Wildlife Conservation Society

A Facilitator's Guide for Ecosystem-Based Management Planning in Fiji

A Facilitator's Guide for Ecosystem-Based Management Planning in Fiji, Second Edition
doi.org/10.19121/2020.Report.38522

Citation: WCS (2020) A facilitator's guide for ecosystem-based management planning in Fiji. Edition 2. Wildlife Conservation Society. Suva, Fiji.

Lead Author: Gerard Acton
Contributors: (in alphabetical order) Akanisi Caginitoba, Sirilo Dulunaqio, Stacy Jupiter, Kini Koto, Sangeeta Mangubhai

Design and layout: Kate Hodge, Hodge Environmental

Cover images:
Main image: Aerial view of Totoya Island, Lau Province. Keith Ellenbogen.
Inset images: WCS and Stacy Jupiter

Available from:
Wildlife Conservation Society
11 Ma'afu Street, Suva, Fiji

Also available online at http://www.wcsfiji.org/Resources/Guides.aspx

Wildlife Conservation Society

A Facilitator's Guide for Ecosystem-Based Management Planning in Fiji

Foreword

In 2005, the Wildlife Conservation Society received its first grant to do ecosystem-based management (EBM) planning with a number of different NGOs and communities in Fiji. At the time, the term EBM was still new. A scientific consensus by leading academics had just been released, and indicators were beginning to be developed for measuring progress.

What did EBM mean for Fiji? Ridge-to-reef planning was not a new concept to the people of Fiji, where historically local communities have collectively governed and managed access to land and sea resources within the vanua unit. Communities within the Locally Managed Marine Area (LMMA) network had already built the strong foundations of a methodology to identify and manage for threats to coastal fisheries resources, including from land-based impacts. Partnerships had formed to discuss an integrated coastal management (ICM) framework to address coastal development and pollution issues along the Coral Coast.

EBM refers to the management of cumulative impact of human activities in order to maintain ecosystems in a healthy, productive and resilient condition to enable delivery of ecosystem services and protect biodiversity. It is thus not a paradigm shift from LMMA, ICM or other integrated management processes. But it perhaps more explicitly considers the condition of ecosystems, the services they provide, how they are connected and how disruptions to one ecosystem can affect other downstream ecosystems and services.

WCS first began its focused work on EBM with the communities of Kubulau District in Bua Province to develop what turned into Fiji's first district level ridge-to-reef management plan. Through participatory planning processes, communities identified key features of all of their major ecosystems from the forests to the seas that they wanted to preserve into the future, the main threats affecting these features and then what they could realistically do, themselves or with partner agencies, to mitigate those threats. In July 2009, the chiefs of Kubulau endorsed the EBM plan and the local priest blessed the protected areas.

Subsequently, the EBM model was replicated in adjacent districts and WCS refined our planning process in response to feedback from local communities, our successes and equally our failures. We realised that community-driven processes take a lot more time than we initially bargained for to build consensus. Yet it is critical to allow for this time in order to build local ownership of the plan, which ultimately fosters better implementation and compliance.

The guidance you will find in the pages of this guide reflects the learning from nearly a decade of experience working with local communities in Fiji to implement EBM, advice from government and NGO partners, and a lot of trial and error. We designed the guide to be as practical and hands-on as possible. We hope that the guide will be used by government staff and community members who are energized to take a pro-active approach to addressing the growing threats to natural resources from environmental, economic and climate change. For those who are new to environmental management and planning, the tips from this guide will give you a place to start. For those who already have some experience, we hope you will find some new exercises to help you to expand your portfolio of planning tools.

Stacy Jupiter, WCS Melanesia Director

Sangeeta Mangubhai, WCS Fiji Director

Contents

Contents

Acknowledgements

The authors would like to recognise the partners who have helped to develop the approach outlined in this guide. Building on the 'Kubulau approach' to ecosystem-based management planning, this has evolved through active and collaborative planning with the Bua Provincial Council Office, traditional leaders and partners across all nine districts in the province of Bua. Particular acknowledgement should go to the people and communities who have given freely of their time and expertise to support the conservation and sustainable use of their district's natural resources. Their ongoing commitment will ensure that management decisions are informed by the best available knowledge and their ongoing support is gratefully acknowledged as we strive to address the increasing challenges that rural Fijian communities face.

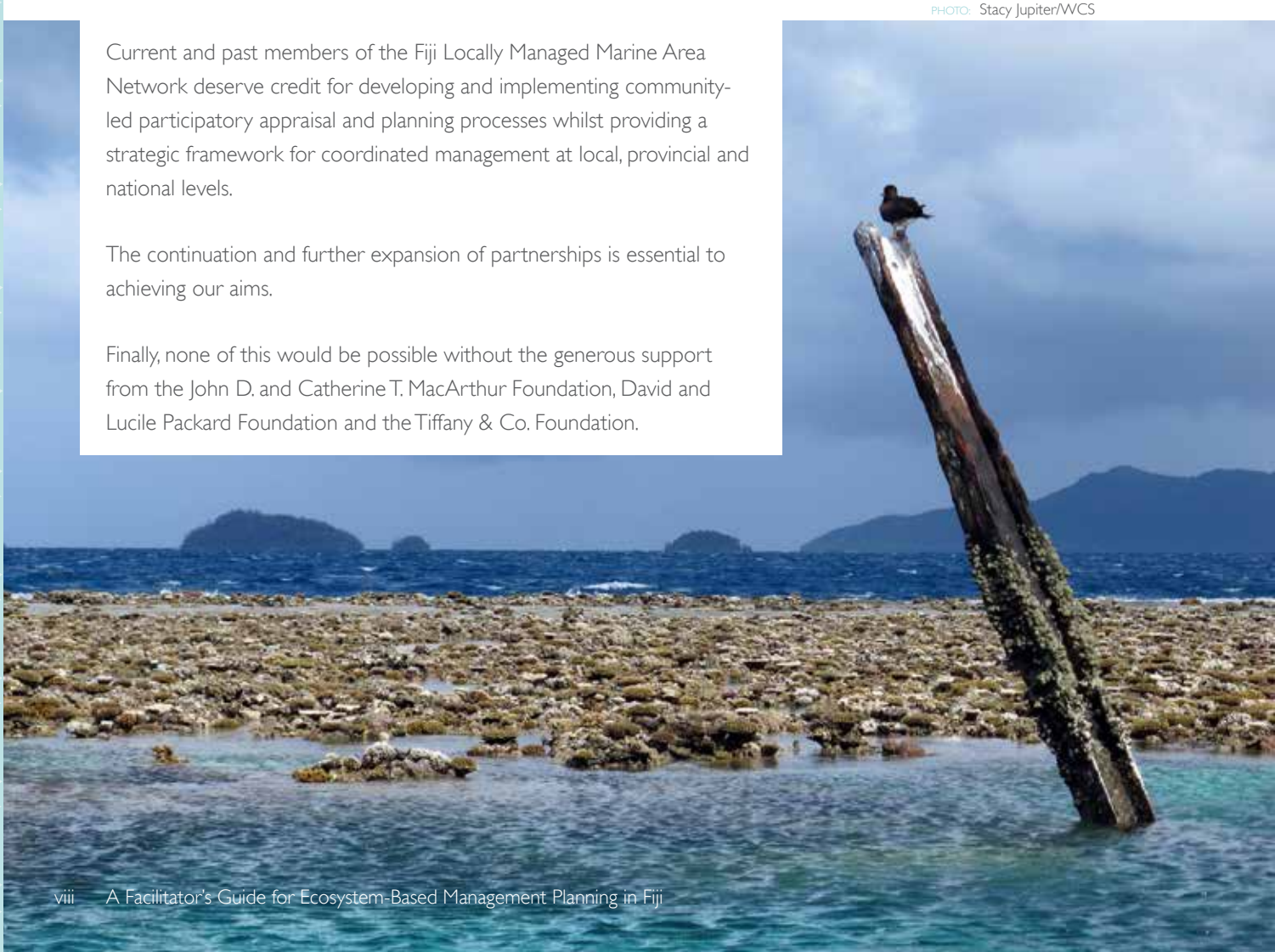
A range of government agencies have contributed to this work, including the Ministries of Environment, Fisheries, Forestry and Agriculture, iTaukei Affairs, the iTaukei Land Trust Board, iTaukei Lands and Fisheries Commission and the iTaukei Affairs Board.

Current and past members of the Fiji Locally Managed Marine Area Network deserve credit for developing and implementing community-led participatory appraisal and planning processes whilst providing a strategic framework for coordinated management at local, provincial and national levels.

The continuation and further expansion of partnerships is essential to achieving our aims.

Finally, none of this would be possible without the generous support from the John D. and Catherine T. MacArthur Foundation, David and Lucile Packard Foundation and the Tiffany & Co. Foundation.

PHOTO: Stacy Jupiter/WCS



Glossary of terms

Adaptive management	Adaptive management is a structured, iterative process of "learning by doing". It incorporates monitoring and evaluation to amend plans with respect to evolving management priorities for improved decision-making in changing situations or where there is a level if uncertainty.
Biodiversity	Biodiversity is the variability among living organisms from all sources (including terrestrial, marine, and other ecosystems and ecological complexes of which they are part) and includes diversity within species and between species, diversity of ecosystems, and the ecological processes that maintain the ecosystems.
Climate change	Changes that alter the composition of the global atmosphere which can be directly or indirectly attributed to human activity and are observed over a sustained period of time. There is now strong evidence of climate change affecting Pacific Island countries, particularly through rising sea levels, extreme weather events and prolonged seasonal droughts.
Connectivity	The way in which different places or species are connected. In the ocean, for example, connectivity depends on the ability of a living organism or non-living particle (such as a larva, adult fish, spore or parcel of water) to move from one place to the other and the regularity with which they do so.
Conservation	The protection of biodiversity, ecosystem function and ecosystem services to the benefit of the natural environment, including humans that depend on it.
Disaster	A disaster is a sudden event that disrupts the functioning of a community and causes human, material, economic and/or environment losses so large that the community cannot cope using its own resources.
Ecosystem	A dynamic community of plants, animals and microbes together with their physical environment; a natural system with interacting and interdependent relationships.
Ecosystem-Based Management	Management of the uses and values of ecosystems in conjunction with stakeholders to ensure ecological integrity is maintained, and recognition that ecosystems are dynamic and inherently uncertain.
Ecosystem services	The direct and indirect benefits that humans derive from ecosystem processes such as pollination, biodiversity and nutrient cycling that are not captured in traditional economic accounting, but that are vital to social, economic and spiritual well-being.
Environment	Environment refers to the physical and external conditions, including both natural and human-built elements, which surround and affect the life, development and survival of organisms or communities.
Evaluation	Systematic acquisition and assessment of information to provide useful feedback about what you have done or what you are doing. Evaluation usually aims to generate learning that will inform what you do next.
Framework	A basic structure underlying a system or concept.
Gender	Biological traits (e.g. reproductive organs) of being female and male determine people's sex. Gender is an identity that is socially constructed, and varies across culture and historical periods.
Gender awareness	This is the knowledge about the differences in roles and relations among people based on their gender.

Gender and social inclusion	This is a concept or principle that all services, opportunities, and establishments are open to all people, without discrimination, and stereotypes do not define societal roles and expectations.
Habitat	The living and non-living environment in which an organism or population lives.
Hazards	These are events, phenomena, substances or activities that may cause injury, death, economic losses and/or environmental damages. Example of a health hazard is a disease outbreak and an example of a hydro-meteorological hazard is a cyclone.
Holistic management	A management system that emphasizes the importance of the whole ecosystem and the interdependence of its parts, including all living and nonliving components, including humans.
Integrated management	A management system that is structured so that all those with interest in an area's management (such as agencies, political bodies, community groups, industry groups and traditional leaders) function cooperatively.
Management	The process of controlling human activities, usually based on a coordinated system of planning, implementation and evaluation.
Management goals	Management goals are designed by the collective vision for the use of natural resources to achieve sustainable long-term practices. They represent the state of future ecosystems and communities that people want to achieve.
Management objectives	Specific results that you aim to achieve (within a time frame and with available resources). In general, objectives are more specific and easier to measure than goals. They serve as the basis for determining strategies and evaluating performance. Management objectives might include achieving food security, maintaining safe drinking water, and generating sustainable income from fishing or farming.
Management plan	An explicit set of rules governing how to apply the principles and framework of natural resource management in a given area. This plan may be adapted to various changes in the natural and social environment, or upon the basis of new information about how a system functions.
Marine protected area (MPA)	An area in the ocean or coastal zone that has been protected from some form(s) of human activity. The most restrictive categories of MPAs are completely protected from all extractive activities, including fishing, mining, collecting and dredging. These areas are sometimes called marine reserves, ecological reserves, fully-protected marine reserves or no-take areas.
Marine protected area network	A group of marine protected areas that are physically and biologically connected by ocean currents, larval transport/swimming, juvenile or adult migration, or other phenomena.
Mitigation	In the context of *climate change*, mitigation refers to human interventions to reduce the sources or enhance the sinks of greenhouse gases such as afforestation. In the context of *disasters*, the lessening or limitation of the adverse impacts of hazards and related disasters.
Monitoring	The act of taking repeated measurements of indicators to determine the nature and extent of change over space and time (natural variability). Monitoring usually follows a sampling protocol.
Natural resources	Actual or potential sources of wealth that occur in a natural state, such as timber, water, fertile land, wildlife and minerals. A natural resource qualifies as a renewable resource if it is replenished by natural processes at a rate comparable to its rate of consumption by humans or other users. A natural resource is considered non-renewable when it exists in a fixed amount or when it cannot be regenerated on a scale comparative to its consumption.

Natural resource management	The act of handling, directing or controlling human action that directly or indirectly affects natural resource availability and quality. Management goals can include reducing user conflict, maintaining productivity or biodiversity, and ensuring the safety of humans and wildlife.
Productivity (of a fishery)	Relates to the birth, growth and death rates of a stock. A highly productive stock is characterised by high birth, growth and mortality rates, and as a consequence, a high turnover and production to biomass ratios. Such stocks can usually sustain higher exploitation rates and, if depleted, could recover more rapidly than comparatively less productive stocks.
Protected area	Areas designated and managed to increase the conservation of their living and nonliving resources. The level of protection of protected areas varies widely, ranging from the restriction of a single activity to the restriction of all extractive or potentially damaging activities. Protected areas can be designated in terrestrial, freshwater and marine environments.
Resilience	The ability of an organism, ecosystem or community to recover readily from natural or human impacts that cause temperature changes, physical disturbance or destruction, or pollution. A system's resilience depends on its health, the area affected and duration and intensity of the impact.
Spatial planning	A process by which stakeholders come together to collectively decide on how to regulate human activities across land and sea areas. An important part of this process may include designation of zones with different restrictions on activities.
Species	The term species can be defined as a group of individual organisms that are capable of interbreeding to produce fertile offspring in nature.
Stakeholder	In the context of ecosystem-based management, a stakeholder is someone who has an interest in or is affected by an ecosystem or ecosystem service. Stakeholders include managers and managing agencies, governing bodies, residents, traditional leaders, scientists, conservationists, recreational users and other interested parties. Within a community, stakeholders include women, men, people of different ages, tribes, clans, religions and abilities. Stakeholders play an important role in the design and implementation of ecosystem-based management plans.
Traditional ecological knowledge	Knowledge about ecosystems and biological diversity held by communities as a result of generations of experience with their environment (for example, from coastal living, fishing, or seafaring). This knowledge may be held in written records or in oral history.
Visioning	A process through which people can develop a common goal, by sharing their aspirations and defining their desired state. Visioning offers a possibility for fundamental change, gives people hope and a sense of control, and provides something to move toward. This can be motivational in helping to generate creative thinking and passion.
Vulnerability	The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. Vulnerability is the result of the whole range of economic, social, cultural, institutional, political and even psychological factors that shape people's lives and create the environment that they live in. In other words, defining vulnerability also means understanding the underlying factors or root causes of vulnerability. However, multiple definitions of vulnerability exist. Some sources regard vulnerability as a composite of exposure, sensitivities or susceptibilities, and coping capacities and resilience.
Yaubula Management Support Team	Yaubula Management Support Teams (YMSTs) are groups at the provincial or island level, composed of community representatives actively supporting site-based management. The main function of YMSTs is to help sustain management activities in established sites and to take the lead in assisting new communities to engage in the Fiji Locally Managed Marine Area network, should they wish.

Introduction

Rural communities in Fiji are heavily reliant on natural resources for subsistence, livelihoods and cultural practice. Organised and collaborative approaches can help protect natural resources by maintaining ecosystems in a healthy, productive and resilient condition. Often called sustainable management, this ensures that the current generation can meet their needs without compromising those of future generations.

A community is a group of people living together in a given physical space, such as a village or group of villages, or settlement. Beyond sharing a physical space, people in communities are often presumed to share common values and beliefs. In the case of marine management, people in communities may also be assumed to have equal access to marine resources and rights to their use, and to have common priorities for the management of those resources. In reality, communities are diverse. They contain women, men, people of different ages, tribes, clans, religions and abilities, with different needs, concerns and aspirations. These social differences often come with differences in the ownership, accessibility and use of marine resources, and the power to make decisions about those resources.

Source: Delisle A, Mangubhai S, Kleiber S (2021) Module 6: gender and social inclusion in community engagement. In: Mangubhai S, Makhoul N, Kinch J, Kalsuak J (eds.) Handbook for Pacific Gender and Social Inclusion in Small-scale Fisheries and Aquaculture. Pacific Community, Noumea.

An effective management planning process provides a foundation for sustainable management by enabling and empowering communities to:

- think strategically, rather than making ad-hoc decisions;
- balance protection and use of natural resources to ensure they are not depleted faster than they are replenished;
- integrate scientific input with their local and traditional knowledge to promote good practice;
- collaborate across governance boundaries;
- engage a range of stakeholders using gender and socially inclusive approaches; and
- promote accountability for more effective implementation, monitoring, compliance and enforcement.

Conversely, poor planning and management can damage ecosystems, affecting their health, productivity and ability to recover from disturbances like natural disasters.

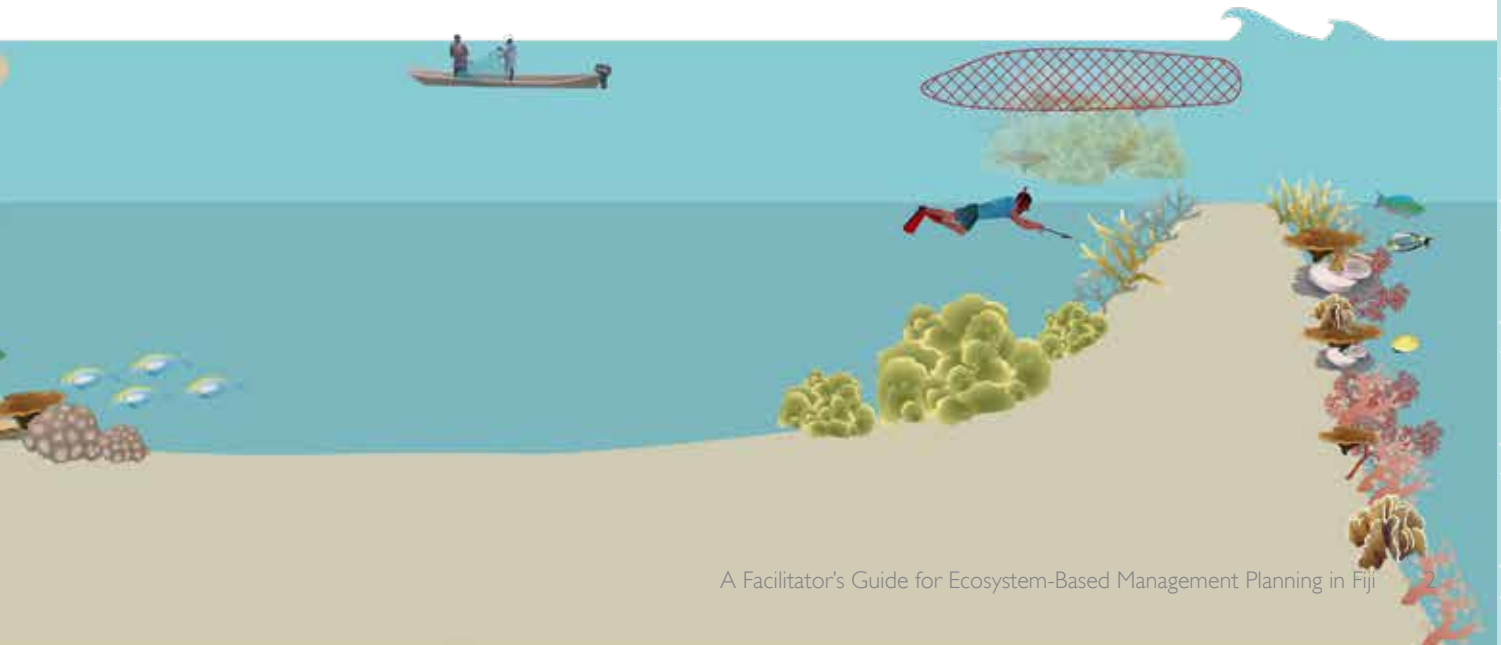
This guide outlines a planning process through which communities can share, develop and analyse their own knowledge of their local situation, supporting them to plan for sustainable management in which they will take the leading role.

The guide is intended as a tool for government officers, particularly, but not exclusively, Provincial Councils and Conservation Officers, Yaubula Management Support Teams (YMSTs), non-governmental organisations (NGOs) and community members with some experience of facilitation or planning. The guide reflects broad principles of good practice that can be adapted to planning for islands, districts or groups of communities at different scales. Facilitator guidelines are also provided (Appendix 1, box below).

Key principles for facilitating partners wishing to promote increasing levels of community participation within the context of EBM:

- Promote curiosity and innovation;
- Value failures (and use them to learn);
- Expect surprises;
- Capitalise on crises;
- Encourage personal growth;
- Create learning organisations and partnerships;
- Contribute to wider learning (by sharing your results and learning with others).

The implementation of all the activities and tools in this guidebook requires skills that are not easily learned from books. Further information on facilitation skills can be found in the Participatory Learning and Action, Participatory Rural Appraisal, Rapid Rural Appraisal and Gender Equity and Social Inclusion literature. It is highly recommended that practitioners are familiar with these techniques.



1.1 A community-led approach

As the main users and owners of natural resources in Fiji, communities must be at the centre of management planning. The way that they are engaged and participate in a planning process can affect how they feel about their management plan. This in turn can affect whether they actively support and follow the plan or disregard it altogether. The process outlined in this guide uses participative methods – enabling everyone (especially women, elders, youth and marginalised groups) to have an input that reflects their aspirations, concerns and priorities – to foster bottom-up community ownership, develop locally and culturally appropriate management strategies and build capacity for implementation. Methods also aim to facilitate input from the less dominant voices within communities in order to optimise the application of local knowledge and human resources.

As such, this approach seeks to move communities towards the higher levels of participation shown in Figure 1. This broadly reflects approaches promoted through the Fiji Locally Managed Marine Area (FLMMA), network which:

- require communities to work together (men, women, elders and youth as well as people from different villages and settlements);
- encourage good governance and leadership;
- acknowledge, adhere to and aim to strengthen the rights and traditional cultures of good stewardship in rural communities; and
- favour long-term processes that build understanding and capacity for management over short-term goals or projects.

Most communities in Fiji have a strong connection with their natural environment, a cultural tradition of good stewardship, customary land ownership and traditional fishing and foraging rights. These represent great potential to manage their resources sustainably for a healthy, prosperous future. To realise this potential, facilitators should embrace and seek to nurture local traditions and customs, beliefs and values, making them part of the solution.

increasing participation

Level of participation	Description
Fully active (highest)	Community members make decisions in partnership with implementing agency or groups and are committed to acting together
Deciding together (higher)	Community members are empowered and facilitated in order to determine options and make decisions.
Consultation (moderate)	Community members are given a restricted choice and role in decision making.
Information collection (lower)	Community members are surveyed and results are analysed externally.
Passively informing (lowest)	Community members are informed of the situation or process.

Figure 1. Community participation levels

1.2 An ecosystem-based management approach

Ecosystem-Based Management (EBM) acknowledges connections between land, rivers, coasts, and the ocean. Plants, animals and people are part of these ecosystems and move between them. Connections between ecosystems are important to their health, as actions in one location can have impacts elsewhere. For effective management we therefore need to adopt a ridge-to-reef approach, considering this range of ecosystems and the connections between them (Figure 2 and Figure 3).

Figure 2. Healthy connectivity between adjacent terrestrial, freshwater, coastal and marine ecosystems

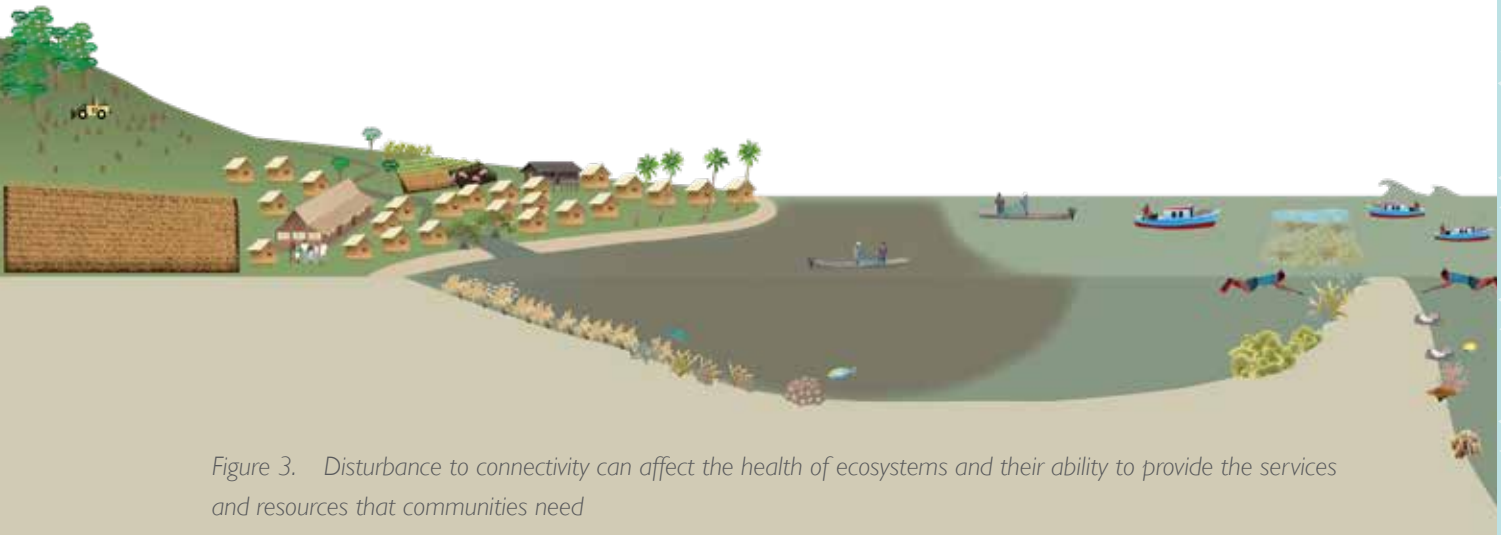


Figure 3. Disturbance to connectivity can affect the health of ecosystems and their ability to provide the services and resources that communities need

EBM implies an integrated approach, acknowledging that communities and other stakeholders may have different perspectives and objectives, and seeks to integrate these whilst taking account of social, economic and environmental considerations. The following key messages can help promote an integrated EBM approach.

Healthy ecosystems are the best defence against disaster and climate change impacts to livelihoods

Only intact, healthy ecosystems provide the full range of benefits and services that communities want and need over long periods of time. By maintaining and restoring mangroves, coral reefs and riverside vegetation, communities can reduce their vulnerability to moderate natural disaster and climate change impacts.

Ridge-to-reef management protects habitats for all stages of life

Different animals use different habitats. Some of these animals move between habitats during different stages of their lives. For example, fish species may move between deep ocean, reefs, mangroves and rivers throughout their life cycle. It is necessary to manage each of these different habitats in order to effectively conserve such species.

Inland and coastal communities need to manage their actions and resources together

Connectivity makes ecosystems vulnerable to impacts of actions elsewhere. For example, the health and resilience of coral reef ecosystems may be affected by clearing and burning the land in coastal catchments. Cooperation between inland and coastal communities is a central feature of ridge-to-reef sustainable management.

Public health and livelihoods depend on healthy environments

Healthy ecosystems are essential for livelihoods, food security and community health. Managing environmental threats, such as contamination of fresh water, can help keep people healthy and prevent the spread of disease , and is vital in supporting a community's ability to recover after disasters.

Effective management depends on good governance and inputs from stakeholders

Developing shared goals and collaboration between agencies, partners and communities enables the concerns and priorities of a broad range of stakeholders to be taken into account. As well as improving the quality of decision-making, this can ensure the sharing of human and financial resources and build accountability by clarifying roles and responsibilities.

1.3 Management at a suitable scale

Management is most effective when the spatial boundaries of the management zone are clearly demarcated and easily recognised by resource users. As far as possible, management boundaries should correspond with governance boundaries where there are clear structures for making decisions.

Villages may be too small-scale for effective management of certain threats affecting natural resources because they cannot adequately control all of the activities that impact their ecosystems and species. For example, coastal communities' access to clean drinking water may be dependent on upstream activities. Management at a broader spatial scale can help address threats that impact the ecosystems, the services they provide people and the species that people want to protect. EBM therefore focuses on management areas that are generally larger than single communities.

Fiji's district boundaries broadly correspond with those of customary land ownership and traditional fishing grounds. As such, they generally provide an appropriate spatial scale and governance unit for management. A district's traditional ties and common leadership hierarchy can also be conducive to effective collaboration and governance.

Management planning should also consider where species live and how far they travel for food and to reproduce. Governance boundaries may not overlap with these parameters. In cases where there is mismatch, management areas can be adjusted to incorporate whole ecosystems and watersheds. Communities from adjoining districts may need to work together in order to manage their natural resources and the outcomes they want from management.

Islands, whether larger or smaller than a single district, also provide an appropriate scale for effective management based on the clear shared boundaries, resources and interests of communities.

