



Building Provincial-level Integrated Coastal Management Plans: Outcomes from the Vatu-i-Ra Seascape Stakeholders Workshop

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Executive Summary

Between September 8-9, 2011, representatives from the four provinces which join together to form the Vatu-i-Ra Seascape (Lomaiviti, Tailevu, Ra, Bua) met together with partners from government and non-government organizations at the Centre for Appropriate Technology & Development at Nadave to discuss the foundations for building provincial level integrated coastal management (ICM) plans. This work builds on the outputs from the September 2010 national Protected Area Committee workshop with provincial administrators where representatives from each province identified candidate sites for protection and management with the main goal to evaluate how new management initiatives fit within the Fiji Integrated Coastal Management Framework recently developed by the Department of Environment.

This report provides an overview of the presentations made to guide thinking on the range of possible threats and management actions within the coastal zone of the Vatu-i-Ra Seascape. We focused specifically on three thematic areas of the ICM framework: Living Coastal Resource Utilization; Land-Based Activities; and Coastal/Eco-tourism Development. For each thematic area, case studies of successful management were presented from around the region and participants used this information to formulate draft concepts or preliminary zoning plans for their provinces. These draft plans can now form the basis of internal stakeholder consultations within each province to develop more comprehensive ICM plans to best accommodate sustainable development of the coastal zone that maximizes benefits for users while minimizing access restrictions and environmental damage.

Because many development activities that impact the coastal zone require an Environmental Impact Assessment prior to their approval, a representative from the EIA unit of the Department of Environment was on hand to field questions from provincial teams. A full transcript of the session is found in Appendix E, and the requirements for an EIA under Schedule 2 of the *Environment Management Act (2005)* are found in Appendix D.



Table of Contents

Executive Summary.....	3
Table of Contents.....	4
Introduction	5
Overview of Workshop Presentations.....	7
Welcome Address by Prof. Bill Aalbersberg	7
Progress on Implementing Management Since September 2010 PAC Workshop.....	8
Lomaiviti.....	8
Tailevu.....	9
Ra	10
Bua	11
Overview of the National Coastal Plan Framework.....	12
Living Coastal Resource Utilization	13
Current and Future Status of Management Under FLMMA.....	13
Marine Zoning in the Vatu-i-Ra Seascape.....	14
Environmental Impact Assessment Processes.....	16
Land-Based Activities	18
Forest Restoration in Ra: Nakauvadra Forest Carbon Project.....	18
Invasive Species Eradication on Vatu-i-Ra Island.....	19
Coastal Development/Tourism Development	19
Case Study: Waitabu.....	20
Case Study: Moon Reef.....	21
Case Study: Namena Marine Reserve.....	21
Outcomes from Provincial-level Discussion Groups.....	22
Lomaiviti.....	23
Tailevu.....	25
Ra	27
Bua	28
Conclusion.....	30
References	31
Annex A. Vatu-i-Ra Seascape Stakeholders Workshop Agenda	33
Appendix B. Participant List	34
Appendix C. Questionnaire Submitted to Provincial Offices	36
Appendix D. Classification of Development Activities with Reference to Requirements for an EIA under <i>Environment Management Act</i>	37
Appendix E. Responses to questions about EIA Process	41



(c) Lill Haugen



(c) Stacy Jupiter



(c) Rebecca Weeks

Introduction

The richness of biodiversity in the forests, mangroves, seagrass meadows, reefs and deep channels surrounding the Vatu-i-Ra Seascape make it one of Fiji's last great wild places (Figure 1). The Seascape includes areas with intact connectivity between land and sea (Jenkins et al. 2010), as well as 6 national priority forests for conservation (Olson et al. 2009). The waters directly adjacent to the 700 m deep Vatu-i-Ra passage nourish highly productive reef areas, with high currents and potential upwelling supporting some of the highest coral reef fish biomass values recorded in the Western Pacific (Marnane et al. 2003).

In terms of value for species conservation, the area contains 5 seabird colony extensions identified as globally significant by BirdLife International, centred at: Vatu-i-Ra Island (black noddies); Namenalala Islands (red-footed boobies); Mabualau Island (black noddies); Gau Island (Fiji petrel); Koro/Gau islands (collared petrel) (BirdLifeInternational 2007). The waters adjacent to Ovalau, Makogai and Vatu-i-Ra islands have long been identified as an important migratory corridor for the endangered Oceania sub-population of humpback whale (*Megaptera novaeangliae*) (Dawbin 1964), and there is a new confirmed record of calving in deep waters adjacent to Vatu-i-Ra Reef (Smith et al. 2011). In addition, the region supports two resident spinner dolphin pods that rest at Moon Reef during the day and feed at depth during the night (WDCS, unpublished data). Further, there are: important turtle nesting and foraging areas around the shallow and coastal margins (in particular Yadua, Namena, Makogai, Wakaya, Vatu-i-Ra, Moturiki and Gau islands), and satellite tracks show turtle movement through the area (WWF, unpublished data); a confirmed grey reef shark breeding ground at Nigali Passage off Gau Island in shallower areas; and a high and stable population of the endemic Fiji crested iguana (*Brachylophus vitiensis*) on

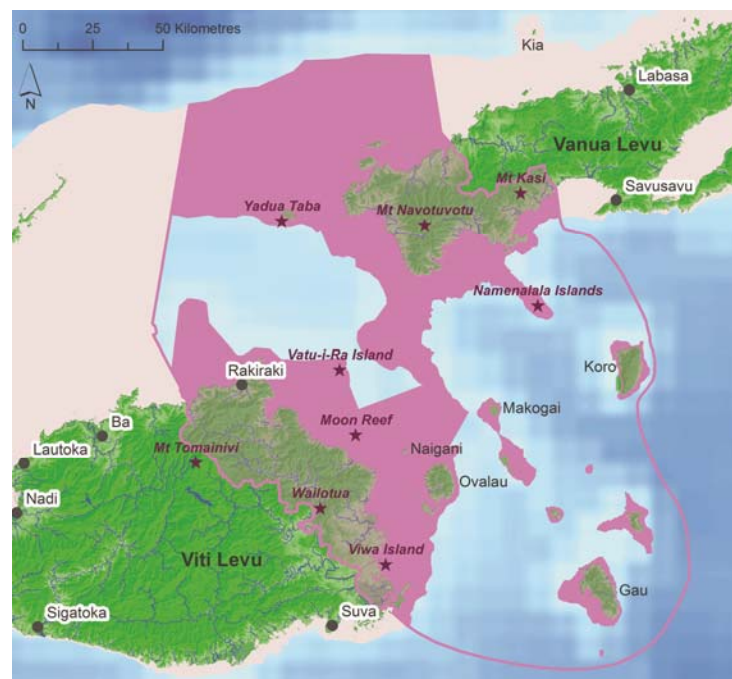


Figure 1. Map of extent of the Vatu-i-Ra Seascape

Yadua Taba Island, with over 6000 individuals (Harlow et al. 2008). Due to these unique features, participants at the 2003 Fiji Islands Marine Ecoregion (FIME) assessment declared 3 areas of global importance, 1 area of national importance and 2 areas of sub-regional importance within the Vatu-i-Ra Seascape (WWF 2004).

However, the Vatu-i-Ra Seascape is not immune from a growing array of natural and anthropogenic threats. Traditional fishing grounds have long sustained coastal communities, but human population growth, increased market demand, new fishing methods that encourage over-exploitation, and encroachments by outsiders on Vatu-i-Ra's fishing grounds combine to severely deplete reef fish and sharks. Meanwhile, Fiji's corals are impacted by periodic tropical cyclones, which damage reef structure, as well as outbreaks of crown-of-thorns starfish (*Acanthaster planci*), which feed on coral polyps (Dulvy et al. 2004). One quarter of Fiji's most intact and unique forests lie within Vatu-i-Ra Seascape (Olson et al. 2009), yet most of them are being logged without careful planning or consideration for impacts. This practice deprives wildlife of habitat, fragments the landscape, and reduces water quality. Freshwater fish are stressed as they face competition from non-native tilapia in Vatu-i-Ra's rivers, while their migratory pathways from forest to sea are jeopardized by deforestation and construction of dams or hanging culverts (Jenkins et al. 2010). Other invasive species, such as the small Indian mongoose (*Herpestes auropunctatus*), have severely reduced populations of Fiji's native land animals and insects. At the same time, climate change looms large for Vatu-i-Ra: predicted sea level rise, warming seas, and extreme climate events are likely to exceed the coping capacity of coral reefs, seagrass meadows, mangroves, forests, and the wildlife and local livelihoods they support.

