Fish For the Future?

A Collaborative Test of Locally-Managed Marine Areas as a Biodiversity Conservation and Fisheries Management Tool in the Indo-Pacific Region

Report on the Initiation of a Learning Portfolio

January 2001

The World Resources Institute
and Foundations of Success

About This Document

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About WRI

The mission of the World Resources Institute (WRI) is to move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations. Because people are inspired by ideas, empowered by knowledge, and moved to change by greater understanding, WRI provides – and works with and helps other institutions provide – information and practical solutions for policy and institutional change to address problems of environment and development.

About FOS

Foundations of Success (FOS) seeks to improve the practice of conservation by working with practitioners to develop and communicate tested knowledge about what works, what doesn't, and why. FOS is composed of learning portfolios - groups of similar projects that use the same strategies to achieve conservation. These portfolios provide conservation practitioners the opportunity to share experiences in order improve their projects' performance, systematically examine assumptions, and communicate what they have learned with other practitioners around the world.

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I.   INTRODUCTION AND OVERVIEW OF THIS DOCUMENT

Over the past few years, there has been growing interest in the idea of conservation groups to partner closely with local communities in helping them establish and manage "marine protected areas" designed to conserve dwindling marine resources. Although this idea sounds attractive in theory, the question still remains: under what conditions will it actually work in practice? [1]

In early August 2000, 40 representatives from 10 South Pacific-based projects in the Cook Islands, Fiji, Palau, Papua New Guinea, and Solomon Islands and several resource people came to Suva, Fiji to discuss establishing a learning portfolio to address this question (see *Box 1* for a discussion of learning portfolios). [2] A week later, nearly 50 representatives from 12 Sulu-Celebes projects in Indonesia, the Philippines, and Malaysia and several resource people met in Iloilo City, Philippines, to discuss setting up a similar portfolio. [2] These project representatives and resource people came together because they are all currently using a locally-managed marine area (LMMA) strategy at their project sites and in their marine conservation work. [3]

At each of these two initial workshops, project teams first presented what they are doing at their sites. They then used a common conceptual language to analyze the conditions at each of their sites and outline the challenges they are each facing using a LMMA tool. The teams then began to discuss what common data they might collect at each of their sites in order to test the conditions under which this tool does and does not work. Finally, the teams began to negotiate a "social contract" outlining how they might work together in the future and what their mutual obligations and expectations might be. At the end of each meeting, the workshop participants agreed to each return to their projects and discuss the ideas with their respective institutions. Participants from both workshops also agreed to reconvene, if possible, at the International Coral Reef Symposium (ICRS) that was to be held in Bali during October 2000 to see if they could finalize the social contracts necessary to launch their learning portfolios.

Photo: The Suva workshop participants, all working with or in support of locally-managed marine protected areas in the western South Pacific.

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[1] For additional background information regarding this question see concept paper, Appendix A.
[2] For a complete list of participants and their organizations from both workshops, see Appendix B.
[3] The term "locally-managed marine area" originated from the Suva Workshop, and was commonly agreed upon by all participants at the Bali meeting for communication purposes.

Box 1. A Brief Introduction to the Concept of a Learning Portfolio

Many conservation programs focus exclusively on results, and overlook the added benefit of learning from the experiences of the projects that comprise the portfolio. A typical *results-only portfolio* involves managing a group of projects that are loosely clustered around some theme (for example, projects in a certain geographic region). Each project is selected more or less independently of the others and there are, therefore, few if any synergies. The results-only portfolio's net impact is at best the sum of its parts.

A *learning portfolio* is a special kind of program that seeks to both achieve specific conservation impacts <u>and</u> systematically test a set of assumptions about particular conservation strategies or tools. For example, you could select a portfolio of projects to learn about the conditions under which an enterprise-based approach to conservation is most effective. The learning portfolio's net impact thus becomes far greater than the sum of its parts. While learning portfolios require more staff and money, a necessarily more restricted focus, and a willingness to experiment and value failure, they also can potentially provide improved knowledge, cross-project learning, and more productive partnerships.

Results-Only Portfolios versus Learning Portfolios:
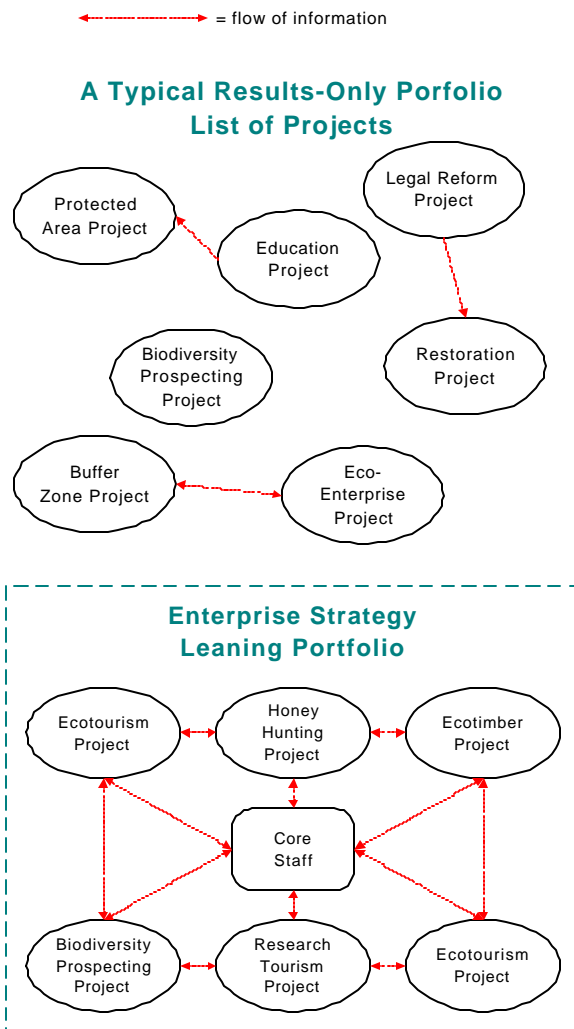
Source: N. Salafsky and R. Margoluis. 1998. Greater Than the Sum of Their Parts: Conservation Programs that Maximize Results and Learning. Available from the Biodiversity Support Program or online at: www.BSPonline.org

A few months later, most of the project participants who attended the August workshops traveled to Bali to attend the ICRS meeting. On the afternoon of October 25, a well-attended learning portfolio meeting was convened in Bali, with over 60 people representing the 22 different projects and resource people who had attended the original August workshops being able to participate. At this meeting, the project teams focused principally on revising the draft social contracts that had been produced at the earlier meetings. The group merged the two contracts and worked line-by-line to produce a joint document to the group's mutual satisfaction. The group then initiated discussions on portfolio membership and governance considerations, and concluded the meeting by outlined next steps for moving forwards with implementation of the portfolio.

These three learning portfolio workshops were organized and convened by the World Resources Institute (WRI), and workshop sessions were facilitated by representatives from WRI, Foundations of Success (FOS), the David and Lucile Packard and John D. and Catherine T. MacArthur Foundations, the University of the South Pacific (USP), and the Wildlife Conservation Society (WCS). The workshops were graciously hosted by: (a) USP's Institute of Applied Sciences (Fiji workshop), (b) the Southeast Asian Fisheries Development Center (SEAFDEC) and Tambuyog Development Center (Philippines workshop), and (c) KEHATI, the Indonesian Biodiversity Foundation (Indonesia workshop). The meetings were made possible through the generous support of The David and Lucile Packard and John D. and Catherine T. MacArthur Foundations.

This document contains the results from these three workshops. It presents a summary of the activities and outputs from each of the sessions during the meetings (see Appendix A for workshop agendas), organized into six chapters. More complete versions of all workshop results are posted on the learning portfolio website: www.FOSonline.org. This document and the online results are meant to provide a living record of the work and learning that these projects undertake together. Taken together, the results of these three workshops reflect the initiation of a learning portfolio focused on collaboratively testing LMMAs as a marine conservation tool in the Indo-Pacific.

To some degree, the 10 projects in the South Pacific and the 12 projects in Southeast Asia are members of separate sub-portfolios within an overall portfolio. For the purpose of this report, however, we have elected to combine the results from both sub-portfolios to facilitate cross-portfolio comparisons and learning. It is important to note that because the workshop in Suva came first, the tremendous learning that arose out this meeting regarding the appropriate process for initiating a portfolio effort was subsequently applied at the Iloilo workshop. This accounts to some degree why the outputs from the Iloilo workshop may appear to be a bit more complete than those generated out of the Suva workshop.

II.   DESCRIBING THE SITUATION AT PROJECT SITES

At both August workshops, one of the first activities involved having the representatives of each of the projects introduce themselves and the work they are doing using LMMAs as a marine conservation tool.   Each of the 22 projects (see *Table 1* for project list) is working in close partnerships with coastal communities to try to manage marine resources in a more sustainable manner and/or conserve *in situ* marine biodiversity. In their introductory presentations, project members provided a wealth of detail about the conditions at each of their sites (see *Table 2* for a sample of information collected across six Sulu-Celebes project sites). It was also fascinating to see the different ways that groups chose to describe their work. Some groups presented formal talks complete with data slides and maps. Others told stories about the work that they are doing. Some even shared elaborate computer presentations that combined digital music and video elements. But regardless of the format in which these presentations were given, one thing was clear across all project sites: a significant amount of learning has and is occurring on the use of LMMAs as a marine conservation tool. The challenge then became clear to participants from the outset of both workshops: how can this learning be done collaboratively as a group, rather than as individual project sites or organizations?

Working in breakout groups that consisted of paired project teams, each project then developed an *initial conceptual model* – a picture of the conditions at their site before they began their locally managed marine area interventions. These models were used to begin the process of identifying what threats and other factors might be important across the sites in the portfolio and to develop a common language for discussing the systems that the projects are working in. Examples of one project model from each workshop are shown in *Figures 1* and *2*. Each project team received copies of all other

Photos: Project representatives (above left) from Papua New Guinea and the Solomon Islands label and arrange factors on flip chart paper for the Marovo Lagoon Marine Reserves conceptual model, led by Casper Revi (far left, pointing) and Seri Hite (right center, writing out factor). The results of this model are presented in *Figure 2* (page 7). Rezal Kusumaatmadja (above right) works within a small group at Iloilo City to analyze the factors that influence the Komodo Island National Marine Park project in Indonesia. Small groups were mixed both with representatives from the site being modeled and outsiders unfamiliar with it.

Table 1. The 22 Projects of the Initial South Pacific and Sulu-Celebes Workshops.

Participating Organization(s) and Project Site(s) from the **Suva Workshop**	*Participating Organization(s) and Project Site(s) from the* **Iloilo Workshop**

<u>Community Conservation Network</u>
    1. Helen Reef, Hatohobei State, Palau
<u>Foundation for Peoples of the South Pacific</u>
    2. Coral Gardens Project, Fiji Islands
<u>Mahonia Na Dari</u> & <u>The Nature Conservancy</u>
    3. Kimbe Bay, Papua New Guinea
<u>The Nature Conservancy</u>
    4. Arnavon Islands, Solomon Islands
<u>Solomon Islands Development Trust</u>
    5. Malaita Tabu Area, Solomon Islands
<u>University of the South Pacific</u>
    6. National Tabu Network, Fiji Islands
<u>World Wide Fund for Nature South Pacific</u>
    7. Marine Reserves, Marovo Lagoon, Solomon Islands
    8. Ra'ui Areas, Rarotonga, Cook Islands
    9. Marine Reserves, Kadavu Province, Fiji Islands
<u>Wetlands International - Oceania</u>
    10. New Guinea North Coast, Papua New Guinea
	<u>Coastal Resources Management Program</u>
	    1. North Sulawesi MPAs, Indonesia
	<u>Conservation International</u>
	    2. Togean Islands, Sulawesi, Indonesia
	<u>HARIBON</u>
	    3. San Salvador Island MPA, Philippines
	    4. Battasan Island MPA, Philippines
	<u>Project Seahorse</u>
	    5. Jagoliao Marine Reserve, Philippines
	<u>The Nature Conservancy</u>
	    6. Komodo National Marine Park, Indonesia
	<u>Tambuyog Development Center</u>
	    7. Sorsogon Marine Reserves, Philippines
	<u>World Wide Fund for Nature Malaysia</u>
	    8. Semporna Islands, Sabah, Malaysia
	<u>World Wide Fund for Nature Philippines</u>
	    9. Balayan Bay MPA, Philippines
	    10. Tubbataha Reef MPA, Philippines
	<u>Yayasan Rumsram</u> & <u>KEHATI</u>
	    11. Padaido Islands, West Papua, Indonesia
	    12. Derawan Islands, East Kalimantan, Indonesia

Table 2. Basic Conditions Across All the Projects Presented at the Iloilo Meeting.

Group	Location	Site Description	Proj Goal	Threats	Tools	Results	Difficulties	Monitoring
WWF Malaysia	SE Sabah	six islands	Park Development	dynamite cyanide overfishing	capacity bldg law enforcement teach teachers env. Education		language	
CRMP	N. Sulawese 3 field sites (2 other provences) Blongko		Develop model of CRM Quality of life issues Increase fish stocks	overfishing destructive fish	community-based marine sanctuaries co-management			fish pops inside and out of reserve
Project Seahorse	Bohol, Philippines	8 areas in network	Conserve seahorses and habitats	overharvesting population cash needs habitat destruction	mpa (total) sustainable use monitoring alt livelihood	no increase CPU	markets lack of bio inform seahorses not a good response species for MPA	
TNC	Komodo Islands	coral reef mangrove seagrasss	Biodiversity conservation	cyanide dynamite overfishing population	co-managed park (multiple use) eco-enterprise conserv finance	blast fishing known to be bad	multiple stakeholders education & awareness market forces	
WWF Philippines	Balayan Bay	coral mangrove seagrass		industrial pollution commercial fishing tourism destructive fishing siltation			political change	
Yayasan Rumsram	Padaido Islands			destructive fishing tourism external fishers	community-managed reserves			
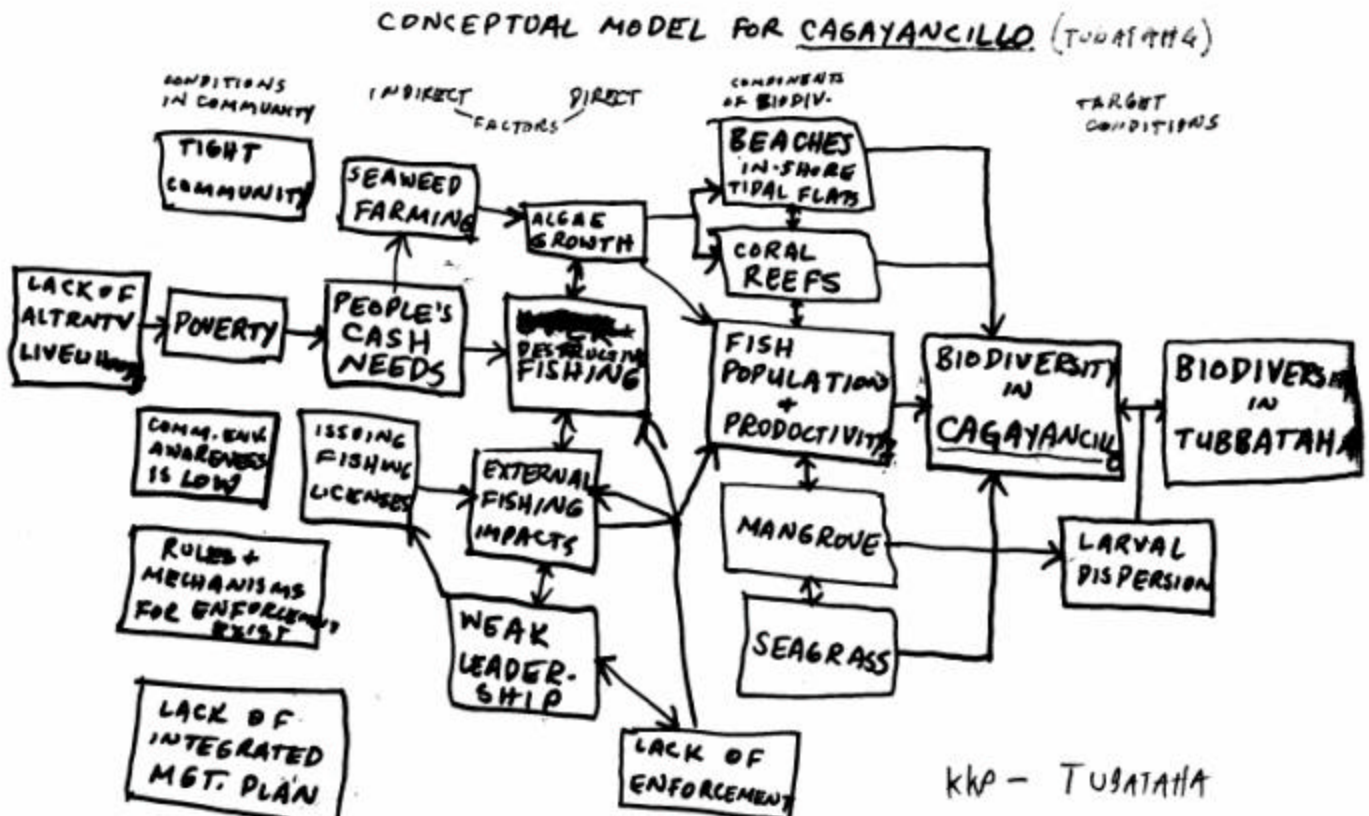
Figure 1. Initial conceptual model of the Cagayancillo Community Participation in Tubbataha Reef Management Project site generated during the Iloilo Workshop.

Photos: Manuel Mejia (above left) presents the Tubbataha Reef conceptual model results to the workshop plenary in Iloilo City (see full model results above, *Figure 1*). Project conceptual models were drafted and revised by small groups using self-adhesive note paper and markers on flip charts (see above right) before being presented formally to the plenary for discussion.

Figure 2. Initial conceptual model of the Marovo Lagoon Marine Reserves Project site generated in Suva. Note the feedback loop created through the interaction of three, central indirect threats.

models presented at the workshops. Electronic versions of all models generated are available on the portfolio website at www.FOSonline.org.