PHOTO: Stacy Jupiter/WCS

1.4 Learning from experience

In Fiji, we have gained experience over many years supporting community planning and resource management. This guide is based primarily on the experiences of the Wildlife Conservation Society (WCS) and FLMMA partners. It seeks to distil their learning of what works, for others to use and adapt. The FLMMA network is a partnership of communities, government agencies, academic bodies and NGOs working towards effective management to ensure fish for the future. The network includes over 400 communities implementing some form of management, with a focus on collaborative ridge to reef approaches. FLMMA links these partners in order to transfer knowledge, spread good practice and establish support networks. As part of a wider LMMA network across the Western Pacific, FLMMA provides a wealth of experience and learning about management strategies including what works, what does not work, and why.[1]

Kubulau District (in the Province of Bua on Vanua Levu), established Fiji's first ridge-to-reef district-level management plan in 2009. Subsequent management

1 For more details see Govan, H., Aalbersberg, W., Tawake, A., and Parks, J. (2008) Locally Managed Marine Areas: A guide for practitioners. LMMA Network

successes have been attributed to critical factors that were created or supported through the management planning process, including:

- effective collaboration between all villages;
- incorporation of local knowledge, traditions and priorities;
- strong partnership between communities and other stakeholders; and
- generation of practical management benefits (including income from recreational use) alongside perceived equity in their distribution (shared within and between communities).

Neighbouring districts witnessed Kubulau's success and requested support through which they established management plans of their own. As of 2019, all nine districts in Bua Province have completed and are implementing district-scale EBM plans..

1.5 Adaptive management

A management plan should be a working document, reviewed and amended periodically to reflect monitoring results, evolving management priorities and the continued input of local communities (Figure 4).

Kubulau district has been through a cycle of adaptive management. A comprehensive review process in 2011–2012 resulted in refinements to the protected area network and management rules to improve effectiveness of management, maintain ecological connectivity and increase resilience to the impacts of climate change.

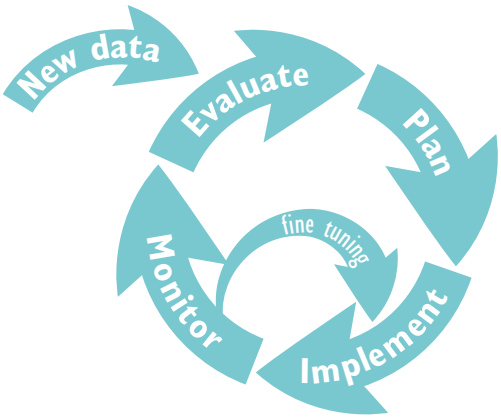


Figure 4. The cycle of adaptive management.

PHOTO: Stacy Jupiter/WCS

1.6 A phased approach

The guide is organised around the five main stages of management planning (Figure 5), which are designed to be followed section by section, with each stage of the process building on the outcomes from the last.

Figure 5. Sequential steps in the management planning process

2 Scoping and pre-planning

Scoping and pre-planning are essential first steps that will help you build understanding and trust and make management planning more effective.

2.1 Confirming community commitment

Communities often initiate management planning by requesting support from a government agency, NGO or other organisation to help them better manage their natural resources. Whether the request comes directly from them or from another stakeholder on their behalf, it is the communities who will need to invest their efforts if management is to succeed in the long-term. As such, it is necessary for you to assess their level of commitment to what may be a long and arduous process. However, it is an important step that can be done separately, or as part of obtaining free, prior and informed consent (FPIC). FPIC is a specific right that relates to work with communities, especially Indigenous Peoples all over the world[2]. The types of questions that can inform such assessment include:

- Is additional management needed?
- Whose idea was it? Did the request come from an appropriate person or institution?
- Is the request genuine and are communities committed to playing a lead role in planning?
- Are the environmental problems solvable given local resources, knowledge and skills?
- Will there be active opposition to the project from important stakeholders?
- Is there a past history of other projects - if so, what has already been done?
- Is the potential partner organisation in a position to offer sustained assistance?
- Will there be support from Government and Provincial agencies?
- What is the leadership situation in the district?
- Are there any conflicts in the area (e.g. over power, ownership, land rent)?

2 WCS (2019) Community engagement protocol. Wildlife Conservation Society, Suva, Fiji. See also, FAO (2016) Free, prior and informed consent. An indigenous people's right and a good practice for local communities. FAO, Rome

This will help determine the viability of the process and ensure that further investment in it has a reasonable chance of success. If the process is not viable, this information will enable you to highlight the reasons why you cannot proceed at the present time (whilst giving local stakeholders the opportunity to rectify the situation).

PHOTO: Stacy Jupiter/WCS

2.2 Inception meeting

Once you decide to proceed with management planning, an initial inception meeting will help clarify and develop a shared understanding of the approach you will take and the steps involved. This should involve a small group of key strategic stakeholders, like:

- Provincial Council Office staff;
- Yaubula Management Support Team (if applicable);
- NGOs or community based organisations that are likely to play a role; and
- District hierachy chiefs (*Bose Vanua ni Tikina*), community leaders and representatives (particularly those involved in instigating action and will likely drive the process).

PHOTO: Eferemo Kubunavanua

2 Scoping and pre-planning

Gender and socially inclusive facilitation techniques should be used to make sure all groups are part of the FPIC process and the final decision to go ahead or not.

Topics that could be covered to inform a useful inception meeting include:

1. Thematic and geographic scope of the project;
    - » Define the management area.
2. Overarching goals and strategies;
    - » Explore initial expectations of key stakeholders (what they want to achieve)
    - » Consider and target secondary outcomes such as learning, enhanced partnerships and community capacity building
3. Values/principles of the approach;
4. Key milestones;
    - » Define broad timeframes for key deliverables/events
5. Forecast the costs of management planning & identify the budget available;
6. Roles of key stakeholders in the management planning process;
    - » It is important that these are realistic so that they can be documented to define the terms of reference for partners' engagement
    - » Consider how partners will work together and communicate with each other
    - » Consider the resources (monetary and non-monetary) that each partner will contribute
7. Existing data/information;
    - » Identify relevant and immediately available information and reports to inform the management planning process and partners' understanding

2.3 Initial situation analysis

A good understanding of local people, their lives and the environment will help facilitators to effectively focus the management planning process and identify underlying issues that could affect progress. The gathering and interpretation of this information is called a situation analysis. This will evolve over time as things change, as we come to know more, and as more people have an input. The process and resulting outcome will:

- identify stakeholders and their potential role in management;
- help understand local governance and key issues;
- develop an appreciation of how to build on local strengths; and
- provide a starting point for establishing targets, identifying threats and developing strategies.

2.3.1 Review existing information

A good starting point is to review existing social, economic and environmental information, including:

- reports from recent and current projects in the local area;
- any local management or development plans (e.g. provincial plan, village plans);
- relevant strategies (e.g. Divisional or Provincial development strategies);
- demographic data from the national census and Provincial Council Office records (compiled from Village Headmen reports); and
- any data available from other sources, such as
  - biodiversity assessments,
  - fisheries surveys,
  - development proposals,
  - details of local logging concessions and mining tenements.

PHOTO: Stacy Jupiter/WCS

2.4 Primary data collection

A review of existing data/reports is likely to identify gaps in your knowledge. You may be able to address some of these by conducting (or commissioning) some research to find out more. Involving communities and other key stakeholders in conducting this research can help build their understanding and capacity.

Socio-economic surveys can be a good way for partners to engage with communities in order to understand them better and build relationships at an early stage, providing a great starting point for working together. For example, household socio-economic surveys were undertaken across all villages in the districts of Kubulau, Wainunu and Wailevu prior to management planning. This provided a wide range of data to identify household sources of income and villages' reliance on different natural resources for subsistence and livelihoods. The data also highlighted community perceptions about the relative abundance of specific resources over time, including which species are thought to be declining most rapidly. It is a good idea to liaise with Provincial Council Offices and Provincial Administrators, who may already have, or be in the process of gathering, this sort of data.

A rapid assessment can help to quickly establish a baseline of current environmental conditions. A recent case study of the Nakauvadra Range forest reserve in Ra Province partly attributed management successes to their initial rapid assessment of biodiversity, which identified rare and endangered endemic species that required special management. [3]

If there are limited data and you are not be able to collect primary data due to limited resources or expertise, be prepared to develop plans based on the **best available knowledge**, including local and traditional ecological knowledge, the plans can always be adapted as more information becomes available.

Socio-economic surveys can be a good way for partners to engage with communities in order to understand them better and build relationships at an early stage.

PHOTO: Stuart Chape

3 http://www.bioone.org/doi/book/10.1896/978-1-934151-38-9

3 Stakeholder Engagement

Stakeholders are people, groups, communities and organisations who have an interest in or will be affected by what you are doing. You may have started exploring this during the scoping and pre-planning phase. The types of stakeholders you are likely to consider include:

- Chiefs, leaders, elders, leaders' council, island council, council of chiefs;
- Community members including youth, women, other groups;
- Relevant local authority, district or provincial government;
- National government ministries (Agriculture, Environment, Fisheries, Forestry, Lands, Tourism, iTaukei Affairs Board, etc.);
- NGO, community-based organisations;
- Fishermen and fisherwomen (commercial or subsistence, local or from elsewhere);
- Farmers (commercial or subsistence);
- Tourism operators (resorts, hotels, tour operators, dive companies, etc.), and other private sector partners;
- Universities, researchers; and
- Churches and other faith-based organisations.

This is not a comprehensive list. You may be able to think of more stakeholders in your situation. Remember that within groups you may have differences between people (e.g. gender, age, religion, education, ability).

"Engagement is a process and an outcome of making decisions together. This process works to build collaborative relationships. There are different types of participation and inclusion, and some do not actively include everyone in decision-making. Engagement takes specific steps to create inclusion in the decision-making process (e.g. ensuring decisions are made together with the widest possible involvement.)"

Source: Delisle A, Mangubhai S, Kleiber S (2021) Module 6: gender and social inclusion in community engagement. In: Mangubhai S, Makhoul N, Kinch J, Kalsuak J (eds.) Handbook for Pacific Gender and Social Inclusion in Small-scale Fisheries and Aquaculture. Pacific Community, Noumea.

3.1 Community engagement

Communities are primary managers and users of natural resources. Community engagement should be designed to fit specific circumstances in different places. The following section outlines an adaptable community engagement process that has been used to undertake management planning in districts across Bua, Cakaudrove and Lomaiviti provinces.

3.1.1 Establish support from community leaders

The traditional hierarchy council (*bose vanua*) is a meeting of local traditional leaders and presents a good opportunity to inform and secure support from this important group of stakeholders at the outset and demonstrate respect for their chiefly authority before engaging communities.

The *bose vanua* usually adheres to traditional protocols, so 'outsider' attendees need to be invited by one of the members and may not be allowed to speak directly during the meeting. As such, it may be necessary to request permission to speak in advance or to have a representative speak for you.

Traditional cultural protocols are important in rural Fiji and should be adhered to when requesting support or permission to work in an area. If facilitators are not aware of these protocols, use a respected local representative (e.g. from the Provincial Council Office) to undertake them on your behalf.

Figure 6. Sperm whale tooth (tabua) is presented during traditional ceremonies

3.1.2 Initial village visits

Although planning is best focused at a larger scale (see Section 1.2), management activities are generally implemented at the village level. This is where people take action together and where they apply and enforce management rules.

Visiting communities in their villages is the best way to engage them in a bottom-up approach to management planning. Initial village visits provide an opportunity for communities and project partners to:

- undertake formal introductions through the traditional protocols;
- establish relationships and rapport;
- discuss project goals and outline the broad approach;
- develop partners' understanding of local issues from the community perspective; and
- invite questions from villagers to clarify their understanding of the process and their role within it.

Village visits can require prior permission from the Provincial Council Office, which can help arrange logistics and notifications through their network of District Headmen (*mata ni tikina*) and Village Headmen (*turaga ni koro*).

Establishing long-term relationships with communities, based on mutual understanding and trust, is a key factor for successful management. Generally speaking, the longer that outside partners spend getting to know communities, the better the quality of support they are able to provide and the more effective management outcomes will be (see box: Attitudes and Behaviours for Positive Partnerships). We recommend spending at least one day and one night on each initial village visit. An illustrative agenda based on these objectives and this timeframe is included in Appendix 2. It is also important to remember that

Attitudes and Behaviours for Positive Partnerships

When working with local communities, it is important for the partner teams to recognise that they will sometimes be entering an environment and/or culture that is very different from what they are accustomed to. This requires special sensitivity with regard to attitudes and behaviour, and it is well worth drawing up some ground rules for all team members to follow when working in the community with which they are partnering. Some examples are:

- Fit into the community and establish rapport. Share meals and accommodation. Follow the local dress code and be sensitive to local culture. If you are not sure what to do, ask.
- Try to put people at ease and join in all activities. Do not set yourself apart.
- Use the local language unless you are absolutely sure all participants can understand and are comfortable with the language you are speaking. Use an interpreter if necessary.
- Always listen to answers and do not interrupt. Be humble. Do not give the impression you are more knowledgeable than community members.
- Be modest and friendly. Observe and adapt.
- Be gender sensitive. Be conscious of the appropriateness of your language and gestures. Avoid jokes that might be offensive to anyone.
- Be aware that local knowledge is owned by communities and its use in any published materials requires their permission. Be clear what the process of using the information involves and what will be done with the outputs. It is also critical to repatriate all local knowledge and data to communities through timely reports.
- Respect confidentiality and privacy. Do not spread gossip or divulge sensitive community information to which you have privileged access.
- Show professional standards such as commitment, being punctual, and not unduly raising expectations.

PHOTO: Rebecca Weeks

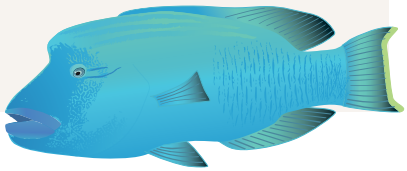
villagers have a range of daily commitments and sessions can be shortened if required to fit within a single afternoon or evening.

Including a wide range men, women and youth in management planning helps ensure that different interests and opinions are well represented. It can also be useful to consider how to involve other key people such traditional leaders, church leaders and teachers, who may be able to support the process or influence outcomes.

Weekly village meetings (*bose va koro*) provide a forum to discuss local issues and organise village life. Protocols vary from place to place, but these meetings are often open to women and young people. Coordinating your village visit with the village meeting can be a good way of ensuring that messages are spread effectively throughout the community.

In addition to traditional leaders, there may be a wide range of people playing leadership roles within communities, including leaders of churches or faith-based groups, schools, public services (particularly police, doctors or nurses) and business owners. Engaging them from the outset can mobilise networks and resources to support a more productive planning process. Consider the potential use of schools, health centres and other public places to reach certain groups, disseminate information and engage communities in innovative ways.

Most Fijian tribes still venerate a totemic species of plant, animal, fish or tree, which they have a special bond with and refuse to injure or eat.



Identifying local resources, issues and priorities

When visiting communities, it is important that facilitators are not seen as 'the experts', bringing all the information, knowledge or resources required. Village visits provide the first opportunity to find out about local issues from the perspective of different groups in a community, putting them (their priorities and their knowledge) at the forefront of the planning process from the outset.

Many tribes and villages have totem species with which they have a special bond or kinship, a type of animal, plant or sea creature (or all three) that they identify as being special to them. Totems provide a useful reference to connect management planning with indigenous culture. Positive relationships can be built by finding out what people know about their totems and adding to their knowledge. Providing new information about totem species and the threats they face can be highly motivational for communities, encouraging them to develop local management strategies that benefit those species.

Communities are generally most comfortable with informal discussions (*talanoa*) initially, enabling them to consider their visitors, and any new ideas they are bringing, at their own pace. Partners also need to be aware of the social protocols that exist in such settings and which can inhibit input from women and youth. To address this, it is preferable to move onto more structured participative sessions, some examples of which are outlined along with facilitator's notes in Appendix 2.

Community mapping

Community mapping is an effective method to find out about local knowledge, issues and resources by asking people to draw a map of their local area (facilitator prompts are included in Appendix 2). Community mapping also introduces the concept of spatial planning (described in Section 4.3.3) as a key element of management and provides data that can be verified and included on digital maps for consideration at a later stage.

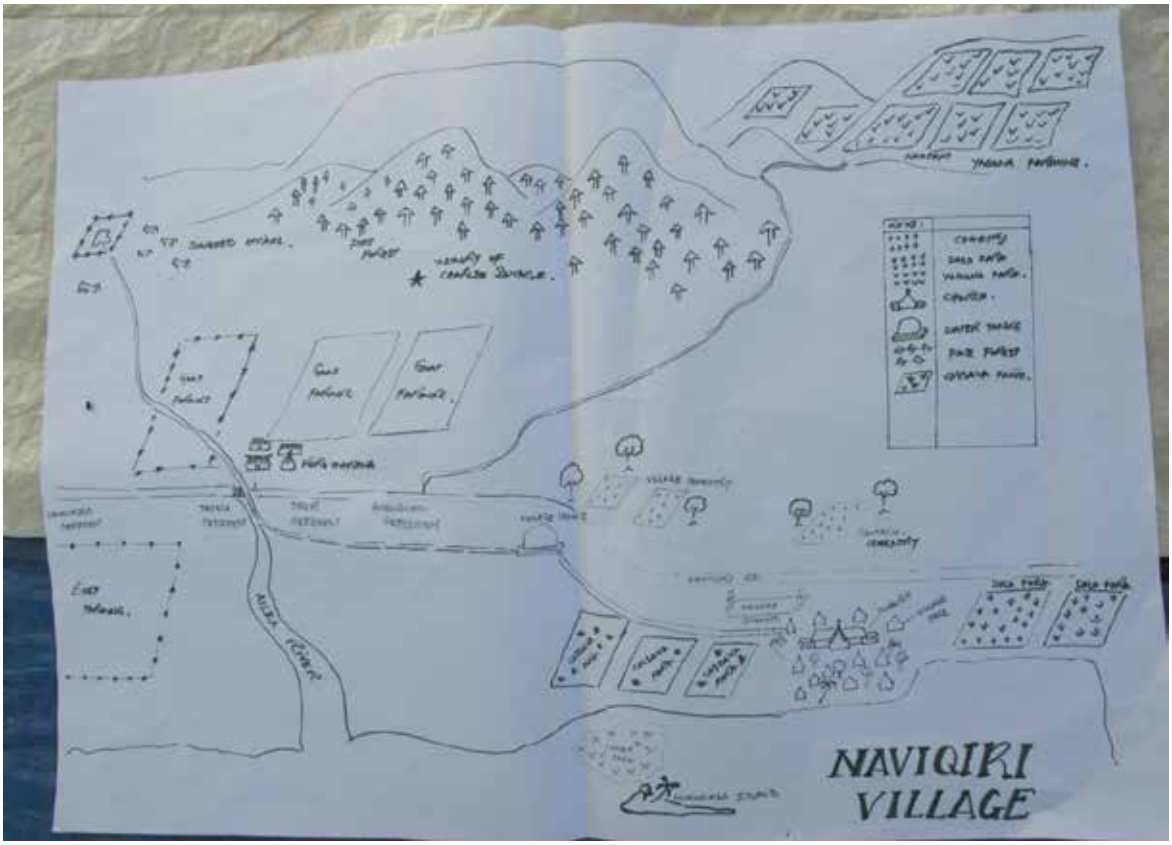


Figure 7. Resource mapping during initial village visits can help identify and understand local issues.

Vision and management goals

Considering a vision for the future and what communities want to achieve (their management goals) are important early tasks. Visioning provides a focus for the collaborative *management planning* process outlined in Section 4 and is a useful starting point for community engagement.

Coming up with their own management goals, or seeing their input reflected in those goals, is fundamental to communities taking ownership of the management plan. Facilitators should have minimal input, but can ask questions to prompt discussion, such as:

- How would you like to see your community in 5–10 years' time?
- What will your natural resources look like?
- What would you like to see happen as a result of the management plan?

This can be a group activity and works best when smaller groups (less than 10 people) have time to discuss ideas before sharing them with everyone else (Appendix 2). Separate groups for women and youth can highlight differences and similarities in their respective goals.

Consider when and how to distil a wide range of inputs into a single vision and a smaller number of goals. These can be consolidated in the first district or island management planning workshop.

The vital role of village representatives

Villages are asked to nominate representatives to attend district/island management planning workshops on their behalf. As the bridge between the workshops and their communities, these representatives are essential to take community input into workshops and communicate information from the workshops back into communities. If they don't fulfil that function, the process is likely to fail.

Initial village visits can be used to explain and discuss the role of village representatives and provide information to help them select the best possible people to fulfil the role. For example, you might ask them to select two men (one of whom should be a village elder or the Village Headman), a women's representative and a youth representative, whilst specifying that their responsibilities will include:

- attending district/island management planning workshops and feeding back to the community (including reaching out to groups that may not usually be engaged);
- bringing information from their village and presenting it to other villages and stakeholders at workshops; and
- taking part in training and awareness-raising activities, then applying and passing on their skills/knowledge within the community.

Given these responsibilities, it is generally recommended that the village representatives should have good communication skills, the ability to learn and support others and a strong commitment to their community and the environment. It is important that the people selected are representative of the wider community, and will be able to engage across different groups. This may mean recommending that women and youth (for example) are included.

People are likely to require support and training to fulfil this role. Some training sessions and tools for this are outlined in Appendix 3. Partners can look to identify individuals with the right qualities during village visits. For example, people who show particular interest, ask relevant questions, interpret information for others or appear to support input or debate across social groups (e.g. mixing with women, youth and elders) are likely to make effective workshop participants and add value to the planning process by facilitating wider community input in order to:

- raise awareness about key issues amongst different types of people in their community;
- encourage and stimulate debate across different groups;
- build understanding about different perspectives; and
- gain consensus around shared priorities, needs and objectives.

PHOTO: Stacy Jupiter/WCS

The village representatives should have good communication skills, the ability to learn and support others and a strong commitment to their community and the environment.

3.2 Other stakeholders

Effective management planning is a collective process requiring input from a range of stakeholders. Management is enhanced by positive partnerships, so initial engagement of stakeholders should foster this by building shared awareness, understanding, trust and commitment (see box: Attitudes and Behaviours for Positive Partnerships on page 16).

Start by identifying who to engage first, focusing on:

- those who can provide support or open doors to make the planning process more successful; and
- those who could be offended that others were informed before them and may consequently refuse to engage or provide a barrier to your progress.

Provincial Council Offices can provide local insight to identify key stakeholders and inform how to engage them. The Roko Tui with responsibility for the district/island may also be best placed to initiate the engagement, either by approaching stakeholders directly or by introducing people to each other.

You should consider that engaging stakeholders on a one-to-one (face-to-face) basis can elicit greater honesty by allowing people to tell you how they really feel. In Fijian culture, you should not expect stakeholders to talk openly about their concerns or any underlying issues that might affect progress. Although it can be important to know, navigate or address such issues, they can often remain hidden to an outsider. To address this, it is important that partners with local knowledge and insight (insiders) are active at the heart of engagement and planning processes. Think about who will fulfil this role so you can encourage and support them to do so.

The main activities at this stage are meetings, interviews and informal discussions. Skills needed for this process include general social and communication skills, interviewing skills and an appreciation of social, cultural or traditional protocols.

Initial engagement should raise awareness about the planning process and invite input from stakeholders. It also enables assessment of stakeholders' interests, expectations, potential contribution and role in relation to the planning process (Table 1).

Table 1. Example of a stakeholder engagement recording template.

Stakeholder	Interests	Issues	Role/how they will participate	Contact
Village Chief (*name*)	Community fishing ground	Decreasing fish and marine resources	Attend meetings. Inform and motivate fishermen	Phone/email
Hotel operator (*name*)	Maine activities for tourists	Pollution or conflict with village	Attend meetings. Work with village	Phone/email
Provincial Council Office (Assistant Roko Tui – *name*)	Well-being of local people	Dissent among villages and businesses	Share information and draft resolutions	Phone/email

Looking at local strengths, weaknesses, opportunities and threats (a SWOT analysis - see Appendix 4) can also provide a useful structure to tap into local knowledge and capture relevant information to inform the situation analysis.

It can also be useful to ask people to identify who else they think should be involved in management planning. As the list of relevant stakeholders grows, you can explore their perceived power/influence and interest in order to consider the appropriate level of their engagement in management planning. Appendix 5 includes facilitator notes for a stakeholder mapping exercise. This can be undertaken by the lead facilitator, the project steering group or with everyone together at a management planning workshop.

It is also important to consider the level at which different stakeholders should be engaged. Establishing support from a director of a government department, for example, can help realise active participation from local officers and ensure that any change in local personnel does not curtail the department's participation. Also consider following up informal discussions with a written exchange to formalise commitments and developing a Memorandum of Understanding with key partners if required.

Consider following up informal discussions with a written exchange to formalise commitments and developing a Memorandum of Understanding with key partners.

PHOTO: Stacy Jupiter/WCS

PHOTO: Eferemo Kubunavanua

4 Management Planning

This section outlines the process through which different communities and other stakeholders come together to undertake management planning for a whole district, island or management area, based on a collaborative, gender and socially inclusive, consensus-based approach.

It is important to progress at a pace that communities are comfortable with. Any of the stages outlined in this section can therefore be made longer (e.g. expanded from one session or workshop into several) as required to enhance understanding and ownership. Facilitating partners should maintain a flexible budget if possible to accommodate this.

> *By failing to prepare, you are preparing to fail.*
>
> Benjamin Franklin

4.1 Workshop planning, organisation and facilitation

Workshops that fail usually do so because insufficient effort has been made to plan them effectively. Facilitators should be well organised and plan effectively to encourage communities to demonstrate these attributes themselves. A process for pre-workshop planning is outlined in Appendix 6. This can be applied before any workshop and covers: setting objectives; identifying participants; developing the agenda; developing the content of sessions; preparing materials; and logistics. Note the indicative timeframes to ensure that tasks are completed in good time.

A formal request to undertake any workshop should be sent to the Provincial Council Office. Approval of this request should trigger a process (agreed in advance during the scoping phase) through which communities are formally invited (for their nominated representatives) to attend the workshop.

Before the workshop starts, a pre-meeting is essential for the facilitation team to go through the agenda and ensure everyone knows their role and contributes fully to effective facilitation of the workshop. Encourage key local stakeholders (such as Provincial Officers or members of the Yaubula Management Support Team) to participate in the facilitation team. Start by involving them in planning and reviewing sessions. You might support them to have an increasing contribution over time, perhaps starting with basic support (such as timekeeping or recording session outcomes) and moving onto a more involved role (e.g. designing or leading sessions) as their confidence and skills build up.

4 Management Planning

The following key principles can help the facilitation team ensure that workshops are effectively managed to meet your objectives (guidelines for facilitators can be found in Appendix 1):

- Prepare well in advance of each session;
- Take a register of participants (include contact details);
- Take photographs to capture outputs and experiences throughout;
- Record and review outcomes with the whole group after each session;
- Meet as a facilitation team before and after sessions to debrief and plan for the delivery of the next session;
- Be flexible and prepared to change your agenda if required to suit the needs of the group, e.g. to explore a hot topic in more detail or to reinforce key messages; and
- Remain engaged, even if you are not the lead facilitator. Supporting facilitators should keep track of the group dynamics, help those who are less engaged or may require additional support or explanation, and ask questions on behalf of participants.

When presenting a *sevusevu* to the chief always brief him on the workshop(s), and share the agenda. If the chief is available it may be a good idea to ask him to officially open and bless the workshop. An update to the chief at the end of the workshop during the *tautau* session is also good practice, so he is aware and supportive of the next steps and planned visits.

Facilitators must consider group dynamics when bringing people from different communities together. Participants may initially be reserved or shy. Given time, their inhibitions are removed and people begin to mix, share and communicate more freely. As such, we recommend that management planning workshops are best scheduled over a period of 2–3 days (a sample agenda can be found at Appendix 7).

Room layout and the way that people sit can affect how they work together. Try to avoid overly formal settings (e.g. classroom style) and promote mixing of people from different communities, government/NGO representatives and facilitators. Be sensitive to gender and cultural issues whilst also taking care of all practical requirements such as break times, ground rules, soap and toilet paper in bathrooms!

There can be advantages in hosting the first workshop in a High Chief's village, ensuring that this important stakeholder is aware of the process and enabling them to show support, for example by opening the workshop or even participating in some sessions. This can also have a positive influence on the commitment and contribution of other stakeholders. But always have a back up plan in case there is a death in the host village.

PHOTO: Stacy Jupiter/WCS

4.2 Developing shared awareness and understanding

Stakeholders should share a certain level of awareness and understanding about key basic concepts in order to develop an effective management plan. This might cover topics such as:

- benefits derived for local ecosystems (including health, safety and income);
- basic ecology of specific ecosystems (such as forests, rivers, wetlands, mangrove swamps and coral reefs);
- connectivity between ecosystems; and
- the need for management and the range of management approaches.

Consider common communication barriers when communicating about these concepts to ensure they are understood. Think about the experience and knowledge of the audience and ensure against the use of technical terminology, jargon, figures or images that they might find difficult to understand. Use examples from their district or province.

> *Tell me and I forget,*
> *teach me and I may remember,*
> *involve me and I learn.*
>
> Benjamin Franklin

Once you have defined key concepts, the process of building shared awareness and understanding can proceed or be integrated with the management planning process. Consider what topics to focus on at different stages in the planning process. Cover too much too quickly and the broad range of ecosystems and topics within EBM can be overwhelming.

You can use the targets and threats in conceptual models (see Section 4.3.1) to identify relevant topics that you can cover systematically over the course of several workshops. Look to involve specific stakeholders to tap into their specialist knowledge or remit. For example, if excessive use of chemicals in farming is identified as a threat, you might invite the local Agriculture Officer to discuss alternative methods of maintaining soil fertility.

Avoid overly formal settings and promote mixing of people from different communities, government, NGO representatives and facilitators.

4 Management Planning

There are different ways of presenting information to help build awareness and understanding of ecological processes, human impacts and the connections between them. Presenters should consider a range of communication techniques, including:

Presentations

Remember that people generally do not concentrate on one thing for long periods. Try to break up long presentations with participative exercises and avoid 'death-by-powerpoint'.

Participative exercises

Participatory assessment and planning exercises aim to facilitate input from a wide range of stakeholders, in a gender and socially inclusive way. As with the sessions outlined in Appendices 3, 5, 6 and 11, participants are asked to provide input, based on their own experiences, as a basis for discussion before determining conclusions for themselves.

On-site observation

Seeing is believing - visiting local sites to view specific threats or projects can develop people's understanding in powerful ways to enable informed discussion. You might choose to locate workshops in villages which have specific projects or challenges that people can see.

Doing things together

Workshops can provide opportunities to do things together. Whether it's a litter clean-up, planting mangroves or clearing invasive plant species, the act of doing something together can change the dynamics of relationships, build a deeper understanding and of course achieve visible results. It also demonstrates that those involved in planning are also willing to take action, which can influence how you are viewed by others and may encourage greater support (see Section 4.5.3 for more details).

