundance of food that can be attributed to Micronesia Challenge efforts. Related management tools and methods can include, but are not limited to marine protected areas, locally managed marine areas, terrestrial conservation areas, gear restrictions, species restrictions, and other forms of formal or informal management.

How to collect the data (HH)

It is recommended that this indicator be addressed through household surveys, so that percentages of households with different level of perception of changes can be tracked.

I am going to read a series of statements. Please tell me whether you think the situation has greatly improved, somewhat improved, no change, somewhat decreased, greatly decreased or do not know about each statement:

Statements	Greatly improved	Improved	No change	Somewhat decreased	Greatly decreased	I don't know
How has the XXXX MPA changed the availability of food fish for my household?						
How has the XXXX MPA changed the availability of edible invertebrates for my household?						

How to analyze the data

Aggregate the data from the household survey to determine the percentages of respondents for each category within the table. Highlight those that have the largest percentage of responses.

Additional data and data collecting methods (KI)

If choosing to interview key informants to address this indicator, it is important to select the appropriate informants. For example if focusing on a marine site, individuals who regularly fish or collect sea life for their household, have been fishers for a long time, or who have significant knowledge about marine life in the area would all be excellent people to survey or interview for detailed understanding of changes.

Questions to consider asking key informants include:

Statement(s)	Greatly improved	Improved	No change	Somewhat decreased	Greatly decreased	I don't know
How has my catch (specify where) changed over the past 5 years.						

- Have you noticed any changes in the availability of seafood since the implementation of management efforts, such as protected areas, size restrictions, gear restrictions, etc.?
- If you have noticed changes, what kind of changes have you observed? Please explain.
- What do you think are causes of these changes?

For information gathered from key informant interviews, transcribe the recorded interview, summarize, and then synthesize the information

How the information can be useful to managers

This question, if asked as part of a monitoring program, can provide a way to track the changes (if any) in the community's perception of the benefits on food availability received from the MPA or other management tools and methods, and complement on-going biological monitoring. Biological monitoring among MC sites generally generates data on the number and size of different food fish and edible invertebrates, providing one way of assessing the availability of seafood at a given site. The data from

both biological monitoring and socioeconomic monitoring should be used to complement each other. By inviting the households or key informants to share their perceptions of this resource, managers can further support the findings of biological monitoring, highlight the need for such monitoring if it does not yet exist, draw attention to disparities (if there is a difference between biological monitoring and perception of households or fishers), understand possible reasons for changes in resources and better address the problems. While biological monitoring might be on an annual or semi-annual basis, community members offer observations and perceptions from daily interactions with the marine environment. For instance, if a large percentage of the population feels that the MPA has not improved the availability of fish for their household, managers should look into the reasons why.



Photo by Katrina Adams



Pohnpeian family. Photo by Ami Vitale

Good Governance

In addition to sustainable livelihood, good governance of natural resources has also been identified as a critical to the human wellbeing domain of the MC. What constitutes effective governance within a given place is highly context specific. In the Micronesian Challenge context, effective long-term sustainable management of natural resources is predicated on governance that has structures and processes that support community empowerment through representation and participation of the communities. Good governance also ensures that people comply with policies, rules and regulations for good practices that allow for resource sustainability. Transparency, accountability, and well informed decisions on policies and regulations related to MC are critical for good governing process.

The following section presents indicators that are agreed by the Micronesia Challenge socioeconomic work group to monitor both the human wellbeing outcome, namely community empowerment in natural resource governance (MC2, MC3) and enforcement (MC4).

MC2: Household participation in Micronesia Challenge management planning or decision making

What it is

Community participation refers to the extent different households who are users and rights holders are able to take part in Micronesia Challenge planning or decision making about access and use of resources, good practices and regulations. Participation itself has different levels and can range from passive participation where people participating are told what is going to happen or what has already happened, to participation where people are consulted for their views, to where they are engaged in planning or taking initiatives to make changes (Schreckenberg, 2010). In the MC context, the level of household participation serves as a proxy indicator for community empowerment, which in itself is identified as a human wellbeing objective in the MC jurisdictions, and an important attribute of good governance.