In respect to geographic representation of projects at the workshops (i.e., the 'spread' of participation), *Figure 3* displays a map of the Central Western Pacific from the Sulu-Celebes region through Melanesia, displaying the geographic location of all 22 participating LMMA project sites.
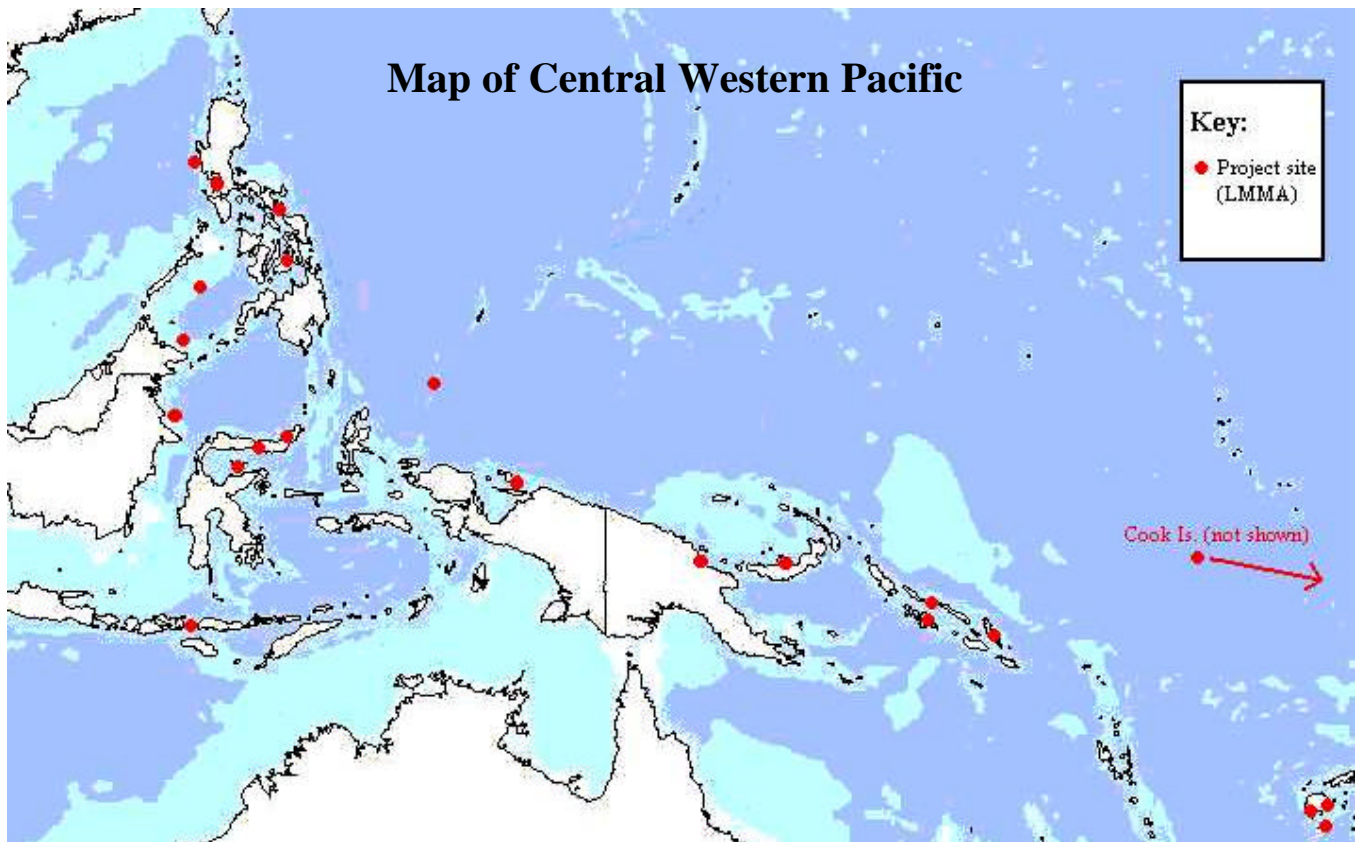
Figure 3. The geographic spread of all 22 LMMA project sites across the Indo-Pacific region that participated in the three learning portfolio workshops.

III.   ASSUMPTIONS BEHIND THE LMMA TOOL

The second major activity at each of the first two portfolio meetings involved having each project show how they were using the LMMA tool.   Returning to their breakout groups, each project team was asked to pick the factor(s) in their models that they thought they could influence by using a LMMA tool and to then outline the assumptions behind the use of this tool. Examples of the assumptions made for the two projects modeled in *Figures 1* and *2* are shown in *Box 2* (complete versions of the assumptions outlined by each group are posted on the portfolio website at www.FOSonline.org). After each group presented their results to the plenary, all assumptions were tallied to see which ones appeared commonly across multiple projects. Results of this work for each portfolio are listed as 'key' assumptions on Pages 11 – 13.

Part of each project's identification of core assumptions and conditions was to define what marine reserve/protected area tool was being used at their site(s). *Box 3* lists the results of each project's name for their LMMA tool.

Box 2. Assumptions Made by Two Projects in Using the LMMA Tool

? *Cagayancillo Community Participation in Tubbataha Reef Management Project*

Project Site:	Cagayancillo (as relates to the Tubbataha Reef)
Tool Being Used:	community-based marine protected area (CB-MPA)
Factor to Influence:	Fishing Pressure
Core Project Assumption:	If a CB-MPA is established, then fish populations will increase inside and outside the MPA area.

This Core Assumption Will Hold True If:

Condition 1:	If there really is a spillover effect.
Condition 2:	If there is stakeholder buy-in.
Condition 3:	If there is community will and capacity to enforce the MPA.
Condition 4:	If the fishermen can replace lost income through alternative livelihood.
Condition 5:	If the MPAs are properly sited and selected by community.
Condition 6:	If the Provincial Government can provide support for enforcement (funds).
Condition 7:	If enforcement training is effective.

? *Marovo Lagoon Marine Reserves Project*

Project Site:	Butubutu Tobakokorapa, Marovo Lagoon Project Area
Tool Being Used:	community-based general conservation area (GCA), established through seasonal and no-take *tabu* declaration by Butubutu chiefs
Factor to Influence:	Overfishing for Subsistence and Market
Core Project Assumption:	If the Butubutu declares a GCA, then live reef food fish, bait fish, trochus, and beche-de-mer overharvesting will decrease dramatically to the point where such resources will be plentiful again.

This Core Assumption Will Hold True If:

Condition 1:	If there is community agreement.
Condition 2:	If there is provincial and national legislation to support the GCA.
Condition 3:	If neighboring communities are aware of the GCA declaration <u>and</u> respect it.
Condition 4:	If commercial operators are aware of the GCA declaration <u>and</u> respect it.
Condition 5:	If the public at large is aware of the GCA declaration <u>and</u> respects it.
Condition 6:	If enforcement of the GCA by the government and community occurs.
Condition 7:	If there is no corruption.

Box 3. What Should We Call the Tool We Are Using?

A non-trivial challenge facing any learning portfolio is to come up with a common language for discussing the problems being addressed. One of the most basic problems is to develop a common name or set of names for the tool or tools being evaluated.

Project teams used the names shown in the table below. At the Suva workshop, the group decided to adopt the term "locally-managed marine area" (LMMA) as a generic term for this tool. At the Iloilo workshop, no consensus on a term was reached. At both workshops there was some discussion of the pros and cons of "locally-managed" versus "community-managed", particularly in regard to how collaboratively-managed sites (i.e., those with government contribution) appeared to be excluded from the latter term. Perhaps the most interesting outcome of this discussion was the realization that this portfolio is not strictly concerned with "marine protected areas" *per se*. Instead, these projects are about managing areas of marine resources by using some type of protection that may involve species specific, spatial, temporal, or gear restrictions – or some combination of all of these.

Implementing Organization and Project Site	*Project Name for Tool Being Used*
Suva Workshop:	
USP – National Tabu Network, Fiji	"no-take traditional reserve"
FSP – Coral Gardens, Fiji	"managed reserve" and "tabu area"
WWF – Kadavu Province, Fiji	"tabu area; marine reserve or marine conservation area"
Mahonia na Dari/TNC – Kimbe Bay, PNG	"tabu area"
Wetlands International Oceania – North Coast, PNG	"customary resource area and wildlife management area"
TNC – Arnavon Islands, Solomon Islands	"community managed reserve area"
WWF – Morovo Lagoon, Solomon Islands	"seasonal reserves" and "no-take conservation area"
SIDT – Malaita Tabu Site, Solomon Islands	"no take zone"
WWF – Rarotonga, Cook Islands	"no-take 2 year closure" or "ra'ui area"
CCN – Helen Reef Atoll, Palau	"no take" and "multiple use zones"
Iloilo Workshop:	
WWF – Cagayancillo, Philippines	"community-based marine protected area"
Project SeaHorse – Jagoliao, Philippines	"permanent no-take zone"
KKP – Balayan Bay, Philippines	"marine protected areas"
Haribon – San Salvador Island, Philippines	"marine sanctuary" no-take zone
Haribon – Battasan Island, Philippines	"no take zone"
Tambuyog – Sorsogon, Philippines	"marine sanctuary"
TNC – Komodo, Indonesia	"zoned marine protected area" (no-take & multiple use)
CRMP – N. Sulawesi, Indonesia	"permanent no-take zone"
Rumsram – Padaido Islands, Indonesia	"zoning" and "species-specific *sasizen* (tabu)"
CI – Togean Islands, Indonesia	"community-based marine protected area" (multiple use)
WWF– Semporna Islands, Malaysia	"marine protected area"

List of Key Assumptions Involved in LMMA Use
For each portfolio workshop, the core assumptions of how a LMMA will affect two common threat factors found across multiple project conceptual models are listed below, along with the conditions under which this assumption is hypothesized to hold true. Names in parenthesis state the project or projects that listed this assumption or condition as pertaining to their project. Note that some filtering occurred in compiling this list by clustering slightly different assumptions or conditions that seemed to refer to similar concepts.

SOUTH PACIFIC ASSUMPTIONS (SUVA WORKSHOP)

? *FACTOR TARGETED: Local Overharvesting/Overfishing (for subsistence & market)*

CORE ASSUMPTIONS (and number of projects citing them):
- Villagers will not fish in tabu area (two projects)
- If the *butubutu* (clan) declares a general conservation area, then overharvesting of resources will decrease dramatically (one project)
- If community polices the General Conservation Area, then poaching will end, most outsiders will respect the management plan, and any violators will be prosecuted (one project)
- Establish community managed reserve area to stop overfishing (one project)
- Creation of MPA will reduce impact of subsistence fishing on sensitive species (one project)
- Community-based management regime over customary areas will result in reduction in overharvesting and the adoption of more sustainable harvesting practices (one project)
- If we establish a full closure zone for two years, then fish populations will recover and increase both inside and outside the no take zone (one project)
- The MPA will allow for the sustainable harvest of commercial species – trochus, sea cucumber (one project)
- Tabu area (managed reserve) will reestablish resource populations, spill-over into outside areas, and broodstock with up recruitment in adjacent areas (one project)
- Community managed marine areas will improve biodiversity in reserve (two projects)

? *FACTOR TARGETED: Foreign Fishing*

CORE ASSUMPTIONS (and number of projects citing them):
- Creation of MPA will reduce illegal foreign fishing (one project)
- If commmunity does policing in GCA, then no more poaching and outsiders will respect management plan and violators will be prosecuted (one project)

CONDITIONS (for both factors):

Biological And Resource Conditions
- Traditional resource management system and natural history knowledge exists to regulate harvest (three projects)
- Villages have other reefs to fish (one project)
- MPA will improve biodiversity in reserve (three projects)
- No freshwater causing problems (one project)
- Brood stock exists (one project)
- Area is significant from a biodiversity standpoint (one project)
- Poachers can be seen (one project)

- Patrolling exists (two projects)
- Spillover outside no take zone sufficient to increase catch for others (two projects)

Social/Political Institutional Conditions
- Community agree and respect purpose and chiefs – compliance by insiders and willingness to change/evolve (nine projects)
- Compliance/awareness/respect by neighboring communities (one project)
- Compliance with reserve by outsiders/commercial operators (two projects)
- Enforcement by community (two projects)
- Enforcement by government (two projects)
- Decision makers use knowledge and results (one project)
- Villages still maintain ownership of reefs (one project)
- Legislation (provincial, national) in place (two projects) (explicitly not – one project)
- Courts can prosecute (one project)
- Benefits accrue to people who bear sacrifice (one project)
- Political stability (one project)
- Peer pressure is sufficient sanction (one project)
- No corruption (one project)
- Sufficient knowledge (two projects)
- Conflicts between/within communities can be resolved (one project)
- Community has ownership of resources (one project)

Capacity Conditions
- Training and awareness exists (two projects; one project – only externally)
- Community education (one project)
- Technical and financial support (two projects)

SULU-CELEBES ASSUMPTIONS (ILOILO WORKSHOP)

✍ FACTOR TARGETED: Fishing Pressure / Subsistence & Commercial Overfishing

CORE ASSUMPTIONS (and number of projects citing them):
- If CB-MPA is established, then fish populations will increase inside and outside MPAs (four projects)
- If we establish the MPA, then we will reverse observed declines in fish yields (one project)
- If we establish a marine sanctuary, then fish catches will increase (one project)
- If establish species-specific *sasi*, then coastal ecosystems health will increase (one project)
- If overfishing due to commercial vessels, a ban will result in stock replenishment (one project)

CONDITIONS:
- "Spillover effect" (one project)
- Stakeholder acceptance (four projects)
- Capacity to enforce MPA (two projects)
- Willingness to enforce MPA (one project)
- Effective enforcement (one project)
- Able to replace lost income through alternative environmentally friendly livelihoods (seven projects)
- Equitable distribution of income (one project)
- Compliance of existing laws, rules, and regulations (one project)
- Alternative sources of food/protein available (one project)
- MPAs properly sited and selected by community (one project)

- Provincial government supports enforcement with funds (two projects)
- Enforcement training is effective (one project)
- Able to get out of debt-peonage system (bondage) (one project)
- Commercial fishers agree to ban (one project)
- Local fishermen effectively organized (two projects)
- Stakeholder effectively organized (one project)
- New laws formulated (one project)
- Implementation of existing laws (including Municipal), effective judicial system (three projects)
- Adequate and long-term funding (two projects)
- Local NGO support (two projects)
- MPA plan developed and implemented (one project)
- Capacity of locals to do community monitoring (two projects)
- Environmental education, information availability & management (three projects)
- Institutional infrastructure for participatory decision-making (one project)
- Capacity building occurs for governance, legal, rules (one project)
- Effective leadership (one project)
- Community actively participate in design, establishment, and management (one project)
- Logistical support from government (one project)

✍ FACTOR TARGETED: Destructive Fishing (Dynamite, Cyanide, and Gears)

CORE ASSUMPTIONS (and number of projects citing them):
- If we establish the MPA with strong local use regulation compliance, then locals have power to eradicate dynamite fishing for sustaining their life (one project)
- If we install a protected area, then destructive practices end and fish and other marine life stocks recover (two projects)
- If we install a zoned species-specific *sasi*, then destructive fishing halted and ecosystem health increases (one project)
- If we install a permanent no-take zone, it will eliminate destructive gears which in turn will replenish fish stocks (one project)

CONDITIONS:
- Full stakeholder acceptance (including government) and all recognize benefits (two projects)
- Community organized and empowered (one project)
- Respect and recognition local rights by all stakeholders, including government (one project)
- Alternative, sustainable fishing techniques and practices lead to income (one project)
- Sustainable alternative livelihoods available and provide income (two projects)
- Institutional infrastructure for participatory decision-making (one project)
- Information/education available locally (two projects)
- Effective local NGO community organizers and capacity to undertake activities (one project)
- Capacity building of legal, judicial (one project)
- Long-term financial support (one project)
- Effective judicial system and respect for it by authorities (two projects)
- Effective enforcement (two projects)
- Effective leadership (one project)
- Market availability to receive alternative sustainable fisheries catch (one project)
- Permanent Monitoring (one project)

IV.   COMMON FACTORS AND WAYS OF MEASURING THEM

The third major activity at each of the first two portfolio meetings involved focusing on key factors that appeared across project sites. At each workshop, participants subdivided themselves into breakout groups based on disciplinary interest. Each group then took on one or more factors (see example in Box 4 below). For each factor the group came up with a definition, outlined what other factors the selected factor might affect and stated hypotheses, and determined a range of indicators and methods for measuring the factor. Finally the group in some cases made recommendations about which method might be best suited for the portfolio.

This activity was undertaken to develop a draft analytical framework for the overall portfolio. The current version of this framework is presented in its entirety in Appendix C. Note that we have combined all factors from both workshops. It will be the decision of the group whether to split the factors out by region or keep them together. This draft framework is an important start. But it will require a huge amount of work before it will be ready to be implemented.

Box 4. The Degree of Conservation Investment Factor

A. What is It?

Definition: The conservation investment is the total amount of money annually invested at a project site by the implementer(s) into a LMMA (or LMMAs, if networked).

B. What Does It Influence?

Hypothesis: The conservation success of a LMMA increases as the total amount of investment in the area increases.

C. Indicators and Methods

What to Measure: Total annual LMMA project costs per unit area.
How to Measure It: Investment = total annual LMMA costs (US$) divided by total LMMA area (ha)
Examples: Thubataha Marine Area conservation investment = ~ $5.25/ha/yr
                                 Komodo National Marine Park conservation investment = ~ $10.05/ha/yr
Data collection:
1.   The geographic area for the LMMA can be sourced via government maps or project survey data (i.e., GPS).
2.   Total annual LMMA costs can be calculated by adding: (1) the annual LMMA project budget, and (2) any other annual costs associated with the LMMA (e.g., participating community labor and opportunity costs). These latter costs can be estimated or determined through socioeconomic data collected from annual surveys.
Related Indicators:
1.   Conservation investment relative to human population of area.
2.   Conservation investment relative to total revenues generated from incompatible activities occurring in area (i.e., investment relative to scale of threats/problems).
When to Measure It: Annually.
Who Measures It : Project staff.
Comments: Power-play ? Catalyst

                                                                                        Generated by: Iloilo Working Group

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V. DEVELOPING A SOCIAL CONTRACT

The final, and perhaps most important, activity for the three initial workshops was to develop a draft *social contract.* A social contract is a mutually developed agreement that governs how the portfolio functions. It includes a statement of the vision of the portfolio, outlines ideas of what the members of the portfolio will do together, and describes the obligations and benefits of being a member.