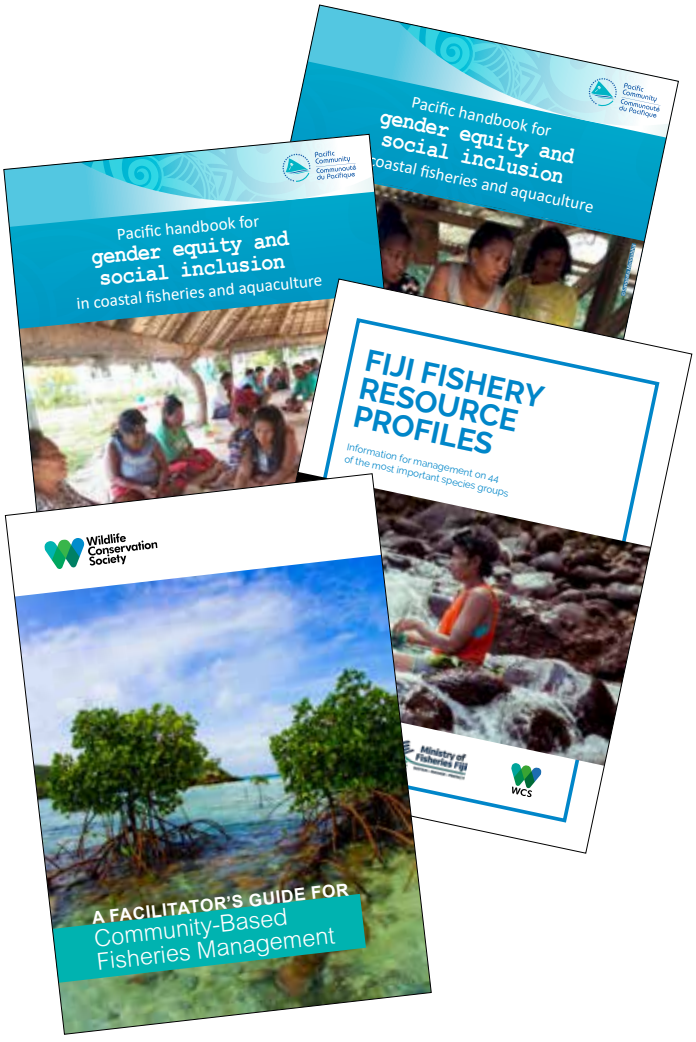
Opportunities for questions, reflection and discussion are essential with each of these methods. Facilitators need to create an environment in which people feel safe to share their experiences, ask questions and explore issues together. Facilitators should reiterate that that everyone brings a valid and useful perspective and these are just as important as input from outside experts.

Whilst giving everyone a chance to raise issues for clarification, it is important to ensure that a session does not get sidetracked by personal or local issues that are not relevant to the whole group (e.g. relating to a specific dispute or development). If this arises, facilitators can record the issue and suggest that it be taken forward between the relevant parties through appropriate channels outside of the workshop.

The messenger can sometimes be just as important as the content of a message, which can have greater impact if it comes from the right person. Presentations from government officers can enable them to convey information to communities as well building relationships, demonstrating their commitment to the management process to reinforce the notion that government agencies support community-management and vice versa. It is advisable to communicate with government officers in advance in order to define the scope of presentations and ensure consistent messaging that promotes the values of sustainable management.

The messenger can sometimes be just as important as the content of a message.

A wide range of existing information packs, toolkits, posters and DVDs can be used to help build awareness about management issues among communities. Many such resources are available from government ministries, regional organisations like the Secretariat of the Pacific Regional Environment Programme (SPREP)[4], as well as through FLMMA and other non-governmental organisations[5]. When using such resources, it is important to avoid overloading people with too much information too quickly and to get information to the most relevant people. Provide opportunities for them to discuss what they have seen and consider how it applies to them.



4 http://www.sprep.org/Library-Information-Resource-Center/Publications/

5 For example, www.lmmanetwork.org, www.worldfishcenter.org

4.2.1 Understanding change

Looking at changes experienced over time is a powerful way of identifying local issues and trends. This can start people thinking and debating why and how major changes have occurred. Historical mapping, documenting changes over decades or generations, captures the history of a place and its people and can stimulate discussion about the root-causes. Such activities can also bring together different generations and social groups by asking young people to interview elders, men to interview women, etc. A participatory exercise to help communities map out important historical events for their community can be found in Appendix 9.

Rural communities are highly dependent on natural resources for subsistence and livelihoods and the patterns of their activities are influenced by seasonality and cycles of those resources. Developing a seasonal calendar (Figure 8) with communities can help to identify and explore which resources are available or harvested at different times of the year. Acknowledge that the most accurate information on breeding seasons is often held within the traditional knowledge of local communities. This puts local people at the front and centre of the planning process. The seasonal calendar is also a great prompt for discussion on sustainable management of resources and seasonality of workloads (including those of different genders or social groups), diseases, income, expenditure and changes in weather patterns. This all adds to the depth of understanding that goes into planning and the rich texture of a management plan. Appendix 10 provides details of a participatory exercise to help communities develop a seasonal calendar.

Example historical timeline from Kubulau District

1997 Chiefs formed fishing committee and decided to stop giving consent for commercial fishing licenses

1998 Massive fish and coral die-off

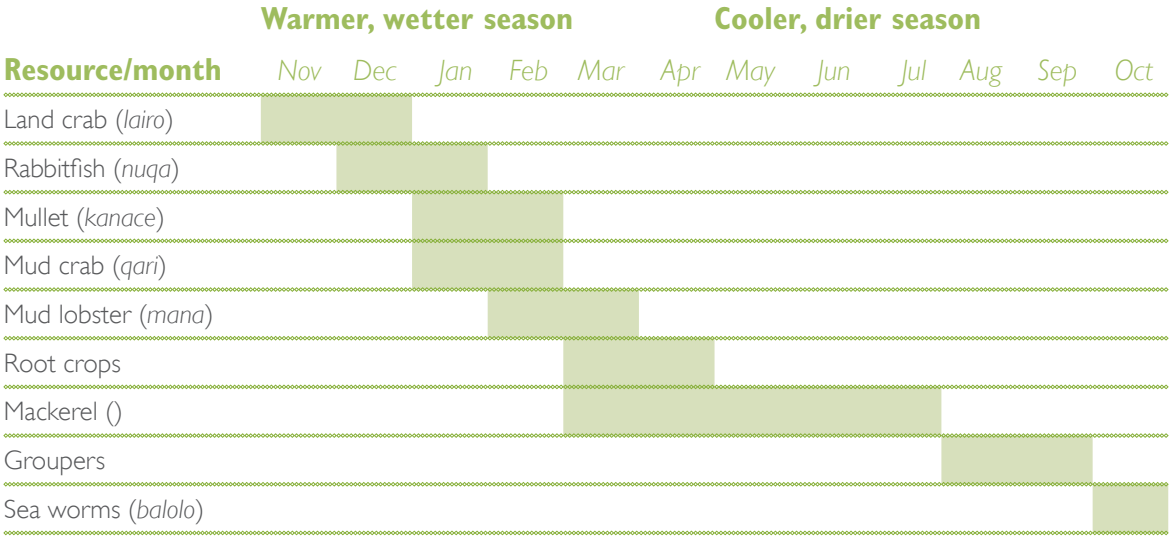
2001 Logging company purchased concession covering part of district upland forest

2002 Mass coral bleaching

2009 Ridge-to-reef management plan adopted

2010 Cyclone Tomasi damaged reefs and crops

Figure 8. Resource use calendar developed with communities in Wainunu District in Bua Province.



4.2.2 Climate change and disaster risk reduction

Some districts or communities may be particularly vulnerable to climate change impacts and to natural hazards such as cyclones, droughts, landslides and floods, earthquakes or tsunamis. Climate change can also exacerbate the magnitude and impacts of some natural hazards such as flooding. Indeed, some communities may already be experiencing the effects of more frequent or intense weather events, storm surges, rising sea levels and changing patterns of rainfall. Where such threats have been identified, you may need to explain the causes, impacts and consequences of climate change.

The way in which climate change is communicated to communities is extremely important, as an effective community response requires that they both understand the threats and are also motivated to take actions that reduce their vulnerability to related risks. Videos from other parts of Fiji or the wider Pacific may be a good way to explain impacts, and potential mitigation actions. When communicating about climate change, it is therefore important to avoid[6]:

- portraying communities as helpless victims of problems caused far away;
- focusing on projections with high levels of uncertainty;
- focusing on worst-case or long-term scenarios (which can make people lose sight of positive actions that can be undertaken here and now);
- putting climate change ahead of other (often more relevant) challenges that communities face, such as remoteness, population pressure, environmental degradation or migration; and
- over-relying on complicated science-based messages, which can be confusing (without over-simplifying to the extent of being inaccurate).

As a small island nation, Fiji has experienced its share of disasters, some of which have had a devastating impact on the local economy. These disasters have ranged from earthquakes, cyclones, flooding and droughts among others. Over the past 2 decades, the frequency and intensity of cyclones has increased with 18 cyclones from 2000 until today. These tropical cyclones ranged from Category 1 to Category 5 in terms of intensity ad wind speeds of up to 280km/hr.

Due to Fiji's geographical location, the country receives a significant amount of rainfall throughout the year. In some instances, flooding of low-lying areas and landslides occur due to the extended period of rainfall in some parts of the country. Flooding and landslides cause localised disasters.

In the context of EBM planning, our focus is generally on restoring or maintaining intact, healthy ecosystems so that natural infrastructure such as mangroves, coral reefs and watershed vegetation reduces community vulnerability. This long-term approach may not be appropriate for communities that are already facing significant impacts on their homes and livelihoods. They may require immediate assistance and short-term plans with provisions that might include early warning, evacuation procedures or (in the worst-case scenario) village relocation. As well as specialist agencies and NGOs, government stakeholders including the Climate Change Division, National Disaster Management Office and the iTaukei Affairs Board are well placed to provide such support.

6 Adapted from McNaught, Warrick and Cooper (2014) Communicating climate change for adaptation in rural communities - a Pacific study, Journal of Regional Environmental Change; Aug 2014, Vol. 1,4 Issue 4, p1491

The consultation phase of the EBM planning process is important, as the contributions of all community members is crucial. The gender roles, social class and physical capabilities and resource availability of every member in the community should be carefully considered.

The EBM planning process includes several exercises to assess communities' capacities and vulnerabilities, so that the information gathered can be used to identify interventions for climate change adaptation and disaster risk reduction. These can assist the community develop EBM plans that accounts for climate change and natural disaster risks. Specifically, the exercises help to:

- gauge communities perceptions of their resilience (Appendix 2e);
- identify historical events that may have impacted the communities resilience (Appendix 9);
- map out resources (natural, infrastructure, services) that are key to support communities before during and after hazards (Appendix 2d);
- identify potential how the seasonality of certain natural resources may be affected by different hazards (Appendix 10); and
- help communities assess their vulnerabilities and identify options for adaptation to climate change (Appendix 8).

All the tools highlighted are important; however, it is best for facilitators and community representatives to use tools that are suited both to the communities and their environment.

A Glossary of Climate Change Terms in the Fijian language has been developed by the Ministry of iTaukei Affairs and partners. This can help to convey issues to communities in a consistent and precise manner.[7]

7 http://65.49.80.109/content/vosa-qali-ni-draki-veisau-itaukei-glossary-climate-change-terms

4.3 Starting to plan together

A shared vision and management objectives provide the basis for collaborative planning. If you have already undertaken visioning exercises in villages (Section 3.1.2), you can distil these into a single vision for the management area. This can be achieved by reviewing the village visions, facilitating discussion to identify dominant or recurring themes and agreeing a form of words that captures them. If you have not yet done any visioning, Appendix 2 provides facilitator guidance on this process.

4.3.1 Conceptual modelling

Conceptual modelling progresses communities from having a vision and general awareness to having a detailed understanding of their local situation and clear strategies to achieve their goals. Conceptual

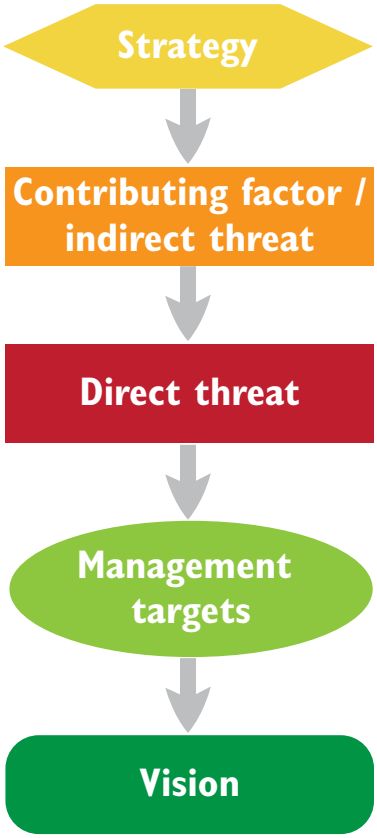


Figure 9. The linked elements used in a conceptual modelling process as a basis for detailed situation analysis and informed management planning.

modelling is a way of representing concepts and ideas (from a range of perspectives) to help us understand and address the situation at hand. A conceptual model helps us to visualise the situation in the management area and the major direct and indirect threats affecting the target condition (Figure 9).

Informed by scientific data and local knowledge, the conceptual modelling process builds consensus amongst participants to identify:

- management targets;
- threats affecting their targets and the health of ecosystems;
- causal factors affecting threats and targets; and
- locally appropriate and targeted management strategies.

Reflecting the multi-faceted nature of a local situation, the process builds a picture that reflects and makes sense of this complexity, as illustrated in the completed conceptual model over the page (Figure 10).

A conceptual model helps us to visualise the situation in the management area and the major direct and indirect threats affecting the target condition.

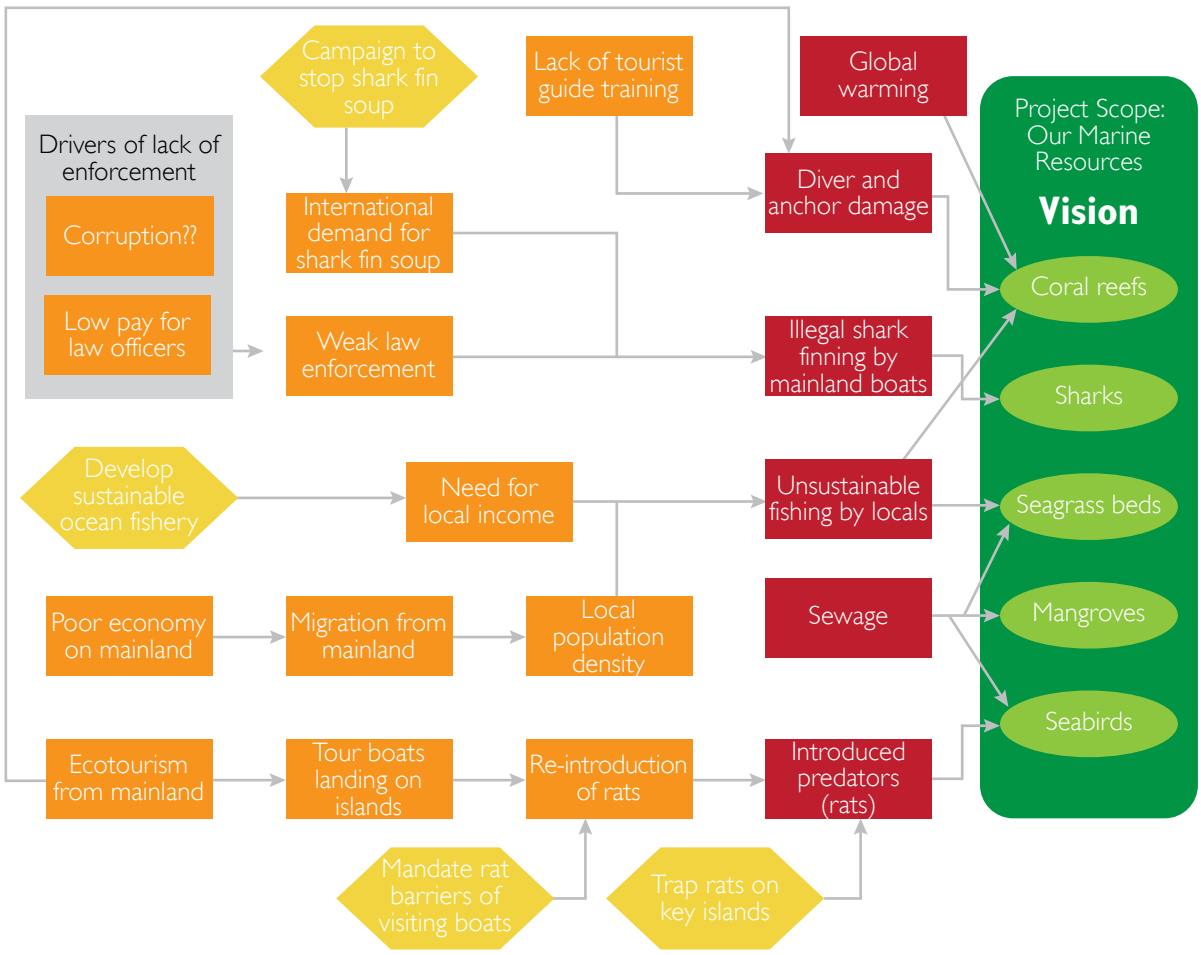


Figure 10. A conceptual model links goals with management interventions via consideration of specific management targets and threats.

4 Management Planning

When developing a conceptual model, it is important to start by defining the focus or scope of what you will be looking at. This should be broad enough to incorporate a range of human-environmental interactions, without being too large or complex to comprehend. Experience suggests that conceptual modelling works best across broad ecosystems. As such, it is recommended that separate conceptual models be developed for:

- Terrestrial ecosystems (land and forest);
- Freshwater ecosystems (wetlands, rivers and creeks);
- Coastal and estuarine ecosystems (tidal mudflats, mangrove forest, estuaries and beaches); and
- Marine ecosystems (particularly coral reefs and seagrass beds where fish and other valued species are found).

In a workshop situation, these separate conceptual models can be developed simultaneously by breakout groups comprising people from different villages. Think about how these are composed, considering the particular interests of different individuals, locations of villages, and other factors that are outlined below.

The **terrestrial group** could include:

- Commercial farmers;
- People from inland villages who may have more knowledge or concern about forests; and
- Forestry and Agriculture Officers who can provide relevant information or guidance.

The **freshwater group** could include:

- People who rely on rivers and creeks for regular food or income; and
- Women who rely on income from woven mats or handicrafts made from wetland reeds.

The **coastal group** could include:

- People who regularly harvest coastal resources like crabs and shellfish (usually women); and
- Fisheries Officer, to provide relevant information or guidance.

The **marine group** could include:

- People who get most of their food or income from fishing in the fishing grounds; and
- Fisheries Officer and Fish Wardens, who can provide relevant information or guidance.

Experience of the social dynamics within workshops suggests that women and youth representatives speak more freely amongst their peers than they do in mixed groups including men (particularly elders). Contributions from women and youth can therefore be enhanced by keeping them together in one group, rather than splitting them up. Experience also suggests that women work best when developing conceptual models for coastal/estuarine ecosystems, where they regularly glean or fish for food. Youth representatives are generally most productive when drafting conceptual models for terrestrial and marine ecosystems, drawing on their experience as fishermen and farmers.

The stages of a conceptual modelling process, as applied in the course of district management planning across Bua Province, are outlined in Table 2. More detailed facilitator guidance notes are provided in Appendix 12).

Table 2. An outline of the stages in a conceptual modelling process.

Stage	Definition	Activities/approach for facilitators
1. Scope Approx. timeframe: 10 – 30 mins	Identify the geographic or thematic area on which you will focus	Use a map to highlight the area you are focusing on (i.e. covering terrestrial, freshwater, coastal or marine ecosystems). Briefly discuss what is found in the focal area – *ask them to tell you what is there* (e.g. if it is a coastal area you might have mangroves, estuary, mudflats, beach, coconut palms, etc.).
2. Vision 40 mins – 1½ hours	A description of the desired state (i.e. what success will look like)	Refer to the overall vision, stating "this is what we are working to achieve". We now want to think about the desired state (or 'vision') for the ecosystem that we are focusing on: ◇ Take a few minutes to visualise the desired state (individually, don't confer). Prompts: *What do you see? What species? What are they doing? What are the humans doing? How do they feel?* ◇ Share and record (brainstorming). ◇ In small groups, distil a shared vision in 2–3 sentences (optional: if there is limited time or a small group, skip to next step). ◇ Develop consensus/confirmation of the vision for the focal area (can adopt one of the groups' visions or bring together the best bits of several).
3. Targets 50 mins – 1½ hours	The elements that we choose to concentrate on, especially for the purposes of planning a project and measuring its effectiveness "What do you want to protect/manage"	Brainstorm lots of targets individually on cards. Gather and read them all out. Ask for clarification as required. Discard repeats and set aside (for now) those that are not really targets. Based on facilitator-led discussion (confirming agreement from the author of each target), sort similar targets together into groups. Whilst sorting them into groups, ask the author of each target: ◇ Why did you chose this target? ◇ What is its current state? ◇ What change do you want to see? ◇ How can we measure progress? After grouping, discuss 'Which ones are most important?' (or can vote on this) and 'Which targets can we measure?' (species work best). *Try to prioritise 3–6 key targets*

Stage	Definition	Activities/approach for facilitators
4. Direct threats 1 – 2 hours	Things that directly affect our targets (and that can stop us achieving our vision)	Brainstorm lots of threats (individually on cards). Group together similar threats. Whilst sorting them into groups, discuss each threat briefly: ◇ Clarify what they mean; ◇ Describe how each poses a threat; and ◇ Which are the biggest threats? Which threats can we do something about? Which require the most urgent action?
5. Contributing factors 1 – 2 hours	Factors (economic, cultural, societal or institutional) that allow or encourage the human-related direct threats	Explain that we are going to focus on those threats that are human-related (these are the ones we can affect). Issues are often more complex than they first appear, so it is important to explore the reasons why people act the way they do in order to identify the underlying causes of problems so that they can be properly addressed. Brainstorm what causes, allows or encourages each of the (human-related) direct threats? Ask 'How does this contribute to the threat?' Ask 'Why does this occur?' – *until you can identify the root-cause*
6. Management Strategies 1 – 2 hours	Plans of action that can reduce threats, capitalise on opportunities and help reach our targets/vision	Brainstorm strategies (should be more than just single activities or actions). Group together similar strategies. Briefly discuss and clarify each one. Briefly discuss which strategies are the most important (maybe because they address several threats or the biggest threat or they provide a foundation for other strategies). Explain that these are initial suggestions and talk about why it is best to get more input from communities to develop our strategies further (see section 4.5).

Each stage of the conceptual modelling process is multi-faceted and follows the same procedure, which is designed to maximise the level of input from every individual, prevent the loudest voices from influencing others, stimulate debate, incorporate different perspectives and, most importantly, build consensus that the final model represents their shared understanding of the situation. This involves:

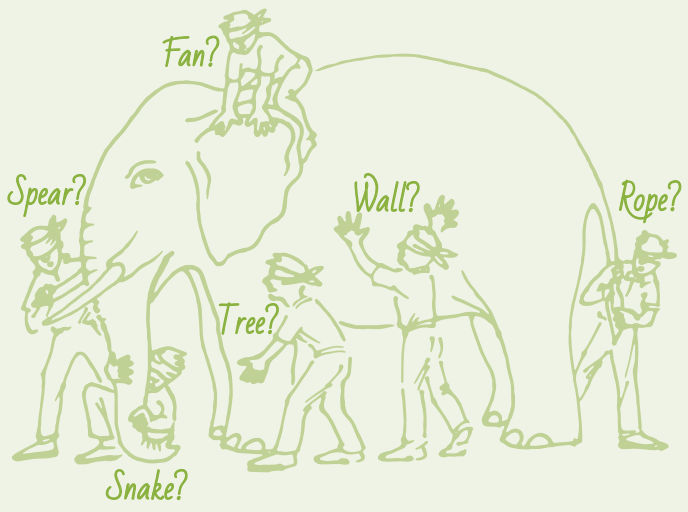
- Individuals brainstorming their personal thoughts or ideas, reflecting their own reality, onto cards (one idea per card);
- Individuals sharing their own thoughts/ideas by reading out, explaining and sticking each of their cards onto a wall (clarifying points as required for the wider group); and
- The facilitator grouping, filtering and arranging the cards based on how they relate to each other. This is informed by a group discussion, with the final positioning, inclusion or exclusion of cards reflecting general consensus on a shared reality.

Management strategies are generally implemented at village level, so it is important to involve communities in the strategy development process. Strategies identified through conceptual modelling should therefore be seen as a starting point for discussion, to be presented back to communities for further input and suggestions. This helps ensure that strategies are practical, locally appropriate and likely to succeed (see Section 4.5.1).

4.3.2 Building consensus

Consensus is a general agreement to which stakeholders are willing to give their consent, even if it does not represent their favourite option. As such, consensus represents the best way forward for everyone collectively. To build consensus, people have to understand the reality of their own situation and also appreciate that others may have a different experience or understanding. The parable of the blind men and the elephant can help illustrate the point, demonstrating how informed debate between stakeholders can help them appreciate each other's perspectives so as to better understand the reality of their situation.

The parable of the blind men and the elephant can be used to start a conversation about how everyone has a unique perspective which may be a different variation of the truth, depending on their own personal experience. In the story, a group of blind men touch an elephant to learn what it is like. Each one feels a different part, but only one part, such as the side or the tusk. They then compare notes and learn that they are in complete disagreement. It is only when they can share their experiences with one another and figure out how the different parts are connected that they can get a full picture of the elephant.



The conceptual model is the basis for the management plan and the whole process can later be undermined if the consensus around targets, threats and (particularly) strategies is not strong enough to support effective management. Group facilitation skills are essential during conceptual modelling to ensure a high-quality participative, gender and socially inclusive process that supports real consensus.

Fijian culture values politeness and dislikes open expressions of conflict. This can sometimes manifest in people expressing general agreement whilst silently holding reservations that they are unwilling to express. If this happens, a false assumption of consensus can later undermine the management plan. The challenge for facilitators is therefore to create an environment in which people are confident to express reservations and can be open about different view or competing agendas. Skilled facilitators can also play devil's advocate to challenge and prompt in relation to issues where they feel there might be underlying discord.

Rural Fijian communities may prefer to secure widespread agreement before they consent to a particular course of action. Although the iTaukei Land Trust Board takes 60% agreement of clan members as their threshold for establishing lease agreements, communities themselves may have a higher threshold, probably closer to 90%. It is therefore essential to avoid rushing this process and enable locally approved consensus to emerge.

4.3.3 Spatial planning

Spatial planning involves using maps to help participants consider the specific locations and distribution of ecosystems (e.g. forest, wetlands, mangroves and coral reefs), species, resources (e.g. crops or food species) and threats (e.g. logging concessions, mining tenements or sources of pollution).

Spatial planning (see Section 4.5.2) is essential for effective management, enabling stakeholders to interpret information in a relevant local context whilst reinforcing the connections between different people, places and resources. This can help identify:

- spatially targeted management strategies focused on the places where they are needed most;
- potentially incompatible or conflicting resource uses; and
- ownership/governance boundaries (particularly for customary land and fishing grounds) to highlight management responsibilities.

A workshop participant presents a conceptual model showing targets, threats and strategies.

PHOTO: Ged Acton/WCS

Maps also enable scientific data to be shown in an accessible way, such as by highlighting where resources are highly prevalent or most depleted. They can show information from local and traditional ecological knowledge (e.g. showing local water sources, plantations, favoured fishing spots or sites of cultural significance) and integrate different types of information to deliver a balance of economic, social and ecological considerations.

Maps can be considered and drawn on by workshop participants to develop shared understanding of the local situation. They are also referred to during subsequent stages of management planning to identify where management actions or zones should be targeted.

Spatial planning is essential for effective management, enabling stakeholders to interpret information in a relevant local context whilst reinforcing the connections between different people, places and resources.

Participants consider mapped data at a management planning workshop.

PHOTO: Ged Acton/WCS

4.4 Facilitating ongoing input from communities

Effective management planning requires the engagement of whole communities, not just those attending workshops, in order to raise their awareness, facilitate their input and build local ownership. Ideally workshop participants will identify and engage specific groups of people within their village (e.g. traditional leaders, women, elders, youth, fishers, farmers) to build their awareness and input. If this process is effective, community ownership and the chances of management success will increase.

To assess and incorporate community input, ask participants to provide feedback on how they engaged people in their communities (after the previous workshop) and to highlight issues arising from this. Having this as the first session of a workshop puts local issues at the forefront and reinforces the importance of community engagement. Facilitators can use guiding questions, such as:

Q1. After the last workshop, what information did you feed back to your community?

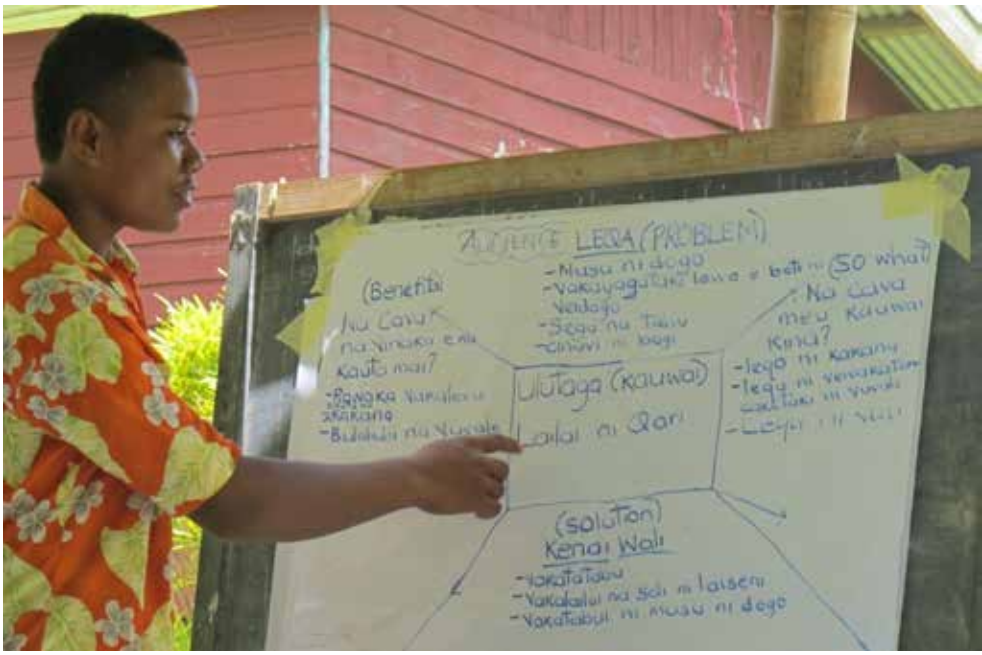
Q2. Do people in the village know about the proposed management rules and protected areas?