Management of biodiversity and natural resources in Fiji operates through a complex system whereby national legal frameworks and customary governance processes co-exist within the same geographic space, sometimes working in harmony and other times creating conflict (Clarke and Jupiter 2010). For example, while the state legally recognizes traditional land tenure by indigenous clans, ownership of the sea rests with the state and the current *Fisheries Act* grants open access for subsistence fishing. Thus, in order to manage for these threats, there is a need to take a coordinated approach that considers bottom-up management by local communities as well as more top-down planning through provincial offices.

In order to facilitate this approach, teams from the four provinces of Ra, Tailevu, Lomaiviti and Bua, that compose the Vatu-i-Ra Seascape, were invited to a two day consultation from September 8-9, 2011, at the Centre for Appropriate Technology and Development Centre in Nadave to discuss integrating biodiversity conservation with sustainable development objectives for the Vatu-i-Ra Seascape (see Agenda and Participant List in Annexes A and B). At the workshop, the participants reviewed the outcomes from the September 2010 Protected Area Committee workshop with provincial administrators where candidate sites for protection and management were nominated (Jupiter et al. 2011). Participants were then asked to think beyond protected areas and identify areas for regulation and management under more holistic, provincial-level integrated coastal management plans, in line with Fiji's National Coastal Plan Framework (DoE 2011).

This report highlights the material presented at the workshop, as well as consolidates the outcomes with respect to proposed areas or activities that potentially require zoning, regulation and/or management in each of the Vatu-i-Ra provinces. We additionally provide recommendations for proceeding with the development of ICM plans for Ra, Tailevu, Lomaiviti and Bua provinces.

Overview of Workshop Presentations

Welcome Address by Prof. Bill Aalbersberg

Professor Bill Aalbersberg, Director of the Institute of Applied Sciences at the University of the South Pacific (IAS-USP) and Chairman of the Integrated Coastal Management Committee, delivered a welcome address that provided some historical context to the development of the National ICM Framework.

The original ideas for implementing ICM in Fiji were discussed in the late 1990s with an emphasis on fitting new management concepts within existing social structures. By 2000, Aliferete Tawake took leadership efforts to build this approach with training he received at the University of Rhode Island's (URI) Coastal Resources Center. As URI was interested in developing a partnership in Fiji, they co-hosted a national workshop on ICM in 2002 funded by the David and Lucile Packard Foundation. Nadroga Province was selected as an appropriate location to trial the ICM concept, given the intensity of coastal development for hotels and tourism enterprises. A stakeholder group of representatives from government, NGOs, academic institutions, private sector and community members developed a coastal plan for the Coral Coast, from which an action plan was implemented and supported by a National Committee.

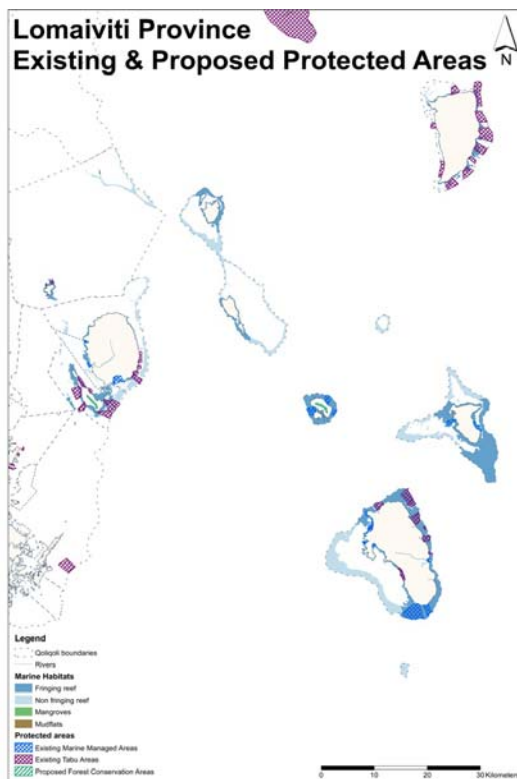
Key among the lessons learned from the Coral Coast planning process was the need for better framework-enabling legislation that would provide a complement of institutional resources for successful environmental policy, planning, regulation, and implementation (Thaman et al. 2005). As the Ministry of Tourism was heavily involved in the planning effort, Manoa Malani prepared a cabinet paper on requirements for effective ICM implementation in Fiji. This led to the push for endorsement of Fiji's *Environment Management Act* in 2005, in which section 8(3) enables the National Environment Council to "appoint a committee for coastal zone management to prepare a coastal zone management plan."

In response to this call, the Integrated Coastal Management Committee (ICMC) was established in 2009 under the Department of Environment and tasked to develop a national coastal plan. Upon consultation with stakeholders, the ICMC determined that a more suitable first step would be to develop a framework for a national coastal plan "to review current coastal conditions in the context of tourism development, coral reef degradation, siltation and erosion, harvesting of marine resources, waste management, coastal reclamation and construction and natural disasters among others as well as assess the current legal and institutional governing framework so as to recommend proposals for action and policy towards sustainable coastal

resource management for Fiji" (DoE 2011). One of the main recommendations from the Plan is to use the framework to build on experiences from bottom-up planning to develop provincial-level ICM plans that can be consolidated into a national document. The Vatu-i-Ra Seascape Stakeholders Workshop is the first forum to implement this approach at the scale of four provinces, though ongoing consultations will be required within each province where voices from the communities, districts and provincial government will need to be heard.

Progress on Implementing Management since September 2010 PAC Workshop

Each of the provincial teams were asked to provide a 20 minute overview on any progress made in their respective provinces based on candidate sites for management and protection nominated by provincial representatives to the September 2010 Protected Area Committee workshop. In some cases, the members of the provincial teams had not yet seen the outputs from the 2010 PAC meeting, therefore they reporting on the current status of management implementation to the best of their knowledge.



Lomaiviti

After reviewing the outputs from the September 2010 Protected Area Committee workshop, the Lomaiviti team determined that the same four priorities still exist for establishing new marine protected areas (MPAs) at Cakaumomo Reef, Nairai, Nasova, and Makodraga. However management has yet to be initiated at any of these sites and further consultations with the traditional fishing rights owners (TFROs) are required.

A presentation was made by Aporosa Kaunisela of the Koro Yaubula Management Support Team (YMST) on progress to date. The Koro YMST was established in 2008 to assist the conservation of their natural resources from ridge to reef on Koro Island, which resulted in the implementation of 14 marine tabu and 1 freshwater tabu, with help from the Peace Corps, GEF Small Grants Programme and the Ministry of Fisheries & Forests. This site-based management has been strengthened through workshops, biological and socio-economic surveys, and monitoring the commercial sale of invertebrates. Existing challenges to management success include: poaching; improper use of herbicides; lack of good governance; lack of resources for monitoring; non-compliance with current fisheries legislation, construction of jetties without environmental impact

Figure 2. Proposed and existing areas for protection and management in Lomaiviti from the September 2010 PAC workshop.

assessments (EIAs); and inappropriate tree cutting. Plans for 2011 include: confirmation of traditional titles; good governance workshop for their local leaders; revival of traditional communal farming practices; mangrove planting; establishment of district resource management committees; land use workshops; monitoring progress of existing management plans; and training on the sustainable management of natural resources. The Koro YMST has yet to formulate a management plan but have indicated a strong interest in working with partners to do so.