Since each project was only represented by two or three people at the original two workshops during August, following these meetings participants took the contract back to their respective institutions for review and comment. The participants then came back together at the meeting in Bali to finalize the social contract. This final social contract is presented below. This version combines the two drafts developed individually by the Suva and Iloilo working groups. Text in *[italic brackets]* indicates issues that were not resolved at the Bali meeting or were raised independently by participants afterward.

Photos: Development of the social contracts during the August workshops proved to be a challenging and thought-provoking exercise. A good sense of humor assisted both workshop plenary groups (Iloilo group above top; Suva group above bottom) move through the exercise.

A.   Vision and Goals

Elements of our vision include:

1. Healthy ecosystems and communities, abundant fish stocks, and sustainable fisheries utilization.
2. Protected marine biodiversity.
3. Sustainable development in coastal communities.
4. Understanding of what communities are doing in managing marine areas.
5. Understanding of ecological and socioeconomic responses to LMMA implementation.
6. Global awareness of the biological and social-economic science related to LMMA that is coming out of the Indo-Pacific.

Our overall goal is:

We seek to reach the portfolio vision by forming a group of practitioners (both individuals and organizations) and researchers who are committed to sharing experiences and information on determining the conditions under which locally managed marine areas can contribute to conservation. We work together because we want to be able to take actions that have a high chance of measurable long-term success.

In reaching for these goals, we believe in the following core values:

- Commitment (to the portfolio, to finding the truth)
- Teamwork (inclusion of all voices such as community members and government officials)
- Transparency (a willingness to share failures and mistakes as well as success stories)
- Empowerment
- Respect (e.g., valuing diverse perspectives)
- Fun
- Belief that we can make a positive difference

B.   Things That the Portfolio Might Do

Proposed portfolio activities include:

1. Design and implement a plan to collect and analyze a comparable set of data to enable us to learn from each other's success and mistakes.

2. Provide support and capacity building assistance to projects on an ongoing basis to collect this common data set. *[we still need to determine whether these data should be "standardized" for analytical rigor or merely "comparable"]*

3. Establish an appropriately protected internet web site to store portfolio data, analytical results, reports, etc. Specific rules and regulations on the access of such information will be developed by the group over time. *[we need to develop a working*

group to define the data issue further and to make sure to include groups without web access]

4. Promote cross-site visits that incorporate specific skills training.

5. Support a portfolio team that provides regular technical assistance in core skills.

6. Hold regular meetings at different sites on a rotating basis.

7. Establish country-specific teams that accommodate different language and skill levels.

8. Share logistical and technical information.

9. Set up study tours for decision makers (both government officials and traditional leaders).

10. Engage with other coastal resource management initiatives/portfolios.

11. Hold on-site training workshops that target specific skills development (linked to larger meetings if possible).

12. Create joint policy briefs and educational materials based on collective learning.

13. Produce regular analyses and "stories" showing successes and failures with projects and the portfolio learning process.

14. Identify and establish links with specific resource people at key institutions and communities.

15. Engage in collective advocacy for locally-managed marine areas.

C.   Portfolio Member Benefits and Obligations

We agree that to be included within the portfolio, there are a number of obligations that need to be met and benefits that should be experienced. These are detailed below, by category of portfolio participant.

C-1   Projects and Organizations

Projects and organizations in the learning portfolio should:

1. Share an agreed upon minimum set of data (based on the analytical framework) with the wider group.
2. Attend and actively participate in portfolio meetings.
3. Commit resources for portfolio-related activities, including staff time, funding, timely collection of minimum set of data.
4. Obtain "buy-in" from project site partners.

Projects and organizations in the learning portfolio should benefit from their participation by:

1. Learning new ideas and techniques via cross-project capacity building.
2. Having access to comparable data from other organizations and projects.
3. Receiving financial and technical support for portfolio-related monitoring activities.

4. Receiving regular advice, technical and educational support, and feedback from participating peers.
5. Securing a stronger, collective voice in policy debates with local, national and international audiences.
6. Becoming part of a growing community of experts on LMMAs.
7. Expanding professional relationships.

C-2   Resource People

Resource people participating within the learning portfolio should:

1. Provide access and information to the portfolio project sites and organizations regarding other related learning network and training workshop opportunities.
2. Provide advice and objective perspective on portfolio activities (be a friendly critic).
3. Bring learning of project sites from other countries and regions to portfolio discussions.
4. To respect the portfolio's core values and be an active participant.

Resource people participating within the learning portfolio should benefit from their participation by:

1. Learning from the projects within the portfolio.
2. Using the portfolio and its voice as an opportunity to communicate their own work and findings with interested audiences.

C-3   Donors

Donors participating within the learning portfolio should:

1. Make concerted efforts to provide funds to portfolio participants for cross-project visits, portfolio meetings, monitoring support, publications, etc.
2. Value lessons learned from failures as well as successes and help get the message out.
3. Communicate the portfolio's vision with their respective Board of Directors and others.

Donors participating within the learning portfolio should benefit from their participation by:

1. Obtaining guidance and advice on other projects to fund in future years.
2. Accessing lessons learned and data that can be shared with Board of Directors.
3. Demonstrating how donors can support both learning & conservation at the same time.

[Note that a few respondents expressed concerns that the donors are not making a solid commitment to funding the portfolio members in their ability to collect the standard set of data. See their feedback within the Bali meeting evaluation comments, in Section VI.]

C-4   Coordinators

Portfolio coordinators should:

1. Provide the time and person-power necessary to effectively coordinate the portfolio.
2. Assist with fund raising to provide logistical and next steps coordination for portfolio workshops, training workshops, and/or meetings where the portfolio voice will be present.
3. Provide access to different media outlets and with different policymakers.
4. Bring portfolio results into external, related global discussions.
5. Provide a collective portfolio voice as necessary.

Portfolio coordinators should benefit from their participation by:

1. Obtaining information about the process of Leaning Portfolios.
2. Using the portfolio to communicate their own work and findings with interested audiences.

[The working group nominated and elected WRI to be the portfolio coordinator. The group also tasked WRI with organizing and leading a group of inter-portfolio members willing to serve as a management team, or coordinating body, for the whole portfolio.]

D. Portfolio Membership

[The text in this section was developed after the Bali portfolio meeting based on group discussion held at the end of the meeting. This text was circulated to projects and portfolio participants during ICRS for comment. As such, it has not been officially ratified by the portfolio members.]

The portfolio is composed of the following types of members:

D-1 Project Members
The core focus of the portfolio is on site-based projects. *[Some respondents proposed making "organizations" the unit of portfolio membership rather than projects to prohibit "domination of the portfolio by large participating organizations with multiple projects".]*

There are three types of membership open to projects:

- **Full Membership** – Projects and coordinators who have completed initial membership obligations. These initial obligations include:
  - Obtaining buy-in from local partners;
  - Completing an initial site description;
  - Developing a monitoring plan;
  - Collecting baseline data;
  - Appointing project representatives to the portfolio;
  - Coordinating portfolio activities and the group learning process;
  - Overseeing group's analytical products and communication of results.

  Projects that have full membership will have decision-making rights in the portfolio once it gets fully under way.

- **Provisional Membership** – Projects that are interested in joining the portfolio, but have not yet completed initial membership obligations. Note that all projects start off as provisional members.

- **Network Membership** – Projects that do not want to be fully involved in the portfolio, but who want to be part of a broader network of practitioners and researchers focusing on CM- MAs. Network members do not have decision making rights in the portfolio.

D-2   Donor Members

Funders can be non-decision making members of the portfolio. Membership will require 2/3's approval of the project members of the portfolio.

[D-3   Resource People Members]

Resource people can be non-decision making members of the portfolio. Resource people can be nominated for membership by any portfolio member. Membership will require 2/3's approval of the project members of the portfolio. *[This section will only be included if the portfolio agrees to have resource people as members]*

[Note that a few respondents offered suggestions for portfolio membership structures following the Bali meeting; these comments can be found in Section VI.]

E.   Decision Making Procedures

For the first phase of the portfolio, decisions will be made using a consensus-based approach. Decisions will be made by project members during face-to-face meetings or via e-mail.

Photos: Resource people participating in the meetings provided valuable advice during workshop plenary discussions (Pollnac and White, above left) and hands-on participation and feedback within small group sessions (Govan on far left with Solomon Islands experts, above right).

VI. WORKSHOP EVALUATION SUMMARY

Following the initial two workshops during August, participants were asked to evaluate the content and process of the workshops and suggest future portfolio directions. Of the 78 total participants from both workshops, 19 evaluations were completed and returned to the workshop organizers, representing approximately one quarter of the total group. Nearly an equal number of responses came from both workshops, with NGOs responding more frequently than resource people or academic and government representatives.

Each of the five questions asked in the evaluation is listed below, followed by a synopsis of the evaluation responses that were provided to the respective questions. Evaluation summary conclusions are highlighted in bold text.

1) Which sections of the workshop were clear and useful? Which were not? How could presentations have been improved (for example, the Conceptual Model exercise, the Social Contract discussion, the Introduction of Learning Portfolios)?

This question received the majority of respondent feedback.

First, nearly all respondents from the two workshops felt that **the learning portfolio concept is important and useful for projects**. There was agreement that the small group development of factors and assumptions were some of the most useful activities in that they helped move the group learning concept beyond just theoretical discussions and into the development of an actual framework for learning between participating projects. However, a few respondents felt that the learning portfolio introduction was too rushed, leaving them confused. Most people agreed that more time should have been allowed to discuss this concept at the outset before moving on. In addition, there was nearly universal agreement from the group that **there was not enough time allocated to developing a learning framework or for sharing lessons learned** between projects and individuals, particularly on project failures. This was clearly the largest disappointment with the workshops. One respondent noted that they "did not leave feeling that I had learned very much", a similar sentiment echoed by several respondents. One respondent who felt strongly about this noted that "the meeting was not a good use of my time" and that they probably would not attend again. Some respondents noted that as they thought the purpose of the workshop was to learn about each other's experiences in using reserves and MPAs, there was a "big need to share lessons that was not fulfilled" given their expectations coming into the workshops. Several respondents felt that the overall need for more time to be invested on the small group activities that focused on sharing assumptions and building a learning framework could have been achieved within the overall three and a half-days, but **that poor facilitation styles** prevented this. One respondent noted that "some of the people participating knew more about how to hold participatory workshops than the facilitators themselves."

Next, nearly all of the group agreed that **more energy should have been invested in developing the social contracts** so as to build the framework for collaborative learning. Many respondents felt that there was "very little discussion" on the social contract, that "adequate time was not allocated" for the session, and that an initial discussion on the social contract should have come early on during the workshop rather than waiting until the very end. Several respondents noted that they believe the social contract is the most important first step in establishing a collaborative

learning effort given that it defines what the learning portfolio expects from participating members. A few people even suggested that the workshops should have focused just on developing a social contract and creating a framework for sharing lessons, with the conceptual modeling and discussions on factors and assumptions being a separate workshop.

Feedback regarding the utility and time commitment placed on conceptual models was somewhat mixed. A few respondents found the exercise very useful, particularly in regard to the notion that "it gives clarity to the situation and for identifying which interventions are useful and where". One respondent felt that they were "fortunate" to attend the workshop in that they now "grasp the importance of the conceptual model for planning" and defining project goals and objectives. However, the majority of respondents felt that **too much emphasis was placed on conceptual modeling**. Most respondents believed that amount of time invested on this exercise was "excessive", and there was general agreement that they "did not gain anything new" from doing it. One respondent suggested that as an alternative format, each project participating in the workshop should have been tasked with bringing a first draft model to the workshop which could then be shared, compared, and critiqued with others' models. While almost everyone understood the importance in the models, several respondents voiced strongly that they felt the conceptual modeling exercise was facilitated poorly, with facilitators being "overly academic", "unnecessarily confusing", and "too top-down".

Also, feedback on the individual project presentations was mixed. Some respondents enjoyed hearing and learning about others' work, and one person even felt that this was the most interesting aspect of the workshop. Some felt that the significant time invested on project introductions was unnecessary in that the content later became "redundant" when small groups came together to build project conceptual models and when the overall group discussed common assumptions shared between projects. However, one point of agreement between most respondents was that while useful, **too much time was given for project introductions**, and that this time would have been better used on other activities that allow for more "two-way sharing". For the workshop facilitators, this is one of the most interesting conclusions arising from the evaluation because they were originally concerned that not enough time was being allocated for project introductions.

Overall, respondents liked the learning portfolio concept and enjoyed the content of the workshop activities and small group discussions, but felt that the overall workshop process could have been improved upon, particularly in regard to better: (1) time allocation invested between activities, and (2) facilitation style.

2) Were the "right" individuals and institutions represented in the group? Would it be more (or less) effective to have more (or fewer) people/institutions present?

Three important missing elements were expressed by respondents in regard to the composition of the workshop participants. First, nearly all respondents felt that there **needed to be more representation from project staff and community members working "on the ground" across each country**. The group felt that most workshop participants were officers from national or international offices "based in cities far away from the project sites that they all talked about", and that the majority of participants were from the host country rather than having an even spread of representation across the countries represented. A few respondents also expressed their disappointment that despite encouragement in the original invitations for groups to bring a

community representative from their projects to the workshop, participation was "dominated" by program officers and resource people rather than by the key individuals running the project on site and ensuring local participation and buy-in. Second, respondents believed there **should have been more local NGO representatives present** rather than "the usual suspects" from the larger regional and international NGO programs. A few respondents argued that many of the smaller NGOs not represented at the workshop are those doing "most of the work on the ground" and are the most "innovative" groups addressing the subject of locally-managed marine areas. Thirdly, the group felt that while the NGO representation was strong, there was **insufficient representation from regional organizations and national governments** at the workshops. Respondents argued that without inclusion of these groups in the collaborative learning effort, conclusions generated would not be effectively put into practice within a decision-making context.

Respondents generally felt that the learning portfolios taking an initial **geographic focus on the South Pacific and Sulu-Celebes regions is correct**, but a few South Pacific respondents suggest that the portfolio consider encouraging broader participation from interested projects operating in Polynesia.

Also, the group **appreciated the diversity of people attending the workshops**, particularly in terms of: (1) the different types of groups that participants represented, (2) the various countries that they were from, and (3) the breadth of professional and project perspectives and backgrounds that people brought to the meetings.

Finally, while respondents believed that the number of people participating was doable, they recognized that **a smaller workshop size and more frequent small group interaction** would have strengthened the workshop process. One suggestion was to limit the participation from each group in the learning portfolio to no more than one or two people for future portfolio meetings, with broader attendance at country-specific, cross-project meetings. Having all participants stay at a single venue and share meals together was suggested for any future portfolio meetings that might occur.

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3) <u>Which sections of the workshop should have been given more emphasis</u>? <u>Did the sequence of the sections make sense</u>? <u>If not, what should be changed</u>?

While nearly all respondents thought that **the sequence of activities was right**, there was consensus that **too much emphasis was placed on the wrong activities** (e.g., conceptual modeling and project introductions) instead of the right ones (e.g., the group 'learning' elements: social contracts, factor development, and outlining shared assumptions). Feedback suggests that this emphasis issue was due largely to poor facilitation, and that facilitators were "too process oriented" and "too close to the subject matter". In particular, most respondents noted under this question that **not enough time was committed to exploring the learning portfolio concept** at the outset. As a result of this, most respondents felt "confused" about moving forward with the portfolio-related development activities and "**did not feel that there was enough experiences shared**" when the portfolio development began to happen.

It should be noted that the majority of the responses under this question are consistent with feedback received under question one.

4) <u>If you will be in Bali in October, are you interested in attending a follow-up portfolio meeting? What would you like to be the focus of that short meeting (for example, the "Social Contract")? Given what you feel should be the topic of the meeting, what are your specific expectations for the meeting</u>?

There was strong, universal support from evaluators to **move the learning portfolio process forward by holding a portfolio side meeting during the ICRS meeting** in Bali. This was true even despite the fact that some of the evaluators admitted that they would not be attending ICRS. Regardless of their attendance, they still insisted that the learning portfolio process needed to move forward as soon as possible so that it would "not loose the momentum built" out of the two initial workshops.

Two areas were commonly flagged by respondents as needing to be addressed at the portfolio side meeting. The most commonly suggested agenda item by evaluators was the need to **revisit and finalize the social contracts** so that participating groups within the learning portfolio: 1) could "define our commitments as individuals and organizations", 2) could clearly understand "who is going to do what", and 3) could further refine a framework that outlines "how we are going to network with each other."   Part of this need cited by evaluators for directional clarification was in regard to the extent of portfolio membership at this initial stage, particularly "which project sites are included" and what the "obligations for project sites" are if they choose to be a part of the collaborative learning effort. But respondents also noted their awareness of the potential rewards from being part of "the first on-the-ground marine conservation learning initiative" of this type, and expressed a sense of urgency in wanting the portfolio to "get on with the good stuff" and become operational. As one respondent put it, their principle expectation at the side meeting "is the aim to become part of the beneficiary."

The other Bali side meeting agenda item that was commonly suggested by evaluators was the need to **clearly outline a set of next steps for the portfolio in terms of data collection and information sharing**. Respondents cited this "process need" as being immediate so that the initiative could "gel" and "move it beyond just a concept and into practice." One respondent noted that determining the process for "future interactions" for "sharing of information and problem solving" was their main expectation for the side meeting, and others argued that this could only be achieved if a concrete set of time-bound next steps for all members is defined.

It is very clear from the evaluations that the main expectation for the Bali side meeting will be to **produce a concrete agreement of: 1) who will be involved in the learning portfolio, and 2) what the responsibilities are of each member**.

5) <u>Please write here any additional comments or observations you feel are important for the facilitators and for the group itself</u>.

There were a number of additional suggestions for portfolio direction outlined by evaluation respondents:

(a) Future learning portfolio meetings should be facilitated on a volunteer basis by different members of the portfolio than the original facilitators[4].

(b) All other projects and organizations that are interested in joining the portfolio and who did not attend the original two workshops should be considered by the group for membership consideration; membership thereafter should be reviewed on a periodic basis (e.g., annually) by the overall portfolio.

(c) Participating donors should link participation in collaborative learning efforts to project proposals more explicitly; donors need to provide strong financial incentives to learning portfolio participation given the amount of time that such involvement requires.

(d) The learning portfolio should integrate its efforts into other cross-program initiatives working on nearshore marine conservation issues, such as the Pacific Roundtable and MPA work being undertaken by SPREP.

(e) Agendas for future portfolio meetings should be determined by the portfolio itself.

(f) Future portfolio meetings should be hosted and organized in different countries by in-country projects and supporting organizations.