Q3. What are the biggest management issues in your community at the moment?

Constructive feedback is essential to highlight how village representatives might improve communication. Prompt them to consider their role as conduits for community input, using questions such as:

- What were the key messages for your community?
- Where did meetings take place and who was present (any women, youth, people from settlements, etc.)?
- How did it feel when you were presenting the information? Did you apply the training? Were your notes useful? Did you use the workshop report or any other materials?
- What was the response from your community? Were they interested? Did they raise any specific issues? Which groups were most interested, and why?

PHOTO: Ged Acton/WCS



A youth representative outlines a key message using the Message Box tool.

This can be challenging for village representatives. Most will require time and support to build confidence and develop their approach. Training sessions can build the communication skills for public speaking, messaging, and facilitating discussions. We recommend incorporating such training into management planning workshops from the outset.

One such session introduces a simple Message Box tool (see Appendix 3 for detailed facilitator notes) to help village representatives distil key messages from the workshop and plan how to communicate these effectively, using local examples in compelling presentations for different audiences in their community. Workshop participants can practice delivering presentations through role-play exercises. Skilled facilitators can use these to point out examples of good and bad communication from participants, with reference to the training or guidelines provided, whilst highlighting the advantages of targeting communication for different types of people and of facilitating debate rather than just giving information. Creating a fun environment can encourage participants to provide and accept constructive feedback. This reinforces learning and encourages them to support each other in wider community engagement.

A flipchart with facilitator notes to support community outreach is available in Fiji as a means of engaging communities in discussions about natural resource management (Figure 11). This tool has been designed to help village representatives with limited public speaking experience to stimulate debate, rather than merely relaying information to a passive audience. At least one full day of training is required to adequately introduce the tool and develop the required communication skills for village representatives to use it within their communities.

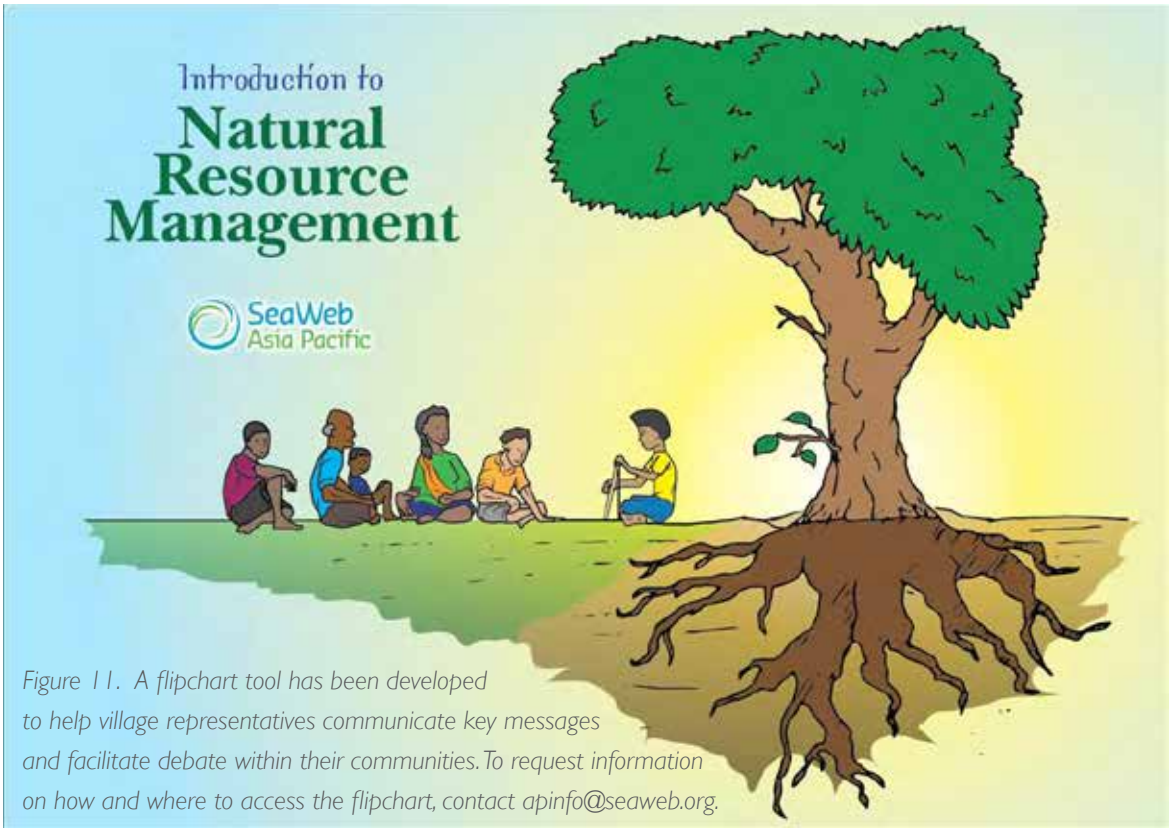


Figure 11. A flipchart tool has been developed to help village representatives communicate key messages and facilitate debate within their communities. To request information on how and where to access the flipchart, contact apinfo@seaweb.org.

4 Management Planning

The focus on communication aims to ensure that community engagement and management planning are based on consistent messaging and ongoing dialogue led by local leaders. These are the foundations enabling communities to identify their own priorities and drive the planning process. Further value can be derived from communications training by targeting involvement of key stakeholders with influence and ability to spread messages, such as:

- Village Yaubula Committee;
- District or Island Resource Management Committees;
- Provincial Conservation Officers;
- Provincial Council Office staff;
- Fisheries Officers;
- District Headmen (*mata ni tikina*); and
- Village Headmen (*turaga ni koro*).

> *Spread the message within families, communities, organisations – within and beyond the village, district or island. We learned from other places, used our cultural links and tackled problems as they arose. If you strive to achieve your goals your children and their children will reap the benefits too.*
>
> Paulo Kolikata, Chairman of the Kubulau Resource Management Committee

PHOTO: Stacy Jupiter/WCS

4.5 Developing management strategies

The conceptual modelling process (see Section 4.3.1) is used to generate ideas for targeted management strategies. As management strategies are implemented at the community level, they require input from communities before being finalised. Community consultation can identify potential problems with proposed strategies or generate alternative suggestions. This process helps ensure that they are locally and culturally appropriate and have community support. Ideally, a management plan will not only tell communities exactly what they need to do, but will provide a framework for them to come up with their own ideas and stimulate self-directed activities.

Examples of good practice can help communities to develop effective management strategies (see Appendix 13). These can be used, for example, to guide communities in how frequently they can open *tabu* areas without compromising the sustainability of resources or why they should locate piggeries away from rivers to manage nutrient levels. Facilitators should ensure that good practice is well understood and considered by communities, rather than simply being adopted on expert advice. Experience suggests that this usually results in three types of strategy emerging, namely:

- Management rules;
- Zoning; and
- Local projects and activities.

As outlined in the following sections, each of these types of strategies requires a range of different considerations.

4.5.1 Management rules

Limited awareness and enforcement of existing national laws can undermine local management, enabling illegal practices to degrade the environment. A management plan can highlight these laws and raise awareness of reporting and enforcement processes. National laws can be supplemented by local management rules which are enforced through customary processes and can be adopted as local by-laws. Effective management should harness national laws and local rules, clearly articulating the relationship between local decision making processes and government regulations.

A management plan will not only tell communities exactly what they need to do, but will provide a framework for them to come up with their own ideas and self-directed activities.

Table 3 shows an example of how this can be illustrated in a management plan. Note that management actions clearly state who is responsible and how breaches should be reported, promoting effective enforcement (see Section 6). The detailed footnotes outline the origin of management rules and the specific national legislation and regulations or community rules to which the rules refer.

Table 3. Management rules expressed with details to support monitoring and enforcement.

Marine Management Rules	Exception	National law	Local rule	Management Action
Night diving is prohibited	None		✕	Monitoring by communities, particularly fish wardens. Report breaches to *bose vanua*
Leaving nets overnight (or more than one tide) is prohibited	None		✕	Monitoring by communities, particularly fish wardens. Report breaches to *bose vanua*
Catching donu or kawakawa is prohibited during their breeding season (June–Sept)	None		✕	Monitoring by communities, particularly fish wardens. Report breaches to *bose vanua*
Removing coral is prohibited	None		✕	Monitoring by communities, particularly fish wardens. Report breaches to *bose vanua*
The use of dynamite is prohibited [8]	None	✕		Monitoring by fish wardens. Report breaches to Ministry of Fisheries
Use of derris roots (fish poison) prohibited [8]	None	✕		Monitoring by fish wardens. Report breaches to Ministry of Fisheries
Nets with mesh sise less than 50 mm are prohibited [8]	None	✕		Monitoring by fish wardens. Report breaches to Ministry of Fisheries

8 Fisheries Act Cap 158

Local management rules often seek to address specific threats or targets identified through conceptual modelling. Local rules also seek to address identified gaps in national legislation, where the law or enforcement processes are not considered to be adequate. They can be adopted as local customary or village by-laws, regulate how resources are harvested (e.g. by restricting the types of fishing gear that can be used) and restrict harvesting of certain resources or in certain areas. Note, however, that community rules need to be consistent with national legislation.

The management plan should identify the source of the stated national laws, e.g. if the use of dynamite is prohibited, state that this relates to the Fisheries Act (Cap 158) s10(4), which prohibits the use of dynamite and enables fines up to FJ$5,000 and mandatory jail term for all convictions. It should also reference the workshop at which local management rules were proposed, e.g. Local rules were proposed at the Ecosystem-Based Management Planning Workshop (state location and date of workshop), modified at the Management Workshop (state location and date of workshop) and approved by the bose vanua (state location and date of decision).

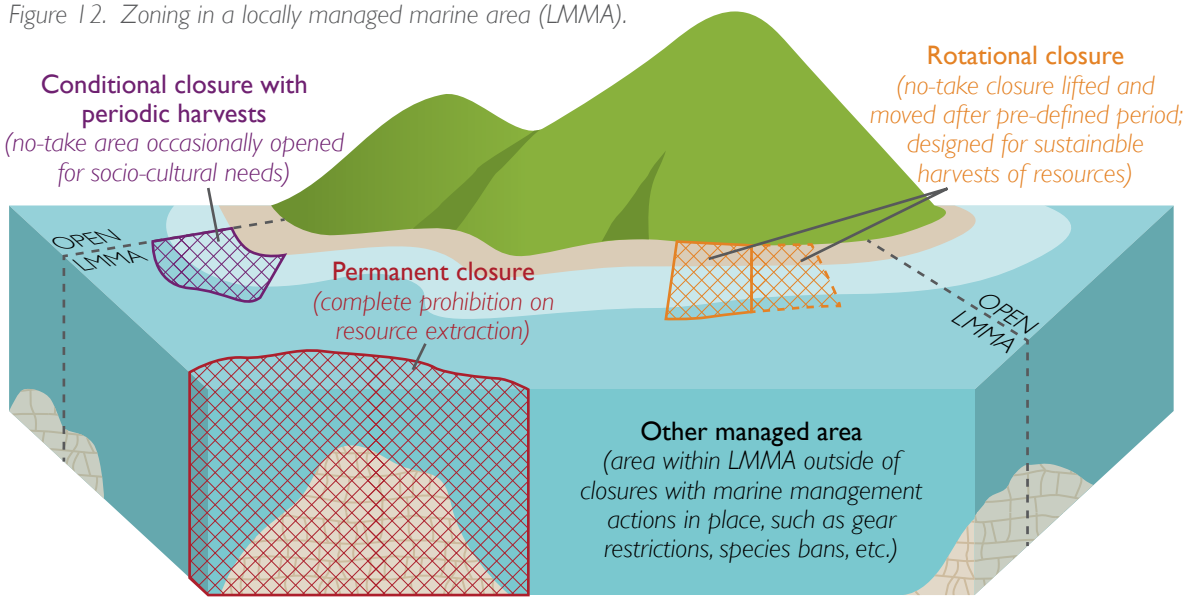
For example, if communities make a rule to destroy the boats of offenders caught poaching, they will likely be punished under national legislation that prevents destruction of personal property.

4.5.2 Zoning and Protected Areas

Ecosystem-Based Management (Section 1.2) implies a spatial approach, focusing on ecosystems and the connections between them. Specific zones can be outlined on maps and designated for particular uses or types of management. Zoning is a key element of spatial planning (see Section 4.3.3) and seeks to minimise environmental impact, maximise ecosystem services and reduce user conflict. Scientific information and local knowledge can also be shown on maps to help identify the best location and boundaries for zones to achieve management objectives.

Zones can vary from very restrictive (e.g. designating a no-go area or prohibiting fishing or farming) to very permissive (allowing most or all uses) and a range of management restrictions in between. Figure 12 below provides an example of zoning in a locally managed marine area with four different management zones.

Figure 12. Zoning in a locally managed marine area (LMMA).



Protected areas

The traditional management approach of setting aside (or protecting) areas or species from hunting, fishing or gathering has long been practiced in Fiji to build up quantities of food or other resources for special occasions. Such approaches are generally known as *tabu*, designating some places, plants or animals as being forbidden. This allows those resources to build up over time, increasing the overall abundance available to harvest.

Protected areas are recognised as a core tool in managing natural resources in Fiji today and are likely to feature in spatial planning and zoning processes. They are particularly widespread across marine and coastal zones, driven by local management objectives mostly concerning food security, livelihoods and cultural/spiritual or stewardship values. Although their status can vary (e.g. nature reserves declared under national forestry legislation; heritage sites established by agreement with communities; and conservation leases held by individuals and businesses), they are most commonly governed through customary processes with no current legal recognition.

It is important not to focus too narrowly on protected areas to the detriment of other approaches or to be over reliant on them as the only management tool.

PHOTO: Stacy Jupiter/WCS

Although protected areas can be a key element of management, it is important not to focus too narrowly on them to the detriment of other approaches or to be overly reliant on them as the only management tool. Too many ineffective management planning processes have started by asking communities 'where are you going to locate your *tabu*?', rather than looking at a wider range of (potentially complimentary) options for zoning as part of a holistic spatial planning process.

Different types of protected areas include permanent no-take areas and closures in which harvesting is allowed periodically (Figure 12). These are only effective when management rules and processes are clearly expressed and understood. For example, rules may allow harvesting of a protected area once a year, every three years, or even less frequently. They may be opened for certain species only, for a single day or a longer period, usually to cater for specific events or to raise money for community projects. If the frequency, duration and methods of harvesting are not predefined, understood or enforced, then prolonged or intensive harvesting of a protected area can deplete resources to a level from which they may not recover. This can negate any positive impacts accrued from the closure and renders the protected area ineffective as a management tool. However, if the rules are clearly defined, protected areas can provide a simple, appropriate means of protecting species so that they grow and reproduce, in some cases spilling-over into adjacent areas.

Table 4 and Figure 13 show a network of protected areas with clearly defined management guidelines and responsibilities for each. It is important to clearly outline the management rules for each protected area and to identify who is responsible for monitoring compliance.

Table 4. Illustrative management rules for community declared marine protected areas in a district.

Protected Area Name	Habitat	Management Rules	Exception	Management Responsibility
Tabu Rivers	River and riparian zone	All fishing and harvesting is prohibited. Logging and clearing for farming are prohibited within 50 m of the riverbanks	Fish and prawns can be harvested from a river *tabu* for a village or church function (maximum one time per year) with prior approval from the District High Chief or the traditional hierarchy council	All village headmen and clan leaders to ensure that the *tabu* and its rules are understood and respected.
Nabunabuna	Coastal/ Marine	Fishing or harvesting of any kind is prohibited inside the marine protected areas (MPAs) and within a 20m buffer zone around the protected reefs.	Fish and invertebrates can be harvested for a limited period of one or two days for a village or church function (maximum one time per year) with prior approval from the District High Chief. The closure (*tabu*) can also be opened for a similar period to mark the passing of a local chief (*turaga ni yavusa*)	Village B
Naisogotiri & Vuaquru				Village C
Cakau Nole				Village C
Cakau Lekaleka	Marine	Fishing or harvesting of any kind is prohibited inside the MPA and within a 50 m buffer zone around the protected reef.	Can only be opened to mark the passing of the District High Chief (*turaga ni vanua*)	All villages in the district

Management plans should state when protected areas were initially mapped by community representatives, e.g. the Cakau Nole Marine Protected Area was mapped at the Management Planning Workshop (*state date and venue*), modified at the Management Support Workshop (*date and venue*) and endorsed through the district hierarch council (*date and venue*).

Figure 13. Map of community protected areas (rules and responsibilities for which are outlined in Table 4) in a small district and its fishing grounds.

4 Management Planning

There are a range of considerations for designing effective protected areas. Their size, location and boundaries should be defined by resource owners, informed by local knowledge and scientific data where available (remembering that planning is still possible using 'rules of thumb'), and with reference to ecological processes and connectivity. Here are some guiding principles for this process:

- **Protect multiple habitat types**
  Different habitats support different communities or provide for species at different stages of their lifecycle. To protect all species, try to ensure that different habitat types are protected in your network (e.g. including mangroves, estuaries, nearshore and outer reefs). At a larger ridge-to-reef scale, more than one example of each habitat should be protected.

- **Protect ecologically important areas**
  Animals often come together in large congregations to reproduce. For example, many fish gather in large numbers at specific sites to breed in spawning aggregations. This can make for an easy catch, but can also affect reproduction and endanger populations. Protection of breeding and spawning sites enables supply of seeds/larvae to ensure future generations.

- **Protect special and unique areas**
  Rare habitats and culturally significant places are unique, and therefore deserve special protection as they cannot easily be replaced if damaged or destroyed. Similarly, rare and threatened species require higher levels of protection in order for them to avoid extinction.

- **Consider enforcement**
  The size, shape and location of protected areas are important for enforcement and implementation. There is little point in selecting areas that are too far away which cannot be monitored or enforced. The boundaries of a protected area should be easily recognisable.

A session plan and facilitator notes for designing or 'design checking' marine protected area networks (as part of sustainable fisheries management) is provided as Appendix 14. *A Facilitator's Guide for Community-Based Fisheries Management* produced and tested by WCS, offers additional fisheries training modules that can be used to: (a) train local communities in the latest scientific knowledge and information on *tabus* areas and fisheries management tools; and (b) assist communities develop more specific fisheries rules for their customary fishing ground (www.wcsfiji.org). These can be included in the EBM plan.

Workshop participants discuss mapped data whilst considering zoning options.

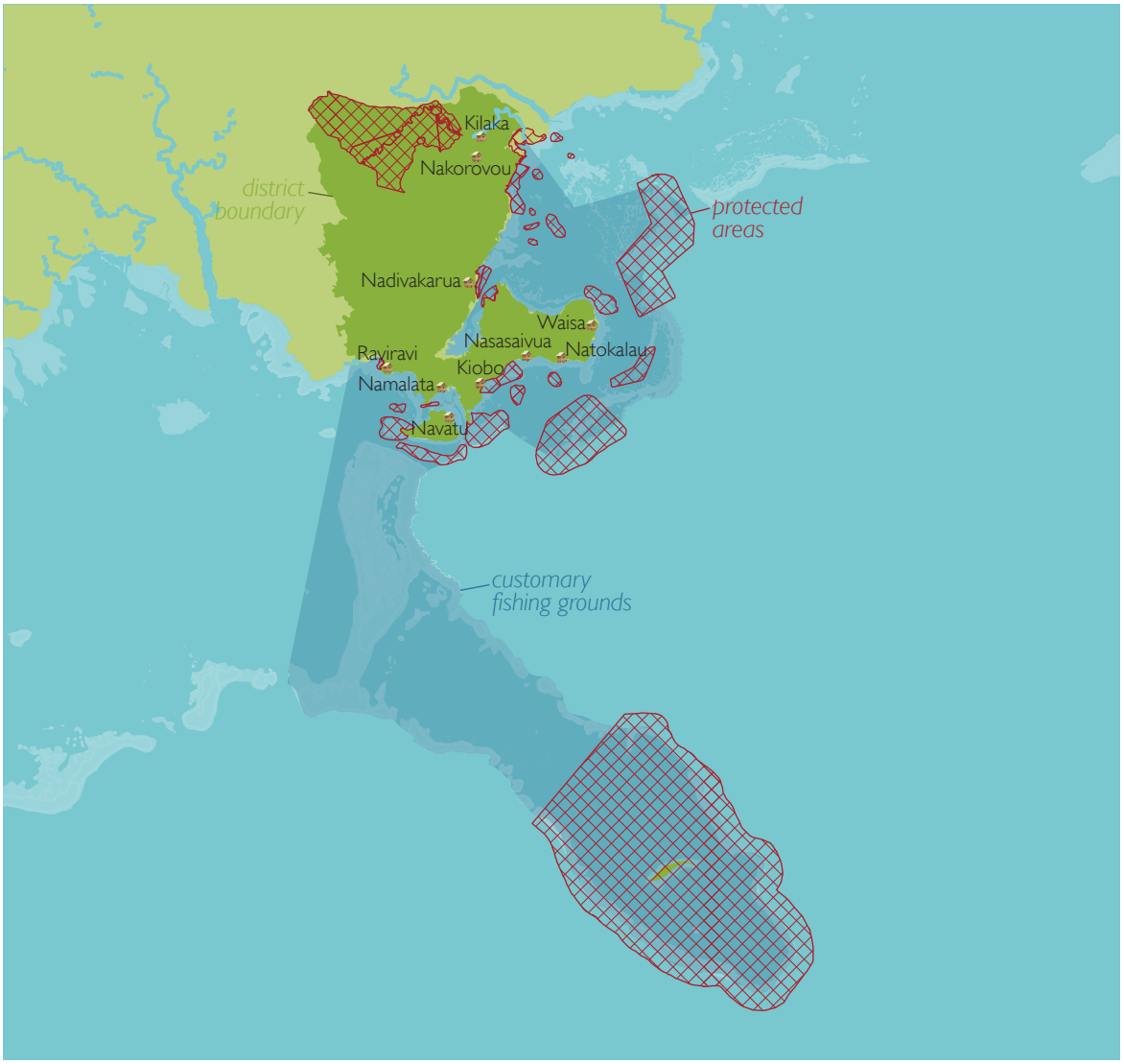
PHOTO: Ged Acton, WCS

Experience suggests it is best to start small, initially focusing on a smaller number of protected areas that can be managed effectively. Where there is sufficient management capacity, a complimentary network of protected areas can help incorporate these considerations and generate additional benefits. These protected area networks may include terrestrial, riparian, coastal and marine areas, the idea being that they are collectively more productive than the sum of their parts.

Over the course of two cycles of adaptive management over seven years, the people of Kubulau District in Bua Province have established a network of protected areas (Figure 14). This includes 24 marine protected areas, one of which, the Namena Marine Reserve (http://www.namena.org/) is the largest in Fiji, containing a nature reserve on the island of Namenalala. Details of how protected areas are managed and the process through which they were designed can be found in the Kubulau District Ecosystem-Based Management Plan[9].

Figure 14. The network of Protected Areas in Kubulau District and associated fishing grounds in Bua Province.

9 Download at http://www.wcsfiji.org/ManagementPlans.aspx



4.5.3 Local projects – taking action

The act of doing something together is a very powerful way of engaging people in natural resource management. Local activities or projects give people a memorable experience, demonstrating their ability to make a difference in a more meaningful way than just talking about the issues. Such activities are useful for engaging wider communities because they can be undertaken whilst planning is ongoing, rather than wait until the process is finished. In addition, projects can also be included as key elements of strategies in the management plan.

The capacity of village representatives (or communities in general) to plan and deliver projects or activities varies depending on their experience. Management planning workshops provide a forum in which to build this capacity and a session on 'planning village projects' is outlined in Appendix 15. The following are examples of community projects identified in the course of management planning in Bua Province:

- Establishing local nurseries for native trees, mangroves and other plants;
- Organic farming
- Waste management
- Disaster risk reduction preparedness
- Women's cooperatives producing and selling honey, virgin coconut oil and woven mats and other handicrafts;
- Community-ecotourism initiatives, including cultural tours and nature trails;
- Seaweed and pearl-spat cultivation; and
- Poultry and livestock farming.

Some projects may require further training or support from technical specialists. However, it is useful to start with what communities can do themselves with little or no support. Design a project plan by establishing clear goals, then identify who will be involved and outline the actions through which they will progress to completion. Project funding may be available through the Provincial Council, the Divisional Commissioner's Office or other sources such as the Global Environment Facility's Small Grants Programme administered by the United Nations Development Programme. However, it is important to remember that much can be done with little or no money and this is often the best place to start!

Livelihoods projects

Livelihood diversification projects commonly emerge when conceptual modelling identifies 'lack of money' or over-reliance on income from fishing and farming as an underlying cause of unsustainable practices. This is usually based on the assumption that new income sources will reduce the fishing pressure, the intensity of farming methods or the need for destructive logging. However, careful consideration is required at the early planning stages to ensure such projects will actually reduce pressures and not further damage or deplete resources. It is particularly important to avoid negative impacts on resource management. If improved income does not materialise, or if conflict arises due to inequitable distribution of benefits, it is important that people do not take out their frustrations by over-harvesting the very resources they are supposed to be managing. This can similarly arise if only certain groups within a population (e.g. women) are involved in a project and other groups continue with unsustainable practices. As such, it is important to exercise caution in supporting development of alternative livelihoods projects and prioritise sustainable management as a means of reducing the growing need for additional cash income.

4.5.4 Finalising strategies

Conceptual modelling, subsequent community input and planning processes will generally identify a wide range of strategies and it is important to think about which to focus on first. Prioritising strategies ensures that stakeholders do not spread themselves too thinly and are able to invest their limited time and resources wisely. A prioritisation exercise is outlined with facilitator notes in Appendix 15. This provides a process for stakeholders to assess and rank different strategies in terms of their potential impact (which is a factor of the effect it is likely to have and/or the negative effects of the threat that is being addressed) and achievability (the likelihood that it can be effectively implemented with the resources available).

Finalising endorsement of strategies with traditional leaders and resource owners is vital, particularly in relation to local management rules and protected area/zoning boundaries. This needs to be a relatively formal process, requiring several stages of consultation, following traditional protocols within tribes (*yavusa*) and clans (*mataqali*) to incorporate their input, make any changes and ensure widespread agreement before finalising the management plan. The designation of a protected area (*tabu*), for example, may be proposed by village representatives at a workshop. It will then require approval that may involve local consultation over a significant timeframe to build awareness (e.g. of how a protected area works), understanding (about proposed restrictions and any exceptions) and consensus (that it is a good idea to establish a protected area in a particular location). Although this can delay progress (i.e. until resource owners reach widespread agreement), it is essential so as to avoid causing conflicts and undermining the credibility of the management plan.

Consultation with resource users who fall outside these traditional systems (e.g. local settlements or commercial fishers) can also build support for implementation and monitoring to increase the likelihood of successful management. These groups are more likely to comply with management rules if they have been consulted in their development and may also provide useful insight and a new perspective to inform effective strategies.

PHOTO: Eferemo Kubunavanua

Bua EBM Consultation at Dalomo village

PHOTO: Ged Acton, WCS

Wailevu Plan launch prayer group and ceremony

4.6 Reviewing progress and identifying next steps

It is important that participants regularly review what they have done, reflecting on learning points, arising issues and progress towards overall planning objectives. At the end of each session, facilitators can summarise key points for participants, encouraging them to note and feed these back to people in their communities.

At the end of each workshop, clearly define the next steps. These should include 'take home tasks', which need to be clarified to ensure that everyone understands and feels comfortable with what they will do (e.g. presenting to the village meeting; exploring potential management strategies with local women and youth). Highlight the need for village representatives to support each other with these tasks, as developing teamwork and collaboration can accelerate planning and enhance management.

Be aware of the rate of progress and the need to involve stakeholders who may not yet have been adequately engaged. It is particularly important to recognise any communities that are not represented at a workshop. Continued non-participation of any communities will weaken effective management, so discuss possible reasons for their absence and encourage participants to consider how they can be engaged in future. Circulating workshop hosting between different villages can help raise awareness and build collective ownership across different villages.

The required number of management planning workshops will vary depending on factors such as the availability of funds (to cover the costs involved in bringing people together); the rate of progress in planning; and status/capacity of communities to agree, monitor and implement a management plan. It depends on the circumstances, but we suggest no fewer than four management planning workshops (bringing together villages and other stakeholders in the management area) are required to ensure an appropriate level of community input to inform a practical plan.

Increase the role that key local stakeholders play at each workshop (i.e. Provincial Office staff, members of the Yaubula Management Support Team, Conservation Officer). By building their involvement in planning, delivering and evaluating each workshop, their capacity to facilitate and support local management processes will be enhanced. It is also important to evaluate workshops with participants and as a facilitation team (see Appendix 16 for an evaluation template) to learn about what went well or less well, what was learned, and to inform how you will deliver future workshops.

A workshop report, including the objectives, participants, outcomes and next steps, should be circulated to participants and key stakeholders – ideally within 2–3 weeks of the workshop. The report should preferably be written in the local vernacular. Note that the planning process can lose credibility, momentum or support if the workshop report is not accurate or if it does not reach its intended readers. The Provincial Office can often advise how best to ensure these are delivered to reach the right people through existing communication networks.

These processes should be repeated at the end of every workshop to ensure participants are clear on their role and able to engage their communities. It is also useful to do a summary for those participants who might not have been present at the previous workshop(s). It is also important to progress at a pace that communities are comfortable with and to acknowledge the value of a shared learning experience in which the journey is as important as the destination. Any of the stages outlined in this guide can therefore be made longer (e.g. expanded from one session or workshop into several) as required to enhance understanding and ownership.

4.7 Writing the management plan

A management plan should be documented in order to formalise and share its contents and to provide a transparent record of agreed decisions. The management plan can be widely distributed to inform all stakeholders and enable their contribution and compliance to support implementation. The document is also an essential prerequisite for funding applications to secure resources for implementation.