It is important to recognize that in most communities, members can be heterogeneous and participation of different socioeconomic groups could be important in determining the level of empowerment of the community as a whole. These groups may include economically marginalized, socially disadvantaged, or groups that are normatively excluded in a meeting but rely heavily on natural resources for their livelihoods. Examples are poor people, indigenous people, migrated populations, women, and elders.

How to collect the data (HH, S)⁵

Through a household survey, ask about opportunities to participate in the management process. In order to ensure that accurate information is recorded, it is important to be sure that the person answering for the household is someone who is aware of household members' experience with the following situation:

Statement	Never	Seldom	Sometimes	Frequent	Always
Members of my household participate in management planning and decision making related to resource management					

Secondary sources. The use of secondary sources such as meeting participant records, activity sign-up sheet, etc...can be an effective way to assess this indicator. Managers should keep track of the community's participation in management planning and decision making events, activities, meetings, etc. Secondary sources can be useful in identifying which groups within the community are participating and which (if any) are not.

How to analyze the data

For household surveys, calculate the percentages of responses for each column. Consider highlighting those responses which received the largest percentage of responses to see the extent to which the households are in terms of different levels of community empowerment in natural resources management. For secondary sources, calculate the percentages of community members who attended

⁵ For further information see ST2 in SEM-Pasifika guide

management planning events, activities, meetings, etc., to understand their proportion of the total participants.

Additional data and data collecting methods (HH)

Community empowerment can be seen as a process that enables communities to take or have control over different aspects of their lives. Because becoming empowered involves a long process of change, many empowerment indicators are process indicators. In regard to natural resource governance, this process may include different steps and levels, ranging from communities being informed or having access to information, participating or engaging in decision making related to resource management, having the means and capacities or being able to mobilize what is needed to implement the decisions they have made, leading initiatives coming from the communities themselves, and being able to negotiate and work successfully with outsiders. Therefore, in addition to participation, there are other proxy indicators that may be relevant to measure the different levels of community empowerment.

Statements	Never	Seldom	Sometimes	Frequent	Always
Members of my household are informed about issues related to resource management.					
Members of my household have the skills or capacities needed to implement decisions related to resource management.					
Members of my household are able to access resources (for example, assets, or technical and financial resources) needed to implement decisions related to resource management.					
Members of my household have led initiatives related to resource management.					
Members of my household are able to negotiate and deal successfully with others in relation to resource management.					

Finally, to gain a better understanding of the makeup of such participation, consider recording the age and gender of those said to participate in management planning and decision making.

How the information can be useful to managers

This information can provide managers with data to understand how involved the community is in the decision making process as well as the types and levels of their empowerment. Sometimes, managers feel that they are providing ample opportunities for involvement, however it may be that the participation rate is low or the community feels otherwise. As mentioned earlier in the additional data collection, community empowerment can develop through a number of steps. By identifying where a particular community is on this ladder of empowerment, managers can better assist them by adjusting existing and developing new programming to support them as they work to reach next step.

MC3: Number of community driven management plans endorsed by stakeholders

What it is

This indicator aims to assess how many existing management plans were driven by the community and endorsed by stakeholders. Community driven management plans should be defined according to the local context. In general, these plans are results of a management plan development process in which community members and/or community leadership actively participated; or the concerns and suggestions of the community were welcomed, heard and incorporated throughout. Endorsement of such plans by other stakeholder groups shows the recognition of the communities as having legitimate rights to determine how their land, sea, and resources are used and managed.

How to collect the data (S)

The assessment team should gather the existing management plans for all MC sites. From these plans information such as whether or not there is an existing management plan, whether or not the plan was community driven, and whether or not the plan was endorsed by stakeholders should be extracted and documented. The following table is an example of how to collect the data:

SITE	Existing Management Plan (Y or N)	Community Driven (Y or N)	Endorsed by Stakeholders (Y or N)

How to analyze the data

To analyze the data, find out the proportions of plans that are community driven and endorsed from the total number of plans.