(g) Side field trips to project sites using LMMAs within the portfolio should be part of every portfolio meeting and should either not be optional or strongly encouraged to be attended by all groups participating in the portfolio meetings; such side field trips should not be so far from the portfolio meeting venue that it compromises attendance or logistical ease.

(h) Agendas for future portfolio meetings should be sent out earlier. Logistics for travel to the meeting site coordinated earlier. Financial support secured for groups to attend annual portfolio meetings should be finalized earlier.

(i) Long-term donor support for convening annual learning portfolio meetings needs to be secured as soon as possible. Portfolio members need figure out how they will individually contribute toward meeting and travel costs as a show of good faith.

(j) A day should be set aside at each portfolio meeting for a small selected or volunteer group of portfolio members to present on their LMMA lessons learned, both successes and failures.

Photo: Overall, respondents of the August workshop evaluations liked the learning portfolio concept and enjoyed the content of the workshop activities, particularly the small group break-out discussions (Fijian small group, above). However, respondents pointed out that too much emphasis was placed on certain exercises that took away valuable time from more rewarding activities where projects shared experiences and learned directly from one another.

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[4] Original facilitators: WRI, USP, FOS, and the Packard and MacArthur Foundations

Following the Bali meeting during October, participants were asked to provide feedback on: (1) their review of a draft of this report; (2) the content and process of the Bali meeting and its revised social contract output; (3) suggest any steps in implementing the learning portfolio, including indications of whether or not the project in question was interested in becoming a full or provisional member in the immediate future; and (4) offer any other feedback on the learning portfolio concept and overall process.

Review feedback and editorial comments on the draft report have been collated and incorporated into this document and its appendices. Responses on the last three Bali meeting evaluation questions are quoted directly below, by question.

(a)   What feedback would you offer on the content and process of the Bali workshop and its revised social contract output?

Respondent 1: "It is still not clear how committed the donors are to supporting this initiative and the projects that will be responsible for collecting the data. Perhaps donor members should consider portfolio membership part of their grant-making criteria. If the projects are 'obligated' to do so much under the social contract, why are the donors not 'obligated' in a similar way? Shouldn't they also be committed to this portfolio through the social contract in the same way that projects will be?"

Respondent 2: "I think that there is a problem with the incentives structure of the portfolio. From the perspective of the donors and the coordinators, there is a clear benefit to being in the portfolio: (a) donors get a better return on their investment if there is a learning built into their funding, (b) coordinators get to generate information and publications, and get paid to coordinate and analyze data. For resource people however, there is little incentive to continue participating in the portfolio: in exchange for technical assistance/consulting, resource folks get a couple of free trips to portfolio meetings (maybe) and the opportunity to learn what the portfolio discovers (but presumably folks outside the portfolio will have access to the same information and learning opportunities).

Most importantly, there appears to be little incentive for projects themselves to participate in the learning portfolio. As is currently stands, the only thing that projects will get out of this endeavor is the opportunity to learn; but projects have many opportunities to learn from both their own site and others. By contrast, the projects (as things currently stand) that join the portfolio will be obligated to shoulder a significant burden to generate the human and financial resources necessary to collect the data required for research and analysis. Relative to the benefits the individual projects might derive from learning, the costs of generating and dedicating resources to data collection are very steep. This is especially true because (at the ICRS meeting) donors seemed to 'backpedal' and retract their prior offer to provide the financial and technical resources necessary to support data collection. Several projects clearly noticed and commented aside on this donor 'backpedaling', and they recognize the disparity between benefits to them and the benefits to coordinators and donors. The incentives for projects to participate in the portfolio were tenuous, at best, when donors were willing to fund these learning

initiatives; with retraction of support, few projects have the incentive to participate in the portfolio beyond the fear that existing donor funding will be retracted if projects don't sign up to participate."

Respondent 3: "In terms of the social contract, not a significant amount of progress or decisions were made during the Bali meeting. Reviewing and revising the contract did not build the resolve of perspective project members as was anticipated. Also, it is not clear as to when projects are to 'adopt' or accept the social contract and decide whether or not to become part of the portfolio. This needs to be clarified."

Respondent 4: "It is not clear when a perspective project needs to formalize its commitment to the learning portfolio as a full or provisional member, agree and 'sign off' on the social contract."

Respondent 5: "I do not believe that this study will obtain honest, objective self-evaluations from participating project sites, no matter what type of 'social contract' is signed. For example, why wasn't one project open to an assessment of their community MPA project sites … unless I went through a community meeting & focus group procedure that would have resulted in the production of biased information?"

(b)   What feedback would you offer on the unfinished 'membership and governance' section of the revised social contract?

Respondent 1: "The Bali meeting was moving along well, but fell apart at the end once the governance discussion was suddenly begun. I am not even sure the facilitators knew what was happening by that point – it left a bad taste in people's mouths to come out of a meeting that was going so well."

Respondent 2: "What exactly is the point of voting membership as opposed to any other kind of membership (i.e., vote someone in or out, but to what end)?

Success or failure to achieve goals that constitute membership and subsequent voting rights, resource groups that don't have the same goals to achieve...exclusion of any group once it has been identified as a niche in the conservation system seems to be moving away from the point of your examination.

Introducing the ideas of control and sovereignty (membership and voting rights) to a study situation is curious to me. On the one hand, it is good to know the importance of self-concept for various project entities and the interaction as these egos (I don't mean ego in a bad way. Look up the generic definition if you aren't familiar with brain games) meet, but it also introduces hierarchy and maybe something that we could call artificial ethnicity (differentiation...my group, not your group). How do you analyze the idea that people in Bali were hung up on excluding some interested parties (resource and funding groups) and projects with weak participation; discussing criteria for inclusion also implies exclusion."

Respondent 3: "Acknowledging that it might simply be me projecting personal worries and cynicism, I wonder why the discussion on membership at the end of the meeting was oriented toward an inclusion/exclusion process rather than a discussion on how to include everyone. After

all, all of the projects were in the meeting room in Bali, so they are all (at some level) stakeholders in this process as far as I can tell."

Respondent 4: "Generally, I like the new text of the membership and governance that came out following the Bali meeting. However, I think that the decision making process '2/3 approval of the project members within the portfolio' should be given further thought. I think each organization, rather than each project, should be given equal representation or there is a risk of decisions being weighted toward specific NGOs with multiple projects, and portfolio activities may become homogenized as a consequence. We should be looking for a representative diversity of approaches to conservation as well as true representativeness in decision making.

Respondent 5: "It is notable that you guys omitted the coordinators from your discussion of the governance. My guess is that project people noticed this, and are likely concerned by the omission."

Respondent 6: "What is the role of FOS in the proposed governance structure? Some people said aside that they are worried that FOS will be 'the boss' over the portfolio who will 'hire and fire' its members, as the terminology was used in the meeting. I am not sure that everyone understands what FOS will do and what it wants out of this process… is it just creating work for itself as an NGO?"

Respondent 7: "Rather than chop things up into 'project', 'donor', and 'resource' members (etc.), you might want to restructure things like they've been doing within some of the US National Marine Sanctuaries and their advisory committees. You may want to consider having:

1) <u>Portfolio board of directors</u>, consisting of voting and nonvoting members. Voting members would consist of projects, nonvoting members might consist of donors, resource people, and coordinators;
2) <u>Technical advisory committee</u>, consisting of resource people and coordinators, which would provide technical (scientific) information/advice to projects/voting portfolio board regarding data collection and analysis; and
3) <u>Stakeholder advisory committee</u>, consisting of donors, government officials, NGO bosses, and other clients who might use the information provided by the learning portfolio. These folks (nonvoting members of the portfolio board) would provide information to the portfolio regarding the types of information that they would like to receive from the activities of the learning portfolio and facilitate the dissemination and use of the information that the learning portfolio generates.

I think that this model might provide a good balance between the technical and financial needs of the learning portfolio (and the desire for useful information to be generated and disseminated), as well as the need for the actions of the portfolio to be controlled (largely, at the least) by the projects that will actually be doing most of the work."

Respondent 8: "The sense coming out of the Bali workshop from projects was that the organizers may not be conscious of the pace that things should move at without alienating projects, and to not to push this initiative beyond where it can operate at present – this was particularly true of the shift in the workshop at the end toward the proposed governance structure and 'hiring/firing' procedures discussion for the portfolio brought up by FOS."

Respondent 9*:* "Potentially, project 'membership' within the portfolio could be promoted in a three-tier process: first as a choice, then as a reward, and lastly with consequences for those continuing their membership. Examining these steps suggests the following process:

1) Membership would begin as a '<u>choice</u>', implying that candidate projects would declare their intentions to become part of the portfolio, at which point they could become a provisional/ probationary member (contingent benefits offered). This provisional membership would be an agreement only for projects to report their progress at specific times to the rest of the group, versus reporting progress at a specific goal realization via monitoring (see below). Advancing to full membership status would require the project to achieve this status through 'reward' (see below).
2) Next, membership as a '<u>reward</u>' would imply that candidate projects would "achieve" full membership (and the benefits therein confirmed) only after said activities and reports are achieved and received under the social contract and certified by an overseeing portfolio board or committee. Goal realization to this end would be achieved through the review of project efforts by the overseeing board in their use and completion of the standardized monitoring methods within the portfolio.
3) Membership as a '<u>consequence</u>' would imply that candidate projects would continue to keep their status as full members (and the benefits therein confirmed) by maintaining their obligations as full members under the social contract. In the event that a project fails or refuses to complete activities and submit reports to the group (quarterly/semi-annually/annually – reporting period to be determined), the consequence would be the project being placed on 'probation', where revision of the project's status would move from full to provisional membership standing by the overseeing board. In effect, the project therefore chooses not to remain as a full member in the portfolio."

Respondent 10*:* "Resource person membership is a good idea. Maybe a system needs to be agreed upon that works on the same premise that resource people need to declare their intent to work inside the portfolio, and then should report on the same timeframe as the projects in terms of their learning on the portfolio topic as 'members' within it. Reports could include advice and criticism, but should also provide self-analysis… i.e., what kind of resource did they provide? Was there a need which they could not answer with their current configuration of work/research? How did they respond to that need?"

(c) <u>What other steps are necessary to implement the learning portfolio? What other comments can you offer on the learning portfolio concept in general and the process achieved to date thus far</u>?

Respondent 1*:* "The Bali portfolio meeting was not as successful as we had hoped, and there is not a sense of full understanding of where this process is headed from our team. As the project is not sure of where this exercise is headed or the expectations of those leading the charge, I am not certain if our project will join the group or not."

Respondent 2*:* "I won't be talking about portfolio participation with anyone in our project until February at earliest. In fact, I don't think my project is frankly at the stage where we could even suggest our participation in this portfolio. I need more time to educate our partners about the need for it before they can decide if they want to be part of it. Our first workshop with each community may occur in February… we've been working only with the executive decision makers up until now. I've approached these people to see if we can receive permission to work

lower down at the community level (with the actual LMMAs). Most of the executives are members of one of the LMMA committees so it shouldn't be too hard to start developing a relationship. We will reach more into the community if we work at the committee level."

Respondent 3: "It is important to keep the momentum of this effort through a sensitive manner, and not push too hard too fast. This will ensure the willingness of projects to advance the portfolio idea and its efforts into reality. So I advocate for patience during the portfolio start up, with only a few projects as full members – then later, when others see the benefits of membership, they will enter into the portfolio on their own initiative. In the interim, move forward with those projects who are ready and willing."

Respondent 4: "I am a little unclear as to the long term role FOS will play in this learning portfolio. I understand WRI and Packard/MacArthur's roles as coordinator and donors, but am unclear about what this newly formed NGO wants out of this relationship and is willing to offer to the portfolio."

Respondent 5: "One of the donors at the Bali meeting spoke up and said 'all of you sitting here have received funding for your projects from Packard or MacArthur but you shouldn't worry that if you decide not to be in the portfolio that your funding will be cut off.' I just would like to point out that our project has never received Packard nor MacArthur funding, but we would still like to be a portfolio member because I think, in principle, it is a good idea. However, there are several of the success factors that are listed in the document that our project haven't measured because of time, money and lack of expertise in social science (I doubt that many of the other projects, either, have quantitatively measured human health as a baseline for example). I guess what I would like to know is, will portfolio members be given funding to ensure that they can meet all of the monitoring, communication and publication obligations under the social contract? Or will we have to compete as usual for funds along the usual channels (i.e., will portfolio members be given preferential access to funds)?

Respondent 6: "How does FOS benefit from the formation of this portfolio? Is this initiative really one from the projects-up or one from yet another DC-based NGO who thinks they know how to make conservation better? Several people I spoke with are concerned about this – the role needs to be clarified if a portfolio is going to form."

Respondent 7: "Our project attendees of the workshop are interested in meeting regularly and linking up with each other a lot more; this is a positive outcome of the workshops."

Respondent 8: "Since the portfolio is a study regarding the evaluation of management systems for ecosystems ('ecosystems' implying that we are sensitive to and aware of the fundamental interconnectedness of all things, and we know that a project does not function in a vacuum), it makes sense to explicitly include resource groups and document their interaction with projects. The projects would offer advice and friendly criticism to the resource groups. Also, this would be a forum for interaction between resource groups. It could be argued that this would lead to a danger of introducing politics into the portfolio study, but as politics is a legitimate subject of study in the management system, this might be okay.

Respondent 9: "I found Appendix C [the LMMA success factors] to be excellent, well presented, and potentially useful to projects. I believe that staff will benefit from incorporating a number of the Learning Portfolio components into their programs, assuming they chose to do so."

VII.   NEXT STEPS

Building off of the Bali meeting, several outstanding items have been identified by the portfolio working group in terms of needing completion prior to full implementation of the collaborative learning process:

1. Establish guidelines for data sharing, ownership, and publication by a sub-committee of portfolio members (both full and provisional members). <u>Volunteers for working group to address this</u>: Mike Hedemark (WCS), representative(s) from WWF-South Pacific, Alifereti Tawake (USP), and John Parks (WRI).

2. Develop a plan for completing the analytical framework for the portfolio; decide whether or not this framework should outline factors to be measured across full member sites that are standardized or merely 'comparable'. <u>Volunteers for working group to address this</u>: Mike Hedemark (WCS), Jessica Meeuwig (Project Seahorse), Nick Salafsky (FOS), Patrick Christie (UW), Alifereti Tawake (USP), Richard Pollnac (URI), Robert Pomeroy (WRI), and John Parks (WRI).

3. Develop and strengthen country focal points and working groups. <u>Volunteers to address this</u>: USP for the Fiji Islands.

4. Seek out, identify, and collaborate with other 'collaborative learning' groups doing similar research. <u>Volunteers to address this</u>: all projects.

5. Create a list of learning portfolio terms with definitions and disseminate to group. <u>Volunteers to address this</u>: FOS and WRI.

The portfolio coordinator (WRI) will convene a meeting of the portfolio management team (comprising of volunteers from USP, WCS, CCN, and FOS) to address facilitating these next steps with volunteer 'full member' projects, and discuss other ongoing coordination needs and responsibilities for the portfolio during late February 2001.

The following items were also suggested by members of the portfolio working group as immediate (i.e., within the next three to six months) next steps in implementing the learning portfolio with those projects that have already or will self-elect to become full members:

1. Develop a timeframe and work plan to commence full member project data collection, training of community monitors (if necessary), and group analysis.

2. Develop a timeframe for the next portfolio meeting and determine a venue and host.

3. Commence learning portfolio through full member implementation of social contract.

As per the revised social contract, all above next steps will be facilitated by the portfolio management team and overall portfolio coordinator (WRI) in the next eight months.

VIII. LIST OF APPENDICES

APPENDIX A: Initial Workshop Agendas, Original Invitation Materials, & Concept Paper

APPENDIX B: Initial Workshop Participant Lists

APPENDIX C: Success Factors for Locally-Managed Marine Areas

APPENDIX A:

*Initial Workshop Agendas,
Original Invitation Materials,
and Concept Paper*

SOUTH PACIFIC WORKSHOP AGENDA

Fish for the Future?
Testing Shared Assumptions Regarding Community Participation in Nearshore Marine Protection

*Agenda for a Meeting of Community- and Co-Managed
Marine Reserves from Across the Western Pacific*

Date: 8 – 11 August 2000
Host: The University of the South Pacific (USP) Institute of Applied Sciences, Suva, Fiji.
Location: USP's Pacific Institute of Management and Development Conference Hall.
Objectives of Meeting:
1. Develop a common understanding of how community-managed marine protected areas can be used as a tool for resource management and conservation.
2. Learn a common language for analysis of these problems.
3. Learn how and why 'learning portfolios' can improve the practice of conservation. Determine if there is sufficient overlap and interest to establish a voluntary portfolio of sites interested in exploring community-managed marine reserve strategies. If so, specify the roles and functions of organizations and individuals in the portfolio.
4. Develop an initial analytical framework and shared set of assumptions regarding the conditions under which community-managed marine reserves may effective for resource management and conservation.
5. Using this framework, determine initial data needs to systematically test these assumptions and develop a common methodology for collecting information.
6. Create a work plan outlining next steps for the implementation of the learning portfolio.

Working Agenda:

DATE & TIME   SESSION

Tuesday, August 8

DATE & TIME	SESSION
9:00 – 10:00	Official Opening Programme
10:00 – 11:00*	Discussion and Tea Break
11:00 – 11:30	Welcome & Intro to Workshop
11:30 – 11:45	Intro to Marine Reserve Concept
11:45 – 12:30	Breakout Groups (4) to Develop Assumptions
12:30 – 13:15	Lunch
13:15 – 14:00	Report Back and Discussion
14:00 – 14:30	Intro to Conceptual Models of Project Sites
14:30 – 16:30*	Breakout Groups to Develop Project Models
16:30 – 18:00	Presentation of Projects and Models (1st round)

DATE & TIME   SESSION

Wednesday, August 9

8:30 – 8:45	Recap Previous Day
8:45 – 10:15*	Breakout Groups to Develop Project Models
10:15 – 11:30	Presentation of Projects and Models (2nd round)
11:30 – 12:00	Initial Discussion of Commonalities
12:00 – 13:00	Lunch w/ presentation of Verata
13:00 – 13:30	Intro to Project Goals, Objectives, and Activities in the Context of Marine Reserves
13:30 – 15:30*	Breakout Groups to Develop Sample G/O/A for Marine Reserves at Each Site
15:30 – 16:00	From Projects to Portfolios….
16:30	Field Trip: Travel to Tikina Verata

Thursday, August 10

AM	Field Trip: Monitoring Fieldwork in Verata & Return to Suva
12:00 – 13:00	Lunch
13:00 – 13:30	Presentation of Common Factors from Models
13:30 – 16:30*	Breakout Groups by Discipline to Develop Sub-Assumptions, Indicators, and Methods
16:30 – 17:30	Present Results of Breakout Groups

Friday, August 11

9:00 – 9:30	Recap Previous Day
9:30 – 10:00	Present Concept of Learning Portfolio
10:00 – 11:00*	Breakout Groups to Outline "Negotiation"
11:00 – 12:00	Present Results & Discussion of Social Contract
12:00 – 13:00	Lunch
13:00 – 14:00	Continue Discussion of Social Contract
14:00 – 15:00*	Discussion of Next Steps
15:00 – 15:15	Parking Lot
15:15 – 15:45	Workshop Close
16:00	Traditional Kava Ceremony, USP Fijian *Mbure*

* includes coffee/refreshment break

SULU-CELEBES WORKSHOP AGENDA

Fish for the Future?
Testing Shared Assumptions Regarding Community Participation in Nearshore Marine Protection

*Agenda for a Meeting of Locally-Managed
Marine Areas from the Sulu-Celebes Region*

Dates: 15 – 18 August 2000

Hosts:

- Southeast Asian Fisheries Development Center (SEAFDEC) Aquaculture Department, Tigbauan, Iloilo City, and
- Tambuyog Development Center, Quezon City.