Mesake Draniatu, the FLMMA Eastern Division representative, made a presentation on behalf of the Ovalau YMST. The most recent major challenge has been the closing of the PAFCO fish processing facility, which has coincided with an increase in land-based activities and pesticide use from unemployed workers who have returned to their villages to work the land. Mr. Draniatu noted that there were multiple new MPAs on Ovalau that had been mapped, but their boundaries were not yet in the FLMMA database although they had been submitted to Conservation International, who facilitated the Ovalau YMST introductory workshop in 2010. Ongoing livelihoods projects include clam restocking, algal mariculture and coral farming.

Inoke Navuetaki of Levuka District presented on local management efforts, noting that development needs to be accepted within the structure of the vanua. With a Peace Corps volunteer, the communities have developed an MPA on Makogai and would like to extend the marine corridor across from Ovalau to Makogai. The Department of Fisheries says they have received the coordinates, however it is likely that they still need to be incorporated into the central FLMMA database.

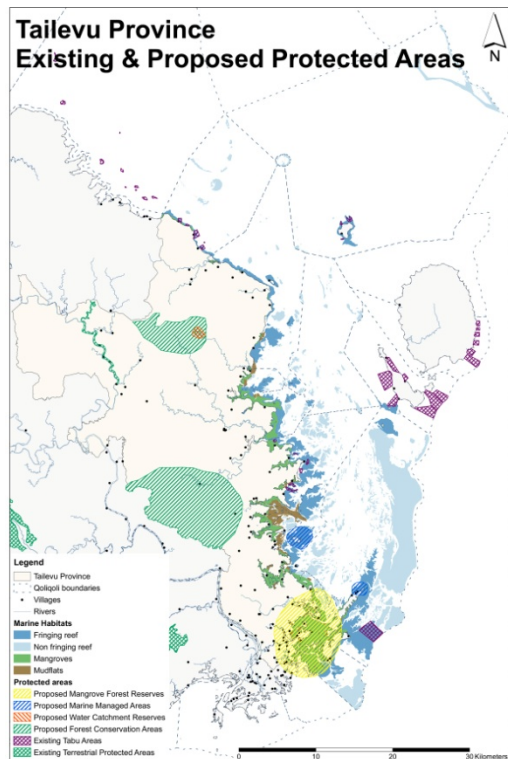


Figure 3. Proposed and existing areas for protection and management in Tailevu from the September 2010 PAC workshop.

Tailevu

Isoa Koroi, from IAS-USP, presented on behalf of the Tailevu team, none of whom were present at the September 2010 Protected Area Committee workshop. He reported that LMMA activity had not expanded in the province. Instead, FLMMA partners focused on trying to strengthen existing management on the ground despite a notable increase in poaching at Verata and Dawasamu. Communities are working to establish four MPAs in Nasawakasa, while the Forestry extension officer has worked with communities to try to establish Proposed Nature Reserves. To this end, Namau and Dawasamu have confirmed proposed Water Catchment Areas, while Sawakasa is revegetating with exotic species

With respect to challenges to management, there is still great concern about unsustainable agricultural practices. The Provincial Office is very focused on commercial development and has been encouraging communities are encouraged to develop coffee, fisheries and other commercial products. This needs to be done with care with respect to lasting impacts to the environment.

Ra

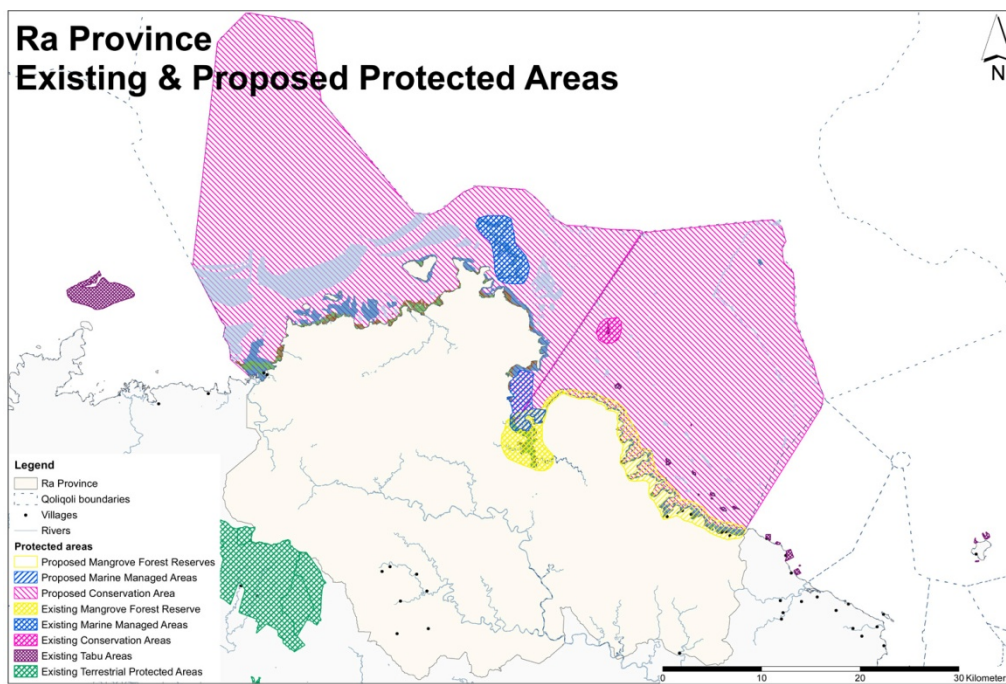


Figure 4. Proposed and existing areas for protection and management in Ra from the September 2010 PAC workshop.

On December 12, 2007, IAS-USP led a meeting to start MPA planning. Since that time, 12 reefs have been protected in Nakorotubu District, however poaching is still a major threat. A boat was confiscated from Suva in September 2011 with a major haul. Forty-two fish wardens were trained in August 2011, and there is hope that this will start to address the poaching problem. The Organization for Industrial Spiritual and Cultural Advancement International (OISCA) has been working with communities to plant mangroves. Meanwhile, BirdLife International and their conservation partners have hosted 3 workshops for conservation of Vatu-i-Ra Island, including rat eradications, and Conservation International has been working with communities on forest restoration work (see **Land-Based Activities** section below). One outstanding challenge is to establish a mechanism by which financial benefits from divers who come to the region are transferred to communities.

Alivereti Senikau of the Department of Fisheries presented a case study from Namuaimada where an MPA was established due to the poor condition of the fringing reefs, the lack of large predatory fish, low overall catches, observed dead and damaged corals, and high levels of nutrient runoff. The program is funded by GEF Small Grants Programme, with support from all

of the chiefs. The program was launched on December 14, 2010 with the vision to "Care for our natural resources for the sake of our future generation". The launch included a blessing ceremony and placement of marker buoys at the boundaries of the MPA. To date, the project has achieved engagement of youth and women, PLA training to build a management plan, and improvement of epiculture programs. Remaining activities include: (1) rehabilitation of MPAs; (2) farming of bivalves/sea grapes/giant clams/beche-de-mer; (3) creation of a buffer zone for mud crabs; (4) establishment of demonstration plots of cultured species (e.g. pearl oysters); (5) empowerment training through biological monitoring, fish warden training, and dissemination of MPA materials; and (6) development of community-based eco-tourism.