Additional data and data collecting methods (FG)

In addition to secondary sources, consider conducting a focus group with managers. Other questions that also might help to address the indicator include:

- Does the management planning team include representation from key stakeholder groups (leadership, resource users, etc.)? Yes or No (MPAME)⁶
- Has management planning been a participatory process that allows adequate opportunity for key stakeholders to influence management plan? Yes or No (MPAME)
- Has management plan been endorsed by the community? Yes or No (MPAME)
- Has mechanism for stakeholder and leadership consultations been internalized into existing management structure? (MPAME) Check one answer from the choices below.
 - Stakeholders have no input into decisions relating to the management of the MPA

⁶The Marine Protected Area Management Effectiveness (MPAME) Tool, developed by Palau International Coral Reef Center and The Nature Conservancy provides for partners a process through which to measure the effectiveness of the management of their marine protected areas. It is referenced here as an additional way in which this indicator is being measured in the region.

- Stakeholders have some input into discussions relating to management but no direct involvement in the resulting decisions
- Stakeholders directly contribute to some management decisions
- Stakeholders directly participate in making decisions relating to management

In order to understand the root causes of an issue, it might be beneficial for managers to conduct interviews with individual managers following the assessment to understand the reasons behind the yes/no questions of the tool.

How the information can be useful to managers:

By reviewing the existing management documents, managers can determine how many of the plans are community driven and endorsed. This information can be used for management to improve their strategy and activities that will assist in community empowerment.



Taro. Photo by Ami Vitale

MC4: Change in violations and illegal activities related to fishing, harvesting and use of natural resources

What it is

Good natural resource governance can be defined as the process by which a governing body or groups of resource rights holders decide and define what is and what is not acceptable behavior in terms of natural resource use in a given area, and how the group ensures that people comply with the policies, rules, and regulations for acceptable behavior. These rules and regulations may be customary or official. Most (if not all) Micronesia Challenge sites will have laws or regulations related to fishing, harvesting, and use of natural resources which detail activities that are and are not allowed within defined boundaries. Violations of such laws or regulations not only indicate problems with the natural resource governance or implementations of the rules and regulations by those who manage the resource, but also can seriously undermine the effectiveness and sustainability of such conservation efforts.

How to collect the data (S, KI)

Secondary Data: Review recorded and/or reported documentation of violations or illegal incidents. Violations listed are likely to be different for each jurisdiction and even by site. The assessment team should determine what records are available and reliable.

Violations (examples)	Number of violations in a year or particular season
Poaching	
Scuba Spear	
Dynamite Fishing	
Harvesting lobsters carrying eggs	

Key Informant interview: Speak to key community members who are familiar with the site and the activities taking place within it. Inquire into their perceptions about the change in poaching, violations of fishing regulations, and/or destructive activities at the site over the past five years. Ask questions that will help understand reasons and causes of these activities.

How to analyze the data

For secondary sources, review the number of violations for each type of incidents from existing documents. Track their changes over the years if information is available. For key informant interviews, transcribe the recorded interview, summarize, and then synthesize the information.

Additional data and data collecting methods (HH)

If the assessment is going to use household survey, the team might want to consider including these questions into the survey in order to examine households' perception of changes in violations and illegal activities.

Statements	Decreased Greatly	Decreased Slightly	About the Same	Increased Slightly	Increased Greatly
How has poaching changed in the past five years?					
How have violations of fishing regulations changed in the past five years?					
How have other destructive activities changed in the past five years?					

Other questions to consider for a household survey include:

- In the last six months did you see or hear of anyone fishing in the MPA? Yes or No (RARE)⁷
- Has a formal enforcement program been established? Yes or No (MPAME)
- Is the enforcement program actively enforcing MPA rules and regulations? (MPAME) Choose one from the choices below.
 - There is no capacity to enforce MPA regulations
 - There are major deficiencies in capacity to enforce MPA regulations
 - There is acceptable capacity to enforce MPA regulations
 - There is excellent capacity to enforce MPA regulations
- Are illegal and destructive activities reduced/halted within the MPA? Yes or No (MPAME)
- Are all extractive activities effectively stopped within the MPAs no-take zone/area? Yes or No (MPAME)

How this information can be useful to managers:

The information collected on this indicator can be useful for managers to understand whether the enforcement is adequate and effective, the level of compliance, and the problem areas that should be addressed by management. Such information can provide insight into the level of good governance of a

site. It can also be used to guide management strategies in addressing such threats.