Location: Sarabia Manor, Iloilo City, Iloilo

Objectives of Meeting:

1. Introduce the concept of 'learning portfolios'.

2. To learn about the locally managed marine areas being used as a tool for resource management and conservation across the region.

3. To develop a common language for understanding where this tool works and does not work.

4. Determine if there is sufficient overlap and interest to establish a voluntary portfolio of sites interested in exploring locally managed marine area strategies. If so, specify the roles and expectations of organizations and individuals in the portfolio.

5. Create a work plan outlining next steps for development of the learning portfolio (if appropriate).

<u>Working Agenda</u>:

DATE & TIME   SESSION

Tuesday, August 15

8:30 – 9:30	Introductions and Expectations
9:30 – 10:30	Learning Portfolios: History and Vision
10:30 – 10:45*	Break
10:45 – 12:30	Project Presentations (4)
12:30 – 14:00	Lunch
14:00 – 15:00	Continue Project Presentations (3)
15:00 – 15:30*	Break
15:30 – 16:30	Continue Project Presentations (3)
16:30 – 17:00	Daily Wrap-Up

Wednesday, August 16

8:30 – 9:30	Introduction to Conceptual Models
9:30 – 11:30 *	Breakout Groups to Develop Project Conceptual Models (part 1)
11:30 – 12:00	Presentation of Project Conceptual Models (2)
12:00 – 13:00	Lunch
13:00 – 13:45	Presentation of Project Conceptual Models (3)
13:45 – 15:30 *	Breakout Groups to Develop Project Conceptual Models (part 2)
15:30 – 17:00	Presentation of Project Conceptual Models (5)
17:00 – 17:30	Daily Wrap-Up

Thursday, August 17

8:30 – 11:30 *	Breakout Groups on Managed Marine Areas at Project Sites
11:30 – 13:30	Lunch
13:30 – 15:00	Discussion of Common Factors and Measurement
15:00 – 15:30	From Projects to Portfolios…
15:30 – 15:45*	Break
15:45 – 17:30	Discussion on Portfolio Expectations and Obligations

Friday, August 18

8:30 – 10:15	Discussion of Social Contract
10:15 – 10:30*	Break
10:30 – 12:00	Discussion of Next Steps and Parking Lot
12:00 – 13:00	Lunch
13:00	Workshop Close & Group Photograph

* Includes coffee/refreshment break

ORIGINAL INVITATION MATERIALS

ORGANIZER LETTER (SUVA WORKSHOP EXAMPLE):

June 12, 2000

Dear *[invitee name]*:

Greetings from the United States.

As you well know, community participation in the management of marine reserves is increasingly seen as an important tool for 'effective' resource management. Despite the interest, exploration of community- and co-managed marine reserves has only begun during the last decade, and few well documented and disseminated evaluations of these tools exist. Given the growing need for low-cost and culturally appropriate marine reserve models, the question is increasingly being raised by decision-makers, donors, and international conservation practitioners: are community-managed marine reserves useful conservation tools, both for: a) sustainable fisheries, and b) maintenance of biodiversity? If so, under which conditions are they administered most effectively, and what policy guidance should be given in order to increase the likelihood of conservation utility?

To answer these questions, a group of practitioners, researchers, and donors will come together this August in Suva. This group will compare their experiences and see if it makes sense to develop a formal network to systematically test a shared set of assumptions regarding the conditions under which community-managed marine reserves operate with success. We feel your presence, experience, and expertise would add tremendous value to the meeting. In particular, we were thinking that attendance by a project partner staff member and a community representative from the *[project name]* project at the meeting would bring the right mix of on-the-ground perspective, management lessons, and the practical side of what it takes to employ direct protection as a marine biodiversity conservation strategy (unless, of course, you feel someone else on the project would be more appropriate). Therefore, on behalf of ourselves and the meeting host, the University of the South Pacific (USP), we would like to formally invite *[invitee organization name]* to attend "Testing Shared Assumptions Regarding Community Participation in Nearshore Marine Protection", to be held 8 - 11 August 2000, in Suva, Fiji. Attached with this letter you will find: (1) a draft agenda for the meeting with location details and a proposed schedule of activities; (2) an letter from the meeting supporters, the MacArthur and Packard Foundations, and (3) a background piece written by John Parks (of the World Resources Institute) to frame the issue and summarize how and why this meeting has come about.

In terms of logistics, some invitees to the meeting have received funds specifically allocated for attendance at this meeting. For other invitees who have not, and are interested in attending, they should contact us regarding the costs of airfares to Suva, lodging, and per diem. Lodging is being coordinated through the meeting's host, USP (see attached agenda); the lodging contact is Dr. William Allbersberg (email: aalbersberg@usp.ac.fj). We kindly request that you please RSVP with us by Friday, June 30. If you have any other questions or comments, please feel free to contact us.

Cheers,

John Parks, Bernd Cordes, and Nick Salafsky

SPONSOR LETTER (SUVA WORKSHOP EXAMPLE):

June 12, 2000

Dear Colleagues:

A lot of good, hard work is being done to conserve the coral reefs, mangroves, seagrass beds and estuaries of the Western Pacific region. As donors, we are already providing financial support for some of this site-based work, but we are also interested in exploring other, creative ways to add value to it. As you know, the conservation process is not static. We are continually gathering new information and experiences and, in turn, learning to be more effective conservationists and resource managers. If we, as donors, can facilitate or even advance that learning process, we would like to.

We are, therefore, working with World Resources Institute and the University of the South Pacific staff to develop a three and a half day workshop in Suva, Fiji, from August 8-11. The purpose of the meeting is to bring together the individuals working at various marine protected areas throughout the South Pacific. Given that there are often common elements in the implementation of coastal management and conservation programs – establishment of government-recognized and/or community-initiated marine reserves; development of training programs to build local skills for monitoring and enforcement; assistance to small-scale enterprises that rely on the health of coastal resources, etc. – then there are certain to be common lessons learned, comparable data collected, and strategies and skills that can be exchanged.

In addition to working together for these few days in August, part of the point of this workshop is also to determine whether or not it makes sense to establish a continuing network of sites and individuals. That is, if you and the other participants find that the interaction is useful and are interested in continuing the connections made (not, of course, a foregone conclusion), then we can discuss how we might continue this interaction over time. To this end, it will be necessary to collectively determine who should be in this network, what it means to be "in" the network, whether the network will consist of five sites or twenty-five, how often the group meets and for what purpose, and other details.

While most of the participants at this workshop are receiving grants from the MacArthur and Packard foundations, it is very important to note that that was merely a starting point. Participation is by no means confined to MacArthur and Packard grant recipients. The intent is to be inclusive—not exclusive—and for the network to evolve over time within practical and manageable bounds. Also, because many of the participants are or might be receiving funds from the MacArthur and Packard foundations, we want to stress here that participation at this or subsequent workshops is by no means mandatory or conditional. It is perfectly valid for you and/or your organization to choose not to be part of the "network," either because of other commitments or because, simply, you feel it will not be useful to the work you are trying to do.

So, with all that in mind, we look forward to seeing you in August. If there are any questions or comments, please feel free to contact us at nsalafsk@macfdn.org and b.cordes@packfound.org.

Respectfully,

Nick Salafsky   Bernd Cordes
Program Officer   Associate Program Officer
John D. and Catherine T. MacArthur Foundation   David and Lucile Packard Foundation

CONCEPT PAPER:

Fish for the Future? Testing Conservation Assumptions Behind a Portfolio of Small-Scale Marine Reserves in the Indo-Pacific

A Research Concept Paper proposed by John E. Parks[5]   May 2000

As human populations expand, overexploitation and development within the coastal margin has followed. Degradation of coastal habitat and loss of both biodiversity and biomass have resulted. To address such threats, the use of large, permanent no-take zones within coastal ecosystems is increasingly being cited by conservation practitioners and policy makers as a conservation panacea. The application of such areas in the developed world has been underway since the 1970s, and there are a number of notable success stories regarding their conservation value. As a result, the conventional wisdom in conservation today assumes that the application of such areas can and will lead to fisheries stock replenishment and biodiversity maintenance. The result has been tremendous growth in the interest, application, and support of marine reserve establishment by the international conservation community.

At the same time, there is broad recognition from the scientific community that the evidence necessary to delineate the parameters under which MPAs are effectively implemented remains under-documented. In addition to the assumed sustainability utility needing adequate proof, such large, permanent no-take zones often require a degree of managerial and financial resources that may not be available or appropriate everywhere coastal habitats are at risk. For example, permanently closing large, productive coastal areas in the developing world of the Indo-Pacific may not be feasible given that the majority of national populations in this region are heavily dependent upon inshore marine harvesting and, in some cases, may have legally-recognized property rights over the waters in question needing protection.

At a point in time when:

(a)   increasing threats to the coastal environment are being addressed with limited financial and human resources,
(b)   policy devolution of nearshore marine resource management from central regulatory authorities to municipal and village-based levels is presently underway within many tropical developing coastal nations, and
(c)   the popularity of MPA approaches as a management tool is at an apex with decision-makers, resource managers, and donors,

        there is growing interest in the conservation community in the exploration of innovative, low-cost, low-technology marine reserve alternatives to supplement more formal, permanent no-take areas. Consequently, during the 1990s these low-tech and –cost models began to be piloted within the nearshore waters of a number of developing countries throughout the world. These small-scale reserves can be characterized as being spatially limited, ecosystem-specific, temporarily designated, and/or locally- and cooperatively-managed. Designation of such reserves has often been attempted in cultures hosting congruent customary practices, such as the *tambu* system of Melanesia, *sasi* practices of eastern Indonesia, and *kapu* system in Polynesia.

To date, only isolated case study analyses of preliminary results from these pilot reserves exist, certainly not enough from which to strategically design appropriate policy measures from. Therefore, it is still unknown whether or not the conservation benefits arising from the multiple application of such small-scale reserves as 'representative' networks across ecological and spatial gradients within a relatively confined geographic area can rival or exceed the assumed

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[5] Biological Resources Program, World Resources Institute; 10 G Street, Northeast; Washington, DC 20002; tel: +1 (202) 729 7632, fax: +1 (202) 729 7620; email: jparks@wri.org

benefits resulting from the establishment of large, permanent no-take areas. Even so, creation of 'representative' networks of small-scale reserves is arguably a more culturally-appropriate, financially-feasible, and managerially-sustainable policy option in addressing pressing biodiversity conservation and fisheries food security concerns where large, permanent no-take areas are clearly not feasible over the long term. As the theory and practice behind these alternatives has only begun to be explored during the last decade, few documented and disseminated evaluations exist, and policy guidance for decision makers regarding the conditions under which their implementation can be effective is nearly non-existent. Even known success stories with measured conservation benefits from the use of such alternatives remain under-documented and poorly disseminated.

The questions are thus raised: are community-managed marine reserves useful conservation tools, both for: a) sustainable fisheries, and b) maintenance of biodiversity? If so, under which conditions are they administered most effectively, and what policy guidance should be given in order to increase the likelihood of conservation utility?

To answer these questions, a group of conservation practitioners, researchers, and donors are forming a mutually-beneficial partnership through which a representative network of small-scale marine reserves (hereafter referred to as the 'portfolio') throughout the Indo-Pacific will systematically test a shared and peer-reviewed set of assumptions behind the utility of such MPA alternatives within a fixed period of time (e.g., three years). It is proposed that this portfolio will use an adaptive management, or 'learning', approach toward testing relevant hypotheses, a methodology that uses science to determine the conditions under which, if any, such alternatives operate most effectively for conservation. The portfolio will not only culminate in providing answers regarding the appropriate policy guidance necessary to most effectively employ MPA options, but also serve to leverage the lessons and expertise of the field-based partners pioneering the application of appropriate and innovative MPA techniques to a global level. Moreover, it is hoped that through the coordinated application of science to systematically test specific conservation assumptions across a suite of disparate sites and partners that new lessons regarding the process of how conservation can be done will emerge and be documented.

Initial steps required to formally operationalize this study include:

1. Recruitment of site-based partner groups into the portfolio;
2. Convene initial meetings through which relevant organizations and individuals organize to collectively address common questions regarding small-scale marine reserve application so that a voluntary 'portfolio' of site partners can collaboratively design an analytical framework and evaluative workplan;
3. Develop data collection and analytical methods by the portfolio; and
4. Hold subsequent portfolio meetings as necessary.

Initial meetings to establish the portfolio and develop an common analytical framework are proposed for August 2000.

APPENDIX B:

Initial Workshop Participant Lists
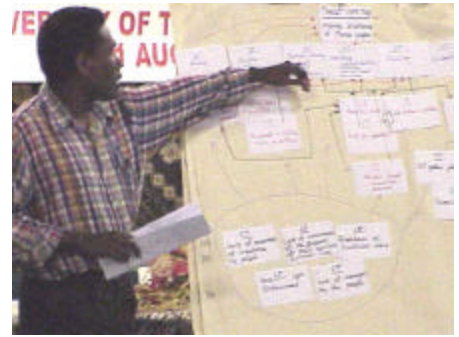
Participant List for the Suva Workshop

Meriwether Wilson
c/o Australian Institute of Marine Science
PMB No. 3, Townsville MC
Queensland 4810
AUSTRALIA

Tel: 61-07-4753-4275
Fax: 61-07-4772-5852
Email: meriwether.wilson@ed.ac.uk

Jacqui Evans
WWF South Pacific Program
Cook Islands Partnership in Conservation &
Development
P.O. Box 649
Rarotonga
COOK ISLANDS

Email: jevans@wwfcooks.org.ck

Bill Aalbersberg
Institute of Applied Sciences
University of the South Pacific
Suva
FIJI ISLANDS

Tel: (679) 312952
Fax: (679) 300373
Email: aalbersberg@usp.ac.fj

Austin Bowden-Kerby
Foundation for the Peoples of the South Pacific
P.O. Box 14447
Suva
FIJI ISLANDS

Tel: (679) 313 123
Fax:
Email: bowdenkerby@is.com.fj

Semisi Nadriubalaya
C/. PO Box 1457
Ba
FIJI ISLANDS

Kenneth MacKay
South Pacific Forum Secretariat
Private Mail Bag
Suva
FIJI ISLANDS

Tel: (679) 312 600
Fax: (679) 312 696
Email: kennethm@forumsec.org.fj

Hugh Govan
Amazon Conservation Team
Apartado 1919-2050
San Jose
COSTA RICA

Tel: 506-735-5013
Fax: 506-735-5094
Email: hgovan@csi.com

Naomi Batirerega
Navutulevu Village
Serua
FIJI ISLANDS

Sangeeta Mangubhai
Worldwide Fund for Nature - South Pacific
Private Mail Bag, GPO
Suva
FIJI ISLANDS

Tel: (679) 315 533
Fax: (679) 315 410
Email: smangubhai@wwfpacific.org.fj

Pio Radikedike
Ucunivanua Village
Verata, Tailevu
FIJI ISLANDS

Etika Rupeni
Worldwide Fund for Nature - South Pacific
Private Mail Bag, GPO
Suva
FIJI ISLANDS

Tel: (679) 315 533
Fax: (679) 315 410
Email: erupeni@wwfpacific.org.fj

Josaia Tabau
Waiqanake Village
FIJI ISLANDS

Tel:
Fax:
Email:

Setareki Tinalevu
Votua Village
Ba
FIJI ISLANDS

Veikila Vuki
Marine Studies Program
University of the South Pacific
Suva
FIJI ISLANDS

Tel:
Fax:
Email: vuki_v@usp.ac.fj

Sabino Sakarias
PO Box 1017
Koror
PALAU 96940

Tel: (680) 488-2218/5149
Fax: (680) 488-5149
Email: hsg@palaunet.com

Akuila Sovatabua
28484 Mission Boulevard
Apt. 310
Hayward, CA
USA 94544

Tel:
Fax:
Email: asovatabua@cs.com

Alifereti Tawake
Institute of Applied Sciences
University of the South Pacific
Suva
FIJI ISLANDS

Tel:
Fax:
Email: alifereti_t@yahoo.com

Joeli Veiyataki
Marine Studies Program
University of the South Pacific
Suva
FIJI ISLANDS

Email: veitayaki_j@usp.ac.fj

Sunia Waqainabete
Fisheries Division
Ministry of Agriculture, Fisheries & Forests
PO Box 3165
Lami
FIJI ISLANDS

Tel:
Fax: (679) 361 184

Paul Lokani
The Nature Conservancy
PO Box 2750
Boroko
PAPUA NEW GUINEA

Tel:
Fax:
Email: lok.tnc@global.net.pg

Shannon Seeto
Mahonia Na Dari
PO Box 697
Kimbe, WNBP
PAPUA NEW GUINEA

Tel: 675-9834241
Fax:
Email: tnckimbe@global.net.pg

Seri Hite
World Wide Fund for Nature - South Pacific
Solomon Islands Programme
Box 97
Gizo
SOLOMON ISLANDS