Bua

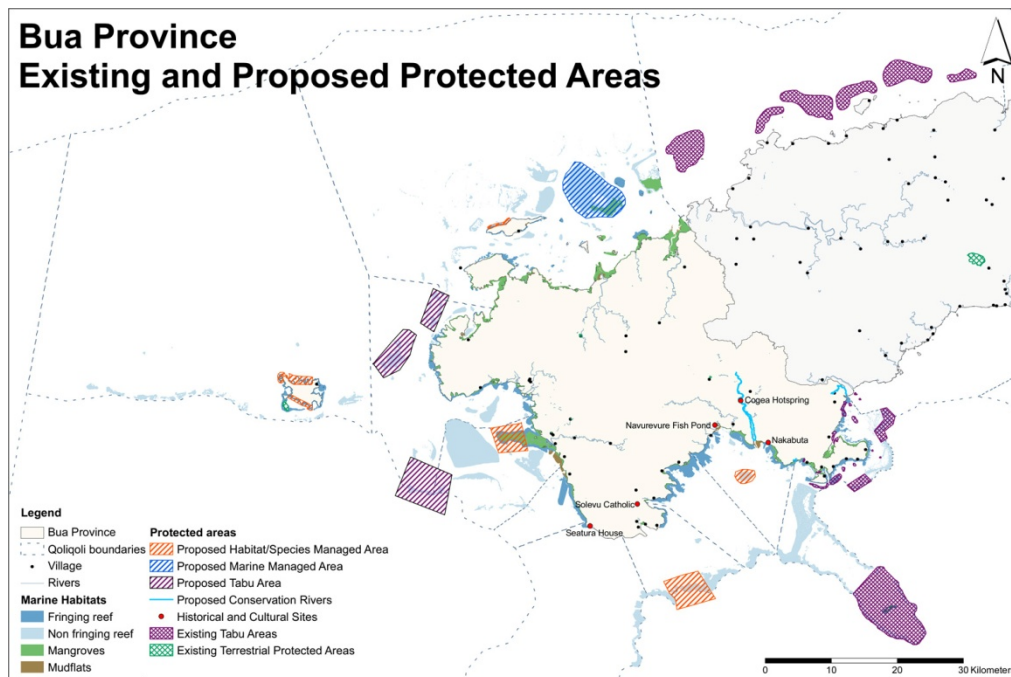


Figure 5. Proposed and existing areas for protection and management in Bua from the September 2010 PAC workshop.

None of the Bua team participants were present at the September 2010 Protected Area Committee workshop, and as far as they were aware, nothing had yet been done at the provincial level with respect to carrying out the action plan. The current team proposed to investigate forming Bua management and implementation plans.

Based on reports from stakeholders at Bua Provincial Council meetings, commitments from districts and villages to natural resource management are strong. Kubulau District had progressed well in implementing its ecosystem-based management plan (WCS 2009) and is waiting for assistance from Department of Fisheries to help gazette its district MPAs, particularly the Namena Marine Reserve. Residents of Yadua Taba are following the crested iguana species recovery plan (Harlow et al. 2008) and have expanded management to include adjacent marine protected areas and ecosystem-based adaptation activities. With the National Trust of Fiji, residents are investigating trying to find alternative sites for the iguana as the

population is threatened, particularly from fires. Nadi, Solevu and Wainunu districts were waiting on advice from the Wildlife Conservation Society, who held a large management planning workshop with participants from each district in November 2011 to develop ecosystem-based management plans with provisions for habitat and resource management from ridge to reef. IAS-USP led a workshop with Bua District in late 2010 to define new areas for management, which resulted in placement of tabus in Sandalwood Bay, Bua Bay and 2 reefs to the north for three years. A management committee was established composed of village chiefs, women's representatives and turaga ni koro from each village. Lastly, the Department of Forestry is working to form sandalwood nurseries in schools and encourage its rehabilitation, as early sandalwood export from Bua decimated this once abundant species.

Overview of the National Coastal Plan Framework

Under section 8(3) of the *Environment Management Act* (2005), the National Environment Council "may appoint a committee for coastal zone management to prepare a coastal zone management plan." An *Integrated Coastal Management (ICM) Framework* was conceived by the Integrated Coastal Management Committee and drafted through the Department of Environment to:

"review current coastal conditions in the context of tourism development, coral reef degradation, siltation and erosion, harvesting of marine resources, waste management, coastal reclamation and construction and natural disasters among others as well as assess the current legal and institutional governing framework so as to recommend proposals for action and policy towards sustainable coastal resource management for Fiji" (DoE 2011)

The Framework includes sections on: the status of coastal management in Fiji; current coastal conditions; coastal development; tourism development; living coastal resource utilisation; land-based activities; marine activities; natural threats/disasters; coastal data collection systems; current coastal management initiatives; and funding possibilities. The Framework contains guidelines for moving forward with the development of provincial-level plans, for which there should be extensive consultation at community level. The key recommendations to emerge from the ICM Framework were:

"RECOMMENDATION 1: Extend the jurisdiction of the ICM Plan inland within a clearly defined watershed when appropriate (instead of merely 30m).

RECOMMENDATION 2: Develop ICM plans at the provincial levels which when considered together will suggest the make-up of the National ICM Plan. It is assumed that the ICM plans at the provincial level would include a mangrove management plan as well as a coastal sensitivity atlas for disaster response planning and management.

RECOMMENDATION 3: Determine a relevant legal and institutional framework to effectively support Fiji's ICM vision. Part of this includes determining which regulations under which Acts take precedence when in conflict.

RECOMMENDATION 4: To achieve multi-sectoral integration, a coastal commission (perhaps the NEC sub-committee) will need to play a greater role in decision-making. Its exact powers will need to be determined and formalised.

RECOMMENDATION 5: Identify key data and information requirements for sound coastal management decision-making and develop an appropriate system of gathering, collation, use and management for ICM purposes.

RECOMMENDATION 6: Funding be sought under the next GEF funding cycle to support development of a full ICM Plan." (DoE 2011)

Prior to the Vatu-i-Ra Seascape Stakeholder workshop, provincial teams were asked to select focal areas from the ICM Framework on which they were most interested in receiving information. Based on responses to a questionnaire (Appendix C), workshop facilitators arranged the agenda to discuss Living Coastal Resource Utilization, Land-Based Activities, Coastal Development and (Eco)-Tourism Development. Information delivered during the workshop was based on this information to tailor the content to the most immediate needs of the provinces.

Living Coastal Resource Utilization

Coastal communities throughout Fiji are highly dependent on fisheries resources for subsistence and artisanal purposes (Teh et al. 2009). Local-scale management of Fiji's coastal and marine resources has grown rapidly through the Fiji Locally Managed Marine Area network (Mills et al. 2011a), in which a variety of different management strategies are implemented by communities within their qoliqoli. The next section highlights new work assessing how effectively the FLMMA network protects coastal and marine resources now and into the future, which was based on PhD research conducted by Morena Mills at James Cook University (and presented by Stacy Jupiter of WCS).

Current and Future Status of Management under FLMMA

In 2005 at the review of the Barbados Plan of Action in Mauritius, the Fiji Government made a commitment to effectively manage and finance at least 30% of Fiji's inshore marine areas by 2020. In 2009, the Fiji National Protected Area Committee (PAC) began an assessment to see how far along the country current stands against this commitment through a gap analysis that asked: "how much of Fiji's marine and coastal habitats are currently effectively protected?".

In partnership with researchers at the ARC Centre of Excellence for Coral Reef Studies at James Cook University, the marine working group of the PAC first asked where are marine and coastal habitats currently protected and what sort of management strategies are currently being applied. For this work, the PAC used spatial data that was available at a national scale for mangrove, intertidal mudflat, fringing reef, non-fringing reef and other benthic substrate, and considered management sites that had been spatially mapped within the FLMMA network (Jupiter et al. 2010). The working group then used an innovative approach that considered the

relative ecological effectiveness of each type of management strategy being applied within FLMMA, which included: permanent no-take areas; conditional closures that are periodically harvested in a controlled manner; conditional closures that are periodically harvested in an uncontrolled manner; and broader management applied within the traditional fisheries management (*qoliqoli*) area, that may include gear bans, species bans, seasonal bans, and access restrictions, among other actions (Mills et al. 2011a). Using conservative measures of effectiveness (the modal low score across all species groups for each habitat), the Fiji Government determined that the FLMMA network is currently contributing to effectively protect 12% of inshore waters within *qoliqoli* and 1.2% of the EEZ overall.¹

Given that much of the planning for inshore marine management in Fiji is undertaken by communities within the FLMMA network, a further study was undertaken to evaluate whether the expansion through FLMMA could achieve national conservation objectives by 2020. A model was developed simulating expansion of the FLMMA network to 2020 using data collected from key informant interviews to identify factors that influence opportunities for and constraints on implementing closures in Fiji. This model was then compared to results obtained through systematic conservation planning techniques that took a more top-down approach to achieve national objectives, with the constraints that only a limited amount of area could be added each year and closures are likely to be within the same size range as those presently implemented (Mills et al. 2011b).