Photo by Ami Vitale

⁷ RARE is an international NGO that is working in the region to conduct social marketing campaigns. Included in the development of their campaigns are what they call KAP (Knowledge, Attitude, and Practice) surveys. In 2013, they conducted, along with local partners, 11 of these surveys in different islands of Micronesia. In six of the marine surveys (CNMI, Palau, Pohnpei, Marshall Islands, Guam, Chuuk) they were able to incorporate questions that directly address the MC indicators. In 2015, all 11 campaigns will also conduct post-campaign surveys which will provide data for comparison.

Education

Education and capacity building has been identified as an important domain of human wellbeing related to MC efforts, however, there is considerable variation in site objectives and activities making it difficult to establish common indicators that would be regionally applicable.

The proposed steps are therefore suggested:

Step 1. Identify and prioritize environmental education, learning, outreach, or capacity building needs by the community at your site and can be met by MC support.

Step 2. Develop an objective, strategy and activities to meet the top priority need

Step 3. Develop indicators that will effectively monitor MC impacts. The indicators may track changes in awareness, knowledge, perception, attitude, or behavior.

The following section presents an example of how MC partners might go about developing and measuring an education indicator (MC5).



Photo by Ami Vitale

MC5: Education

What it is

The following serves as an example of how managers might best go about collecting and measuring an educational-related activity.

The CNMI's Teacher Camp is the result a partnership between the CNMI's Coral Reef Initiative (CRI) and Mariana Islands Nature Alliance (MINA). Through key informant interviews and focus groups with CNMI teachers, CRI and MINA recognized the need to provide resources and support for teachers to facilitate their efforts to incorporate MPA awareness and education into their lessons and curriculum.

One objective of the teacher camp was to get teachers, and in turn their students, to understand the "dos and don'ts" associated with Marine Protected Areas. To do this, the strategy was to take teachers into the classroom and out into the field to learn about coral reefs and to provide training and tools to help them bring the information into their classrooms. Two of the activities to help facilitate this were first to help the teachers develop and implement in-class lesson plans which addressed MPA "dos and don'ts" followed by a field trip for the teacher and her class to a local MPA. Such behaviors addressed included:

DO: Have fun, swim, explore, play, observe, pick up trash, snorkel

DON'T: Step on coral, fish, take anything home, collect anything, feed the fish

Indicators were developed to measure the effectiveness of the program. These include communicating with teachers to track the percentage of participating teachers who developed and implemented the in-class lessons and attending the fieldtrips to observe student behavior.

How to collect the data (SG, O)

One way to measure the effectiveness of such a program would be at the end of the program to conduct special group surveys of the teachers and their students regarding their understanding of behaviors that are and are not allowed within MPAs. A simple Yes, No, Unsure survey would provide such information:

Are the following activities allowed within the CNMI's MPAs?

	Yes	No	Unsure
Swimming			
Fishing			
Collecting shells			
Picnicking			
Exploring			
Stepping on coral			

Ultimately, one of the environmental education goals is to develop good environmental practices and habits among the learners or change their behaviors. A follow up to the brief questionnaire might be to conduct an observation during the student fieldtrip to an MPA which would take place during the school day following the questionnaire. During such an activity, over the course of an hour, adult volunteers observe how many times students (and teachers) engage in any of the “don’t” behaviors. In order to see all students and teachers in addition to what they are doing above and beneath the water, some observers should be on shore, and others should be in the water.

Behavior	Tally of incidents
Stepping on coral	
Feeding fish	
Collecting shells	
Fishing	
Littering	

How to analyze data

For the special group survey, calculate the percentages of responses for each question and each answer option. For the observation, tally the number of incidents. Be sure to include the total number of people being observed and the time period during which the observation is happening.