Tel: (677) 60191/95
Fax: (677) 60294
Email: serihite@solomon.com.sb

Lucy Hora
Conservation in Development SIDT
PO Box 147
Honiara
SOLOMON ISLANDS

Tel: (677) 21131
Fax: (677) 25389
Email: sidtcid@welkam.solomon.com.sb

Nelson Kile
Coastal Fisheries Consultancy
PO Box 302
Honinara
SOLOMON ISLANDS

Tel: (677) 30030
Fax: (677) 30030
Email: lamkile@welkam.solomon.com.sb

Casper Rebi
Michi Village
Marovo Lagoon
Western Province
SOLOMON ISLANDS

Tel:
Fax:
Email: wwf@solomon.com.sb

Rudi Susurua
The Nature Conservancy
PO Box 957
Honiara
SOLOMON ISLANDS

Tel: (677) 20940
Fax:
Email: tnc@welkam.solomon.com.sb

Donald Wale
Malaita Province SIDT: Mala'afe Island Coral
Gardening
Box 147
Honiara
SOLOMON ISLANDS

Tel:
Fax: (677) 21131/30
Email: sidtcid@welkam.solomon.com.sb

Scott Atkinson
WWF-USA
11250 24th Street
Washington, DC
USA 20037

Tel: (202) 778-9618
Fax: (202) 223-6971
Email: scott.atkinson@wwfus.org

Bernd Cordes
The David & Lucile Packard Foundation
300 Second St., #200
Los Altos, CA 94022
USA

Tel: (650) 948-2957
Fax:
Email: b.cordes@packfound.org

Kathy Hesse
Packard Foundation
300 Second St., #200
Los Altos, CA 94022
USA 94022

Tel: (650) 917-4712
Fax:
Email: k.hesse@packfound.org

Mike Mascia
Duke University
135 Duke Marine Rd.
Beaufort, NC 28516
USA 28516

Tel: (252) 504-7566
Fax: (252) 504-7648
Email:

Bob Pomeroy
World Resources Institute
Biological Resources Program
10 G Street, NE
Washington, DC
USA 20002

Tel: (202) 729-7623
Fax: (202) 729-7620
Email: rpomeroy@wri.org

Michael Guilbeaux
Community Conservation Network
2440 Campus Road, #561
Honolulu, HI 96822
USA

Tel: (808) 383-2031
Fax:
Email: ccn@attavista.net

Sylvia Linggi-Troost
Counterpark/FSP USA
1200 18th St., NW #1100
Washington, DC 20036
USA 20036

Tel: (202) 721-7505
Fax: (202) 296-9679
Email: slinggi@counterpart.org

John Parks
World Resources Institute
Biological Resources Program
10 G Street, NE
Washington, DC
USA 20002

Tel: (202) 729-7632
Fax: (202) 729-7620
Email: jparks@wri.org

Rex Horoi
FSP International
PO Box 951
Port Vila,
VANUATU

Tel: (678) 22915
Fax: (678) 24510
Email: rhoroi.fspi@fsp.org.vu

Participant List for the Iloilo City Workshop

Renato F. Agabayani
SEAFDEC
Tigbauan
Iloilo City
PHILIPPINES

Tel: (33) 336-2891
Fax:
Email: agbayani@aqd.seafdec.org.phil

Isidore Ancog
Haribon Foundation
#9 Malingap St.,
Teacher's Village
Diliman, Quezon City
PHILIPPINES

Tel: (632) 925-3332
Fax:
Email: iam-lio@eudoramail.com

Orlando Arciaga
Haribon Foundation
#9 Malingap Malumanay
Quezon City
PHILIPPINES

Tel: (632) 925-3332
Fax:
Email: science@haribon.org.ph

Genevieve Broad
Tambuyog Development Center
1164 Molave St., SPP Subd.
Bibancahan Sorsogon
Sorsogon, Bicol
PHILIPPINES

Tel: (56) 2111904
Fax:
Email: genbroad@hotmail.com

Angel C. Alcala
SUAKCREM
Siliman University
Dumaguete City, Negros Oriental
PHILIPPINES

Tel: (35) 422-5698
Fax:
Email: suakcrem@fil.net

Jonathan Anticamara
Project Seahorse/Haribon Foundation
#9 Malingap Malumanay
Quezon City
PHILIPPINES

Tel: 0919-3595329
Fax:
Email: janticamara@yahoo.com

Scott Atkinson
World Wildlife Fund
#1250 24th Street
Washington, DC
USA 20037

Tel: (202) 778-9618
Fax:
Email: atkinson@wwfus.org

Patrick Christie
University of Washington
School of Marine Affairs
3707 Brooklyn Arc NE
Seattle, WA
USA 98105

Tel: (206) 685-6661
Fax:
Email: patrickc@u.washington.edu

Ely Dino
Bacon Resource Mgt. & Multi Purpose
Cooperative (BARMAMCO)
Poblacion
Bacon
Sorsogon, Bicol
PHILIPPINES

Tel: (56) 211-1904
Fax:
Email: tdcsor@digitelone.com

Michael Hedemark
Wildlife Conservation Society
PO Box 6712
Vientiane
LAO PDR

Tel: 856-21215400
Fax:
Email: hedemark@laonet.net

Arlyne Johnson
Wildlife Conservation Society
PO Box 6712
Vientiane
LAO PDR

Tel: (856) 21215400
Fax:
Email: arlynejohnson@cs/com

Cliff Marlessy
Indonesia Biodiversity Foundation (KEHATI)
Patra Jasa Building
2 Floor, Room E-Z
N. Gatot Subroto Kav 32-34, Jakarta
INDONESIA

Tel: 62-21-5228031/32
Fax:
Email:

Ian Dutton
CRMP/NRM Secretariat
Ratu Plaza building 18th Floor
Jl. Jen Sudimar 9
Jakarta
INDONESIA

Tel: (62-21) 720-9596
Fax:
Email: crmp@cbn.net.id

Eusebio (Ted) Jacinto
Tambuyog Development Center
108-A PSSC Building
Commonwealth Ave.
Diliman, Quezon City
PHILIPPINES

Tel: (632) 453-8970
Fax:
Email: erjac@usa.net

Rezal Kusumaatmadja
Marine Aquarium Council
923 Nu'uanu Avenue
Honolulu, HI
USA 96816

Tel: 1 808 5508217
Fax:
Email:
rezal.kusumaatmadja@aquariumcouncil.org

Alejo (Al) Manaloto
Haribon Foundation
#9 Malingap St.
Teacher's Village
Diliman, Quezon City
PHILIPPINES

Tel: (632) 925-3332
Fax:
Email: director@haribon.org.ph

Isak Matarihi
Rumsram Foundation
Jl Bosnik Raya, PLDT II
Btak-Payua
INDONESIA

Tel: (0981) 23269
Fax:
Email: rumsram@biak.wasantara.net.id

Bryan McCullough
International Marinelife Alliance
83 West Capitol Drive
Bo. Kapitolyo
Pasig City
PHILIPPINES

Tel: (632) 638-7118
Fax:
Email: bryan@imamarinelife.org

Jessica J. Meeuwig
Project Seahorse
Dept. Biology-McGill
12-5 Dr. Penfield Ave.
Montreal, QC
CANADA H3A 1BL

Tel: 519-398-5112
Fax:
Email: jmeeuw@po-box.mcgill.ca

Manuel Mejia
World Wide Fund for Nature - Philippines
#14-A Carandang St.
Puerto Princesa
Palawan
PHILIPPINES

Tel: (48) 434-2100
Fax:
Email: mmejia@mozcom.com

Peter Mous
The Nature Conservancy
Coastal & Marine Indonesia Program
Resource Pongerbak 2
Sanur, Bali
INDONESIA

Tel: 62-361-287272
Fax:
Email: pmous@attglobal.net

Jessica Munoz
Bureau of Fisheries & Aquatic Resource
860 Arcadia Building
Quezon Avenue
Quezon City
PHILIPPINES

Tel: (632) 410-9990
Fax:
Email: jessicam@ibahn.net

Marivic Pajaro
Project Seahorse
#9 Malingap cor, Malumanay Sts.
Teacher's Village
Diliman, Quezon City
PHILIPPINES

Tel: (632) 925-3332
Fax:
Email: mpajaro26@hotmail.com

John Parks
World Resources Institute
Biological Resources Program
10 G Street, NE
Washington, DC
USA

Tel: (202) 729-7632
Fax:
Email: jparks@wri.org

Titayanto Pieter
The Nature Conservancy
Jl. Hang Tuah Raya No. 42
Lantai II
Kebayoran Baru, Jakarta
INDONESIA 12120

Tel: (62-21) 720-6484
Fax:
Email: tpieter@cbn.net.id

Robert Pomeroy
World Resources Institute
Biological Resources Program
10 G Street, NE
Washington, DC
USA 20002

Tel: (202) 729-7623
Fax:
Email: rpomeroy@wri.org

Myla Quiring
Tambuyog Development Center
1164 Molave St., SPP Subd.
Bibincahan Sorsogon,
Sorsogon, Bicol
PHILIPPINES

Tel: (56) 211-1904
Fax:
Email: tdcsor@digitelone.com

Susana Siar
SEAFDEC Aquaculture Dept.
5021 Tigbauan, Iloilo
PHILIPPINES

Tel: (33) 336-2937
Fax:
Email: siar@agd.seafdec.org.ph

Richard Pollnac
University of Rhode Island
Coastal Resources Center URI
Kingston, RI
USA

Tel: (401) 874-4140
Fax:
Email: rpo4903u@postoffice.uri.edu

Purbasari Ida Aju
Conservation International Indonesia
Tardan Margasatwa 61
Jakarta,
INDONESIA

Tel: (62-21) 700-30624
Fax:
Email: p.surjadi@conservation.org

Vidhisha Samaraseka
World Wide Fund for Nature Malaysia
15 Petaling Jaya
MALAYSIA

Tel: (603) 703-3772
Fax:
Email: svidhisha@wwfnet.org

Muhamad Saini Suliansa
World Wide Fund for Nature Malaysia
Demporna Islands
MALAYSIA

Tel: 6088-262420
Fax:
Email: mdsaini@yahoo.com

Kasim Suparno
Bapedalda Pemda Berau Kaltim (East Borneo)
Jl. Pranoto No. 1 TG. Berau
Bapedalda Kab. Berau
Kalimantan, Timur
INDONESIA

Tel: (62) 554-21076
Fax:
Email:

Edgardo Tongson
World Wide Fund for Nature Philippines
#23 Maalindog Street
UP Village
Quezon City
PHILIPPINES

Tel: (632) 433-32220
Fax:
Email: etongson@wwf-phil.org.ph

K. Kuperan Viswanathan
ICLARM
P.O. Box 500
GPO 10670
Penang
MALAYSIA

Tel: (604) 641-4623
Fax:
Email: k.viswanathan@cgiar.org

Arief Wicaksono
Biodiversity Support Program (BSP) Kemala
BSP-Kemala, Raju Plaza 18th Floor
Jl. Jen. Sudirman 9
Jakarta,
INDONESIA 10270

Tel: 62-21-7209596
Fax:
Email: ariefw@indo.net.id

Alifereti Tawake
University of the South Pacific
Institute of Applied Science
Suva
FIJI ISLANDS

Tel: (679) 212251
Fax:
Email: Alifereti_t@yahoo.com

Jefferly Tulungen
CRMP Indonesia
CRMP (Proyek Pesisir)
Jl. W. Mongisidi 5
Manado, North Sulawesi
INDONESIA

Tel: 0431-841671/72
Fax:
Email: tulungen@mananado.wasantara.net.id

Allan White
Coastal Resource Management Project (USAID)
5th Floor CIFC Tower
North Area
Cebu
PHILIPPINES

Tel: (32) 232-1821
Fax:
Email: awhite@mozcom.com

APPENDIX C:

Success Factors for Locally-Managed Marine Areas

A Compilation of the Biological, Economic, Socio-Cultural, and Process
Variables that Were Identified and Defined as Directly Influencing
Marine Reserve Conservation Impact
by the Suva and Iloilo Learning Portfolio Working Groups

LMMA SUCCESS FACTORS (24) GENERATED

BIOLOGICAL FACTORS (DEPENDENT VARIABLES)

B-1   Ecosystem Health and Productivity

A.   What is It?

Definition: Ecosystem health is the level of overall integrity and viability of the coastal ecosystem(s) at the project site to support the communities and populations of organisms that are dependent upon it (them). Coastal ecosystems can includes mangrove forests, mud and sand flats, seagrass meadows, coral reefs, barrier islands, and other nearshore habitat types. Ecosystem productivity is the ability of a healthy ecosystem to generate the necessary biomass of fish and invertebrate populations to ensure their long-term viability.

B.   What Does It Influence?

Hypotheses: (1) LMMAs can be useful tools to protect ecosystem health. (2) There is a direct relationship between ecosystem health and fisheries productivity. (3) A functional ecosystem is one that is healthy. (4) Ecosystem health is dependent on the influence of other socio-cultural, economic, and management process factors. (5) For a locally-managed marine area to be considered a success, it must exhibit relatively strong ecosystems health through time. This assumes that ecosystem health is a prerequisite for long-term conservation success.

C.   Indicators and Methods

What to Measure: Ecosystem health and productivity will be determined through a measurement of the condition of the nearshore marine ecosystems (e.g., mangrove forests, seagrass beds, and coral reefs) and assemblages of marine organisms therein (e.g., fish and invertebrate communities, indicator species).

Indicators of an ecosystem's condition are: (a) species richness and relative abundance, (b) population structure, and (c) community composition. These indicators should be monitored across ecosystems found within and outside the LMMA using the following measurements:

Target	*Mangrove Forests*	*Seagrass Beds*	*Coral Reefs*	*Fishes & Invertebrates*
Ecosystem Health Measurements	(a) spp. no. & type	(a) spp. no. & type	(a) % live cover	(a) indicator spp. presence
	(b) acreage (ha)	(b) acreage (ha)	(b) spp. diversity	(b) spp. no. & type
	(c) tree size (cm)	(c) % cover	(c) structure & substrate	(c) frequency, size, & density, size class distributions of individuals
	(d) presence or absence of disease	(d) presence or absence disease	(d) algal cover	
			(e) presence or absence of disease	
			(f) degree of bleaching	
			(g) numbers, size, and distribution of major coral reef predators (e.g. drupella, COTs)	

How to Measure It: Prior to LMMA implementation, collect baseline survey data from both areas outside and inside where the LMMA will be designated for comparison. Conduct repeat surveys on a consistent basis (e.g. annually or semi-annually), depending on the target (see below) and subject to resources available and access to site.

Use the following survey methods to collect the necessary biological data:

Target	*Mangrove Forests*	*Seagrass Beds*	*Coral Reefs*	*Fishes & Invertebrates*
Survey Methods	(a) line transect (b) diameter at breast height (c) basal area (d) GPS	(a) quadrats on line transect (b) permanent quadrats (c) GPS	(a) manta tow (b) belt transect (scuba) (c) video & stills of permanent quadrats	(a) manta tow (b) belt transect (scuba) (c) point counts (scuba) (d) timed swims

Data collected should be analyzed so as to track changes through time in: (a) species richness, and abundance; (b) population structure, mortality, and recruitment; and (c) community composition.

Measurements and methods should be standardized (where possible)so as to allow for cross-project comparability. Training, technical, and financial support may be necessary at certain sites in the portfolio.

When to Measure It: Mangroves and seagrass beds should be surveyed annually. Coral reefs and invertebrate and fish species should be surveyed semi-annually.

Who Measures It: Community members and project partners including technical experts, NGO staff, and government agencies.

Comments: Training should be provided to community members and monitoring done in collaboration with technical experts for first two years. After second year, communities should have the skills to do the monitoring on their own.

Assessment of fisheries catches for sizes and species should be completed initially (see Factor S-2).

Ability to do sophisticated biological monitoring will depend on financial resources, expertise/skills, and time.

Project reintroduction of brood stock and habitat restoration within or outside the LMMA may be necessary as determined by monitoring results.

Questions to keep in mind include: (1) Is the overall functioning of the system improving or being maintained? (2) Is there sufficient habitat and spawning stock present to maintain a healthy ecosystem and populations of species therein?

Post-Workshop Comments: As some sites may be fairly isolated and others may not have the financial support to do detailed scientific work, projects expressed reservations regarding highly regimented biological monitoring periods. While some sites were recognized as already presently collecting such detailed sets of "ecosystem" data, others report that they lack such technical monitoring skills even within their own home countries overall. Hence it was seen as better to leave the timing and degree of information collected within the portfolio at as flexible a level as possible (without compromising standardized data integrity) to accommodate an array of projects willing to participate in the portfolio with variable in-country capacity and/or program funding to carry out such biological monitoring. within programs and the difference in capacity

between the Asia Pacific region, etc. Monitoring programs also need to be defined, tailored and developed according to the "questions" that are being asked at the project sites.

Projects expressed the need to distinguish between the collection of biological data for community decision-making purposes versus the collection of highly technical data for scientific study that may not be of use to the communities participating in the project. Several projects expressed their belief that the monitoring done for portfolio purposes needed to acknowledge this division and embrace the utility of the former type of data for the purposes of this study, as opposed to the latter. One project verbalized this position that will need to be taken by portfolio members well:

> "Scientific monitoring is very different from community monitoring: different in the methods we might use, the amount of replication that would be done, the species we would target, and the questions we would be answering. For example, from a conservation point of view we might want to know 'does a marine reserve enhance species biodiversity on a local scale?' From a community's point of view, they are driven to project participation by questions such as 'will the marine reserve increase my subsistence fish stocks' and 'will the marine reserve improve my commercial catch?' In This sense, we should not be asking communities to implement complicating time consuming monitoring, to answer questions they are not interested in."

However, projects also recognized the need for 'scientific' monitoring to confirm/reject 'community' monitoring results and provide credibility to the results arising out of the learning portfolio.

Generated by: Suva and Iloilo Working Groups

B-2   Biodiversity Maintenance

A.   *What is It?*

Definition: Biodiversity maintenance is the ensured continuation and protection of the genetic, species, and ecosystem diversity and processes. Biodiversity can be observed as the numbers and types of living organisms and habitats present.

B.   *What Does It Influence?*

Biodiversity is good in many ways. It provides humans with a number of natural resources/products and services and has important cultural value. It is important in that it represents the diversity of living organisms in an area.

Hypotheses: (1) LMMAs can be useful tools to maintain *in situ* biodiversity. (2) Intact *in situ* biodiversity is an indicator of overall ecosystem health, productivity, and functional trophic (food web) relationships. (3) If the establishment of a LMMA includes the goal of biodiversity protection, to be considered a successful intervention there must be protection and maintenance of *in situ* biodiversity within the LMMA that would be representative of a normal, natural system (i.e., one devoid of human impact). (4) Regardless of whether or not biodiversity conservation is an explicit goal of the LMMA, maintenance of biodiversity in the LMMA is a prerequisite for long-term conservation and resource management success.