The main outcome of this work was that under the ad hoc scenario, where conditions were designed to reflect an optimistic continuation of the business as usual conditions by which new sites are added to the FLMMA network, the network will achieve a good portion of the national objectives, but will fall considerably short of the 2020 objectives. More top-down systematic planning processes could therefore be useful to help scale up where FLMMA partners and government could additionally allocate resources to fill important gaps to achieve national objectives. As a starting point to fill the gaps, there is an urgent need to map already existing, tourist-resort managed MPAs. With the guidance of systematic assessments, FLMMA partners and other government organizations may be able to provide incentives to the community to expand the boundaries of their closures so that they will contribute to both local and national objectives. In addition, there may be opportunities to discuss options for marine zoning within *qoliqoli* waters to regulate multiple activities in the coastal zone in order to achieve other objectives besides purely fisheries management. A second presentation (given by Azusa Makino of the University of Queensland), therefore, providing some background on the concepts behind marine zoning to generate discussion on how zoning could be applied within the Vatu-i-Ra Seascape and what activities should be zoned.

Marine Zoning in the Vatu-i-Ra Seascape

People have multiple uses and values for coastal and marine areas. In Fiji, mangroves, seagrass, intertidal areas, coral reefs and sand banks support fisheries production, harbour biodiversity,

¹¹ These figures are being reported in 2011 within Fiji's country action plan under the Programme of Work on Protected Areas to the Secretariat of the Convention on Biological Diversity.

provide cultural resources, attract tourists, and provide opportunities for a wealth of industries. Zoning is one strategy to meet multiple objectives through spatial configurations of areas that vary in their permitted activities. Zoning will be most effective where it incorporates stakeholder consultation and participation so that all of the costs of prohibiting certain activities are equitably distributed across all resource users.

For example, in July 2004, the Great Barrier Reef Marine Park Authority in Queensland, Australia, implemented a new Great Barrier Reef Marine Park Zoning Plan (GBRMPA 2003) (Figure 6). The overall objective of the Plan was to increase biodiversity protection and maintain ecosystem integrity by ensuring that each of the 70 major bioregions were represented in a network of highly-protected areas (Fernandes et al. 2005), which resulted in increasing the amount of no-take zones from 4.5 to 33% of the total Park area. Because of an extensive public education and consultation process which included more than 1000 public meetings and over 31,000 written submissions to GBRMPA (Hughes et al. 2007), there was large public buy-in to the plan and high levels of overall satisfaction three years later from recreational fishermen (Sutton and Tobin 2010).

ACTIVITIES GUIDE (see relevant Zoning Plans and Regulations for details)	Zoning Plan 2003						
	General Use Zone	Habitat Protection Zone	Conservation Park Zone	Buffer Zone	Scientific Research Zone ²	Marine National Park Zone	Preservation Zone
Aquaculture	Permit	Permit	Permit ¹	X	X	X	X
Bait netting	✓	✓	✓	X	X	X	X
Boating, diving, photography	✓	✓	✓	✓	✓ ²	✓	X
Crabbing (trapping)	✓	✓	✓ ³	X	X	X	X
Harvest fishing for aquarium fish, coral and beachworm	Permit	Permit	Permit ¹	X	X	X	X
Harvest fishing for sea cucumber, trochus, tropical rock lobster	Permit	Permit	X	X	X	X	X
Limited collecting	✓ ⁴	✓ ⁴	✓ ⁴	X	X	X	X
Limited spearfishing (snorkel only)	✓	✓	✓ ¹	X	X	X	X
Line fishing	✓ ⁵	✓ ⁵	✓ ⁶	X	X	X	X
Netting (other than bait netting)	✓	✓	X	X	X	X	X
Research (other than limited impact research)	Permit	Permit	Permit	Permit	Permit	Permit	Permit
Shipping (other than in a designated shipping area)	✓	Permit	Permit	Permit	Permit	Permit	X
Tourism programme	Permit	Permit	Permit	Permit	Permit	Permit	X
Traditional use of marine resources	✓ ⁷	✓ ⁷	✓ ⁷	✓ ⁷	✓ ⁷	✓ ⁷	X
Trawling	✓	X	X	X	X	X	X
Trolling	✓ ⁵	✓ ⁵	✓ ⁵	✓ ^{5,8}	X	X	X

Figure 6. Example of permitted activities within each of the zones of the Great Barrier Reef Marine Park, based on the GBRMPA Zoning Plan 2003

Development of a zoning plan for the Vatu-i-Ra Seascape, or for the four provinces within the seascape, first will require consultations to assess what values people want to maintain. Following that, it will be necessary to determine what type of zones to implement and what activities are permitted in each zone. In doing so, stakeholders should consider the compatibility of different resource uses, their goals for sustainable fisheries management, and the needs of different communities and users. Lastly, it will be necessary to develop a spatial plan that equitably distributes the zones across the different qoliqoli and waters outside the qoliqoli found within the Vatu-i-Ra Seascape. There are software tools, such as Marxan with

Zones (Watts et al. 2009), that can help produce zone configurations which meet all objectives and minimize costs. In Fiji, these could be used as a starting point for discussions with provincial and community-level stakeholders. Any zoning activity should be sure to incorporate existing management zones at the district level.

Environmental Impact Assessment Processes

The *Environment Management Act* (EMA) was passed in Parliament in 2005 and came into effect on January 1, 2008. The objective of EMA is to apply the principles of sustainable use and development of natural resources. Individuals and companies are legally required to follow the rules set out in EMA, with the consequences of maximum penalties of FJD\$5M for a corporation and FJD\$1M and/or life imprisonment for an individual for breaches under the Act.

The Act has seven parts: Part 1 - Preliminary, which includes definitions and applications; Part 2 - Administration; Part 3 - Environment Reports & Plans; Part 4 - Environment Impact Assessment; Part 5 - Waste Management & Pollution; Part 6 - Offences & Penalties; Part 7 - Miscellaneous; plus Schedule 1 - Environmental & Resource Management Act; and Schedule 2 - Development Proposals.

An Environmental Impact Assessment (EIA) is the process of identifying, predicting, evaluating and mitigating the biophysical, social and other relevant effects of development proposals prior to major decisions being taken or commitments made (Figure 7). An EIA is applied to development proposals or projects as defined in EMA (2005) and Environment Management (EIA Process) Regulations 2007. A "Development proposal or undertaking" is defined as any activity or undertaking likely to alter the physical nature of the land in any way, and includes: the construction of buildings or works; the deposit of wastes or other material from outfalls, vessels or by other means; the removal of sand, coral, shells, natural vegetation, seagrass or other substances; dredging, filling, and land reclamation; and mining or drilling for minerals. Fishing is not considered a development or undertaking under the Act.