How information can be useful to managers

The information collected from the special group survey can be used to assess the effectiveness of the in-class presentations for both teachers and students. The observation can further help assess whether

or not the information from the classroom session did in fact result in the desired behaviors. For areas that still need improvement, materials should be designed to further address the specific desired behaviors. For longer term monitoring, take the same class out to the site twice during the same school year and observe the same students a second time. If the results are positive, consider continuing such a project, if the results leave room for improvement, reevaluate the project and determine how it might best be improved.



Photo by Trina Leberer

Process Indicators

While the previous indicators are ways to monitor how well the Micronesia Challenge achieves human wellbeing outcomes of sustainable livelihood and good governance, the following indicators focus on the processes MC involves in helping to reach these outcomes. Process indicators help us measure the quality of different aspects of the Challenge that contribute to the achievement of the human wellbeing objectives. While process indicators themselves do not necessarily tell us if we are meeting the objectives, they help identify areas for improvement and can be useful for recommendations on how the Micronesia Challenge can be effective in reaching human wellbeing goals.

The following section presents indicators that are agreed by the Micronesia Challenge socioeconomic work group to monitor both the processes of the MC (MC6, MC7, MC8, MC9, MC10, and MC11).



Photo by Ami Vitale

MC6: Accessibility of reports to all stakeholders

What it is

Transparency of MC governing structures (e.g. MC Steering Committee, MCRO, MC Focal Points, etc.) is considered important in the process of good governance as it allows the stakeholders (such as fishers, farmers, resource users, residents of the conservation area, etc.) to know what MC is working on and how, and for MC to be held accountable in its activities. Accessibility of reports and records to all stakeholders is used as a proxy indicator to help measure the transparency of the Micronesia Challenge.

How to collect data (SG)

Survey representatives of all stakeholder groups.

Are relevant reports available to you upon request?

- Yes No, Don't Know

How to analyze the data

Calculate the percentage of respondents who answered Yes, No, and Don't Know. Determine the level of accessibility among all the respondents as well as in different stakeholder groups.

How information can be useful for managers

As the Micronesia Challenge continues to work closely with stakeholders it is important to ensure that they have access to the documents and reports

that are relevant to them and their community. By addressing this indicator, managers can work to continue to keep reports accessible or work to make them more accessible to the relevant stakeholder groups.



Rota Revegetation Community Volunteers by Kaitlyn Mattos

MC7: Use of community input and scientific data in decision making of MC

What it is

While scientific data can contribute to a comprehensive understanding of complex and dynamic natural systems and processes, community input could provide local knowledge that are site relevant and crucial for development of good plans and strategies of the Micronesia Challenge and ensuring its success. The combination of scientific data and local input could lead to more robust solutions to environmental problems and may empower local communities to monitor and manage environmental change easily and accurately (Reed 2008). By working with and listening to the guidance that can be provided by both groups, the MC can also develop policies and regulations that are scientifically sound and guided by insight of communities who interact with the resources on a daily basis and understand the socioeconomic, cultural and political conditions of the site.

How to collect data (SG)

For scientific data, conduct a survey with key scientists, technical specialists, MC managers, decision makers, and policy developers who work with the Micronesia Challenge.

Survey questions:

	Not Used at All	Limited Use	Some Use	Much Use	Always Used
Level of use of scientific or technical data in MC decision making (policy and regulations)					
Level of community input in MC decision making (policy and regulations)					

How to analyze data

Calculate the percentages of responses for each question to determine the level of use

Additional data and data collecting methods (KI)

If community input and/or scientific data are not used or used in decision making at a low level, additional interview with relevant parties, including decision makers, community representatives or leaders, and scientists, may be conducted to better understand the reasons so that management can address the issues. Such an interview is critical especially in a situation where the information is available but has not been used.

How information can be helpful for managers

This indicator is an opportunity to ensure that the MC is accessing and making use of the appropriate information for decision making from both the local and the scientific communities. By surveying individuals who are familiar with these aspects of Micronesia Challenge decision making, managers can determine steps necessary to further involve these critical partners or how to ensure their continued involvement.