C.   *Indicators and Methods*

What to Measure: The number and type of vertebrate and invertebrate species inside and outside the LMMA.

How to Measure It: Use the survey methods described under B-1 to collect the data. Then use these data to create a comparable biodiversity index (examining both species richness and relative abundance) at sample sites.

When to Measure It: Sampling depends on funding availability. At a minimum, projects need to survey *in situ* biodiversity prior to implementation of the LMMA management regime (baseline), and then every one, two, or five years thereafter (periodic).

Who Measures It: Scientists and others with monitoring and analytical skills, in collaboration with NGO partner staff and government officers. Inclusion of government workers in such surveys is recognized as important as the results can be useful at national-level policy planning and monitoring activities.

Comments: Biodiversity conservation may or may not be the goal or objective of the LMMA intervention. Ability to do sophisticated biological monitoring will depend on financial resources, expertise/skills, and time.

Post-Workshop Comments: One project added that it would be difficult to find and measure "a natural system (i.e., one devoid of human impact)" because such systems do not exist in a world with globalized human impacts (e.g. climate change, pollution, commercial fishing).

Generated by: Suva Working Group

B-3   Relative Abundance of Important Fisheries

A.   *What is It?*

Definition: Relative abundance is the frequency of individuals of a species in a community of organisms. Important fisheries are fisheries that have priority economic, dietary, and/or cultural value to the communities residing in the project area. Important fisheries are often the ones that are targeted for protection/restoration under a LMMA.

B.   *What Does It Influence?*

Hypotheses: (1) LMMAs can be useful tools in increasing the overall abundance and sizes of important food (both subsistence and commercial) and other cash- and customary-use species within and outside (i.e., spill-over) LMMA waters. (2) Protecting and increasing the biomass and number of reproductive individuals in populations of important fisheries will improve their sustainable management. (3) Monitoring changes of protected and unprotected fishery populations by resource users will reinforce the awareness of the positive changes occurring within the managed areas, leading to increased use and replication of LMMAs. (4) Important species are more likely to be successfully protected if they are identified and decided upon by the community.

C.   *Indicators and Methods*

What to Measure: (1) Abundance and size of important food (subsistence and cash) resources in the village. (2) Abundance and size of important food and cash resources (indicator species) within LMMAs, adjacent harvest areas, and distant harvest areas.

How to Measure It:

1. In the village:
    (a) Complete simple catch surveys (amount and average size) for important food and cash species. Record these data into a community log book or ask fishers to do this voluntarily on a blackboard.
    (b) Complete effort surveys with fishers in regard to their location and ease of resource harvest (e.g., questionnaire or number of fishers and hours of effort, whether or not they harvested adjacent to the LMMA).
    (c) Count remains of consumed resources (e.g., empty clam shells).

    2. Inside and outside the LMMA, complete frequency-size surveys of important harvest species through appropriate sampling techniques (transects, quadrats, etc.).

When to Measure It:

1. In the village, catch surveys should be done as needed (daily), effort/location surveys should be done with fishers at least twice a year, and remains counts should be done as consumption patterns allow.

2. Inside and outside the LMMA, frequency-size surveys of important species should be completed at least annually.

Who Measures It:

1. In the village, community members should collect simple catch data and count remains of consumed resources. Project staff should conduct effort surveys with local assistance.

2. Inside and outside the LMMA, frequency-size data should be collected by trained community monitors, with the assistance of project staff and outside researchers.

Comments: Monitoring of important species should be a joint effort by trained community and project staff, with decreased staff support as community monitors improve their survey skills. In addition, independent monitoring by outside researchers and staff of the relative abundance and size of important species should be periodically conducted parallel to the community-led surveys to independently verify their monitoring results. This will bring credibility to the community monitors.

Generated by: Suva Working Group

ECONOMIC FACTORS (INDEPENDENT VARIABLES)

E-1   Degree of Conservation Investment

A.   What is It?

Definition: The conservation investment is the total amount of money annually invested at a project site by the implementer(s) into a LMMA (or LMMAs, if networked).

B.   What Does It Influence?

Hypothesis: The conservation success of a LMMA increases as the total amount of investment in the area increases.

C.   Indicators and Methods

What to Measure: Total annual LMMA project costs per unit area.

How to Measure It:

$$\text{conservation investment} = \frac{\text{total annual LMMA costs (US\$)}}{\text{total area (ha) of LMMA}}$$

Example: Thubataha Marine Area conservation investment = ~ \$5.25/ha/yr
              Komodo National Marine Park conservation investment = ~ \$10.05/ha/yr

1. Geographic area for LMMA can be sourced through government maps and data or project surveys (i.e., GPS survey).
2. Total annual LMMA costs can be calculated by adding: (1) the annual LMMA project budget, and (2) any other annual costs associated with the LMMA (e.g., participating community labor and opportunity costs). These latter costs can be estimated or determined through socioeconomic data collected from annual surveys.

Related Indicators:
    1. Conservation investment relative to human population of area.
    2. Conservation investment relative to total revenues generated from incompatible activities occurring in area (i.e., investment relative to scale of threats/problems).

When to Measure It: Annually.

Who Measures It: Project staff.

Comments: Power-play ? Catalyst

Generated by: Iloilo Working Group

E-2 Presence of Alternative Livelihoods

A. What is It?

Definition: An alternative livelihood is an economic activity performed by community residents within the project site that utilizes local resources (human and natural) sustainably, generates supplementary income, distributes the benefits equitably among the stakeholders, and builds local capacity.

B. What Does It Influence?

Alternative livelihoods influence the following factors: (1) incomes, (2) local resources, (3) nutrition, (4) standard of living, (5) gender issues, (6) traditional knowledge, (7) health needs, (8) employment, (9) education, knowledge, & skills, and (10) community welfare.

Hypotheses: (a) If a LMMA is to achieve conservation, there must be alternative livelihood options available to the communities living in the project area to displace lost income from LMMA access and harvest restrictions. (b) The more successful the alternative livelihood options, the greater the LMMA conservation success.

C. Indicators and Methods

What to Measure: (1) Presence of alternative livelihoods at LMMA site. (2) Degree of alternative livelihood success.

How to Measure It:
1. Presence/absence of alternative livelihoods at LMMA site: yes/no.
2. Alternative livelihood success/performance measurements:
   (a) Collect socioeconomic data for participating communities in the LMMA on: (i) income levels, (ii) unemployment rates, (iii) local wages, and (iv) basket of goods.
   (b) Complete inventory of community: (i) resources, (ii) skills, (iii) traditional knowledge, (iv) existing credit and financial services, (v) standard of living, (vi) resource consumption patterns, (vii) enterprise viability, (viii) supply and demand, and (ix) seasonality of labor and resources.
   (c) Do a feasibility study of alternative enterprise options through informal discussion, structured and semi-structured interviews with community members.
   (d) Build financial reports for alternative livelihood activities (e.g., profit and loss statements, cash flow, balance sheets, and rates of return).

When to Measure It: At the beginning (baseline survey), during the middle (interim survey), and at the end (final survey) of the LMMA project cycle. Many of the socioeconomic data should be measured all throughout the project through constant monitoring. Enterprise financials should be done annually.

Who Measures It: Implementing partner staff, external auditors, and community members.

Comments: Alternative livelihood success ultimately depends on existing market forces.

Generated by: Iloilo Working Group

E-3   Changes in Market Forces

A.   What is It?

Definition: Market forces are the supply and demand relationships that affect resource use and management through time as they change. Examples of these forces include: price, consumer demand, consumer preferences, and status.

There are different levels at which changing market forces have an influence on the nearshore marine environment: (a) local level – e.g., demand for lime from coral extracted; (b) subsistence level – e.g., demand for food for local diet drives overfishing; (c) national level – fisheries and other commodities harvested to meet national population demands; (d) international level – live reef food fish harvested to meet demand in Hong Kong.

B.   What Does It Influence?

Market forces influence food availability and costs, cash availability, and credit arrangements/servicing debt. Market forces can breakdown traditional and kinship arrangements, social structures, and resource management. They can both create an inequitable climate (negative influence) and foster innovation and wealth (positive influences). Market forces lead to direct impacts on *in situ* biodiversity and ecological processes (extraction, degradation, etc.).

Hypothesis: Changes in market forces that lead to increased demand for marine resources found within the LMMA decrease its likelihood of conservation success.

C.   Indicators and Methods

What to Measure:
1. Product price along one market chain.
2. Supply and demand at different levels.

How to Measure It:
1. Monitor product price and quantity.
2. Complete market demand studies.

When to Measure It:
1. Measure on a regular basis that is relevant to the particular product being studied.
2. Monitor indicator species and groups at certain times annually.

Who Measures It: Local community residents, national statisticians, NGO project partners, and the private sector.

Comments: "As long as you have a valuable resource the market will come to you."

Generated by: Suva Working Group

E-4   Village Economic Sustainability

A.   What is It?

Definition: Village economic sustainability is the degree to which a village community is able to sustainably meet their basic income needs. It is a factor that contributes toward an overall measurement of quality of human life for a particular village.

B.   What Does It Influence?

The economic strength and stability of a village influences the rate (sustainable or unsustainable) at which natural resources are harvested to meet basic income needs. Theoretically, a village achieves economic sustainability when harvest levels allow for a family's basic income needs (e.g., money for food, school fees, clothing, and transport) to be met without degrading the natural environment for future generations.

Hypotheses: If participating villages in the project area have economic security, there is an increased likelihood of LMMA conservation success. The greater the population of a village, the less the level of economic sustainability.

C.   Indicators and Methods

What to Measure:
1. Total annual household income and expenditures.
2. Total annual household educational enrollment and per-student enrollment fee rates.
3. Household and village population.

How to Measure It:
Use secondary data from government statistics for sources of national average village and household income and expenditure levels. Source primary data through survey of project villages and households. Compare participating village household income against: (1) national averages, and (2) relevant international economic security measures. If village measurements some degree higher than national and international averages, then assume village economic sustainability. If village measurements some degree lower than national and international averages, assume village economic unsustainability.

When to Measure It: Annually.

Who Measures It: Government and project staff.

Comments: This is a 'human quality of life' factor.

Generated by: Suva Working Group

SOCIO-CULTURAL FACTORS (INDEPENDENT VARIABLES)

S-1   Stakeholder Welfare

A.   What is It?

Definitions: Stakeholders are persons or groups with some degree of economic involvement, investment, interest, and/or influence over *in situ* natural resources. They include direct resource users (e.g., fishers, tourists, and traders) and indirect resource users (e.g., academics, LGUs). Stakeholder welfare refers to a stakeholder group's overall quality of life as determined by the degree of access a stakeholder group has to: (a) material goods/possessions and basic livelihood necessities, (b) services ensuring social well-being (e.g., health services, education, water supply, etc.), and (c) positive and peaceful social relationships.

B.   What Does It Influence?

Hypotheses: (1) As stakeholders material possessions grow, there are increased LMMA benefits. (2) As a stakeholder group's well-being is improved, there are increased LMMA benefits. (3) As stakeholder group resource conflicts decrease, there are increased benefits from LMMAs; As social relationships and kinship networks improve with stakeholder groups, there is better management of LMMAs.

C.   Indicators and Methods

What to Measure:
1. Material measurements: (a) type of household; (b) facilities and appliances acquired; (c) income and expenditures, savings and debt.
2. Social well-being measurements: (a) weight of children; (b) infant mortality; (c) dietary schedule, number of meals and type; (d) health-related expenses; (e) education-related expenses; (f) family members in and out of school and highest level education achieved by adults.
3. Social relationship measurements: (a) presence and number of organized groups (formal and informal); (b) presence of local leaders (formal and informal); (c) type of leaders (formal and informal); (d) presence of resource conflicts.

How to Measure It: All measurements require interviews and focus group discussions to be completed through site visits and direct observation. Material and social well-being measurements should also include group feedback discussion and validation. Social relationship measurements should also include attendance at group meetings. Regular monitoring requires appropriate and sensitive integration with communities.

When to Measure It: Material and social well-being measurements: (a) monthly interviews, and (b) focus group discussions quarterly. Relationships measured annually.

Who Measures It: Researchers, local community research partners, and other stakeholders (village leaders, etc.).

Comments: Generated by: Iloilo Working Group

S-2   Degree of Local Harvest Pressure

A.   *What is It?*

Definition: The degree of local harvest pressure is the amount of fishing effort occurring at the project site (i.e., within or adjacent to LMMA waters). This can be defined as the amount of the stock removed each year from a fisher per unit area.

B.   *What Does It Influence?*

Hypotheses: The degree of fishing effort and amount (kg) of catch (both over the long- and short-term) effects both species composition (community) and average body size (population) of fishery stocks in the project area. The greater the degree of local harvest pressure in the project area, the less the likelihood of LMMA obedience and success.

C.   *Indicators and Methods*

What to Measure:
1. Basic catch data: species composition, catch value (local currency), and total amount/weight (kg).
2. Basic effort data: number of boats and fishers, number and type of gears, number of engines.
3. Detailed characteristics: catch per unit effort (CpUE), average body size (length in cm) and weight of individual fish species caught.
4. Use: % of catch to subsistence? local, national, or international commercial markets?

How to Measure It:

Amount of stock removed annually per year: $(Z = F + M_?) C = F \cdot B$
[note: need to define formula terms]

1. Basic catch data: sourced from official fisheries statistics and collected through survey of fish landings.
2. Basic effort and use data: collected through direct observation and structured interviews.
3. Detailed characteristics: collected through frame and catch assessment surveys.

When to Measure It:

1. Basic catch, effort, and use data: sampled daily over a month or period of months.
2. Detailed characteristics: frame survey every six months, depending on dynamics of fishery surveyed; catch assessment (CPUE) survey more frequently than the frame survey, depending on fishery dynamics.

Who Measures It: Depends on who needs the data.

Comments:

Generated by: Iloilo Working Group

S-3   Community Institutions and Governance

A.   What is It?

Definitions: A community is a group of people that are geographically bound and characterized by socio-cultural homogeneity, a shared political system, and common sense of belonging to a specific place. Institutions are governance systems established by formal or informal groups with shared goals, agreed rules and regulations, and a set of sanctions and rewards.

B.   What Does It Influence?

Hypotheses: The strength and orientation of community institutions influence ecosystem health, the productivity of natural resources, LMMA and regulatory compliance, the level of local fishing pressure, and overall resource sustainability.

C.   Indicators and Methods

What to Measure:

1. Number and qualities/attributes of social organizations, including: (a) proponents; (b) viability (structure, membership, years of existence, financial solvency); and (c) dynamics.
2. Coastal resource management plans developed and adopted.
3. Budgets allocated.
4. Governance: Rules and laws agreed upon and enacted.

How to Measure It: Surveys, case studies, and stakeholder analysis.

When to Measure It: Annually.

Who Measures It: Project staff.

Comments:

Generated by: Iloilo Working Group

S-4   Cultural Values

A.   What is It?

Definition: A cultural value is a shared understanding of what is good, desirable, or just.
Sub-Factor: Aesthetic appreciation of nature (a cultural value).
Sub-Factor Definition: The shared understanding that nature has values beyond just the production of material uses and goods or services (e.g., natural beauty).

B.   What Does It Influence?

People make choices and undertake actions based on their values about what is good, desirable, or just. Depending upon the structure and orientation of these values, this will enhance or undermine efforts to conserve marine biodiversity and sustainably manage marine resources.

Hypothesis: If the cultural values held by resident communities encourage effective resource stewardship, then the conservation success of LMMAs will be increased.

Sub-Hypothesis: The more that communities value nature for reasons other than material use, the more likely they will effectively conserve marine biodiversity at the expense of material gains and the more likely that LMMAs will be successful.

C.   Indicators and Methods

What to Measure: (1) Values held by the community. (2) The community's aesthetic appreciation of the marine environment. Examine values in relation to the appropriateness of: (1) the degree and scale of resource protection under the LMMA; and (2) the partners assisting in LMMA intervention. (see Comments section below)

How to Measure It: Document values held by community through the survey of value statements with personal interviews and focus groups. Use likert scales and rankings. Compare across communities and groups.

When to Measure It: (1) Pre-test/post-test: measure community values prior to LMMA intervention (at baseline) and at a fixed time after LMMA intervention; (2) periodically with households (time series).

Who Measures It: (1) Outsiders (national and international NGO partners, researchers); (2) Insiders (local residents, community leaders).

Comments: The working group feels that the influence of cultural values on LMMA success is very strong and that it is critical to understand this relationship. Recognition of a community's value system and it's relationship to the state of the natural environment should suggest and determine the: (1) appropriate mode of conservation intervention to be employed (e.g., whether or not and the degree to which direct protection is appropriate; whether or not education, enforcement, training, is appropriate) and ; (2) appropriate source and partnership for any intervention(s) (i.e., whether or not partners should be local, external, both, or neither).

Generated by: Suva Working Group

S-5   Cultural Beliefs

A.   What is It?

Definition: A cultural belief is a shared understanding of how the world works (group assumptions regarding causal relationships).

B.   What Does It Influence?

People make choices and undertake actions based on their beliefs and understanding of how the world works. Depending upon the assumptions underlying these beliefs, this will enhance or undermine efforts to conserve marine biodiversity and sustainably manage marine resources.

Hypothesis: If the cultural beliefs held by resident communities recognize the limitations of resource abundance and the need to allow for resource replenishment, then the conservation success of LMMAs will be increased.

C.   Indicators and Methods

What to Measure: Document community belief statements and assumed causal relationships regarding resource use impacts on the natural environment, power relationships and authority structures, and customary beliefs regarding stewardship and sustainable management of marine resources.

How to Measure It: Conduct structured and semi-structured interviews and review secondary literature and other written documents. Measure the presence or absence of specific beliefs in each household and/or community surveyed, rank preferences and beliefs. Use likert scales in interviews to identify if respondents agree or disagree with belief statements.

When to Measure It: Baseline survey with annual re-evaluation. Survey frequency may vary depending on variable/belief being assessed.

Who Measures It: Locals and outside partners.

Comments: Recognition of belief structure and relationship to state of environment should suggest an appropriate mode of intervention (direct protection, education, enforcement) as well as the source of the intervention (local, external, both, or neither).