Initially, when a development is proposed, there is a screening stage to determine whether the proposed development requires an EIA or not. There is a detailed list of activities from EMA (2005) in Appendix D which stipulates which activities require EIA approval from the EIA administrator (Part 1), from an approving authority (Part 2) or could go forward without an EIA (Part 3). During the screening stage, the proponent applies to the approving authorities with an FJD\$250 payment included with 5 hardcopies of development plans. If no EIA is required, there are 4 days to submit comments to DoE. If an EIA is required under Part 1 or Part 2, there are 5 days to submit comments to DoE. During the scoping stage, the proponent proceeds, varies the application, or cancels the submission. A site inspection is conducted to finalise a Terms of Reference (ToR), followed by scoping meetings to receive comments on the ToR. Once the ToR is approved, a registered EIA consultant will be engaged at the proponent's cost to carry out the EIA. The EIA report must provide a comprehensive analysis on the potential impacts of the proposal, as well as suggest measures to mitigate the impacts. The EIA report must be submitted to the approving authority and the EIA administrator within 12 months of the ToR

being finalised, and it must be made available for public inspection. The processing authority must produce a written report setting out its decision in relation to the proposal within 35 days of the submission of the EIA report.

The processing authority may: not approve the proposal; recommend any additional study on the proposal; or approve the proposal, with or without conditions. Conditions may include: specified location of the activity; specified method of undertaking the activity; required monitoring and reporting of any environmental impacts; specified maximum quantities of emissions and substances; specified manner and location of the disposal of substances; required studies on reducing the discharge of substances or energy; specified procedures for cessation of operations/rehabilitation of land; specified particular individuals or organizations who may carry out activities under the approval; and/or required implementation of an environmental management plan. An EIA approval may be made subject to the payment of a cash bond as a security for the probable cost of preventing or mitigating any environmental damage to the area and its surroundings or rehabilitation.

Figure 7. Flow diagram of the steps involved in preparing and deciding upon an Environment Impact Assessment (Department of Environment)

Land-Based Activities

Across the Vatu-i-Ra Seascape, the coastal zone is impacted by a considerable number of land-based activities, including: wastewater runoff and seepage; solid waste disposal; terrestrial runoff from agriculture, forestry and mining; river aggregate extraction; forest fires; and spread of invasive species. Posters were presented during the workshop on lessons from the Water and Nature Initiative (WANI) projects and other sustainable land management projects to support integrated coastal management. The case studies below document some best practices being applied by communities and partners to better manage their watersheds and islands.

Forest Restoration in Ra: Nakauvadra Forest Carbon Project

Forests within the Nakauvadra range are becoming increasingly isolated from the main forest block on Viti Levu and yet have high conservation significance (Olson et al. 2009). In this region, they are mainly threatened by fires from expanding grassland regions. Isaac Rounds of Conservation International (CI) discussed the work that CI is doing together with the Fiji Department of Forestry (DoF), Ra Provincial Council, Ra Methodist church and the districts of Tokaimalo, Naroko and Naiyalayala, to initiate a reforestation project with funding from Fiji Water Foundation. The goals of the project are to:

- Help mitigate climate change through carbon sequestration
- Improve the socioeconomic conditions of the local communities
- Improve the current habitat for important species known to inhabit the Nakauvadra area
- Assist in creating a buffer for the Nakauvadra forest
- Create a corridor between the Monasavu key biodiversity area (KBA) and Nakauvadra KBA, while reforesting the headwaters of the Rewa River and its tributaries

With participation from community members from 16 mataqali, to date the project partners have planted over 400 hectares of grassland in 26 plots with native and exotic trees, including: teak (*Tectona grandis*); koka (*Bischofia javanica*); vesi (*Intsia bijuga*); dakua salusalu (*Dacrydium nidulum*); dakua makadre (*Agathis macrophylla*); kaudamu (*Myristica spp.*); damanu (*Calophyllum spp.*); kauvula (*Endospermum macrophyllum*); makosoi (*Cananga odorata*); laubu (*Garcinia myrtifolia*); kuasi (*Podocarpus neriifolius*); aumunu (*Dacrycarpus imbricatus*); and tadalo (*Pagianta thurstonii*). CI has established 6 nurseries, while communities have established 7 nurseries. Project partners have completed an assessment of seedling survival and establishment of monitoring plots.

To assist communities with land use management, CI and the Land-Use section of the Department of Agriculture have helped each district develop a Tikina Land-Use Plan, built on information derived from socioeconomic surveys. Two model farms have been built at Dranisama settlement and Nailawa village. Fire breaks have been planted with coconut (Fiji tall), sandalwood, citrus trees and pineapple, with the aim of reducing combustible materials while providing short-medium term income to community members. Sheep have been brought in as grazers to keep grasses down.

Invasive Species Eradication on Vatu-i-Ra Island

The small (2.3 ha) Vatu-i-Ra Island, located off of Ra Province, is a critically important seabird site, home to a large breeding colony of black noddies (*Anous minutus*), as well as dense populations of red-footed boobies (*Sula sula*) and lesser frigatebirds (*Fregata ariel*), breeding hawksbill turtles (*Eretmochelys imbricata*) and the endemic pygmy snake-eyed skink (*Cryptoblecephalus eximius*) (Johns et al. 2006). Due to these features, BirdLife International declared the site an Important Bird Area (Masibalavu and Dutson 2006). Community members of the Nagilogilo clan have been since working to develop a small birdwatching venture, having noted an increasing number of visitors making stops without requesting permission from the landowners, who were receiving no benefits (Saunders et al. 2007). Sione Gonewai, of the Yavusa Nagilogilo, and Tuverea Tuamoto, of BirdLife International, presented work that has been undertaken to rid the island of invasive rats as well as develop the nascent eco-tourism venture.

Based on requests by the Ra Provincial Office in 2002, BirdLife International conducted a feasibility study in 2004 (Johns et al. 2006), which deemed that invasive rats (*Rattus exulans*) were present in high densities, having a negative impact on bird population, and could be successfully eradicated. In 2006 and 2007, Birdlife International carried out the eradication in partnership with NatureFiji-MareqetiViti and with technical support from the Pacific Invasives Initiative, the Pacific Invasives Learning Network and the New Zealand Department of Conservation, with funding from the Critical Ecosystem Partnership Fund and the Australian Government Regional Natural Heritage Programme. Following the initial eradication efforts, monitoring was done every 6 months until the island was declared rat-free in 2008. Throughout the effort, volunteers from the community assisted with research and monitoring, such that they are now able to continue monitoring themselves. Bures are being built as part of a new Vavia Lodge at the village to take tourists out to the island. More recently, a solar powered sound system is being installed, coupled with artificial burrows, to attract the highly endangered Fiji petrel. Visitors to Vatu-i-Ra Island will be allowed continued access as long as the island is respected, trips are managed closely to avoid new introductions of invasives, and cooking fires are never left unattended.

Coastal Development/Tourism Development

Coastal development pressures in the Vatu-i-Ra Provinces are not nearly as high as other areas of Fiji that have experienced increasing urbanization (e.g. Suva-Nausori corridor, Nadi-Ba corridor) or rapid expansion of tourism accommodation (e.g. Coral Coast, Mamanuca and Yasawa island groups). However, with the Fiji Government's "Look North" policy that provides incentives to develop Vanua Levu, as well as increased extractive pressures in Ra, Tailevu and Lomaiviti, there is increasing urgency to regulate coastal development, particularly for tourism, to ensure that it is congruent with the sustainability goals. At the same time, communities involved in ecotourism ventures in the Vatu-i-Ra Seascape region need to recognize several limitations to initiating new projects due to the geographic remoteness, low and irregular influx of tourists, and lack of infrastructure for handling bookings or marketing new ventures. The case studies below highlight some of the successes of ecotourism projects with the Vatu-i-Ra Seascape. They also indicate specific challenges that need to be overcome to allow for true

alternative livelihood generation that is adequate to compensate people from the opportunity costs of establishing fisheries closures or forest parks that restrict access to local resources (e.g. Adams et al. 2011).