MC8: Community awareness of the Micronesia Challenge

What it is

To understand whether the MC is perceived as having benefits to human wellbeing, it is important to know whether the target community knows what the MC is and what its objectives are. If people are not aware of the MC or do not know what it does, it is not possible for us to expect that they make a link between any improvement in human wellbeing with MC efforts.

How to collect the data (HH)

As we would like to understand the proportion of people aware of the MC, household surveys are recommended. Examples of questions for a household survey questionnaire are:

- Have you heard of the Micronesia Challenge?
 Yes No, Unsure
- What are the two most important goals of the Micronesia Challenge?
1. _____
2. _____
 Check here if you don't know what the goals of MC are.

How to analyze the data

Calculate the percentage of households who have heard of the Micronesia Challenge as well as those who have not and those who are unsure. For the option “list the two most important goals...” code the responses, enter the codes and calculate the related percentage of respondents mentioning each type

of goal and the discrepancies between defined Micronesia Challenge goals and responses. Compare the goals that the respondents mentioned with the defined goal of MC to determine the level of the right understanding of the MC goals.



How this information can be useful to managers

This indicator can help managers determine the extent to which their community is aware of the Micronesia Challenge. This can help guide education and outreach efforts.

Photo by Suoin Wonebusarkum

MC9: Community support for the Micronesia Challenge

What it is

This indicator assesses support for the Micronesia Challenge among the households and help understand the actions they have taken or are willing to take.

How to collect the data (HH)

In a household survey, ask a question such as the following to gauge the community's support for the Micronesia Challenge.

- Do you support the Micronesia Challenge?
 Yes No, Unsure
- What have you done to support the Micronesia Challenge?
- What would like to do to support the Micronesia Challenge?



Photo by Supin Wongbusarakum

How to analyze the data

For the first question above, calculate the percentages of respondents who answer yes, no and unsure. For the second and third questions, code the responses, enter the codes, and calculate the related percentage of respondents mentioning each of the activities to understand which are most frequently done by respondents to support MC and which they are interested in supporting.

How this information can be useful to managers

This indicator can help managers determine the extent to which their community is in support of the Micronesia Challenge. It also can help managers adjust their efforts to the types of support community members mentioned in the assessment. Finally, it can provide insight into areas for further development of community support.

MC10: Commitment of the Micronesia Challenge to human wellbeing objectives

What it is

This indicator was developed to provide managers an opportunity to assess the Micronesia Challenge and its commitment to human wellbeing objectives. The following questions are meant for managers who are familiar with the MC and its regional and local planning and implementation.

How to collect this data (SG, KI)

Special Group Survey: To collect this information it is recommended to survey mid-level managers such as members of the MC Measures Working Groups, Pacific Islands Managed Protected Area Community (PIMPAC) members, or Micronesians in Conservation (MIC).

	Very Low	Low	Moderate	High	Very High
Level of MC in strategic planning that addresses human wellbeing objectives.					
Level of MC's resources allocated to achieve human wellbeing objectives.					
Level of MC in capacity building among its staff that is required to meet human wellbeing objectives.					
Level of MC in socioeconomic monitoring and measuring its social impacts					

Key Informant: Conduct interviews with key members of the MC Measures Working Groups to address the level of the MC's monitoring of its effectiveness and impacts on human wellbeing. Consider asking about areas of the above survey where there were a significant number of "very low" or "low" responses in order to gather some background information to better understand the issues and how to address them.

How to analyze data

For the special group survey, calculate the percentages of responses for each question and each answer option. For key informant interviews, transcribe the recorded interview, summarize, and then synthesize the information.

How this information can be useful to managers

This information will help identify gaps that need to be filled and areas where the Micronesia Challenge can improve in order to increase the potential to reach human wellbeing objectives.