Key components of a comprehensive EBM management plan include:

- A description of the management area, including district and qoliqoli boundaries, demographics, habitat descriptions, resource tenure, resource use and protected area boundaries;
- Discussion of habitat management issues for terrestrial, freshwater, estuarine, coastal and marine ecosystems, including habitat descriptions covering flora and fauna, endemic and endangered species and species of cultural and economic significance;
- A management implementation plan, including:
  - a discussion of key threats and underlying causes of those threats for each habitat;
  - management rules for each habitat, including national laws and community rules;
  - proposed management activities for each habitat; and
  - best practice management recommendations for each habitat.
- A description of key management institutions and external stakeholders;
- An explanation of management roles and processes, including preparation, implementation, amendment and review of the management plan; and
- An overview of compliance and enforcement issues.

It can be useful to share and discuss these contents with workshop participants (and, through them, with communities) before drafting the management plan, so that they understand why different elements are important and how they fit together. This also enables everyone to follow the management planning process and see why it designed broadly around these elements.

It should be recognised that most community members will not read a completed management plan with all of this content. However, it is important that they have access to the information regarding the rules and managed area boundaries. If funding permits, a summary of the EBM plan (e.g. poster) should be produced in the iTaukei language with information on the management areas, rules and best management practices, and distributed to each village and household. These can be distributed at a household level or turned into posters that can be displayed in prominent community settings.

A range of examples of management plans can be found through the Additional Resources outlined in Section 11 of this guide.

The management plan is an essential prerequisite for funding applications to secure resources for implementation.

5 Governance

An effective and deliverable management plan needs to be based on consideration of how local communities actually function at the moment – looking at decision-making processes, social systems and how these affect planning and management. The management plan and any associated committees or sub-groups should fit with and utilise these structures. Given their remit to govern and support local governance, it is suggested that the Provincial Council Office and traditional hierarchy council (*bose vanua*) should play leading roles developing the governance structure of the management plan.

PHOTO: Stacy Jupiter/WCS

Village representatives can undertake a parallel process during management planning workshops, looking at local governance (which incorporates both official/administrative and traditional structures and hierarchies) to identify gaps (e.g. where communication is not happening), barriers (e.g. people who are not participating or who might obstruct the process) and routes of influence (pathways to influence key decision makers). These can be mapped out to help participants design effective engagement and communication strategies. Useful prompts for the process include:

- Who are the key decision makers?
- Are the current (traditional and administrative) management mechanisms working (i.e. do people respect current protected areas and existing management rules)?
- Do any other mechanisms need to be introduced?
- Do any other bodies (e.g. committees) need to be set up? If so,
  - What would be the terms of reference and reporting mechanisms?
  - What structure or model of representation is best and how will communication flow?
  - Which key individuals need to be involved?

This also helps to target communication and engagement at the key decision-makers. The role-play exercise outlined with facilitator notes in Appendix 3 can help build confidence, reinforce communications training and develop teamwork by encouraging participants to consider who is best placed to deliver messages to different audiences and how they can do so to influence change. In some cases this can go beyond the more obvious (i.e. that an elder man should present to traditional leaders, or a senior woman to the district women's group) towards a more tactical approach, such as the elders from one village offering to deliver messages to a chief in another village in order to use the influence of their traditional relationships.

A workshop participant highlights his village governance structure and how he plans to communicate within his community after the management planning workshop.

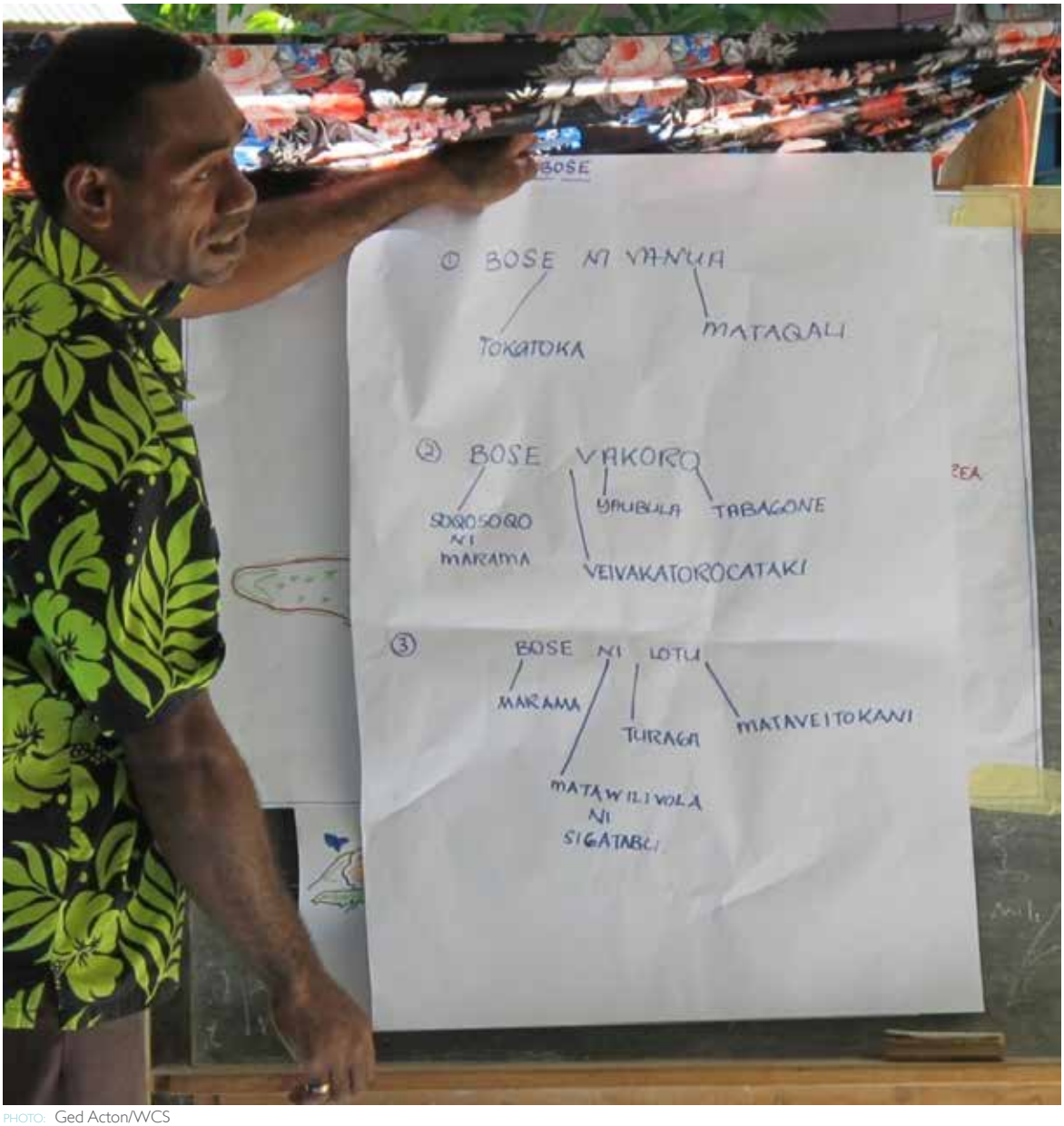


PHOTO: Ged Acton/WCS

The process of exploring local governance can highlight existing conflicts (such as disputes over chiefly titles or resource ownership) and communication breakdowns (such as the absence of regular meetings of traditional leaders) that were not identified during the initial stakeholder engagement and situation analysis. In such cases, it is important to ensure that external facilitators do not become involved or take sides in conflicts, which can affect the planning process and discredit the management plan. Rather, they should seek to involve the various government agencies with remits to help address these issues, particularly:

- the iTaukei Affairs Board and Provincial Council Offices that they manage, which provide support and guidance for traditional leaders as well as training in leadership and good governance; and
- the iTaukei Lands and Fisheries Commission, which oversees traditional titles and customary resource ownership, as well as keeps a record of membership of all registered tribes and clans throughout Fiji (in the Vola ni Kawa Bula).

Capacity building can also help village representatives build their understanding of traditional roles and processes, enhance negotiation and conflict resolution skills and consider how to promote good governance within their communities.

It is useful to remember that not all relationships are formal or part of a designed 'structure'. Communities and other stakeholders also relate and interact through informal social networks. Encourage people to use these networks (e.g. school ties, church groups, sports clubs, farming groups, grog drinkers, Facebook, etc), perhaps starting with their close family, as a way of spreading information and getting people involved.

5.1 Resource Management Committees

Systems for implementing and monitoring management plans should be designed to complement local systems of governance and link with existing management institutions. As such, we recommend that the design process is undertaken in close consultation with key stakeholders such as the district High Chief (*turaga ni vanua*), other traditional leaders (through the *bose vanua*) and the Provincial Council Office.

For example, most districts in Bua Province have developed a District Resource Management Committee, which links to village committees and reports to the district hierarchy council (*bose vanua*), as illustrated in Figure 15.

Experience suggests that the process of establishing terms of reference and committee membership is often done too quickly or in an overly simplified manner. Any new committee structures, membership and protocols should be developed over a reasonable timeframe in consultation with key stakeholders before being ratified through the necessary traditional and government protocols. Other problems can occur with voluntary committees include:

- over-reliance on one or two key individuals who can become overloaded and unable to carry the weight;
- a lack of validity in the eyes of key stakeholders (particularly chiefs), which can limit the potential influence and impact; and
- a lack of motivation or accountability that can cause inertia, with the committee becoming ineffective as a result.

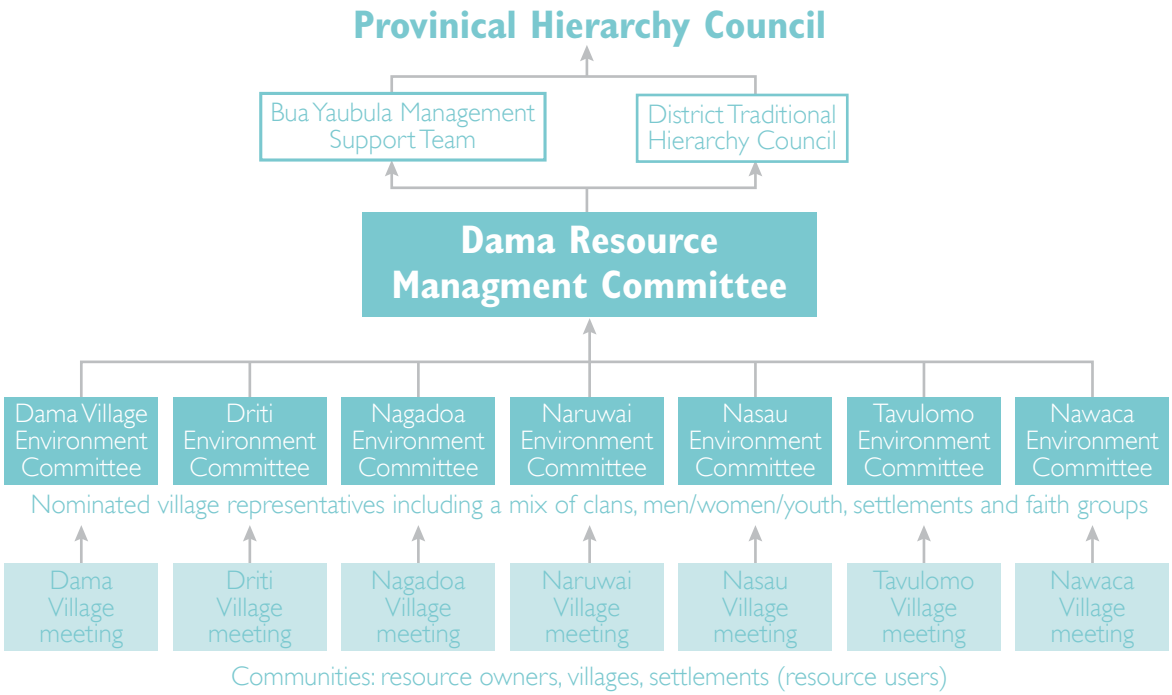


Figure 15. The proposed reporting structure of the Dama District Resource Management Committee, showing relationships with local management institutions.

It is also important to consider the types of people who should be involved as members of Resource Management Committees. Figure 16 shows the membership of district and village committees in Solevu District in Bua Province. This particular model is based on people broadly representing different 'constituent groups' (in this case the heads of clans, women, youth and fish wardens) from their village. This could be extended to include other interest groups such as people living in nearby settlements or business owners.

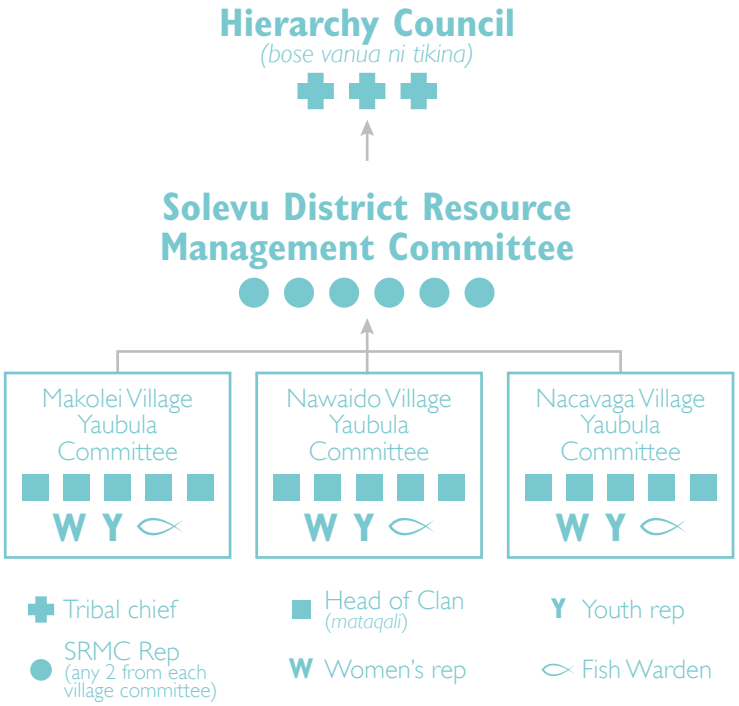


Figure 16. Proposed model of representation/governance in Solevu District, which comprises only 3 villages.

6 Compliance and Enforcement

A management plan is likely to include rules and regulations that challenge and seek to change existing behaviour. The management plan and those who support implementation will lose validity and can soon become redundant if people do not respect or comply with management rules.

Promoting compliance is the most effective (and cost-effective) way to ensure management success. Compliance can be enhanced by widespread understanding of the rationale behind management rules. In theory, wider community participation in management planning and endorsement of local chiefs (see Section 7) should encourage voluntary compliance with management rules and reduce the need for enforcement, which involves more expensive and problematic interventions.

Promoting compliance is the most effective (and cost-effective) way to ensure management success.

Communities obviously have to be aware of, and have reference to, local management rules in order to comply with them. This can be achieved by raising awareness through posters, leaflets and calendars which summarise rules in the local vernacular. Workshop participants, community leaders, government officers and resource management committees should be mobilised to distribute these and to 'socialise' the information as a topic of general conversation within families, communities and across wider social networks.

In reality, management rules are likely to be broken at some stage. When this happens, catching and sanctioning guilty parties will send a strong message and reduce the likelihood of further non-compliance. Effective enforcement applies appropriately graded local sanctions including penalties and fines. These can be monetary or traditional, enforced through legal or customary processes, depending on whether a national law or a local management rule has been breached. This also determines where the responsibility for enforcement falls across a wide range of government agencies and traditional management institutions.

Enforcement can be made difficult by the lack of capacity amongst enforcement agencies in remote rural areas. This highlights the need to develop a coordinated approach in which different agencies, institutions and communities help each other to effectively monitor compliance and enforce non-compliance. Such approaches are likely to involve:

- the Ministry of Fisheries and associated network of voluntary community Fish Wardens;
- the Ministry of Forestry and any Forest Wardens overseeing compliance with the Fiji Forest Harvesting Code of Practice;
- the Ministry of Environment who oversee compliance with all elements of the Environmental Management Act 2005;
- Provincial Council Offices (including their networks of Village Headmen and District Headmen);
- the Police (supporting enforcement of all national laws);
- Traditional Hierarchy Councils (*bose vanua*), taking overall responsibility for local community rules; and
- Communities (monitoring and recording incidents of non-compliance and reporting them through the correct channels).

Effective enforcement therefore requires these stakeholders to move beyond being aware of their own responsibilities to considering the roles they can play towards effective enforcement of a wider range of rules (even if they are not directly responsible) and becoming sufficiently organised and confident to do so. Communities often do not realise how they can contribute to monitoring and recording incidents of non-compliance and how this can support government agencies to do their jobs. Enforcement training, particularly if undertaken in partnership with officers from government agencies with an enforcement mandate (listed above), can help build the necessary capacity. A scenario-based enforcement exercise can be a great way to help community fish wardens to promote consistent enforcement.

It is important that enforcement responsibilities, sanctions and their source (regulations or a customary decree) are agreed in advance and clearly expressed in the management plan (see Table 3) so everyone is aware of them. This should be a focus for the resource management committee (or alternative body that is overseeing the management plan). A template showing how this is done in Kubulau can be found at Appendix 18.

PHOTO: Stacy Jupiter/WCS

7 Endorsement and Awareness

You cannot assume that broad involvement in the management planning process reflects everyone's agreement with the outcomes. To reinforce shared ownership and commitment, a draft management plan should be circulated to stakeholders to invite, clarify and incorporate their input before it is finalised.

Communities are only likely to accept the validity of a management plan that is endorsed by their traditional leaders. An official/traditional launching ceremony provides a good opportunity for chiefs to sign their endorsement (usually on the first page of the management plan), demonstrating their backing for everyone to see. Fijian communities are often devoutly religious, so remember to include faith based institutions throughout management planning. Their formal 'blessing' of the management plan and incorporated *tabu* areas as part of the launching ceremony can further enhance local commitment.

Awareness is greatly enhanced by making the management plan a focus for discussion amongst families, clans and in social settings. This 'socialisation' can also be assisted by distributing a vernacular summary of the management plan. People can be reluctant to read exhaustive text, so consider alternative formats such as posters, signboards and calendars, with greater emphasis on visual messaging.

As well as village representatives, consider the role that key stakeholders like Village Headmen (*turaga ni koro*), District Headmen (*mata ni tikina*) and government officers, women and youth group leaders can play in socializing and promoting awareness. Formal recognition of management plans by government departments can also support implementation. This can influence continued officer support and ensure that management rules or zones are highlighted in the conditions of fishing and logging licenses.

PHOTO: Stacy Jupiter/WCS

Blessing the Wainunu District EBM Management Plan at the launching ceremony, Bua Province

8 Capacity building

Learning is an important part of the management process, acknowledging that people learn together through shared experience and reflection.

It is important that management planning workshops reinforce key messages and progressively build awareness, understanding and capacity amongst participants. This requires consistent representation from villages (the same people attending each workshop), which also enables them to build relationships, trust and 'teamwork' between and within communities.

Capacity building may be required at different stages and for different stakeholders in order to effectively develop, implement and monitor a management plan. Partners should therefore consider what different types of training are required and when. We recommend that training be integrated with planning to give participants new skills that they can apply to maximise the effectiveness of the management planning process.

Learning and capacity building should be seen as ongoing processes within communities, continuing after their management plan is launched. Training should be tailored to meet the specific needs of individual groups by addressing their weaknesses and building on their strengths.

A tool developed to audit skills and identify the training needs with District Resource Management Committees can be found at Appendix 18. This is applied in a participative process through which key competencies are identified (reflecting the priorities of a specific area or committee, which are likely to be stated in their management plan) and then assessed to identify strengths and weaknesses that can be addressed through training activities.

Management support workshops can be held once or twice each year in each district where there is a management plan. This seeks to enhance skills, knowledge and resources for management implementation, covering topics such as proposal writing, project management, development of monitoring and evaluation plans and financial literacy. The overall aspiration is to help engaged community members become more independent over time, working towards establishing partnerships, generating income and implementing projects on their own.

Training should be tailored to meet the specific needs of individual groups by addressing their weaknesses and building on their strengths.

9 Implementation and Adaptive Management

9.1 Implementation

A management plan is only effective if it is actively implemented. The stages of planning outlined in this guide are designed to facilitate implementation by fostering local awareness, understanding and ownership among stakeholders so that they can play a leading role in implementation.

Management plans are generally implemented by voluntary partnerships between communities and other stakeholders. These are often informal associations with limited capacity for allocation of tasks through a clear chain of command. This can create an 'implementation gap' and lack of accountability that means little gets done. Partnerships usually seek to address this by formalizing structures, responsibilities and reporting processes (see Figures 15 and 16) by developing an Implementation Plan which outlines specific actions, names people who will lead and support them, and provides associated timeframes for delivery (Appendix 17 – Illustrative Implementation Plan).

PHOTO: Stacy Jupiter/WCS

9.2 Monitoring

Monitoring is about observing or measuring the situation to look for any changes. Evaluation is using that information to determine if something is having the desired effect. It is therefore important to measure whether the management plan is being implemented, whether the impacts of management are as expected and the overall effect that management activities are having locally.

An indicator is something that you might expect to change as a result of management. Monitoring requires periodic measurement of indicators. For example, if the management plan has a target to see more crabs and a *tabu* area has been established as a strategy to achieve this outcome, then 'the number of crabs' counted in a specific area or harvest would be an appropriate indicator.

Biological indicators like fish, crabs and shellfish should relate to the management targets, i.e. those species that are important to communities for food, income or their cultural significance (like totem species).

Social characteristics can also be useful as indicators, for example the number of people who say they support the management plan, are aware of the rules or the number of times certain rules are broken (in a month or year). These are called community indicators.

It is important to measure whether the management plan is being implemented, whether the impacts of management are as expected and the overall effect that management activities are having locally.

Here are some basic guidelines for selecting indicators:

- Communities should be involved in selecting indicators that have the most meaning to them;
- Select only a few indicators (e.g. 3 biological and 2 community indicators);
- Consider a range of species as biological indicators, to represent things that might change relatively quickly (fast breeding/growing species like mud crabs) and those that might take a longer time to recover (like coral grouper); and
- Select indicators that the community can monitor effectively (or those that partners have committed to monitor).

9.3 Evaluation

Evaluation is a considered, logic-based assessment that aims to provide useful feedback and inform adaptive management. This involves analysing monitoring data and assessing outcomes (against those that were targeted) and impacts (any broader intended and unintended effects), whilst accounting for other influences.

Although funding agencies can require independent evaluation of their projects (requiring a third party to lead assessment), those involved in community-led management often undertake self-evaluation of their activities. Involving different stakeholders, who contribute different perspectives to the assessment, can enhance the usefulness of this process and facilitate more effective uptake of conclusions and recommendations. As well as informing adaptation of the management plan, evaluation can also influence policy and strategies to strengthen support and enhance enabling conditions that indirectly affect management success.

9.4 Adaptive management

Management plans are working documents and should be reviewed and amended periodically to reflect evaluation results, evolving management priorities and the continued input of local communities through an adaptive management approach. Linking into existing governance systems and processes, this is likely to require a minimum commitment from communities and other stakeholder to:

- Hold quarterly meetings of the District Resource Management Committee (or alternative forum through which communities collaborate);
- Review progress annually; and
- Undertake a detailed evaluation and adaptive management process, incorporating review of data and priorities, every 3–5 years.

These processes are likely to require facilitative support, appropriate levels of monitoring data and continued input from a range of stakeholders who can bring data, insight, resources and different perspectives on the situation.

Reviewing can also be a great opportunity to recognise and celebrate successes. This helps motivate stakeholders to continue their advocacy and action, progressing and adapting their management plan.

PHOTO: Stacy Jupiter/WCS

10 Summary

This guide outlines the principles and processes for effective EBM planning in a Fijian context, based on a decade of experience in the field. It is intended to provide a framework for facilitators to adapt and use to fit their purposes, accounting for social, economic and political considerations.

To achieve the optimal results, it is recommended that the sections are followed sequentially and that the overall process is thoroughly considered by key stakeholders from the outset. The aim is to build local ownership of the process and maximise their input into its final design.

Flexibility is required to ensure that the plan is developed at pace which suits communities and to help realise valuable secondary outcomes such as shared learning, building strong partnerships and establishing strong foundations for implementation. Every journey is made up of important small steps and the planning process, like that of management, can therefore be adapted over its course.

> *Management planning was when it all came together for us in Kubulau. By having a good process, with support for a range of partners, we were able to build a plan that has benefited our people. We have been able to overcome challenges, adapt our plan and continue on a good path.*
>
> Paulo Kolikata, Chairman of the Kubulau Resource Management Committee.

Kubulau stakeholders at a management planning workshop in 2009.

PHOTO: WCS

Additional resources

Abesamis RA, Green AL, Russ GR, Jadloc CRL (2014) The intrinsic vulnerability to fishing of coral reef fishes and their differential recovery in fishery closures. Reviews in Fish Biology and Fisheries 24: 1033-1063.

Bunce L, Townsley P, Pomeroy R, Pollnac RB (2000) Socioeconomic manual for coral reef management. National Ocean Service, National Oceanic and Atmospheric Administration, Silver Spring, Maryland, USA.

Clarke P, Jupiter SD (2010) Principles and practice of ecosystem based management: A guide for conservation practitioners in the tropical Western Pacific. Wildlife Conservation Society, Bronx, USA.

Cohen PJ, Foale SJ (2013) Sustaining small-scale fisheries with periodically harvested marine reserves. Marine Policy 37: 278–287.

Delisle A, Mangubhai S, Kleiber (2021) Module 6: Gender and social inclusion in community engagement. In: Mangubhai S, Makhoul N, Kinch J, Kalsuak J (eds.) Handbook for pacific Gender and Social Inclusion in Small-Scale Fisheries and Aquaculture. Pacific Community, Noumea

FLMMA (2010). FLMMA operations Guide: The way we work together. Guidelines for members of the FLMMA network. Fiji Locally-Managed Marine Areas Network, Suva, Fiji.

Gombos M, Atkinson S, Green A, Flower K (2013) Designing resilient locally managed areas in tropical marine environments: A guide for community based managers. USAID Coral Triangle Support Partnership, Jakarta, Indonesia.

Govan H, Aalbersberg W, Tawake A, Parks J (2008) Locally-managed marine areas: A guide for practitioners. The Locally-Managed Marine Area Network, Suva, Fiji.

Green A, White A, Kilarski S (2013) Designing marine protected area networks to achieve fisheries, biodiversity, and climate change objectives in tropical ecosystems: A practitioner guide. The Nature Conservancy and the USAID Coral Triangle Support Partnership, Cebu City, Philippines.

Green A, Maypa AP, Almany GR, Rhodes KL, Weeks R, Abesamis RA, Gleason MG, Mumby PJ, White AT (2014) Larval dispersal and movement patterns of coral reef fishes, and implications for marine reserve network design. Biological Reviews doi: 10.1111/brv.12155.

Jupiter SD, Jenkins AP, Lee Long WJ, Maxwell SL, Watson JEM, Hodge KB, Govan H, Carruthers TJB (2013) Pacific integrated island management: Principles, case studies and lessons learned. Secretariat of the Pacific Regional Environment Programme (SPREP) and United Nations Environment Programme (UNEP), Apia, Samoa, and Nairobi, Kenya.

Kleiber et al. 2019. Gender-inclusive facilitation for community-based marine resource management. An addendum to "Community-based marine resource management in Solomon Islands: A facilitators guide" and other guides for CBRM. Penang, Malaysia: CGIAR Research Program on Fish Agri-Food Systems. Program Brief: FISH-2019-08.

LMMA (2003) Learning framework for the locally-managed marine area network. Locally-Managed Marine Area Network, Suva, Fiji.

Mahanty S, Stacey N (2004) Collaborating for sustainability: a resource kit for facilitators of participatory natural resource management in the Pacific. South Pacific Regional Environment Programme, Apia, Samoa.

Mangubhai S, Donato-Hunt C, Kleiber D (2019) Module 3: Monitoring evaluation and learning. In: Barclay K, Leduc B, Mangubhai S, Donato-Hunt D. Pacific Community, Noumea

Margoluis CR, Salafsky N (1998) Measures of success: designing, managing and monitoring conservation and development projects. Island Press, Washington DC, USA.

Mukherjee N (1993) Participatory rural appraisal: Methodology and applications. Concept Publishing House. New Delhi, India.

Preston (2009) The ecosystem approach to coastal fisheries and aquaculture in Pacific Island Countries and Territories. Secretariat of the Pacific Community and The Nature Conservancy, Noumea, New Caledonia.

Pretty JN, Guijt I, Thompson J, Scoones I (1995) Participatory learning and action: a trainer's guide. IIED, London, England.

SPC (2010) A community-based ecosystem approach to fisheries management guidelines for Pacific Island Countries. Secretariat of the Pacific Community, Noumea, New Caledonia.

Tawake A, Meo S, Cakacaka A, Aalbersberg B (2003) Community based biological monitoring training guide. Fiji Locally-Managed Marine Area Network, Suva, Fiji.

Weeks R, Jupiter SD (2013) Adaptive comanagement of a marine protected area network in Fiji. Conservation Biology 27: 1234-1244.

WorldFish (2013) Community-based marine resource management in Solomon Islands: A facilitator's guide. Based on lessons from implementing CBRM with rural coastal communities in Solomon Islands (2005 – 2013). CGIAR Research Program on Aquatic Agricultural Systems, Penang, Malaysia.

12 Appendices

Facilitator Guidelines

A GOOD FACILITATOR

- is well prepared
- stimulates discussion, curiosity and ideas
- has good communication skills
- listens (really listens)
- is a team player

A FACILITATOR IS NOT

- **person in charge**
  The whole group is responsible for learning. The facilitator's role is to help that learning happen more effectively. Nor does the facilitator have sole control of the agenda. Participants should have a voice in determining the topics to be covered.
- **lecturer**
  The facilitator is a co-learner, exploring all subjects as an equal partner and contributing individual experience to that of others.
- **expert**
  Although preparing each session, the facilitator may not know as much about a subject as some other members of the group.
- **centre of attention**
  A good facilitator generally speak less than other participants; instead she or he draws them into the discussion.
- **judge of what is right and what is wrong**
  In collaborative learning, all contributions are valid.
- **person totally responsible for the session**
  While the facilitator takes initial leadership in coordinating the sessions, she or he should not become the only person who takes responsibility. Lots of people take responsibility in a true collaboration.