Case Study: Waitabu

Helen Sykes, of Resort Support and Marine Ecology Fiji, gave a presentation of the history of the Waitabu Marine Park and important lessons learned that could be applicable for other ecotourism developments in the Vatu-i-Ra Seascape. In the late 1980s, communities of Taveuni were under pressure from logging companies to lease their lands for forestry activities, but the villages decided instead for "tourism instead of toothpicks." With assistance from the Native Land Trust Board and the New Zealand Forest and Bird Protection Society, and funding from the New Zealand Overseas Development Agency (NZODA), the communities developed the Bouma Environment Tourism Project, which had four objectives:

- Protect the Vanua Bouma forest and ecosystems, including the marine area
- Create sustainable livelihoods for the four villages
- Preserve natural and cultural traditions where possible
- Have projects managed by and for the local communities.

Four different ecotourism projects were initiated, including: (1) the Vidawa Rainforest Hike (1998); (2) the Waitabu Marine Park, a permanently closed no-take area 900 m long x 300 m wide (April 1998); (3) the Lavena Coastal Walk (1999); and the Korovou Waterfall Park (1989). Following the 2000 coup, there was no more NZODA funding, and ever since the initiative has been fully community and volunteer supported, with support from the National Trust of Fiji by contributions of office supplies for the Bouma Heritage Park.

Given the long history of protection at the Waitabu Marine Park, the children have now grown up with the perception of "no take" areas, which greatly reduces incidence of local poaching. Volunteers observed increases in fish populations after 3 years and increases in giant clam densities after 4 years. Village youth have been trained as snorkel guides: for FJ\$50, guests are treated to a bilibili ride, snorkeling with a comprehensive briefing, tea and entertainment in the village.

A 2007 FLMMA socioeconomic survey showed that the average household income of Waitabu to be consistently very low (~FJD120 per month). While community members have received a small added income from the ecotourism venture on a regular basis, the proceeds are well-divided between guides, ladies who make tea, boat captains and fuel, therefore it serves as only a minor supplement to other livelihood activities. When a balance remains, proceeds are deposited into community project funds.

Attempts to generate increased revenues have so far met with limited success. Reduced rates for backpackers did not work and resulted in lower total income overall, with the same number of guests arriving annually. A campground was added to the site, however to date it has only been used by volunteer monitoring teams. Two websites have been created to attempt to market Waitabu Marine Park, however as there is no internet access in the village to take

bookings, a more appropriate marketing development model is needed. A small success has been to bring in student groups for homestays, where families have adequate cultural briefing to welcome the guests, however, this works best in limited periods so as not to drain community resources and overwhelm families.

Case Study: Moon Reef

Josefa Bau, representative of the Dawasamu Environment Movement (DEM), presented on the unique opportunities for cetacean viewing around Moon Reef, Tailevu. DEM is composed of representatives from 11 tribes and 41 clans of Dawasamu. Through the assistance of the University of the Sunshine Coast's Sustainability Research Centre, they have worked together to develop the Moon Reef Sustainable Coastal and Marine Tourism Management Plan to regulate the growing ecotourism industry to the area. Tourists are attracted by the two resident pods of spinner dolphin (*Stenella longirostris*), who use the lagoon area of Moon Reef as resting habitat during the day before leaving in the late afternoon to forage offshore. As the dolphins and other cetaceans are very sensitive to boat traffic and change their behaviour at the sound of outboard motors, there is an urgent need to regulate visitation to prevent the pods from moving away if exposed to unsustainable tourism. Guidelines will include:

- Codes of conduct for all operators and their staff
- Use of naturalist/nature guides on all tours who can provide accurate information
- Use of effective interpretation/education to encourage pro-environmental behaviours
- Recommendations on numbers of operators, vessels and visitors
- Minimum approach distances to cetaceans
- Optimal times of the day for watching cetaceans and limits on amount of time spent watching/interacting with dolphins and whales
- Recommendations for use of vessels that have minimum impact on the environment (4-stroke/bio-fuels)
- Sustainable practices for anchoring, snorkelling, SCUBA, reef walking, fishing

DEM is also investigating development of alternative activities for tourists to take pressure off of Moon Reef; these include: diving at the seamount E6; kayaking; waterfall visits; bilibili rides; and village garden visits. DEM has been successful to date as the chairman is a Forestry Officer, which means he is neutral with respect to clan ties and therefore able to negotiate potential conflicts. They hope to build a dolphin education centre within the next year. In the meantime, other livelihood benefits to the communities to date have included: housing for newly married couples; buying produce from farmers/fishermen; carpentry projects; electrification (6 homes); school fees for 12 secondary students; and employment for 22 locals.

Case Study: Namena Marine Reserve

Paulo Kolikata, chairman of the Kubulau Resource Management Committee (KRMC), presented the last case study on the history and development of the user pay initiative at the Namena Marine Reserve, which was instigated with assistance from the Coral Reef Alliance (CORAL). The Namena Marine Reserve was established in 1997 when the chiefs of Kubulau District banned commercial fishing from their qoliqoli due to growing concerns of destructive fishing practices

and poaching on the Namena barrier reef. Because Namena is known throughout the global dive community as a world class destination, there was opportunity to develop a model whereby visitors pay an additional fee for their dives which is returned to the community. Through the assistance of CORAL, dive tags have been distributed to dive operators, who sell them to visitors to Namena, now at a FJ\$30 fee per tag, which allows for one year access to the Reserve. CORAL has also installed mooring buoys within the Reserve to reduce anchor damage to corals. To date, the revenue generated by the user pay system has allowed for the sponsorship of students for secondary and tertiary education, has been used for community development projects, funds provincial levies and church contributions, and pays for associated management costs.

In 2005, WCS, together with CORAL and other stakeholders, assisted the communities of Kubulau to establish the KRMC, made up of a representative from each village and a chairman, who are responsible for overseeing management of the qoliqoli, Namena and adjacent lands and coastal areas. By 2009, the high chiefs endorsed Fiji's first ridge-to-reef management plan for Kubulau (WCS 2009), which covers rules and regulations on activities in terrestrial, freshwater, coastal and marine areas in the district, both within and outside of the 3 district no-take marine reserves, 17 village-managed tabu areas, and proposed community forest park (Clarke and Jupiter 2010).

The success of this system has been based on the strengths of strong partnerships across stakeholders, reliable income generation, strong cooperation among villages, and a comprehensive management plan and decisions support matrix. However, overall management has been limited by lack of resources for enforcement, lack of other opportunities for alternative livelihood developments, and limited tourism industry experience of community members. The model is replicable to other areas of Fiji with the caveat that it requires outstanding dive sites or features that will dependably draw tourists to the area. The Namena Marine Reserve has been successfully marketed by CORAL and other tourist operators (e.g. Nai'a, Aggressor, Jean-Michel Cousteau Resort, Koro Sun Resort, and Moody's Resort based on Namenalala Island) who have substantial capacity to take bookings and ensure transportation to and from the Reserve.

Outcomes from Provincial-level Discussion Groups

During the two day workshop, on two occasions provincial teams worked in discussion groups with conservation and management partners to discuss: (1) thoughts on appropriate zoning schemes; and (2) how to regulate land and coastal development within each province. For the second discussion, teams were asked to report on the following five questions/activities:

- What types of land management activities are needed in your province?
- Draw on a map where there are current management and development projects.
- How can we work with Primary Industries to foster best practice?
- What are opportunities for eco-tourism in your province?

- What are the areas for development (especially tourism development) that need to be regulated?

The outcomes from each of the two discussions have been synthesized below by province. It is important to note that these are preliminary ideas only and should form the basis of initial discussions with a broader selection of stakeholders as each province begins to develop their own ICM plan.

Lomaiviti

In terms of management areas for marine activities in Lomaiviti Province, there was considerable interest in establishing a cetacean corridor in Lomaiviti Passage spanning between Ovalau and Wakaya and Makogai islands, which is a known migratory route for the endangered Oceania sub-population of humpback whales (Dawbin 1964) (Figure 8). The areas around Wakaya and Makogai have additional values as high-end tourism and aquaculture zones, respectively. Moturiki Island currently has four *village-managed periodically harvested tabu areas* and Koro Island has a turtle calling site of high cultural significance. It was noted, however, that better enforcement efforts are needed for MPAs.