MC11: Micronesia Challenge Regional Coordination Effort

What it is

In order for the Micronesia Challenge to achieve human wellbeing for the people of the region, it is necessary that it be effectively and efficiently coordinated. This effort is multi-tiered and requires regular reporting, transparency, funding, and broad support. A well-coordinated regional effort should include a number of key characteristics, including the following:

- Status reports and proposed recommendations provided to Chief Executives at annual meetings (e.g. annual Micronesia Chief Executives Summit)
- Regular means of communication occurring at all levels, with full participation by all relevant stakeholders (e.g. quarterly MC Steering Committee calls, with all members or proxies present, progress on implementation shared by local partners and communities on MC website and in newsletters, etc.)
- Transparent, and clearly defined, decision-making processes, including broad dissemination of results to all relevant stakeholders (e.g. reports from meetings of the MC Steering Committee, Working Groups, Regional Support Team shared on MC website, or in monthly newsletters, etc.)
- Sustainably financed MC Regional Office (advance funding for a 2 –year budget cycle)
- Institutional assessments conducted bi-annually to evaluate effectiveness of regional coordination (including annual evaluation of MC Steering Committee / Regional Office SAP)
- MC Measures Working Groups and sub-committees have the necessary resources and support to implement the regional monitoring framework to track progress toward the MC goals

How to collect the data (KI, FG, SG)

Key Informant Interview: Interview members of the MC Steering Committee questions related to the following:

- Are status reports and proposed recommendations provided regularly to Chief Executives? If no, why?
- Are there regular means of communication occurring at all levels, with full participation by all relevant stakeholders? If no, what are the reasons, challenges, or obstacles?
- Is the MC Regional Office sustainably financed? To what extent do you think the future funding could be secured? What does this depend on and what is the MC effort in addressing it?
- Are institutional assessments conducted bi-annually to evaluate effectiveness of regional coordination? If no, what do you think are the reasons and how should it be addressed?

Focus Group Interviews: Conduct a focus group with MC Measures Working groups and sub-committees asking questions about the situation, availability of resources and support, opportunities, and areas of improvement.

Special Group Survey: Conduct a survey of local managers to inquire into the dissemination of information related to the MC.

Statements	Never	Seldom	Sometimes	Frequent	Always
How often do you communicate with managers from other jurisdictions?					
How often do you have access to results of the MC decision making process?					

How to analyze data

For Key Informant interviews and focus group interviews, transcribe the recorded interview, summarize, and then synthesize the information.

For the special group survey, calculate the percentages of responses for each question and each answer option.

How information can be useful to managers

This information can help the leaders of the MC, such as the steering committee, evaluate the overarching coordination effort of the MC, understand the areas that needs to be addressed in order to improve its regional coordination efforts Indirectly, the focus group discussion itself could provide an communication opportunity for the MC work groups and committee members and to work towards agreed common grounds.



Yap Men's House by Liz Moersch Marchitto

References

Marine Protected Area Management Effectiveness Tool, 2013...working on citation.

Micronesia Conservation Trust. 2012. *Micronesia Challenge First Socioeconomic Measures Workshop Report. Unpublished.*

Reed, Mark S. 2008. Stakeholder participation for environmental management: A literature review. *Biological Conservation* 141: 2417-2431.

Schreckenberg, K., Camargo, I., Withnall, K., Corrigan, C., Franks, P., Roe, D., Scherl, L. M. and Richardson, V. (2010) Social Assessment of Conservation Initiatives: A review of rapid methodologies, Natural Resource Issues No. 22. IIED, London.

The Micronesia Challenge. (2013, June 26). About the Challenge. Retrieved from:
[http://www.micnesiachallenge.org/](http://www.micronesiachallenge.org/).

The Micronesia Challenge. (2013, June 13). About the Challenge. Retrieved from
<http://themicnesiachallenge.blogspot.com/>.

Wongbusarakum, S. and R. Pomeroy. 2008. *SEM-Pasifika, Socioeconomic Monitoring Guidelines for Coastal Managers of Pacific Island Countries*. Silver Spring, MD: National Oceanic and Atmospheric Administration (NOAA); and Apia, Samoa: Secretariat of the Pacific Regional Environment Programme (SPREP).
<http://www.socmon.org/publications.aspx>