Personal checklist for facilitators

- ☑ Be very clear about your role: your behaviour more than your words will convey that you are not the teacher but a fellow learner.
- ☑ Be aware of your eyes: maintain eye contact with participants.
- ☑ Be aware of your voice: try not to talk too loudly, too softly, or too much.
- ☑ Be aware of your body language: consider where you sit or stand and other ways in which you may unconsciously exercise inappropriate authority.
- ☑ Be aware of your responsibility: make sure everyone has a chance to be heard and be treated equally; encourage differences of opinion but discourage argument; curb those who dominate; draw in those who are hesitant.
- ☑ Be aware when structure is needed: explain and summarize when necessary; decide when to extend a discussion and when to go on to the next topic; remind the group when they get off the subject.
- ☑ Be aware of your power and share it: ask others to take on responsibilities whenever possible (e.g.,taking notes, keeping time, and, ideally, leading discussion).

Appendix 1

ADDITIONAL CONSIDERATIONS FOR FACILITATORS WHEN PREPARING WORKSHOPS

Venue: It is important to have an idea of what possible venues will be available. Good floor space or tables that people can sit around during group work are important, as are adequate lighting and of course a roof!

Ground rules: When facilitating workshops or groups, it is very useful to establish agreement as a group on the way things are going to be conducted. This may include things such as punctuality, respect, smoking, tea break timing, language, and so on. Once agreed on, these can be referred back to in order to help in enforcement.

Groups: Most exercises will be done in smaller groups to allow a better chance for all participants to have input. Six to eight people is ideal, but ultimately the overall number of participants will need to be considered – the more groups there are, the more time will be spent reporting back. The groups should be formed taking into account the objectives of the exercise and the characteristics of the communities involved. Some criteria include: gender (sometimes women prefer to work without men present); tribes, kinship or landholding groups (related groups may be able to discuss their resources better and have authority over them); age (sometimes it is useful to see how different age groups regard their resources and use them); random or intentionally mixed (in some cases it may be good for participants to work in groups with different stakeholders to gain a better understanding of each others' positions). Exercises are best explained first in the plenary, and perhaps an example is shown, before splitting into groups.

Plenary report backs: After almost all group sessions, there will need to be a report back session from each group to the plenary, possibly followed by plenary discussions and/or questions. Time allowances need to be made for a report back from each group and this session will need to be facilitated to ensure that discussion is focused and agreements or outstanding points recorded.

Timekeeping: It is important that a realistic amount of time is set aside for each activity, and to keep track of time allotted. In a workshop situation, time is usually limited; if certain exercises run over time, this may result in vital exercises at the end of the workshop being shortened or missed altogether. Assign someone to keep track of time and ensure that exercises stick to the agreed time limit or that other provisions are made to extend or modify the workshop.

Link the exercises – flow: The workshop should be designed to provide a flow in the intended direction. It is important to ensure that participants are reminded of previous results and conclusions as each next step is started, and to keep everyone regularly updated on the progress through the overall agenda. Finished exercises may be displayed on walls or elsewhere so that people can refer to them or see what others have done.

Energizers and icebreakers: When the meeting dynamics are low – such as when people are tired or after lunch – it is helpful to use techniques known as energizers to revitalize the group and increase enthusiasm. In addition, when a group of people are meeting for the first time and do not know each other, icebreaker techniques are useful to facilitate a pleasant and non-threatening way of introducing them to each other.

Record keeping: Sometimes it is useful to have a workshop recorder or specific person assigned to record and be responsible for important information such as the names of attendees, agenda followed, decisions made and any new topics that come up, and to collect all outputs and keep in a safe place.

Teamwork: Foster a team-ethic by involving others in the running of workshop sessions. This might be simply asking someone to take notes, involving them more deeply as co-facilitators or getting their input when planning sessions. The aim is to build collective ownership of the management planning process.

Agenda for Initial Village Visits

Objectives

1. Introduce yourself and partners to individual communities.
2. Outline the management planning process.
3. Identify local issues, information and contacts useful to the management planning process.
4. Clarify requirements and responsibilities for village representatives that will attend forthcoming district management planning process.

KEY PARTICIPANTS

- Traditional leaders
- *Turaga ni koro*
- A mix of men, women and young people from the village

SUPPORTING PARTICIPANTS

- Representative of the Provincial Council (District Headman or Assistant Roko Tui)
- Provincial Conservation Officer
- NGO staff

Facilitator notes

The above agenda can be adapted to cover a whole day, an afternoon or an evening, depending on the time available. It is important to have time for informal discussion (talanoa) and relationship building whilst balancing the consumption of kava with good use of time to find out what projects the village has been involved in, including any training programmes, and explore their main concerns in the village regarding their natural resources.

MATERIALS

Maps of the local area, district or island, flipchart paper and pens.

DRAFT AGENDA

Time	Topic	Notes
Minimum 20 mins	Introduction	Introduce organisation leading the workshop. Introduce the management planning process (explaining links to existing local management plans). Question and answer session
Minimum 45 mins	a) Healthy ecosystems and community benefits	Groups identify: ◇ what environmental features contribute to communities being healthy; ◇ what other benefits they get from those features; and ◇ what environmental features contribute to communities being unhealthy. Feedback and discussion
Minimum 1 hour	b) Mapping natural resources and resource use	Each group is asked to draw/map out their natural resources and local resource use. It is useful to provide a base map of the local area, but hand-drawn maps are okay if you do not have access to GIS, or cannot get materials (e.g. Google Earth maps). Examples of what should go on the map include: terrestrial resources, marine resources, waterways, plantations, cultural sites, *tabu*/protected areas, fishing spots, where totems breed/ live, project sites, etc. Feedback and discussion
Minimum 30 mins	c) Visioning and considering management goals	Individuals think about what successful management would look like (vision) and what changes they want to see (management goals). See Appendix 2c for more information.
Minimum 90 mins	d) Community risk and capacity mapping	Each group, possibly using the same base map as the previous exercise, sequentially completes a spatial map, then maps hazards and risks, then maps local capacities and resources. Using transparent sheets will enable the maps to be layered. Feedback and discussion.
Minimum 40 mins	e) Resilience oscillation tool	Using a template or as a physical exercise each group expresses how they feel about various factors that contribute to resilience in the context of their community. Feedback and discussion.
Minimum 15 mins	Outline next steps	Outline date and purpose of next workshop and requirements for village reps

Appendix 2a

Healthy Ecosystems and Community Benefits[1]

Objective

During initial village visits get communities thinking about the benefits that they get from healthy local ecosystems.

MATERIALS

Maps of the local area, district or island, flipchart paper and pens.

Breakout groups (4–10 people per group) each have a flipchart on which to brainstorm:

a. Environmental features contribute to communities being healthy

If they get stuck, use an example to prompt discussion, e.g. food, clean water, shelter, protection from flooding.

b. Other benefits that communities get from those features

E.g. income from sustainable fishing, strong culture, traditional herbal medicine, tourism.

You can also show an illustration to prompt further, asking them to note things in a picture that they already identified in (a) and (b) and to add anything else they see but have not yet listed.

Facilitator notes for group work

As well as prompting participants to share their knowledge, facilitators can provide their own knowledge to help participants, for example:

- Healthy coastal vegetation, mangroves, and beaches: protect against storm surges; stabilize the coastline and slow rates of erosion; help prevent salt spray from getting inland to crops and homes; provide feeding grounds, nursery areas, and habitat for important fish and invertebrates; and trap sediment from land and prevent it from getting onto the coral reef.
- Healthy seagrass beds: provide critical habitat, breeding grounds, nursery areas, and food for important fish and other marine life; trap sediment from land, improving water clarity and preventing sediments from getting onto the coral reef.
- Healthy coral reefs: buffer against storm surges by breaking wave energy; and provide nursery areas, habitat, and food for important fish, invertebrates, and other marine life (e.g. turtles and marine mammals).

Illustration of a coastal community with intact ecosystems

1 Adapted from Gombos, M., Atkinson, S., Green, A., and Flower, K. (2013). Designing Effective Locally Managed Areas in Tropical Marine Environments: A Facilitator's Guide to Help Sustain Community Benefits Through Management for Fisheries, Ecosystems, and Climate Change. Jakarta, Indonesia: USAID Coral Triangle Support Partnership

- Healthy upland areas and watersheds (including intact native forests, sustainable agriculture, sustainable forestry, and water sources) provide benefits such as reduced erosion and sedimentation, increased soil fertility, and protection of freshwater.

- A community's healthy resources contribute to the livelihood and health of community members. Healthy people are able to practice their culture and have pride in their community. Homes are safe from storms and landslides. People have access to safe drinking water. Healthy food is available through agriculture and fishing. A strong economy includes several sources of income (fishing, agriculture, tourism, and small business).

Next, ask them to consider what environmental features contribute to communities being unhealthy (again, you can use an illustration to prompt discussion), for example:

- Overfishing and/or destructive fishing (e.g., blast fishing, poison fishing, spearfishing on SCUBA, bottom trawling, long lining, gill netting, coral mining, fishing on hookah, and night-time spearing);

- Poorly planned coastal development; and

- Land-based sources of pollution (e.g., trash, sediment, chemicals, sewage).

Groups feed back in plenary, with time for questions and discussion about the ways in which environmental features can make communities healthy and unhealthy.

Facilitator notes for plenary

Try to make sure the group covers and understands all the key messages from this exercise:

- If resources are healthy and intact, communities have a better chance of surviving and thriving.

- When one area of a natural system is damaged, the benefits that area provides to the community and other natural systems will be severely reduced or lost completely.

- Before we can plan how to manage natural resources, we must understand how healthy those resources are now.

- The way we use and manage resources will have significant impacts on the health of the resources. For example, overfishing or habitat destruction will weaken the health of the ecosystem and resources. This is why we will be working together as a district/island – to plan how we can manage our resources sustainably

Illustration of the same coastal community where ecosystems have been degraded.

Resource Mapping Exercise

Objective

During initial village visits, ask communities to provide information about their natural resources and identify issues that affect local ecosystems.

Instruct breakout groups (4–10 people) to draw big maps of their village and surrounding area, including the things that are important to them. To get them started, ask them to show houses and community buildings, rivers, streams and sources of drinking water, and plantations and where animals are kept.

Here are some examples of questions for facilitators to get participants to provide more detailed information on marine natural resources, use and management. A similar set of questions should be asked for natural resources found on land. Where possible, the information collected should be drawn on the maps by community members.

FISHERIES

1. Where are the main areas you use to collect/catch marine resources for eating and/or for selling?
2. Where are you collecting invertebrates (e.g. sea cucumbers, crabs, giant clams) and fish from?
3. Where are you harvesting marine plants (e.g. seaweed, mangroves) from?
4. Are there any other resources you are taking from the sea (e.g. sand, coral)?
5. Are you involved in any types of aquaculture or mariculture? Where are these located?
6. Are there certain gear types you use in specific places? (e.g. nets only over seagrass)
7. Are there specific seasons when you fish for certain species?
8. Are there specific reefs that are used by outsiders? (licensed or not-licensed)?
9. How far offshore do you fish, and for what species?
10. Are there any wetlands that you get *kuta* or other resources from?

SPECIES AND HABITATS

11. What are the different habitats you have? (e.g. wetlands, coral reefs, mangroves, seagrass)
12. Are there specific species you can only find in certain habitats?
13. Are there specific species you only find at specific times of the year?
14. Have you noticed certain fish species aggregating in large numbers on specific reefs?
15. Do you have turtles that nest on your beaches?
16. Do you have important areas for seabirds?
17. Do you see dolphins or whales within your waters?

MANAGEMENT

18. Are certain species *tabu* for the village because of cultural reasons?
19. Are there areas that are currently *tabu*?
20. Are there areas that were previously *tabu*?
21. Are there some areas that are reserves or protected areas?
22. Are there some areas that have been leased out for other uses (e.g. tourism, aquaculture)?

Facilitator notes

The mapping execise should prompt participants to share their knowledge with each other and with you. Draw attention to the issues highlighted in the previous session (e.g. healthy ecosystems and communities), asking whether/where these issues might be occurring locally.

Visioning and Considering Management Goals

Objective

During initial village visits, get communities thinking about what they want to achieve and what success would look like to them.

VISUALISE AS INDIVIDUALS

'Imagine you have travelled 10 years into the future. Everything in the vanua is exactly the way you want it to be. This makes you very happy…'

Ask them to close their eyes and visualise their 'perfect vanua' for a minute.

'As you walk around this perfect place, what do you see? What is in the forest? What is in the sea? What are the people doing?'

INDIVIDUALS SHARE THEIR VISION AND DRAFT A SHARED VISION

Split into groups (perhaps separate the men, women and youth) and ask people to share what they saw.

'Tell me one thing you saw?'

Have each person share one thing, making sure to get everyone to speak. Bearing in mind what they have heard, ask each group to summarise their 'Vision for the Vanua' in 1–3 sentences.

Groups share their vision – by reading them out and sticking them up on the wall (ask for clarification if required).

Identify recurring themes and discuss them in more detail.

MANAGEMENT GOALS

In the same groups, ask the participants to consider what they want to achieve through their management plan.

'What do you want to happen as a result of management?'

Again, give participants time to think quietly as individuals first. Then ask participants to share their thoughts and use this as a basis for clarifications and facilitate wider discussion.

Facilitator notes

Tell everyone that their management plan will try to help them move toward their vision.

Explain that all villages will be doing this exercise and all the visions will be shared and brought together to make one overall vision at the first workshop.

Appendix 2d

Community Risk and Capacity Mapping

Objective

This is a useful tool which allows the community to visualise the natural and built environment around them. It allows individuals to locate important areas and features that may determine how resilient and/or vulnerable their resources, infrastructure, services and homes are to disasters and situations beyond their control.

1. BREAKOUT GROUPS

Instruct breakout groups (of up to 5) for men, women, youth, elderly, and marginalised groups (e.g. those living with disabilities) to draw big maps of their village and surrounding area. It is important to have these separate focus groups because each may identify key resources and hazards that are unique from other groups. The facilitator can guide the drawing of the maps on transparent plastic roll or any transparent material, such as baking paper, using a permanent marker. Using these materials will help with overlaying the different features of the maps that will be drawn to show community members the interactions between different activities and hazards that occur in their community.

There are three aspects to this mapping exercise, the first being spatial mapping.

2. SPATIAL MAPPING

The spatial mapping activity will enable individuals to visualize the layout of important features, including:

- natural features - rivers, hills (which may be prone to landslides), coastal areas;
- different land use areas - forests, farming areas, aquaculture area, grazing sites for animals; and
- infrastructure - water sources (dams, wells, taps, tanks), roads, livelihood assets, such as boats or agricultural machinery, solar panels.

3. HAZARD OR RISK MAPPING

This aspect focuses on identifying the potential hazards or risks that may affect the community's resilience. Examples of hazards include: areas of flooding, coastal inundation, fires, exposed areas that are more vulnerable to strong winds and landslides due to deforestation and unsustainable land use practices, or areas that pose health risks such as improper waste disposal areas or poorly maintained drinking water sources.

4. CAPACITY MAPPING

The final exercise is the capacity resource mapping which will take into consideration the available resources and capacities in the community that will be useful during and/or after a hazardous event or will prove a challenge for the community. Features include the location of the most vulnerable people (such as those with disabilities, children, or the elderly), the locations of the health centre, communications tower(s) and equipment, evacuation centres, the wharf or jetty and other access routes in and out of the community.

Facilitator notes

Once each map is completed, they can then be overlaid to provide a more holistic view of the resources, vulnerabilities, the capacities that exist, and/or needs. The above three activities are important as they help communities get a clearer understanding of the spatial relationship and distribution of important features that will be useful in times of disaster. This information can help them plan for appropriate actions to reduce risk, such as moving the location of a clinic from a flood-prone area or to develop appropriate response actions e.g. identifying the location of children, people with disabilities and the elderly can allow for the evacuation of these more vulnerable people when a hazardous event occurs.

This activity can be conducted as a follow-on from the climate change exercise (Appendix 8) or resource mapping activity to demonstrate the relationship between important community resources, climate change impacts, and other hazards.

Here are some examples of key questions for facilitators to ask participants to provide more detailed information on:

- What are some of the major hazards in the community and where do they impact the most, including weather-related and human-induced events?
- What are the different access routes for the community to evacuate or for others to reach them?
- What types of community practices are being used for different activities (e.g. farming, fishing)? What impacts (negative or positive) do these practices have on resources?
- How can the community influence or advocate for change with the support of others in the short term to long term?
- What possible external long-term support and resources does the community need to make necessary changes?

Resilience Oscillation Tool

Objective

The *Resilience Oscillation* tool is similar to the *Resilience Star* (see Appendix 11) and can be used to gauge the different perspectives of the community to the various factors that contribute to their resilience. It helps them understand how these factors may differ between individuals and groups, and allows for the identification of both issues and groups of people that may require specific targeted support.

Facilitator notes

40 mins

This tool should be used after discussions about what *community resilience* means. It is important that individuals are not pressured into changing their resilience ratings and that everyone is encouraged to talk through their reasons. Remember that the tool can be used to highlight issues that require priority actions, and highlight groups that may require specific targeted support.

BREAKOUT GROUPS

Discussion in breakout groups is very important as facilitators are able to see the different perspectives from all groups in the village (men, women, youth, elderly, and marginalised groups, such as people with disabilities). Consideration should be given to ensure facilitation is gender and socially inclusive. This exercise can also be used as a qualitative tool to evaluate perceptions of resilience 'before' and 'after' interventions have taken place.

Use break out groups of men, women, youth, and the elderly and the template below to facilitate group discussion on how different group members feel about the different factors that contribute to community resilience. This can be done by marking where they feel the community is on the template or by creating an imaginary line on the floor and having members move up and down the line.

Figure 17. A Resilience Oscillation tool template

Identifying Community Representatives and Next Steps

Objective

Ensure that villages understand their commitment to the management planning process and help them select appropriate people to represent them at workshops.

Highlight the need for consistent representation of villages (by the same people each time) at management planning workshops.

Ask each village to nominate their representatives to attend management planning workshops. This might include, for example:

- Two men (one of them should be a Village Elder or Village Headman)
- One women's representative
- One youth representative

Including a wide range men, women and young people in management planning helps ensure that different interests and opinions are well represented. It can also be useful to consider how to involve other key people such traditional leaders, church leaders and teachers, who may be able to support the process or have a positive influence.

Discuss how the role and responsibilities of village representatives will include:

- attending workshops and **feeding back to the community** (including different groups, e.g. the *bose vakoro*, *bose vanua*, women, youth, settlements, etc.);
- taking part in training and awareness raising activities and **passing on their skills/knowledge** within the community; and
- bringing input and information from their village to the workshops.

Given these responsibilities, we recommend that the village representatives should have good communication skills and a strong commitment to the community and the environment.

Acknowledge that village representatives are likely to require **support and training** to fulfil this role. Explain that the workshops (and ongoing contact between workshops) will provide them with tools and training to help them.

Highlight when and where the first district or island management planning workshop is scheduled to take place, and that you are looking forward to seeing them there!

Facilitator notes

Leave copies of this page with each village to inform their nomination process.

Appendix 3

Communications Training for Village Representatives

MATERIALS

Flipchart paper, markers

90 mins

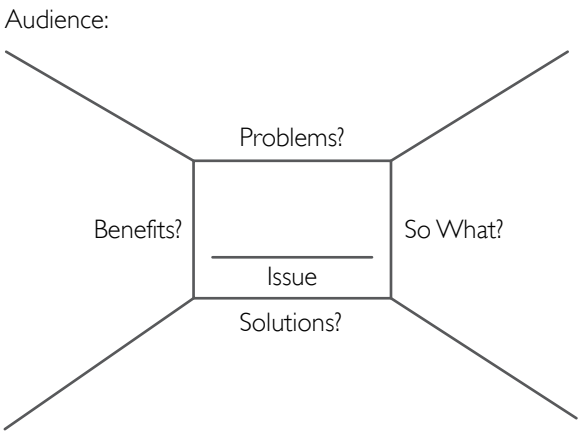
INTRODUCTION

As community members are trained in the science of conservation and management planning, it is important to also build their confidence and ability to communicate what they have learned within their communities, in order to build wide support for natural resource management. The Message Box is a simple tool developed by SeaWeb to help community representatives organize their thoughts and identify their key points. It is designed to be flexible: it can be used to build a presentation/talk, to develop a meeting agenda, to write a letter to government agencies or write a proposal.

EXERCISE

After a short introduction on the importance of creating compelling messages for specific audiences, it is best to break into small groups, where each group tackles communicating a specific community challenge through the message box. To do that, hand out a sheet of flipchart paper with the message box drawn on it (see below).

Message box



For the exercise, be sure to underscore that the tool is meant to identify the information that is critical to a specific target audience – what really matters to them, what do they really need to know. To that end, advise the participants to complete the Message Box in the following order, as you cannot, for example, answer what an audience cares about until you have specifically identified an audience and an issue. The steps are:

1. Identify your central issue (Issue)
2. Identify your target audience (Target Audience)
3. What are the problems/conflicts/issues involved (Problems?)
4. Why does this information matter to my listener, e.g, address values, expectations, needs (So What? Why should I care?)
5. What are some of the possible solutions to this problem (Solutions?)
6. What are the potential benefits of resolving this problem (Benefits?)

Each breakout group should present back to the full group for participant and instructor feedback, highlighting positive messages, ineffective messages and where appropriate, good public speaking behaviours. If the group has difficulty identifying target audiences or issues, instructors can offer issues to consider, such as unsustainable fishing, unsustainable farming practices, village waste disposal, etc. Target audiences should be as specific as possible, for example, participants can target the Bose Vanua, Bose Vakoro, women's group, youth and residents of settlements. Role playing can be used as a tool to help participants consider conflict resolution techniques and practice tailoring delivery to different audiences.

Communication Role Play

Give an introductory presentation on communication and messaging.

Hold a breakout session in village groups.

Each group picks (or is given) a target audience, e.g.

- Bose Vanua
- Bose vakoro
- Local women
- Youth
- Residents of settlements

Each group picks a key message, e.g.

- The need to address unsustainable fishing
- The need to address unsustainable farming practices
- The need to manage village waste
- Whether to give consent to lease land for mining

Groups discuss how they will feedback from this message to their target audience, using the Message Box tool

They each enact a role-play to demonstrate this.

Others watch and listen only, then offer constructive feedback at the end (facilitators too) – highlighting key points.

SWOT Analysis

60 mins

Objective

Build a shared understanding of the local situation, based on knowledge and insight from different stakeholders.

A SWOT Analysis is a participatory technique for understanding your Strengths and Weaknesses, and for identifying both the Opportunities open to you and the Threats that you face.

This can be useful at an early stage of the management planning process to help stakeholders identify and explore these things together, building their shared understanding of the local situation. The exercise is best undertaken in breakout groups of fewer than 8–10 people from a range of villages and organisations in order to facilitate good discussion and incorporate a range of perspectives.

The first step for facilitators is to clearly define the focus of the exercise. For example, ask participants to look at the existing management of ecosystems in their area and then define what each element means:

S = Strengths: community characteristics that can make resource management work

W = Weaknesses: characteristics that will challenge the community when doing resource management

O = Opportunities: things in existence externally that your community might build upon

T = Threats: external things that might hinder management in the community

MATERIALS

flipchart paper, marker pens, cards and sticky tape

STRENGTHS AND WEAKNESSES

General areas to consider are:

- human resources – people/groups within the community
- physical resources
- financial resources
- activities and processes – programs/activities run by the community
- past experiences - building blocks for learning and success

If the group has difficulty naming strengths and weaknesses, start by simply listing community characteristics (e.g. we're small, we're connected to the tribe). Some of these may be strengths.

OPPORTUNITIES AND THREATS

General areas to consider are:

- future trends - in resources or the culture
- economy - local, national, or international
- demographics - changes in the age, or gender, culture of the community (are there people living outside the community?)
- physical environment - what changes do people notice? – what? What obstacles do you face?
- legislation – will new laws or management rules make things easier or harder?
- local, national or international events

Ask groups to record their thoughts and ideas in a standard format as outlined below before feeding back to the whole group.

Strengths

- What advantages will management bring?
- What human, physical, financial and cultural assets do we have?

Weaknesses

- What could be improved on?
- What could hinder effective development of the management plan?

Opportunities

- What opportunities may arise from the management planning process?
- What other opportunities exist and how can we capitalize on them?

Threats

- What obstacles/constraints could we face?

Facilitator notes

When different groups present back to each other, facilitators can highlight common points that have been identified, ask for clarification about key issues and discuss how these things will affect the approach to management planning.

Appendix 5

Stakeholder Mapping Exercise

Objective

Identify different stakeholders and consider how they should be involved in the management planning process.

The stakeholder mapping exercise can be undertaken with a project steering group or with a wide range of people at a workshop, rather than at the community level. It is a useful exercise to do as part of pre-planning.

Start by explaining that stakeholders are people, groups, communities and organisations who have an interest in or will be affected by what you are doing. Emphasise that effective management planning is a collective process that requires input from a range of stakeholders.

1. Ask people to brainstorm individual stakeholders (on paper or card – one name per card).

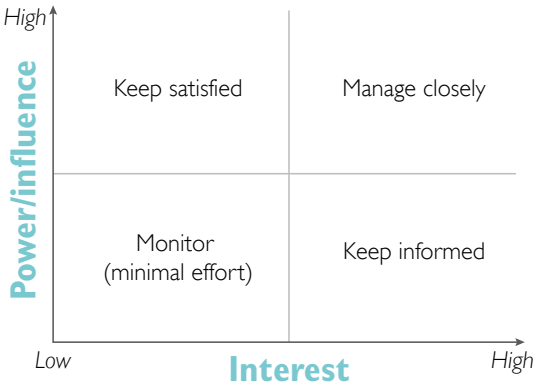
2. When they have exhausted their ideas, collect cards and read them out (or ask participants to read out their own cards). Get rid of any repeated names so there is only one card for each stakeholder.

   Introduce the matrix of power and interest (below) and explain the terms:

   - Power/influence is the extent to which a stakeholder can affect management or the condition of local ecosystems
   - Interest is the value that they place on being involved in management or being part of the management planning process

3. Give participants time to consider/discuss where they think the different stakeholders should be placed on this matrix. Then ask them to place the cards/papers in the position that they think fits each stakeholder best. Facilitators should try to identify differences of opinion, highlighting these as interesting and helping people to come to consensus (rather than one person over-ruling another).

4. Once all the stakeholders have been positioned on the matrix, draw the four segments shown below:



Explain what they mean and how they help identify how different stakeholders should be involved in the management planning process (based on their power and interest).

5. Ask participants if they agree with where the stakeholders have been placed (whether their stated level of involvement is appropriate).

Ask people for their observations and facilitate discussion about these. Talk about stakeholder engagement in practical terms, specifying exactly how you will engage those in the 'Keep Satisfied' quartile (perhaps by providing quarterly written report reports).

You can also discuss whether and how stakeholders can move to different sections on the matrix. For example, some chiefs might be perceived as having high power, but low interest. This may prompt discussion on whether/how their interest can be increased so that they can become more actively involved.

Facilitator notes

The stakeholder mapping exercise can help negotiate possible barriers to progress, for example by identifying stakeholders who can provide support or 'open doors' to make planning more successful or highlighting key people who could be offended if not involved from an early stage and may consequently refuse to engage with the process.

Appendix 6

Guidelines for Planning Workshops

Objective

Ensure that workshops are well organised to optimise their chances of success.

PLANNING MEETINGS

Establish objectives

Indicative timeframe: 4 weeks before workshop

1. State what you want to achieve through the workshop
2. Ask for input on objectives from key stakeholders (via email/phone)
3. Consult key stakeholders on date and venue

OUTPUT: Confirmed objectives, date and venue

Initial planning meeting

Indicative timeframe: 3 weeks before workshop

Involve people who are likely to be at the workshop.

1. Workshop agenda
   For each session:
   - Discuss objectives
   - Discuss the content and sequence of the workshop
   - Discuss methods (e.g. presentations, facilitated discussion, group work)
   - Establish who will be the lead for design and facilitation/presentation
   - Be aware of your funding available

OUTPUT: Draft workshop agenda

2. Participants
   - Brainstorm who should attend - participants and facilitators
   - Make a spreadsheet listing participant names/contacts

OUTPUT: Participant list

3. Tasks - what needs to be done next, by who and what is the deadline

OUTPUT: Completed checklist and allocation of tasks

4. Draft and submit a budget for the workshop

Second planning meeting

Indicative timeframe: 1–2 weeks before workshop

1. Go through each workshop session in detail - outline exactly how it will be delivered and the roles people will play (co-facilitators, recorders, etc.).
2. Follow up to ensure tasks are completed
3. Confirm final arrangements/ logistics
4. Hand out facilitator packs with notes and prompts (if required)

OUTPUT: Team fully prepared and ready to go

BEFORE THE WORKSHOP

1. Present *sevusevu* (if possible, also present a *sevusevu* to the Provincial Council Office)

2. Have a pre-meeting to ensure everyone in the delivery team knows their role and contributes fully to effective facilitation of the workshop. If possible, involve YMST representative/s, Roko/ Assistant Roko and other suitable locals to help facilitate.

3. Ensure the venue is set up as required and think about what is the best layout. (Don't forget to think about other practicalities like soap and toilet paper in toilets!).

DURING THE WORKSHOP

1. Be prepared well before each session

2. Take a register of participants (include contact details)

3. Take photographs (e.g. group photo, flipcharts, people participating in workshop)

4. Record the outcomes of each session

5. Facilitators debrief at lunch and close of day (amend/refine plans as required)

6. Participants complete workshop evaluation

7. Engage informally (developing relationships, building awareness/understanding on both sides)

OUTPUT: Workshop effectively delivered and documented

AFTER THE WORKSHOP

Indicative timeframe: To be completed within 2 weeks after workshop

1. Produce a workshop report.
   As a minimum this should include a list of participants, agenda, outcomes and next steps.

2. Workshop debrief meeting – this can be done by email if the team is not able to meet.

3. Send workshop report to Provincial Office, participants and key stakeholders.

4. Download relevant photos and store in a safe location.

OUTPUT: Workshop report filed and distributed

Facilitator notes

It is important to recognise that even the best-laid plans can be affected by unforseen circumstances. Good facilitators have contingency plans and are able to adapt their plans as required to get the most from every workshop.

Appendix 7

Agenda for First District Management Planning Workshop

Objectives

- Bring different communities and stakeholders together to build shared understanding and start to plan collaboratively
- Build capacity for ongoing community engagement and collaboration.

PARTICIPANTS

Village representatives, Government staff (e.g. Fisheries, Forestry, Lands, Agriculture, Environment, iTaukei Affairs), Provincial Office (PO) staff, Conservation Officer, and where relevant, representatives from FLMMA, Yaubula Management Support Team, NGOs.

Below is an example of an agenda that can be adapted and modified to different districts or islands undergoing management planning.