Generated by: Suva Working Group

S-6   Customary Practices

A.   What is It?

Definition: Customary practices are traditional management rules and regulations regarding marine resource use and harvest timing that are passed through kinship groups with sharing a similar cultural system of values, beliefs, and behaviors.

Sub-Factor 1: Customary harvest refugia (a type of customary practice).

Sub-Factor 1 Definition: Customary harvest refugia are traditional declarations of harvest closure over a defined area of water and period of time protecting any or all of the natural resources contained therein (e.g., *tambu*, *kapu*).

Sub-Factor 2: Respect for customary authority (recognition of customary practices).

Sub-Factor 2 Definition: Respect for customary authority is the willingness of marine resource users (locals, neighbors, and external users) to acknowledge and obey the rules and regulations decreed under customary authority regarding resource use and restrictions.

B.   What Does It Influence?

Hypotheses: (1) Customary practices are alone no longer sufficient to ensure marine resource sustainability. (2) Whether or not customary practices are still used, their revival and acceptance by resident communities can strengthen the cultural identity of local resource users, strengthen local resource governance, and improve the limiting of access by outsiders. (3) If marine reserve design and declaration incorporates customary practices and thereby requires local management and participation (i.e., a LMMA), then the likelihood of success will be greater than that of an externally-imposed and -managed reserves.

Sub-Factor 1 Hypotheses: (1) Because the use of customary harvest refugia assists in maintaining or reviving culture and traditional practices, this leads to strengthened pride and identity in the cultural heritage of community residents. (2) If a LMMA is designed within a congruent, customary harvest refugia context, then it will be the most appropriate and effective way to achieve management objectives and will experience greater conservation success than externally-imposed and -managed reserves. (3) By integrating customary harvest refugia practices and western sustainable management techniques, the value of the natural resources targeted and concern with their availability is increased with resource users.

Sub-Factor 2 Hypothesis: If people (resource users) obey a traditional leader's (i.e., chief's) declarations regarding harvest bans and area closures, then the LMMA will be more effective.

C.   Indicators and Methods

What to Measure:

1.   Data on customary practices that should be collected include:

(a) The presence, use (i.e., still or no longer practiced), type (description of practices), awareness, and acceptance of customary marine resource management practices with resident communities and fishers;
(b) The level of cultural pride and identity resident community members have;
(c) The resource governance structure and strength with local communities;
(d) The legal and *de facto* resource access arrangements; and
(e) The success of and local perceptions regarding externally-imposed and – managed marine areas.

2. Data on customary harvest refugia that should be collected include:

(a) The presence, use, type, awareness, and acceptance of customary harvest refuge practices with resident communities and fishers;
(b) The degree of congruence between such customary practices and western direct protection concepts;
(c) Whether or not customary harvest refugia strengthens local pride and identity in cultural heritage; and
(d) The value and degree of concern of availability local fishers have for marine resources.

3. Data regarding the presence, use, type, awareness, acceptance/respect, and obedience of customary authority and traditional leader declarations should be collected.

How to Measure It: All data can be collected through structured and semi-structured interviews, likert scale surveys, and focus group discussions. Complete knowledge, attitudes, and practices surveys.

When to Measure It: At a minimum, data should be collected pre- (baseline) and post-intervention (time final). Ideally, these should be time series surveys and occur every two to four years.

Who Measures It: Outsiders (NGO partner staff, researchers).

Comments: These factors are absolutely critical to understand (particularly in the context of LMMAs) but are very difficult to measure and quantify/qualify.

Generated by: Suva Working Group

S-7   Community Health

A.   *What is It?*

Definition: The overall health of male and female youth, particularly nutritional health.

Community health is a factor that contributes toward an overall measurement of quality of human life for a particular village.

B.   *What Does It Influence?*

Hypotheses: (1) If the communities that participate in the management of the LMMA are healthy, then the LMMAs will have greater conservation success. Assumes that healthy communities are in a greater position to obey LMMA restrictions. (2) *Tambu* areas can improve community health through high protein/micronutrient consumption, leading to low in nutritional disorders (e.g. VAD, anemia), improved childhood development. (3) Community health is the foundation of overall human capacity of community, and thus a LMMA cannot be successfully managed locally without it.

C.   *Indicators and Methods*

What to Measure: Diet, nutrition-related illnesses (e.g. UAD, anemia).

How to Measure It: Household surveys (dietary) and Ministry of Health statistics.

When to Measure It: Annually.

Who Measures It: Project team, with assistance from the Ministry of Health.

Comments:

Generated by: Suva Working Group

S-8   Community Empowerment

A.   *What is It?*

Definition: Community empowerment is the provision of skills and knowledge for self determination through capacity building and availability of options.

This is a particularly important factor for women and youth. It is a factor that contributes toward an overall measurement of quality of human life for a particular village.

B.   *What Does It Influence?*

Women are the most active care-givers in village life, particularly through their raising of children. Women are also the primary marine resource collectors, gleaning organisms from reefs, seagrasses, mangroves, and other habitats for subsistence and local market use.

Youth can be bored and restless without options to keep them occupied and busy; restlessness can become a source of trouble for youths. Youths are also the future stewards and leaders of village life. If youth are given options for activities that will engage their time and keep their interest (e.g., income generation), then such activities keep them out of trouble.

Hypotheses: (a) As women can be involved in decision making process, in educating children (the future generations of resource decision makers), and typically make the time available for additional community activities, LMMA success will be dependent upon their involvement, and thus empowerment to become involved. (b) As the future leaders and decision makers of villages are the youth, long-term LMMA success cannot be guaranteed without their participation. (c) LMMA participation encouraged youths to become effective future leaders and stewards of marine resources.

C.   *Indicators and Methods*

What to Measure: (nothing provided)

How to Measure It: (nothing provided)

When to Measure It: (nothing provided)

Who Measures It: (nothing provided)

Comments: Very difficult to measure, poorly documented, and overused term.

Generated by: Suva Working Group

S-9   Gender Equity/Equality

A.   What is It?

Definition: Gender equity is equal representation of all sexes in village decision making processes and resource management activities.

B.   What Does It Influence?

Hypothesis: (nothing provided)

C.   Indicators and Methods

What to Measure: (nothing provided)

How to Measure It: (nothing provided)

When to Measure It: (nothing provided)

Who Measures It: (nothing provided)

Comments:

Generated by: Suva Working Group

PROCESS FACTORS (INDEPENDENT VARIABLES)

P-1　Project Inception and Legitimacy

A.　*What is It?*

Definition: Project inception and legitimacy is the degree of acceptance, buy-in, and willingness to participate in a LMMA project based on its history of community involvement in the conceptualization, design, and implementation of the intervention at the site.

B.　*What Does It Influence?*

Hypotheses: (a) LMMAs and the marine species therein are more likely to be successfully protected if they are identified and decided upon by the community for protection. (b) Externally implemented MPAs and no-take areas will not succeed in Melanesia without the full participation of the landowning communities with customary marine tenure over the area being protected during all phases of the project (conceptualization, design, implementation, and on-going management). (c) The long-term sustainability of a LMMA is dependent upon its legitimacy with local fishers and therefore the community's awareness and experience of receiving the benefits from such protected efforts and the benefits of their management in such an area.

C.　*Indicators and Methods*

What to Measure: (a) Analysis of who, how, and why the LMMA initiated; (b) Analysis of who, how, and why the LMMA was accepted; (c) Stakeholder expectations, extent and nature of participation roles and responsibilities.

How to Measure It: Need to generate standardized criteria. Need to collect relevant historical and behavioral data from legal documentation, financial proposals, inception reporting, project proposals, management meeting minutes, and interviews during field visits.

When to Measure It: With each project cycle, and during annual/monthly meetings.

Who Measures It: Project staff.

Comments:

Generated by: Iloilo Working Group

P-2   Enforcement of Managed Area

A.   *What is It?*

Definition: Enforcement is any or all actions taken to influence behavior of fishers to comply with the specified rules of the managed area (LMMA). This definition is particularly focused on considerations regarding community compliance and sanctions, but also that of external stakeholders and fishers. The definition inherently requires the regulation of people through local surveillance, policing, patrolling, and reporting of violations. There is a distinction between voluntary and coercive compliance in enforcement, and this definition is more concerned with the former than the latter.

B.   *What Does It Influence?*

Hypotheses: (1) Without effective enforcement (either voluntarily or through coercion), conservation success will not be achieved. (2) Effective enforcement leads to increased rule compliance which allows fish stocks to recover and improved, in turn leading to conservation success and higher community awareness of the benefits from such interventions. (3) The rules for the LMMA must outline: (a) whether the rules and regulations for the area protect all species or just specific ones and what these rules are as they relate to each species, (b) where (location) the precise boundaries defining the area of protection are, (c) when (timing) the rules and regulations for the area are enforced and for how long, (d) who can and cannot fish of do other activities in the area, if allowed at all, (e) and what gears and technologies are permissible if restricted harvest activities are allowed to some degree and on what scale. (4) Trust must be clearly defined and established between and within the management body, the community members, and/or other stakeholders for voluntary enforcement to be effective; all must respect the LMMA rules and regulations. (5) Resource use is properly and consistently regulated when enforcement of the LMMA occurs. (6) If there is no enforcement and simply open access to *in situ* marine resources, people will exploit the resource base at unsustainable levels and degrade the ecosystem.

C.   *Indicators and Methods*

What to Measure: Enforcement effort and success, including: (a) number of people prosecuted, (b) number of people arrested, (c) number of people apprehended, (d) number of people warned, and (e) number of violations, both addressed and not addressed. For compliance, measure the extent to which rules are being followed. For punishment, measure the extent to which punishment prevents or ends breaking of rules. Document enforcement capacity (systems). Document how enforcement leads to enhanced awareness of rules and regulations. Measure enforcement efficiency index. Also: number of enforcement personnel, number and type of boats and equipment, frequency of enforcement, and total funds spent.

How to Measure It: Community and police records (must train monitors and officers to take good records). Document verbal reports? Be aware of informal/customary enforcement measures. For Compliance: number of violations detected, number of violations reported, type of violations, severity of violations. Indication/standardization of enforcement effort is important.

When to Measure It: Daily basis (i.e., as occurs); monthly, quarterly, and/or annual enforcement performance review.

Who Measures It: Community facilitators and enforcers, partners, government enforcers, conservation officers, and fishers and community members.

Comments: This is quite difficult to measure due to different tenure systems in place (traditional vs. modern enforcement jurisdictions and processes). However, it is recognized that enforcement is a critical tool for conservation success, particularly protected areas (and therefore LMMAs). Positive aspects of enforcement changes attitudes (qualitative documentation); document lateral transfer cross-project learning motivation; track community perception of the number of violations through time. Keep in mind: (a) rehabilitation role, and (b) difference between community enforcement and outsiders enforcement

Generated by: Suva and Iloilo Working Groups

P-3   Scale of Managed Area

A.   What is It?

Definition: The scale of the managed area defines the spatial, temporal, managerial, and inclusivity parameters for the area being protected.

Sub-factors:
1. Size (km^2).
2. Timing (seasonal, fixed interval, or permanently reserved?).
3. Ecological representivity (habitat, biophysical, and chemical properties).
4. Degree of reservation (species-specific moratoria or total no-take area?).
5. Rationale for designation (fisheries replenishment or protection/conservation? biodiversity maintenance or restoration? habitat restoration or maintenance?).
6. Management arrangement (externally, internally, or collaboratively managed?).

B.   What Does It Influence?

Hypotheses: (1) LMMAs can effectively conserve biodiversity and encourage sustainable fisheries as networks of small areas across multiple habitats. (2) LMMAs do not have to be permanent or completely no-take to achieve conservation.

C.   Indicators and Methods

What to Measure: Spatial measurements (in km^2; GPS coordinates), temporal measurements (number of days).

How to Measure It: GPS. Biological baseline reports. Calendar.

When to Measure It: T-zero (baseline) and T-final (end of study, to confirm T-zero data).

Who Measures It: Project staff.

Comments: Important. Easy to measure. Need to define 'representivity' and 'reservation' scales.

Generated by: Suva Working Group

P-4   Location of Managed Area

A.   What is It?

Definition: The location of the managed area is its geographic position in space.

Sub-factors:
1. Distance from community (m or km away; travel time away in hours).
2. Accessibility (easy or difficult to reach or observe).
3. Proximity and presence to enforcement & surveillance.
4. Clarity and degree of boundary delineation.
5. Placement of reserve declaration in relation to: (a) timing (historical operation) of threats in location; (b) whether or not declaration was opportunistic (degraded area) or preventative (pristine area)? (c) how strategic (ecological function) was delineation? Was area randomly or deliberately designated? (d) what degree was designation a function of need versus ease?

B.   What Does It Influence?

Hypotheses: (1) The closer and more accessible resident communities are to the LMMA, the more easily it can be managed effectively by the community and therefore be successful. (2) LMMAs are most effective when the area declared can been observed easily from the village. (3) LMMAs are only effective is clearly delineated. (4) Opportunistic declaration of LMMAs can lead to conservation success and are easier to maintain and enforce than randomly or externally assigned areas by outside parties.

C.   Indicators and Methods

What to Measure: Spatial measurements (in km^2; GPS coordinates), temporal measurements (number of hours; number of days).

How to Measure It: GPS. Biological baseline reports. Calendar.

When to Measure It: : T-zero (baseline), T-interval/mid, and T-final (end of study).

Who Measures It: Project staff.

Comments: Easy to measure.

Generated by: Suva Working Group

P-5 Cost of Community Monitoring and Management

A. What is It?

Definition: Cost of community monitoring and management is the actual and perceived financial and opportunity costs that are associated with the LMMA operation.

B. What Does It Influence?

Hypothesis: If the costs of monitoring and management of the LMMA are too great (i.e., costs outweigh the benefits or perceived benefits), community members will not participate and the LMMA will not be successful.

C. Indicators and Methods

What to Measure: Total costs (US$) of community monitoring of the LMMA, including petrol, boat repairs and rental, monitoring stipends or per diems, labor wages (if applicable), and opportunity costs. Total costs (US$) of management of the LMMA, including community meeting time, enforcement-related costs, and opportunity costs. Value of benefits derived from LMMA (estimated and perceived by community).

How to Measure It: Surveys (structured interviews) of monitoring team and review of project financial reports. Do cost-benefit analysis.

When to Measure It: Annually or semi-annually, depending on monitoring frequency.

Who Measures It: Project staff.

Comments:

Generated by: Suva Working Group

P-6   Presence and Effectiveness of Management Body

A.   What is It?

Definition: A management body is a group of stakeholders that represents and maintains both a long- and short-term perspective and vision for both the resident community and resource management and conservation partners, acting as "middle men" between these two visions. It is a group that is charged with certain responsibilities and decision-making power over a project, and is trained in certain tasks. It facilitates the direction for the project through planning, develops and maintains the structure and logistics of how this is done, and also resolves the conflicts through either traditional or contemporary mechanisms. Presence is whether or not: (a) a formal or *de fac*to management body exists for the LMMA, and (b) the extent to which it is actively and proximally engaged in the area management. Effectiveness is the ability of the body to meet goals and objectives set out for the LMMA.

B.   What Does It Influence?

Hypotheses: (1) For a management body to be effective, it must include: (a) strong leadership, (b) empathy and trust with the community, (c) negotiation and compromising skills, (d) listening skills, (e) an understanding of the community's group mentality, social structure, and historical and sociocultural context, (f) persuasion skills, and (g) cultural sensitivity. (2) A LMMA can only can effective if there is a formal or de facto management body overseeing its operation. (3) A LMMA must be managed effectively by the participating communities if it is to be successful. (4) For a management body to be effective, communication and information sharing must be a two-way process (both top down and bottom up), in which consultation and feedback with/between community and government occurs (i.e., the body acts as middle men). (5) For a management body to be effective, it must sense issues or problems ahead, resolve conflicts, and provide vision.

C.   Indicators and Methods

What to Measure: All effectiveness criteria listed above. Also:
1. Changes in attitude of community/individuals (leaders) through time;
2. Changes in beliefs through time;
3. Witness of changes as consequence of action;
4. Reduction in number of poachers (internal) compliance;
5. Manage body's ability to achieve goals/vision; and
6. Number of actions taken by management committee.

How to Measure It: Interviews, focus group discussions, household surveys.

When to Measure It: Annually.

Who Measures It: Project staff.

Comments:

Generated by: Suva and Iloilo Working Groups

P-7   Institutional Coordination and Capacity

A.   What is It?

Definition: Institutional coordination and capacity is the strengthening of the capacity of individuals, groups or organizations to continue work in long terms. Institutional capacity refers to how effectively various stakeholders play their part and interrelated with each other for management. (also: how resources are measured)

B.   What Does It Influence?

Hypotheses: Effective coordination and adequate technical (both management and monitoring) capacity improves chances of sustaining activities and therefore securing long-term LMMA success. Good coordination and capacity requires external partnership. Good coordination and capacity requires transfer of skills and knowledge.

C.   Indicators and Methods

What to Measure: How well the different organizations work together, how resources are shared, successful collaborations. Achievement of goals and objectives (project performance monitoring). Perception of members of coordination and capacity needs and the people they represent.

How to Measure It: Document of meetings, number of trained people, number of conflicts and successes solved.

When to Measure It: Every six to 12 months.

Who Measures It: Community and project partner staff.

Comments: Networking can sometimes prove difficult; examples: logistical constraints, too busy to network regularly, incongruent with one's organizational duties or objectives. However, partnership is good and is recognized as necessary.

<div align="right">Generated by: Suva Working Group</div>

P-8   Community Participation

A. What is It?

Definition: As the primary stakeholder, communities must adequately and appropriately participate in all aspects of the LMMA, particularly in management and monitoring.

B. What Does It Influence?

Hypotheses: For a LMMA to succeed, it must have adequate and appropriate community participation. Community participation leads to: (a) project ownership, (b) accountability, (c) compliance, (d) transparency, (e) strengthened community cohesion, (f) strengthened traditional values, (g) social justice, (h) management devolution, (i) and appropriate and suitability use of local knowledge.

C. Indicators and Methods

What to Measure:
1. Who starts the participatory process? What does the process involve (overview; # of steps; time required)?
2. How do these facilitators initiate the participatory process?
3. Who is involved?

How to Measure It: Quantitative measurements using community and project staff interviews. Qualitative measurements using participatory stakeholders analysis.

When to Measure It: As early as possible, and then check back regularly.

Who Measures It: Independent surveyors and auditors, project staff, and community members.

Comments: Does the process lead to project that people feel meets their needs?

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