DAY 1: AWARENESS

Time	Topic	Lead	Details/notes
SESSION 1			
08.30	Official Opening Address	PO	A welcome address expressing the objectives of the workshop
08.45	Introduction to management planning	PO	Provincial Office (PO) highlights the management planning process + the role and expectations of the villages and other stakeholders + how this fits with provincial and/or village planning.
09.00	Introduction of participants		Everyone introduces themselves and outlines their hopes/expectations
09.30	Introduction to Ecosystem-Based Management	Facilitator	Review of initial village visits and the need to plan together at the district/island scale. Overview of EBM principles.
10.00	Development Focus of Province	PA	Provincial Administrator (PA) outlines local development plans and projects
10.30	Refreshment Break		
SESSION 2			
10.50	Government presentations on key thematic areas	Fisheries	Sustainable fisheries, income generation projects and marine protected areas
11.25		Forestry	Importance of forests and setting up forest protected areas/catchment areas
11.55		Agriculture	Sustainable agriculture and income generation
12.25		Environment	The Environmental Management Act and Environmental Impact Assessment (EIA) process
1.00	Lunch		

Time	Topic	Lead	Details/notes
SESSION 3			
2.00	Visioning exercise	Facilitator	Present the visions established during initial village visits. Break out into small groups and discuss key words, phrases and recurring themes. Ask them to capture these in a draft 'vision statement' and pick the best one.
3.30	Management objectives	Facilitator	With regard to the vision (and management objectives identified during initial village visits), what do the participants want to achieve through management? How do they think some of the required changes will be achieved?
4.30	Review of Day 1		Outline the focus for Day 2
5.00	Closing prayer		

DAY 2: UNDERSTANDING THE LOCAL SITUATION AND STARTING TO PLAN

Time	Topic	Lead	Details/notes
SESSION 1			
8.30	Recap Day 1 and agenda for Day 2	PO	Invite any questions from participants (arising from Day 1) Outline the focus of Day 2 and agenda
9.00	Mapping exercise	Facilitator	Referring to maps produced during initial village visits, provide new synthesised maps and other information that might be useful for participants (e.g. primary forest, protected areas, logging concessions, mining tenements, reefs/fishing grounds, development sites). Ask them to check these maps for accuracy and to discuss/identify where key issues are occurring spatially.
11.00	Refreshment break (fruits and juice)		
SESSION 2			
11.15	Conceptual modelling exercise	Facilitator	Spilt into four thematic breakout groups (forest, freshwater, mangrove, coastal habitat, marine). See Appendix 12.
1.30	Lunch		
SESSION 3			
2.30	Conceptual modelling exercise		Identifying targets, threats, root causes of threats and initial strategies (refer to detailed facilitator notes in Appendices 12 and 16).
4.30	Review of Day 2	PO	Go through outputs so far, including vision, maps and conceptual models
5.00	Reflection, prayer and close		

Appendix 7

DAY 3: ENGAGING COMMUNITIES

Time	Topic	Lead	Details/notes
SESSION 1			
8.30	Recap Day 2 and agenda for Day 3	Facilitator	Invite any questions from participants (arising from Day 2) Outline the focus of the day (communication, engaging communities and next steps) and the agenda
9.00	Community engagement training	Facilitator	Introduce community engagement tool and provide training. See Appendix 3.
11.00	Morning tea break		
SESSION 2			
11.20	Engaging communities - role-play exercise	Facilitator	Practice feeding back key messages to specific groups in their village, with reference to previous training and their role as village representatives in the planning process. *Continue after lunch if required*
1.00	Lunch		
2.00	Review and next steps	Facilitator	*Review the workshop and go through outputs (maps, conceptual models, etc).* *Ask them to agree next steps (including 'take home' tasks)*
3.30	Closing prayer and homeward journey		

Facilitator notes

Activities on the first two days should build on the outcomes from initial village visits. Repeating some of the information from village visits can help reinforce understanding. Where issues have been identified at community level, they should be explored at the district/island level, for example by asking 'where else is this occurring?' and 'how does this affect other communities?' This helps different stakeholders to build understanding based on their shared knowledge and experiences, providing a foundation for collaborative planning and management.

Climate Change Exercise

This session uses the Community-based Risk Screening Tool – Adaptation and Livelihoods (CRiSTAL) tool to assess local vulnerability to climate change impacts and facilitate development of community-based adaptation plans.

CRiSTAL is a participatory tool developed by IUCN, International Institute for Sustainable Development (IISD), Helvetas, and the Stockholm Environment Institute. Resources can be downloaded from: https://www.iisd.org/cristaltool/

The facilitator notes below are based on experience adapting the tool to a community setting in Fiji.

Start with a presentation on climate change and its impacts

Facilitators can ask questions and encourage participants to share experiences during or after the presentation, e.g. 'are any communities experiencing these things?' and 'can you tell us a bit about the experience in your village?'.

Leave plenty of time for questions.

In plenary, explain the CRiSTAL approach

Explain that the objective is to discuss the various climate hazards affecting the community, what resources they impact, how communities are coping now, and what resources and tools they might need to make their coping strategies more sustainable.

Briefly go through a case study as an example (see page 89).

Breakout groups to identify climate hazards

This works best in village groups.

Start with a general discussion about what changes participants have seen and experienced in their village. Ask them to brainstorm the impacts that they are experiencing (someone from each group should list these on butcher paper).

Ask them to discuss which are the most serious threats, in terms of their impact. In doing this, it is useful to consider:

- Likelihood – how frequently it is likely to occur (e.g. once every 20 years, or twice every year); and
- Severity – how bad the impact is likely to be (will it kill people? destroy homes? ruin crops? – or less serious like flood the road so children can't go to school or farmers can't get to market?)

Ask each village to pick the 2 most important climate change related threats.

Groups go through the CRiSTAL methodology (outlined on the following pages)

Appendix 8

Facilitator notes

At the start of all breakout group exercises, facilitators need to get involved to ensure groups understand what they are supposed to be doing and help get the discussions started.

Be prepared for suggestions that are not linked to climate change. When this happens, discuss the cause and highlight if it is already on the conceptual model. If it is not, then suggest it can be added.

The CRiSTAL methodology works best when groups are given a template, showing the row and column headings only, which they complete based on their perceptions of the key threats in their communities.

The information provided on the following pages can be used by facilitators to prompt discussion.

Basic guide to using CRiSTAL methodology to identify hazards and coping strategies as a result of climate change

Below is a step-by-step guide on applying basic CRiSTAL methodology while facilitating training relating to climate change, livelihood and adaptation to local communities & stakeholders.

How to use CRiSTAL

1. Identify the hazards that your community faces as a result of climate change (these hazards may include the following: floods, extreme cold, extreme heat, storm surges, high winds, prolonged rainfall shortages, droughts, rainstorms etc)

2. Identify the following resources in your community under the following categories:

   - Natural resource(s) - the natural resource stock (e.g. trees, water, clean air) that people rely on directly (food, income, medicine) and indirectly (flood control, storm protection).

   - Physical resource(s) - basic infrastructure and productive capital for transport, buildings, water management, energy and communications (e.g. roads, water tanks, tools).

   - Financial resource(s) - the stock and flows of money that allow people to achieve their livelihood objectives (e.g. cash, savings, remittances).

   - Human resource(s) – the skills, knowledge and good health important to the pursuit of livelihood (e.g. traditional knowledge, weaving skills, education).

   - Social resource(s) – formal and informal social relationships and institutions from which people draw in pursuit of their livelihood (e.g. church groups, farmer associations, political organizations).

3. Ask how does the hazard in #1 impact the listed resources in #2 for their respective categories?

4. List your current coping strategies faced for #3 above.

5. For each of the listed current coping strategies for #4 above, specify whether the strategy is likely to be sustainable or not in terms of the costs and resources required.

6. List other alternative sustainable strategies and what skills, knowledge and resources they will require.

EXAMPLE: CASE STUDY 1

Matu Village is a coastal village on a remote island on the eastern side of Fiji. Communities here depend on fishing, copra, tapa and mat making as their source of income. Being on a small low lying island with a population of 150 inhabitants, drinking water on this island is a precious resource. Additionally, the local ferry calls in once a month to bring in shop supplies and cart out local cargo to be sold in Suva markets.

Due to the remoteness of this village from urban centres, the villagers heavily rely on their natural resources for daily livelihood and income. However, the villagers have been noticing that frequent cyclones and storm surges are now affecting the very resources they depend on.

Certain households in Matu Village also receive supplemental income from pensions and remittances from relatives living and working in Fiji's urban centres and abroad.

Using the information provided above, list the hazards and resources for Matu Village:

Hazards

Frequent cyclones

Increasing storm surges

Resources (as per category)

Natural resource

Finfish & marine invertebrates (*Ika, sasalu, sici, lairo, lumi, nama, kaikoso, vasua, lairo, urau* etc)

Coconut

Pandanus

Masi

Root crops

Fruits and vegetables

Drinking water

Physical resource

Houses

Boats

Copra drier

Farming implements

Financial resource

Cash

Savings

Remittances

Pension

Human resource

Fishing skills

Farming skills

Tapa & mat making skills

Copra production skills

Knowledge acquired from formal education

Traditional knowledge

Social resource

Women's club (*Soqosoqo varama*)

Men's club (*Soqosoqo ni Turaga*)

Youth group

Village development committee

Church group

Out of the resources listed above, identify **3 resources in each category** that will be **most affected by the hazards listed** and follow through with steps in the box on the previous page. Refer to the next page for descriptive step-by-step examples.

Name of affected community: Matu Village

Community description: 150 inhabitants of Matu Village - situated on low lying island, Eastern part of Fiji
Mostly subsistence living, income derived from sales of beche-de-mer, copra, mats & tapa.

Hazards faced by Matu Village: 1. Frequent cyclones 2. Increasing storm surges

		Frequent cyclones				Increasing storm surges			
	List of resources	*How does this hazard impact the following resources?*	*Current coping strategies*	*Sustainable?*	*Alternative coping strategy*	*How does this hazard impact the following resources?*	*Current coping strategies*	*Sustainable?*	*Alternative coping strategy*
Natural resources	Finfish & marine invertebrates	Breaks corals, uproots seagrass, seaweed, algae, can cause tidal waves – affects coral reefs and can deplete marine resources that are already vulnerable from human induced degradation such as overfishing	None	No	Have marine managed areas in place to have safe havens for fish & marine invertebrates for long term sustainability.	Breaks corals, uproots seagrass, seaweed, algae, can cause tidal waves – affects coral reefs and can deplete marine resources that are already vulnerable from human induced degradation such as overfishing	None	No	Have *tabus* in place - for marine life refugia, increase fish stock and also increase resilience of this ecosystem.
	Coconut	Destroys coconut trees including leaves and nuts. Coconut production is affected for a few months for trees that remained standing. For trees that have fallen, no coconuts can be produced at all.	None	No	None - normally coconuts are one of the most resilient trees to cyclones.	Affects coconut trees growing along the beach - increasing storm surges have eroded beachfront and some coconuts have died from roots absorbing salt water	Plant coconuts inland	possibly	Protect mangroves growing on inter-tidal flat & have *tabu* in-front of village. Mangrove provides natural shield for village during storms and *tabu* will encourage production of coral reef. Waves breaking on coral reef reduce energy of waves when they hit the shore.

		Frequent cyclones			Increasing storm surges			
	List of resources	*How does this hazard impact the following resources?*	*Current coping strategies*	*Sustainable?*	*Alternative coping strategy*	*How does this hazard impact the following resources?*	*Current coping strategies*	*Sustainable?*	*Alternative coping strategy*
Natural Resource	Masi	Destroys masi trees, affects leaves. Temporarily halts masi production	None	No	As above	Affects masi tree growing near shoreline	None	No	None
	Pandanus	Breaks pandanus trees & leaves, particularly for trees that haven't had their leaves trimmed. Temporarily halts mat making production	Trim pandanus leaves when cyclone warning is heard	Unsure	Having intact forest around also reduces intensity of high winds. Practice agro-forestry	Affects pandanus trees growing near the beach. Storm surge exacerbates coastal erosion and thus increases high tide mark which increases salinity in soil and harms pandanus trees.	Move pandanus plantation inland	To some extent	Protect mangroves growing on inter-tidal flat & have *tabu* in-front of village. Mangrove provides natural shield for village during storms and *tabu* will encourage production of coral reef. Waves breaking on coral reefs reduce energy of waves when they hit the shore.
	Root crops	Destroys vulnerable root crops like cassava & dalo	Trim cassava leaves	Yes	Plant traditional root crop varieties that adapt to multiple weather variations: yam & dalo-ni-tana.	Affects root crops & breadfruit growing near shoreline.	Move pandanus plantation inland	To some extent	Also practice multi-cropping and plant variety of root-crops particularly traditional varieties that are adapted to multiple natural disasters and have quick maturity time or can keep for long e.g. yam (uvi), dalo-ni-tana & kawai.
	Fruits	Destroys fruiting trees including fruits and flowers	None	No	None	Halts production of mango fruits, damages fruits that are in season when storm surge occurs.	None	No	Also plant variety of fruit trees & fruit plants (e.g. pineapple)- practice agro-forestry
	Vegetables	Destroy vegetables that are vulnerable to cyclones	None	No	Plant variety of vegetables to decrease reliance on single vegetable type.	Damage vegetables growing near shoreline.	Move garden inland	To some extent	Also plant variety of vegetables - if certain species are damaged, other species can be consumed.

Historical Mapping

Objective

This tool provides an opportunity for participants to look back at the history of their community and the events that have taken place. This is an opportune time for the elders of the community to give an insight on how life was like 50-70 years prior. It also facilitates awareness with younger generations of community relocations, disease outbreaks, disasters or hazards (such as droughts and cyclones), and agricultural and other livelihood practices.

GROUP DISCUSSION

Plan a group discussion and select community members who will be able to provide historical information about the community. When selecting participants, you will want to find both men and women, and possibly children, who know the community and are willing to share their experiences. It is good to have a broad mix of people in the group, including leaders, teachers, young and old.

Start off by asking people if they can recall major events in the community related to the topic, such as major hazards and their effects, changes in land use (crops, forest cover, houses, etc.), changes in land tenure, changes in food security and nutrition, changes in administration and organisation, or major political events.

Have a note taker who will write the events discussed on a large sheet of paper in chronological order.

Facilitator notes

The tool can be used following the climate change exercise (Appendix 8) or mapping exercise (Appendix 2b) as it may also prompt discussions on changes in weather patterns, changes in the physical features of the community and use and management of different resources over time. It also assists in facilitating discussions amongst the community about events and decisions that were made in the past and how these may have either made the community more resilient and/or vulnerable.

It is important to look out for themes, such as diseases, access to food, natural disasters, access to work, housing, changes in climate, livelihoods, crime, or stress. When the historical map is completed it is worth spending some time in the community to reflect on the major extreme events. Have weather and climate related events such as flood, drought and cyclones changed in number or severity? Information on the changes may also be reflected in the seasonal calendar tool (Appendix 10).

The findings of the exercise can support the design of more robust adaptation and mitigation measures that can be integrated into the EBM plan to strengthen the community's resilience. An example of a historical timeline constructed from Kubulau District can be found on page 27 .

Seasonal Calendar

90 mins

Objective

The seasonal calendar incorporates aspects of both traditional and Western concepts. The calendar is intended to identify the different hazards that occur during the year and their relationship to important resources, livelihoods, and other activities.

GENERAL BACKGROUND

Before the adoption of the Gregorian calendar, the iTaukei had their own system or methods of differentiating each season. This coincided with the fruiting of certain types of trees or the bloom of a certain plant and the presence of certain fish species.

These indicators can assist communities in discussing measures that they have in place or need to put in place to be able to respond to the impacts of these hazards on their resources and livelihoods. It is important to consider the input of every group as differing perspectives will better reflect the community's activities and needs. The end product will show the types of farming, fishing, social activities or other types of livelihood activities that take place. This can help give an indication of which season the community is most dependent on for income. Understanding that they may not have control over the weather or climatic changes occurring, but still have the capability to manage the impacts of these changes with planned measures is an important point to emphasize.

BREAKOUT GROUPS

Organise a diverse group when putting together calendars representing men, women, the elderly, and youth. Different groups could identify different themes such as: health, seasonal crops or marine species, natural hazards (e.g. flooding, cyclones) and seasonal changes in the weather.

It is up to the facilitator and the community to decide which calendar structure best suits their needs. You may use a table similar to Figure 8 in the guide. The information is intended to create calendars that are not necessarily dated, but that provide communities with guidance on the seasonal needs of different crops or livestock, or different and related actions, such as preparedness for cyclones, that might be needed during the year.

Seasonal calendars were used previously based on stable climates. This tool can also be used as an opportunity to discuss how seasons are changing. The tool could be reshaped and raise awareness that old seasonal calendars and planning approaches may be changing. A diagram could be used to indicate how flowering, planting and harvesting times are changing while climate related hazards might be emerging or old ones appearing at unexpected times. An example of this kind of calendar is below.

Facilitator notes

Try to look for links in the information which can then be discussed with the community and presented clearly. You may also choose to draw the charts on transparent film and overlap them. Think about how hazards affect livelihood activities. When is their workload heaviest? What is the relationship between the wet and dry season, and health and the availability of traditional crops and medicines?

When looking at the changes in the environment check if there is consistency with the climate change information you have from other sources, such as the local meteorological office.

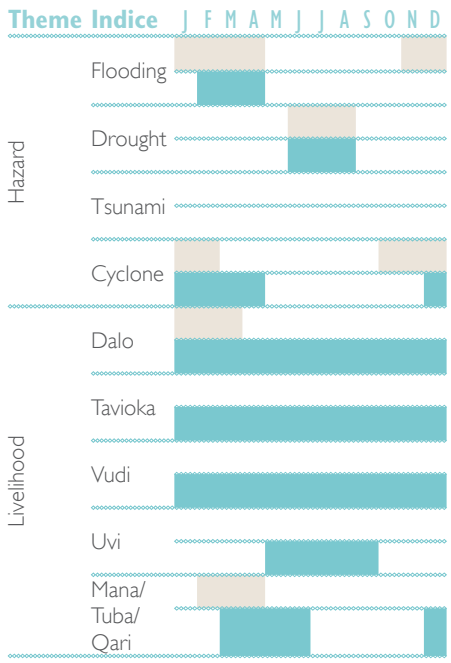


Figure 18. An example calendar

Resilience Star

Objective

The Resilience Star tool helps communities understand the complexities of the factors present in the community that enable them to be resilient, and also how different threats affect these factors. Additionally, the tool helps communities to see the inter relationships between each factor and threat and how they influence each other.

The resilience star explores the social cohesiveness, available economic opportunities, infrastructure and natural resources that enable communities to be resilient. The facilitator assists in identifying these resources and related opportunities that enables communities to develop a holistic management plan which takes into account disaster and climate risks.

BREAKOUT GROUPS

Arrange break out groups (of up to 5) for men, women, elderly and youth and provide them with large sheets of paper, and pre-prepared templates of the resilience star (see example below).

Explain that the circle in the middle of the star represents a resilient community. The points of the star represent the different factors that contribute to community resilience.

In black pen participants write out threats that affect each of the factors contributing to resilience. Once this is done, ask groups to identify their strengths or capacities for each of the factors in a different colour pen. These threats and strengths/capacities may be taken from the SWOT Analysis (Appendix 4) that they may have previously identified, and place them around the star. For example, community members may consider conflict over land as a threat to social cohesion; they may also identify the governance structure and leadership in the community as a strength which supports their social cohesion and also helps with ensuring that resources are managed sustainably.

Following this, a problem and solution tree can be drawn using information from the star. If gaps exist, appropriate and cost effective solutions can be identified to address these with the input of all community members. These may be in the form of good governance workshops to strengthen social cohesion and leadership, awareness on resilience infrastructure so that cyclone and flood proof housing can be built, or financial literacy and alternative livelihood workshops to build more financially literate and financially stable communities.

Facilitator notes

This tool is best used after you have conducted other participatory exercises as it can help bring together information from these exercises to develop an action plan.

Figure 19. An example Resilience Star

Conceptual Modelling Guidelines

Objectives

- Develop a detailed and shared understanding of the local situation (including threats to local ecosystems and their underlying causes)
- Propose ideas for targeted management strategies
- Establish targets

Form four breakout groups, covering:

- Terrestrial ecosystems (land and forest);
- Freshwater ecosystems (wetlands, rivers);
- Coastal and estuarine ecosystems (tidal mudflats, mangrove forest and beaches);
- Marine ecosystems (particularly focussed around coral reefs and seagrass beds where fish and other valued species are found)

Facilitator notes

Consider the makeup of these groups. Experience suggests that women and youth representatives speak more freely amongst their peers than they do in mixed groups including men. Contributions from women and youth can be enhanced by keeping them together in one group, rather than splitting them up. Experience also suggests that women work best on coastal/estuarine ecosystems, where they regularly glean or fish.

Each stage of the conceptual modelling process should follow the same basic steps, which are designed to maximise the level of input from every individual, prevent the 'loudest voices' from dominating, stimulate debate and, most importantly, build consensus that the final model represents the group's shared understanding of the situation:

1. Explain what you are focussing on
   E.g. "targets are the things we want to protect and how we will measure our success"
2. Individuals brainstorm their personal ideas onto cards (one idea per card)
3. Share everyone's ideas by reading out their cards as they stick them on the wall
4. Filter and arrange cards based on how they relate to each other.
5. Review and agree things together
   Get everyone's agreement that what you have done, and the conceptual model you have created, reflects the general consensus of the group.

As well as ensuring consistency across breakout groups, this standardised process creates a safe environment for people to present different views and perspectives. This can be important in rural Fiji, where it can be considered rude to be seen as challenging the opinions of others in public. Facilitation skills are required in order to stimulate (and not lead) the debate.

Detailed facilitator notes for identifying targets, threats and strategies are provided next.

ESTABLISHING TARGETS

First, explain what targets are: the elements that we choose to concentrate on, especially for the purposes of planning a project and measuring its effectiveness. Explain that these are:

- the things we want to protect; and
- things that we can monitor to see if we are making progress.

Species work well as targets because we can record their abundance. With reference to the shared vision, ask participants to identify what key species they want to protect, see or include as targets.

Brainstorm (as individuals first)

- With reference to the vision, ask individuals to think about what their main targets are for their ecosystem?
- An easier way to start them off might be to ask "*What do you want to protect?*"
- Give them a minute to think about it, and then ask them to write their targets (one per card).

Discuss and filter (in plenary)

- It is important to discuss targets so that people understand them better (and so we understand what people mean).
- Go through the targets and discuss each one briefly. Prompts might include:
  - why did you chose this target?
  - what is its current state?
  - what change do you want to see?
  - how can we measure progress?
- As you do this, group together similar targets (e.g. if they have listed trees, forest, and native forest separately you could suggest that they have one target for native trees or ask them 'what species do you want to see into the future?').

Get rid of any that are not really targets, e.g. 'that is more of a threat, lets put it to the side for now'. This will result in a new, shorter list of targets.

Discuss how we might measure some of the targets (e.g. for eels/prawns/fish, we can measure how often we see or catch them).

Prioritise (discuss in plenary and/or vote to rank them)

With reference to the shortened list of targets, discuss 'which ones are most important?' and, 'which are the easiest to measure?' You can use this to identify priority targets.

An alternative method of prioritizing involves giving everyone 3 votes (little dot stickers are best, or they can just make 3 marks with a pen) that they can allocate to the targets they think are most important.

We recommend prioritising 3–6 key targets maximum.

IDENTIFYING DIRECT THREATS AND CONTRIBUTING FACTORS

Explain that threats are things that can affect your target state and/or prevent you achieving your vision.

Brainstorm (as individuals first)

Ask individuals to think about what things are affecting the health of the target species or ecosystems (brainstorm - one threat per card)

Discuss, filter and group (in plenary)

It is important to discuss threats so that people understand them better (and so we understand what people mean). Read out each one, asking 'how is it a threat?'

Group threats by type if possible (e.g. fish poisoning and night diving could be grouped as 'unsustainable fishing methods').

Arrange threats in relation to the targets that they are affecting

Prioritise (discuss in plenary and/or vote to rank them)

Discuss which are the 'biggest threats' – causing the most damage or which requiring the most urgent action.

In order to properly address a threat, you need to understand why it is occurring. A 'root-cause analysis' facilitates discussion about the factors contributing to the threats you have identified. Start by demonstrating what you mean by looking at the root cause (i.e. the source) of a threat together. Select one of the threats that have been identified and write it down at the head of a flipchart.

Brainstorm (as individuals first)

Ask participants to think about why the threat occurs and the immediate social, environmental and economic causes. Get them to brainstorm these root causes onto cards (individually).

Discuss, filter and group (in plenary)

Clarify what the cards mean as you stick them onto the conceptual model sheet or wall under the threat, getting rid of any that are repeated.

Ask questions in order to get to the real root-cause. For example "lack of information" can be questioned with "why is there a lack of information?" and so on.

As you work downwards toward the roots, keep asking the question "Why does this happen?" for each of the immediate causes identified. When a new cause is identified, write this on a card and place it on the conceptual model sheet or wall.

Repeat until it is not possible to break the problem down any further. At this point, you have identified potential root causes of the problem.

Confirm

Check "back up the chain" to see that the logic holds both ways. Clarify any issues that arise, moving or modifying the cards as appropriate.

Finally you can connect the cards with arrows to show the links and make sure that the notes are strongly affixed to the paper or sheet or wall.

Repeat this process for each threat originally identified in the previous exercise.

PROPOSING STRATEGIES

Start by explaining that we want to develop strategies to address threats (or their root-cause) and achieve our targets. This can be informed by looking at good practice, which can be described as 'things that have been shown to work and we can learn from'.

Put paper on the wall for each breakout group, with headings and examples as show below:

Ask participants to brainstorm any other examples of good practice they are aware of (writing one per card). Remember that some may have been highlighted in earlier presentations! Put them in the lefthand column of the chart. Clarify what each card means, asking 'why does it represent best practice?' and record this in the right hand column. If they don't know 'why' then brainstorm together. If no one can come up with a valid reason, then eliminate the suggested practice.

Highlight the range of best practice that they are already familiar with (or already using).

Good practice	Why
Forests and land ecosystems	
Do not use fire to clear land for farming.	Burning reduces soil fertility, increases soil erosion and reduces downstream water quality.
Rivers and freshwater ecosystems	
Restore degraded river banks and riparian zones by planting native trees and shrubs.	Riparian vegetation reduces erosion and provides food and shade for freshwater fauna.
Coastal and estuary ecosystems	
Limit harvesting of mangroves to ensure no net loss in mangrove area.	Mangroves are valuable as a fish hatchery, nursery, feeding ground and habitat.
Marine ecosystems	
Protect MPAs for at least 5 years before any harvesting	A *tabu* will take time to affect changes. 5 years is the minimum recommended period on which real change can be measured

Facilitator notes

Facilitators should also access the lists of Best Practice in Appendix 10. Use this to draw attention to these practices and add them to the chart during the course of group discussions – especially if one of the participants or presenters mentions them.

With reference to the threats and contributing factors identified previously (and the best practice examples just discussed), ask participants to brainstorm strategies that they feel will be most effective in their community, given the resources that they currently have available (one strategy per card).

Read, clarify and filter the proposed strategies (getting rid of repeats and combining similar strategies).

Stick them onto your growing conceptual model, placed in relation to the specific threat or contributory factor that they are addressing.

Ask them to think about which strategies are most important, in terms of:

- Being achievable – e.g. which strategies can communities implement by themselves and which require support or resources from elsewhere?
- Potential impact – e.g. which ones are addressing the highest priority threats.

Explain that we have now identified initial strategies. Because management strategies are generally implemented by communities, it is important that they play a part in strategy selection and design. This ensures that strategies are locally appropriate, understood and likely to receive community support.

We will therefore develop and confirm strategies in consultation with communities at a later point in the management planning process. Explain that they, the workshop participants, will lead this process to:

- Discuss and raise awareness of the need for management with different members of the community (e.g. women, young people, children, residents of settlements).
- Raise awareness about the threats and strategies we have identified. Record what people think about the threats – were they aware of them? why do they happen (contributing factors)? has anything been done to address them in the past?
- Record what people think about the strategies identified – Are they useful? Who should be involved in delivering the strategy? Can they think of any alternative strategies that might address the threats? What can they do (as individuals, families, mataqali, yavusa)? Where should any protected areas be located?

Facilitator notes

It is important that the different breakout groups share what they have done with each other by presenting their conceptual model. When they do so, encourage audiences to ask questions and make suggestions. These can be incorporated into the conceptual model.

Highlight common threats, root-causes and strategies across different ecosystem groups.

Confirm consensus amongst the whole group that each conceptual model reflects their shared reality and take pictures to record this.

Appendix 13

Best Practices

Best practice are recommendations based on best available knowledge and learning by doing.

To maintain and restore the health, productivity and resilience of ecosystems, the following practices are recommended:

Recommendation	Rationale
Farming	
Do not use fire to clear land for farming.	Burning reduces soil fertility, increases soil erosion and reduces downstream water quality.
Do not clear, burn or farm within 50 metres of stream and river banks.	Broad riparian buffers reduce soil erosion and improve downstream water quality.
Do not allow clearing, burning, farming or grazing in drinking water catchments.	Clearing, burning and grazing reduces the quality and quantity of drinking water.
Use fertilisers and pesticides only as necessary, and always follow manufacturer's instructions.	Fertilisers cause algal growth and eutrophication. Many pesticides are toxic to people and animals.
Do not farm on steep slopes. Use terrace and contour planting to control soil erosion.	Farming steep slopes increases soil erosion and reduces downstream water quality.
Forests and water catchments	
Do not allow clearing, burning, logging or grazing in old growth forests.	Old growth forests are home to many unique species, and may take centuries to fully recover.
Do not allow clearing, burning, logging or grazing within 100 metres of old growth forests.	Logging and grazing near old growth forest increases the risk of invasive species.
Do not allow logging within 100 metres of a river of stream.	Broad riparian buffers reduce soil erosion and improve downstream water quality.
Do not allow logging in drinking water catchments.	Logging reduces the quality and quantity of drinking water.
Monitor logging operations and report any breaches of Logging Code of Practice or licence conditions.	Community monitoring ensures compliance with environmental protection rules.
Replant logged areas using local native species.	Restoring forests after logging helps to maintain water catchment health and biological diversity.
Rivers and riparian zones	
Restore degraded river banks and riparian zones by planting native trees and shrubs.	Riparian vegetation reduces erosion and provides food and shade for freshwater fauna.
Do not build crossings, weirs or other structures in a manner that prevents fish migration.	Migration up and down rivers is a vital part of the life cycle of many fishes, including food fish.
Invasive species	
Do not introduce invasive species.	Invasive species reduce agricultural productivity and threaten native plants and animals.

Recommendation	Rationale
Managing coastal and estuarine ecosystems	
Limit harvesting of mangroves to ensure no net loss in mangrove area.	Mangroves are valuable as a fish hatchery, nursery, feeding ground and habitat.
Restore degraded mangrove areas by planting native mangrove species.	Mangroves reduce coastal erosion and provide valuable protection from storm surges.
If a *tabu* is opened, do not use nets with a mesh size less than 75 mm (except for small hand nets) and limit take to amount likely to have accumulated during closure.	Periodic harvesting can affect species abundance and diversity, wiping out any conservation gains through the *tabu*.
Houses and village structures (including jetties) should not be built within 30 m of high tide mark without an environmental impact assessment.	Building in the coastal zone could cause coastal erosion and result in pollution of marine waters.
Industrial or commercial development must not be undertaken without environmental impact assessment.	A wide range of environmental impacts may result from such development, for example coastal erosion or pollution and damage to natural ecosystems such as mangroves.
Fisheries management	
Protect MPAs for at least 5 years before any harvesting.	A *tabu* will take time to have affect changes to abundance, biomass and diversity. 5 years is the minimum recommended period on which real change can be reliably measured.
If MPAs are opened, do not use nets with a mesh size less than 75 mm (except for small hand nets), limit take to amount likely to have accumulated during closure, leave the largest females to reseed the population, and shut down the harvest once the target has been reached.	Periodic harvesting can affect species abundance and diversity, wiping out any conservation gains through the *tabu*.
Do not take fish or invertebrates that are gravid (e.g. large stomach fish, berried crustaceans).	Protecting gravid fish and crustaceans increases the productivity of the fishery.
Do not take fish in migratory 'bottlenecks' during peak migration seasons.	Targeting migrating fish in reef channels or estuaries reduces the productivity of the fishery.
Consider relocating giant clams and sea cucumbers to marine protected areas or *tabu* areas.	Protecting clams and sea cucumbers until they reach reproductive size and at higher densities will help local populations to breed and recover.
Maintain spawning aggregations by protecting spawning sites, including reef channels.	Protecting spawning aggregation sites increases the productivity of the fishery.
Do not take fish or invertebrates smaller than the recommended catch size limits	Catching fish that have not yet reproduced reduces the productivity of the fishery.

Appendix 14

Sustainable Fisheries Management Exercise

Objective

To increase understanding and awareness of marine ecosystems and resources to help inform sustainable fisheries management

Participants: Local communities, Fish Wardens, fishers

NGO partners, Department of Fisheries, Conservation Officers

Facilitator notes

Some of these exercises are adapted from the SPC community-based ecosystem approach to fisheries management guide (available from: http://www.spc.int/coastfish/component/content/article/58-a-community-based-ecosystem-approach-to-fisheries-management-guidelines-for-pacific-island-countries.html) and the USAID Coral Triangle Support Partnership guide to designing MPA networks for multiple objectives, including fisheries management (available from: http://www.coraltriangleinitiative.org/sites/default/files/resources/12_Designing%20MPA%20Networks_A%20Practitioner%20Guide.pdf)

DEFINE THE SCOPE FOR FISHERIES MANAGEMENT

During the breakout groups for conceptual modelling for coastal and marine ecosystems (see Appendix 9), group participants will likely want to set targets for management of focal inshore fisheries resources (e.g., mud crabs, sea cucumbers, trochus, food fish). In considering the potential threats that impact these targets, participants should start with a description of the geographical area to be managed, the stakeholders involved who affect the resources, and the main species of concern. The geographical area to be managed is usually the area under traditional control of the local community.

Participative session – Mapping the fisheries management area

In breakout groups, ask participants to sketch a map of their fishing grounds, indicating important ecosystem characteristics (e.g. habitats), physical characteristics (e.g. ocean currents) and important focal fisheries.

While drawing the map, have the participants consider two important questions:

- Do ecosystem boundaries extend beyond the managed area?

  For example, a continuous area of mangroves, seagrass beds or reefs may extend beyond the managed area, but may be beyond the community's control. Human activities in these areas such as development and fishing may impact movement of larval and adult fish into the community's fishing ground.

- Is the community fishing area affected by human activities outside the managed area?

  For example, downstream coral reefs may be negatively impacted by upstream land-based activities such as logging, mining, agriculture or development that increase the amount of sediments and nutrients delivered by rivers to the coast.

Considering these questions will allow the participants to identify strategies that they can implement themselves versus strategies that might need the buy-in and participation from stakeholders operating outside the boundaries of the local management area.

During the scoping process, think about whether it is more practical and efficient to address all threats to fisheries together or to split them into fishing issues, non-fishing issues and social well-being issues.

FACTORS AFFECTING THE HEALTH, ABUNDANCE, AND RESILIENCE OF FISHERIES RESOURCES

Each species needs different healthy habitats where they can eat, live, grow and reproduce (Figure 17). If habitat that is used for any one of these functions is damaged, it can have negative impacts on populations of all the species that use that habitat.

Species have different patterns of movement during their lifecycle, so we need to protect enough healthy habitats to accommodate different species at different stages of their lifecycle. For example, some species of snapper (e.g. mangrove red snapper) spend their juvenile phase in the mangroves and move out to the reefs as adults (Figure 18).

Participative session – Mapping critical feeding, breeding and aggregating habitats

On the maps of the fishing grounds created during the scope definition exercise, have participants indicate important habitats for feeding, breeding and aggregating for their target species.

Facilitate a conversation about what threats may be impacting each of those critical habitats.

Figure 20. Different species use different habitats. For example, some bivalves, crabs and sea cucumbers use river mouths, estuaries, mangroves and seagrass beds (1, 2, 3 and 5), while some fish use sandy bottoms (4), seagrasses (6) and coral reefs (7 and 8).

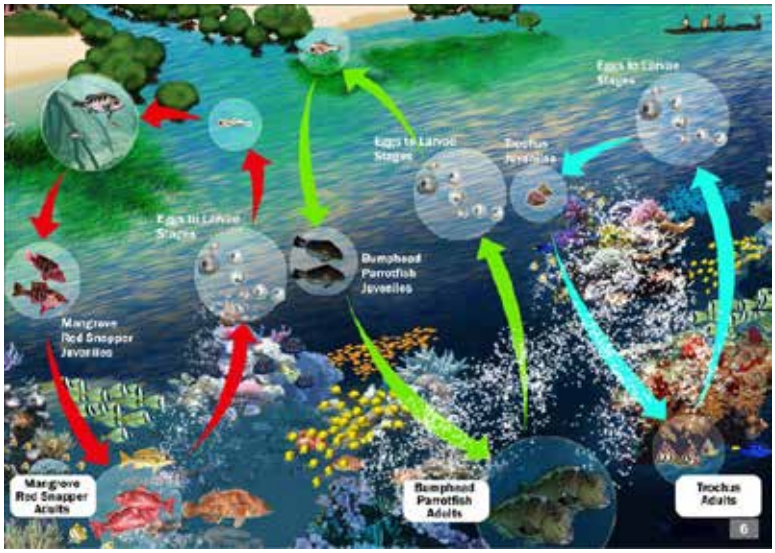


Figure 21. Some species use different habitats at different times in their lives.

Appendix 14

Participative session – Prioritising threats to important fisheries

During conceptual modelling exercises (see Appendix 9), participants will have identified various different threats impacting fisheries resources. The exercise below is designed to aid in prioritising which are the most urgent threats to manage.

The impact of each threat should be given a score based on the extent of its spatial exposure, temporal exposure, intensity (amount of hazard), and perceived social impact. The scores should range from 0 to 5: 0 (no impact); 1 (slight impact); 2 (minor impact); 3 (moderate impact); (4) major impact); or 5 (severe impact). The scores can be tallied across each for a total threat ranking, as per the example in Table 5.

Participants should consider the following questions when scoring across impact categories:

- Spatial exposure

  How much of the coastal ecosystem is affected by the activity or agent?

  Are pollutants released from a single (point) source or multiple (diffuse) sources along the entire coast?

- Temporal exposure

  For how long does the activity or agent affect the coastal ecosystem and fisheries?

  Are the activities/pollutants present over a short time (e.g. one week) or long time (e.g. persistent during the entire year)?

- Hazard effects

  How dangerous are the agents? Are they toxic to fishery resources? If so, do the toxins accumulate within the fishery resources so that they may pose a problem to human health?

- Social impacts

  How much are coastal communities affected by impacted ecosystems in terms of livelihoods and well-being?

  How much are communities disadvantaged by the impact?

Table 5. Example of scoring threats across the various impact categories.

	Impacts score as: 0 (no impact), 1 (slight), 2 (minor), 3 (moderate), 4 (major) or 5 (severe)				
Agent/ source	*Spatial exposure*	*Temporal exposure*	*Hazard effects*	*Social impacts*	*Total*
Silt/dredging	1	3	1	4	9
Silt/erosion					
etc.					

DESIGNING EFFECTIVE FISHERIES MANAGEMENT RULES

Marine protected areas (MPAs) are areas in the ocean or coastal zone that has been protected from some form(s) of human activity. The most restrictive categories of MPAs are completely protected from all extractive activities, including fishing, mining, collecting and dredging. These areas are alternatively called "marine reserves", "ecological reserves", "fully-protected marine reserves" or "no-take areas.

Well-designed networks of marine reserves can be a good to tool to allow for recovery of fisheries resources by reducing fishing pressure. However, marine reserve networks are most effective when they are combined with other fisheries and land-based management measures within the local management area that can reduce impact from the high priority threats.

Guidance for marine reserve network design

Some species need bigger reserve areas than others to allow for population recovery because they are more mobile. Large fish like bumphead parrotfish may move up to 10 km or so just during their daily searches for food, which means that they can get easily caught outside of a reserve if it is very small. Other fish and invertebrates are more stationary and their typically movements may be restricted to within 0.5 km.

Thus, as a rule of thumb, marine reserves should be more than twice the size of the home range of focal species (in all directions) and include habitats that are critical to the life history of focal species and corridors along which they move. Try where possible to replicate protection of critical habitats within the marine reserve network.

Participative session – Identifying marine reserve design criteria for focal fishery species

- Using inputs from the conceptual modelling and design scoping sessions, have participants list priority focal fishery species for management.
- For each species, use local knowledge to identify locations of important critical habitats on fishery management map and consult Figure 19 below and lists of home range sizes and movement patterns to decide on marine reserve sizes.
- If there are existing marine reserves within the fishery management area, assess whether they are large enough to provide adequate protection to focal fishery species.

Facilitator notes

Assessing adequacy of existing marine reserves will require you to come prepared to the workshop with the sizes of the existing marine reserves. Come with measurements of total area and dimensions (e.g. diameter) in square kilometres.

In terms of the spacing between marine reserves, the latest science shows most larvae settle within 10 km of where they were released. Thus, as a rule of thumb, it is recommended that reserve spacing should be within 15 kilometres, with smaller reserves spaced more closely.

Considerations for periodically harvested *tabu* areas

It is common practice in Fiji and around the Pacific to periodically harvest no-take marine reserves, or *tabu* areas, for specific events or community needs. Communities within the FLMMA network have long asked questions about how long they should wait until they open their *tabu* areas.

The answer depends to a great extent on the life history characteristics of the focal fishery species the communities want to manage. Some types of fish (e.g. small parrotfish, rabbitfish, wrasse) grow quickly and reproduce at a young age, thus at a population level they are less affected by pulse harvests that tend to remove the largest individuals. Other fish, like large grouper, grow more slowly and do not reproduce for many years, thus, if they are harvested too young they will be unable to replenish the population.

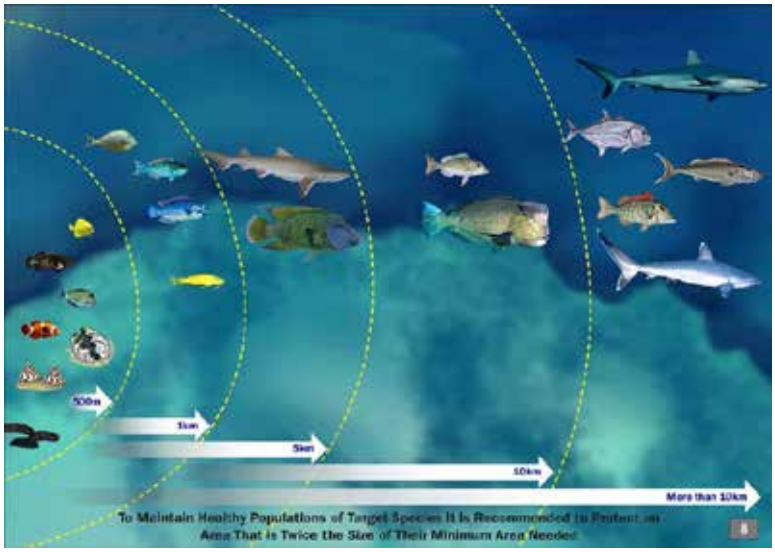


Figure 22. Schematic showing scale of home range movement from various coral reef fishes.

Participative session – Identifying focal fishery species vulnerable to pulse harvests

- For each focal fishery species, discuss its life history characteristics. Does it reproduce a lot (e.g. rabbitfish) or only a few offspring (e.g. sharks)? Does it reproduce at a young age or does it take many years to reach sexual maturity?

Facilitator notes

You can come prepared with background information to assist communities here. Life history information has been compiled for many fish species on Fishbase.org and the vulnerability of 145 coral reef species has been collated.

- Identify what gear types are typically used to catch the fish during harvests and whether any management options can be taken to limit impact to focal fishery species identified as high or very high vulnerability (Table 6).

Table 6. Example of assessment of management measures that could be taken to protect vulnerable species during pulse harvest events.

Fish Species	Vulnerability	Gear Typically Used	Management Options
Ctenochaetus striatus (dridri)	Low	Spear, net	Target preferentially during harvests
Naso unicornis (ta)	High	Night spear	Do not allow nightspearing during harvests
Plectropomus laevis (donu)	Very high	Spear, hook & line	Do not target fish >50 cm by spear; Release fish >50 cm caught by hook and line

General rules of thumb for best practice for periodic harvests are:

- Harvests must be controlled and monitored to leave some breeding stock;
- Don't take all the biggest fish;
- During openings, minimize negative impacts to habitats;
- Optimal results will likely be achieved when *tabu* areas are closed for at least 2 years and only harvested lightly when opened;
- Periodically harvested *tabu* areas will be most effective when placed in a network with other management strategies, particularly permanently closed no-take areas and limits on the number of fishers within the management area.

Participative session – harvest history from local *tabu* areas

Create a timeline of each *tabu* from the fishery management area, with information on how it has been previously harvested which will guide future management decisions. For each *tabu* area, on a butcher paper write the name of the area and in what year management was initiated. Then list in columns all instances that the *tabu* was harvested in the past. For each prior harvest event, list:

- Timing and duration
- Why the *tabu* was opened
- Whether there was a target for the harvest and whether it was met
- Types of gear used to harvest
- Types of species harvested
- Whether the catch was consumed or sold

After compiling the harvest history, use the timeline as a reference to talk about sustainability of practice. Is the community finding it harder to meet their target when they open the *tabu*? If so, it may mean that they are harvesting too frequently or too intensively and that there is generally too much fishing pressure outside the *tabu* area.

Other fisheries management measures

Networks of marine reserves and periodically harvested *tabu* areas can be effective at protecting critical habitats, but they may not reduce the overall fishing effort within the fishing grounds. If overfishing is deemed to be a problem, communities should consider how to regulate overall fishing effort. This could be achieved by:

- Limiting the number of commercial licenses that are issued for the fishing ground;
- Banning commercial fishing in the fishing ground altogether;
- Improving monitoring and surveillance to reduce illegal fishing from poaching; and
- Putting voluntary restrictions on the number of days that local fishers fish.

Other types of fisheries management measures have been applied with varying success in Fijian locally-managed marine areas. These types of rules include:

- Fish and invertebrate minimum size limits;
- Species restrictions;
- Gear restrictions; and
- Seasonal bans on catch.

Discuss with participants which types of rules they think that they can practically enforce. Experience has shown in some cases that certain rules (e.g. size limits) can be more difficult to enforce in a local setting.

Participants should also remember to consider land-based management strategies to improve water quality and habitat condition at downstream habitats used by focal fishery species.

Appendix 15

Developing and Prioritising Strategies

Objective

Incorporating community input, develop locally appropriate strategies to address specific local threats.

1. Presentation

In plenary recap what happened at the first management planning workshop:

- Present the 'vision for the vanua' (make sure this is on the wall);
- List the identified targets ("what we want to protect");
- List the identified threats ("things that can affect our targets in a negative way");
- Review the root-causes of the threats ("na vunilega")
- Review initial strategies to address the threats and help realise the vision

The facilitator should present a printed conceptual model and explain that it is just a way of "sharing our understanding of the local situation, in order to focus the management plan on local priorities".

2. Breakout groups – incorporating community input

One each for marine / coastal / freshwater / terrestrial ecosystems.

Record the ideas for strategies on post-it notes/ or flipchart. Read them out, ask for explanations if required and consider where they should go on the conceptual models (next to the threat they are addressing).

Facilitator notes

Take time at the start of the exercise to to explain that we are developing strategies to address threats, achieve targets and move towards our vision. Also review the conceptual model, explaining the terms and talking through one 'chain' to illustrate how it links together (from target to threat to cause to strategy).

Ask groups to look at the strategies that they identified in the conceptual models. What did communities think about these? What other strategies (things they can do) did they come up with?

3. Prioritising strategies - ranking

Have each breakout group rank the strategies from highest to lowest priority. Alternatively, strategies can be given categorical rankings of "high", "medium" or "low".

Explain the criteria for ranking:

- Immediacy or severity of the threat that is being addressed
- Likely impact of the strategy (the extent to which it can address that threat)
- Achievability (can it be achieved without outside support/resources?)

Facilitator notes

Ranking can be carried out in a number of ways, but it is important that the facilitator and group do not become too obsessed with obtaining a rank or score. One of the most important reasons for using this tool is to encourage discussion and comparison of issues to gain a broad understanding of the relative importance of each; if this is achieved then the object of the exercise has been reached. Friction can be generated where the actual ranks are given too much importance.

4. Feedback in plenary

Each of the breakout groups feeds back on their updated conceptual model and explains how the proposed strategies address specific threats/ root-causes.

Facilitator notes

One strategy that keeps coming up is 'awareness'. Facilitators should challenge people to define this more clearly – e.g. awareness of what exactly? who is the target audience? what are we trying to achieve (changes in attitude/behaviour)? what is the best way of communicating the information?

5. Summary (20mins)

Facilitators should summarise the outcomes of this session, go through the proposed strategies and highlight that they generally come under the following categories:

- Awareness (but has to be targeted and specific)
- Management rules (local rules and enforcement of existing laws) – give some examples
- Protected areas (marine/coastal/river/forest)
- Other projects that communities can do (e.g. mangrove planting, nursery)

Explain that these will be discussed further with communities as we come towards finalising them in the management plan. Ask them to think about how they can get communities thinking about and discussing the following:

- Which strategies can they do now without support?
- Where they could have protected areas (draw on maps)?
- How they can enforce management rules?
- Who are the key people to take forward each strategy?
- Can they think of any other strategies?
- How can communities make these strategies work?

Appendix 16

Illustrative Workshop Evaluation Template

Name: **Date:**

District: **Village:**

What age category are you in:

- ☐ Woman more then 30 years old
- ☐ Woman less then 30 years
- ☐ Man more then 30 years old
- ☐ Man less than 30 year old

Did you learn something from the training?

- ☐ Yes
- ☐ No

If you answered Yes to the question above; explain in a few words what you have learnt

What other training do you think will enhance the knowledge you have attained from this first training?

Do you like participating in the training?

- ☐ Yes
- ☐ No

What would you like improved in the activities undertaken?

Which part of the training do you enjoy the most?

Were there parts of the training that you didn't enjoy much?

What do you think should be covered in the next training?

What is your general evaluation of the training?

☐ Excellent ☐ Good ☐ Needs improving

What do you think of the catering and the food provided?

☐ Excellent ☐ Good ☐ Needs improving

Do you have any other thoughts or recommendations you want to share?

Thank you very much!

Appendix 17

Illustrative Implementation Plan (excerpt)

Published with kind permission of Kubulau Resource Management Committee

Issue	Proposed activity	Implementation	Lead	Actions (+ timeframe)	Progress report	New/remaining actions
Clearing, burning and farming						
Lack of catchment protection rules and guidelines	Prohibit clearing, burning and farming in the identified water catchment areas	KRMC Bose Vanua	KRMC village reps	1. Get information booklets, posters in Fijian on effects of clearing, burning and farming in catchment areas (Jan 2014) 2. Communications Sub-committee to meet with chiefs and request that clearing, burning and farming be prohibited near drinking water sources (Mar 2014) 3. Communications Sub-committee to hold village meetings (Jun 2012)		
Past clearing of catchment areas and stream buffers	Deliver training on re-vegetation using native plants	KRMC Department of Forestry EBM partners	KRMC village reps	1. Obtain Fijian copies of booklets "Guide to Planting Local Tree Species for Forest Restoration" and "Use of Vetiver Grass in Extremely Degraded Areas" (Jan 2014) 2. Arrange re-planting training workshop at district level (Sept 2014)		
Past clearing of catchment areas and stream buffers	Establish community nursery	KRMC Vanua Kubulau EBM partners	KRMC village reps	1. Obtain Fijian copies of Community Nursery Manual (Jan 2014) 2. Arrange visit to another community nursery in Wailevu district (May 2014) 3. Identify and obtain seedlings needed for re-vegetation and farming (drought tolerant crops) 4. Obtain any resources needed for the nursery 5. Establish and maintain the community nursery		
Past clearing of catchment areas and stream buffers	Restore native vegetation in catchment areas and stream buffers	KRMC Vanua Kubulau Department of Forestry	Communications sub-committee	1. Identify priority areas for replanting in catchment areas and stream buffers 2. Identify which species should be planted in these areas, according to booklets obtained 3. Obtain any resources needed for the replanting (e.g. seedlings for re-vegetation from community nursery or from Forestry) 4. Plant native vegetation in priority areas and maintain it		

Issue	Proposed activity	Implementation	Lead	Actions (+ timeframe)	Progress report	New/remaining actions
Clearing, burning and farming						
Lack of awareness of sustainable farming practices	Education on sustainable farming practices, including alternatives to burning and shifting cultivation	EBM partners	KRMC village reps	1. Obtain educational materials on sustainable farming practices 2. Arrange talanoa session with communities to discuss sustainable farming, based on educational materials 3. Arrange visit to model farm in Wailevu district		
Lack of community land use rules and guidelines	Implement land-use rules, including protection of stream buffers and water catchments	KRMC Land Use Department	Turaga-ni-koro in each village	1. Arrange land use planning workshop to discuss national land use rules (Sept 2014) 2. KRMC to compare national land use rules with existing EBM land use rules, and amend EBM rules accordingly to reflect any stricter national land use rules (Aug 2014) 3. Bose Vanua to agree on any amendments to EBM rules		
Lack of community land use rules and guidelines	Deliver workshop on community land use planning, including land use mapping	KRMC Land Use Department EBM partners	KRMC village reps	1. Contact Land Use Dept and EBM partners to request district workshop on community land use planning (including educational materials, land use maps etc 2. Arrange district workshop on land use planning (Oct 2014)		
Crop failure because of droughts	Establish and maintain nursery of drought tolerant varieties of important crops	KBDC SPC RMC village reps Turaga-ni-koro in each village	KBDC	1. KBDC to liaise with SPC to identify the drought tolerant species available 2. KBDC to request those species and deliver to Kubulau, with the drought action plan planting manual (DISMAC) 3. KRMC village reps with Turaga-ni-koro to establish and maintain nursery of drought tolerant varieties (Dec 2014)		

Appendix 17

Issue	Proposed activity	Implementation	Lead	Actions (+ timeframe)	Progress report	New/remaining actions
Clearing, burning and farming						
Crop failure because of droughts	Establish model farms to trial organic farming and permaculture	KRMC EBM partners	KRMC village reps	1. Arrange field visit to another model farm (e.g. Wailevu, Ra) 2. Review objectives for model farm(s) in Kubulau (May 2014) 3. Identify potential locations for model farm(s) 4. Make a plan for model farm(s) in Kubulau		
Unsustainable logging						
Failure to comply with Forest Harvesting Code of Practice	Training for landowners on monitoring compliance with Forest Harvesting Code of Practice	Department of Forestry EBM partners Kubulau Forest Wardens	KRMC village reps	1. Identify Forest Wardens for Kubulau (Mar 2014) 2. Train the Kubulau Forest Wardens so that they know the Forest Harvesting Code of Practice 3. As part of the Forest Warden training, develop a forest monitoring plan		
Failure to comply with Forest Harvesting Code of Practice	Monitor, record and report breaches of the Forest Harvesting Code of Practice	KRMC, Department of Forestry, NLTB, Kubulau Forest Wardens	*Qoliqoli* and District Management Sub-committee	1. Implement forest monitoring plan (Sept 2014)		

Skills and Training Needs Analysis Tool

This tool was developed by WCS to audit skills and identify the training needs with District Resource Management Committees. This is illustrated in the table over the page. The tool should be applied as part of a facilitated process broadly outlined below:

- RMC members discuss and identify key competencies with reference to their specific group and their management plan.

  These can be brainstormed onto a flipchart, and then filtered to distil priorities (i.e. the main competencies required for an effective group). Make sure they are things that can be a focus for training (e.g. improve project management skills is a better focus than being less lazy).

- Individuals can then score themselves (or each other, which can give interesting and different results!) against each competency on a scale of 0 – 5 or 0 – 10.

  Take care to explain the scoring system so that everyone understands it. Scoring does not have to be consistent across the whole group (some people will score higher than others), but participants should try to apply consistent scoring when assessing the different competencies.

- Scores are then recorded on the flipchart (or collated onto a spreadsheet) for everyone to see.

  Scores should be anonymous, as the focus is on collective rather than individual scores.

- Add up the scores in each row to calculate the sub-totals for each of the competencies.

  The spreadsheet tool automatically calculates totals for each competency

- Divide each sub-total by the number of respondents to calculate the average mean score for each competency.

- Prompt discussion by asking 'what does this tell us?'

  They should be able to identify the strongest and weakest competencies. The lower RMC average scores in the example on the next page suggest that the group most urgently needs training in presenting to groups (communication skills) and in understanding and managing finances.

- Ask whether the group considers these to be their capacity building priorities. If not, then ask what else should be a priority and why?

- Establish consensus about training priorities and take forward plans to design, commission or deliver appropriate training.

The subjectivity of scoring means that totalling the scores for individuals (the columns) may not provide a reliable indication of the relative strengths and weaknesses of individuals. However, it can be useful to look at which individuals score highly for specific competencies, giving an indication of where they see their strengths. This can help in nominating people for specific roles (e.g. Secretary or Treasurer) or tasks (e.g. engaging government officers, youth or women's groups).

Appendix 18

	Skills/knowledge (relate to priorities in their management plan)	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	individual name	RMC sub-total	RMC averages
1	Marine ecosystems and sustainable fisheries management	7	7	7	6	8	7	6	7	6	4	8	6	6	7	6	5	3	8		114	6.3
2	Forest ecosystems and sustainable forestry management	5	5	3	6	4	5	1	6	2	5	5	8	8	8	7	5	6	6		95	5.3
3	Farming and sustainable farming practices	8	7	8	5	8	6	8	5	7	3	7	6	8	9	4	3	4	8		114	6.3
3	Business writing (letters, proposals, reports, etc.)	8	7	8	5	8	6	8	5	7	3	7	6	8	9	4	3	4	8		114	6.3
4	Meetings with senior people (e.g. government officers)	7	6	3	8	7	5	0	4	2	7	6	8	6	6	4	3	6	8		96	5.3
5	Presentations to groups	4	3	4	3	4	3	0	2	1	3	5	6	8	9		3	3	7		68	4.0
6	Community engagement and facilitation skills.	7	4	5	2	5	5	0	4	2	7	6	6	7	8	6	4	5	7		90	5.0
7	Contributing positively to group morale and spirit.	8	8	5	8	6	7	4	6	8	9	6	8	3	8	8	7	8	7		124	6.9
8	Seeking and picking up responsibilities.	6	5	5	6	6	5	8	5	6	8	5	7	7	6	6	9	5	5		110	6.1
9	Financial understanding (P&L, cashflow, variable/fixed costs, etc).	5	5	3	2	3	3	2	4	1	3	7	5	7	7	3	4	4	3		71	3.9
10	Running meetings.	7	4	5	2	5	5	0	4	2	7	6	6	7	8	6	4	5	7		90	5.0
11	Project management - admin, planning, monitoring, etc	8	7	5	6	7	7	0	6	5	8	7	6	7	8	5	6	6	8		112	6.2
12	Influence within own social group (eg. men, women, youth, church)	6	6	5	3	6	7	4	5	4	6	6	6	5	7	5	6	5	9		101	5.6
13	Influence, ability to work with or support other social groups	4	7	6	5	7	7	9	7	9	7	6	7	4	5	4	7	4	5		110	6.1
14	Understanding of government systems and processes	6	6	5	3	6	7	4	5	4	6	6	6	5	7	5	6	5	9		101	5.6
15	Ability to influence traditional leaders	7	6	5	8	7	6	8	8	7	8	8	7	9	3	8	6	7	7		125	6.9
16	Time management and being effective and productive.	6	6	5	3	6	7	4	5	4	6	6	6	5	7	5	6	5	9		101	5.6
17	Understanding /experience of ecological monitoring	7	5	6	6	6	5	5	6	6	3	7	7	8	9	7	6	4	8		111	6.2
18	Understanding of compliance and enforcement issues	8	7	8	5	8	6	8	5	7	3	7	6	8	9	4	3	4	8		114	6.3
19	Coming up with ideas, recommendations & suggestions	7	5	6	6	6	5	5	6	6	3	7	7	8	9	7	6	4	8		111	6.2
	Individual totals	**131**	**116**	**107**	**98**	**123**	**114**	**84**	**105**	**96**	**109**	**128**	**130**	**134**	**149**	**104**	**102**	**97**	**145**			
	Individual averages	**6.6**	**5.8**	**5.4**	**4.9**	**6.2**	**5.7**	**4.2**	**5.3**	**4.8**	**5.5**	**6.4**	**6.5**	**6.7**	**7.5**	**5.5**	**5.1**	**4.9**	**7.3**			

Wildlife Conservation Society