The Lomaiviti team additionally pointed out some of the unique terrestrial features of their islands that warrant higher levels of management. These include: the highlands of Koro which are home to an endemic orchid and provide habitat for numerous species, including Fiji collared lorikeet, endemic Fiji goshawk, kingfishers, Fiji parrotfinch, Fiji wood swallow, barking pidgeon, orange breasted honeyeater, many coloured fruit dove, red shining parrot, and jungle fowl; coastal forests of Ovalau where the highly threatened and endangered Fiji petrel and collared petrel have been located; and a Lapita cultural heritage site found on Motoriki Island. In addition, the Fiji Department of Culture & Heritage has put Levuka on the tentative World Heritage list for its cultural importance to the nation as the former colonial capital.

The Lomaiviti team identified seven major categories of land-based activities that require heightened regulation and management. These include: forestry; agriculture; waste disposal; placement of piggeries; construction of roads; excavation of quarries; and ecotourism developments. To more sustainably manage forestry operations, the Lomaiviti team suggested choosing species for reforestation that add value to the soil, such as *Calliandra*, a nitrogen fixer, that has been used at the Sawaieke agroforestry project, as well as *Vetiver* grass, which binds soil and prevents erosion. They supported the development of nurseries and fostering the use of non-timber products, such as bamboo. In addition, they urged better compliance with EMA for all development activities. In terms of management zones, the team proposed a *community forest park* site at Natokalau's water catchment and surrounding Important Bird Areas on Ovalau, Koro and Gau. It was noted that each forest park should include a buffer zone planted with conspicuous boundary trees for easy identification of the parks. The team also called for the establishment of *riparian buffer zones* surrounding all streams.

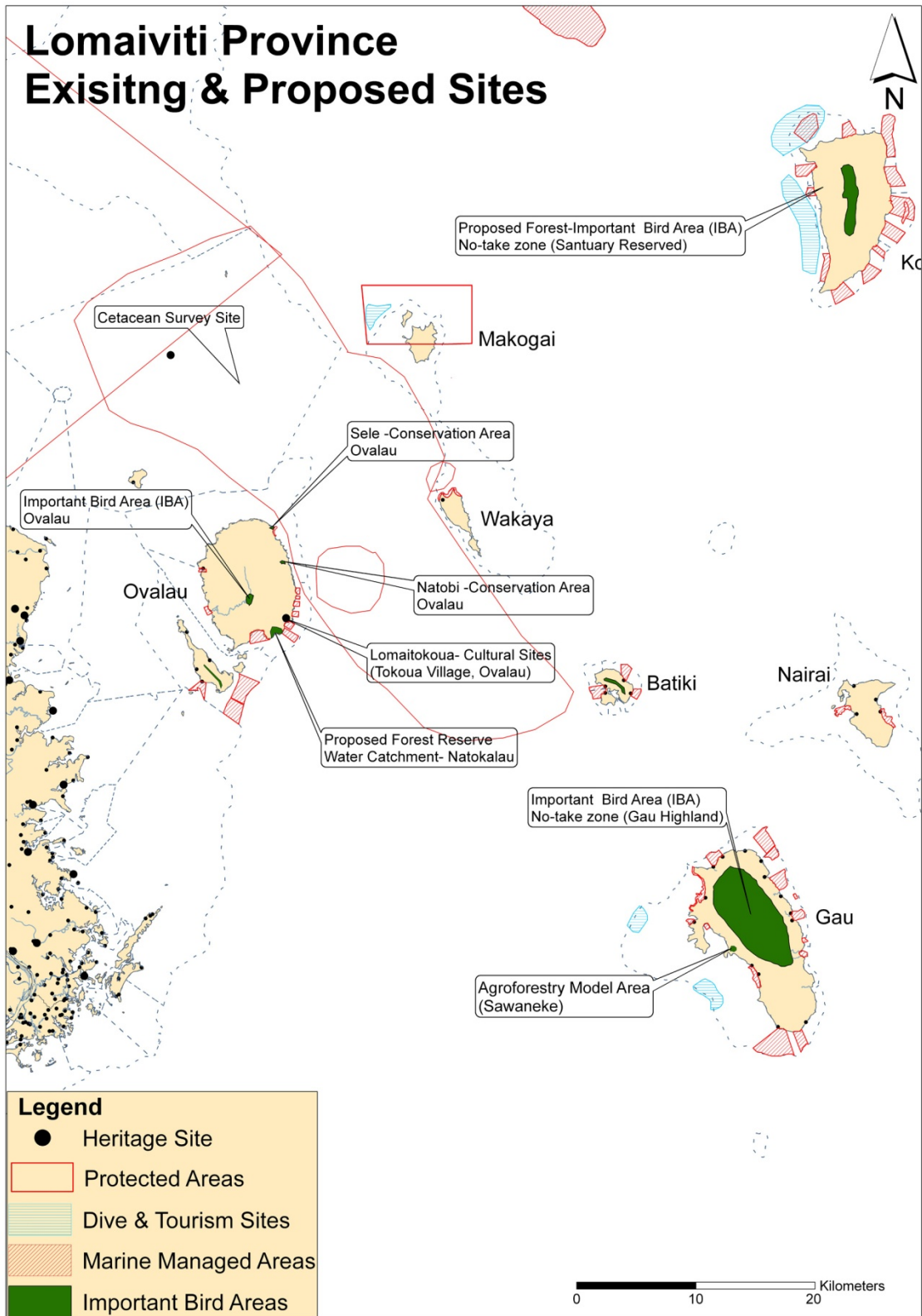


Figure 8. Existing and proposed sites for management in Lomaiviti Province. [NOTE: Error on map: Sawaneke should read "Sawaieke"]

With respect to sustainable agriculture and livestock management, the Lomaiviti team discussed: prohibiting slash and burn agriculture; developing permaculture practices; integrating value-added species into plantations (e.g. palms for development of virgin coconut oil); providing seeds for marketable produce; discouraging placement of piggeries in mangroves or along the coast; and increasing awareness and knowledge to improve informed decision-making by community leaders.

With such high densities of unique and endangered species in the province, there are considerable opportunities for ecotourism, which include: whale watching at Levuka and Makogai; diving with manta rays at Wakaya Passage; turtle calling at Koro Island; shipwreck diving off Levuka; bird watching on Gau and Koro; and trekking in forest parks. The team recognized the need for more awareness to make local communities aware of the importance of their species and habitats, as well as the need to: establish guidelines for cetacean viewing and diving activities; regulate coastal development for resorts; provide maintenance and protection of heritage sites; and improve transportation infrastructure to tourist sites. Two ecotourism projects have been successfully established in Ovalau-natubu and Sele on Ovalau, whereby tourists stop at nurseries prior to trekking up to forest parks and plant the seedlings within the forest park en route to visiting waterfalls.

Tailevu

The Tailevu team identified a series of activities requiring enhanced regulation and management that are spatially located on the map in Figure 9. The activities were described in the following categories: (A) land-management activities; (B) current management and development projects; (D) ecotourism opportunities; and (E) development areas needing regulation. Group (C) indicates best practices to engage with Primary Industry, which included: increased training and consultation; written collective agreements on regulations and rules; strengthened governance at the community level; and development of district-wide guidelines in management plans.

The Tailevu team was reluctant to identify specific zones. They preferred instead to map out current and proposed activities which can now be used as the basis to begin discussions with the Roko Tui and other stakeholders in workshops within the province to develop specific management zones. The team expressed interest in: establishing *permanent no-take reserves*; *ecotourism zones*; *marine aquaculture zones* (e.g. for mud crab culture as mangroves and mudflats were underrepresented habitats in their provincial level gap analysis; Jupiter et al. 2011); *water catchment areas*; and *cultural heritage sites*. They expressed specific interest in protecting water sources to protect water security and thereby save on future costs to develop safe and secure water supplies.

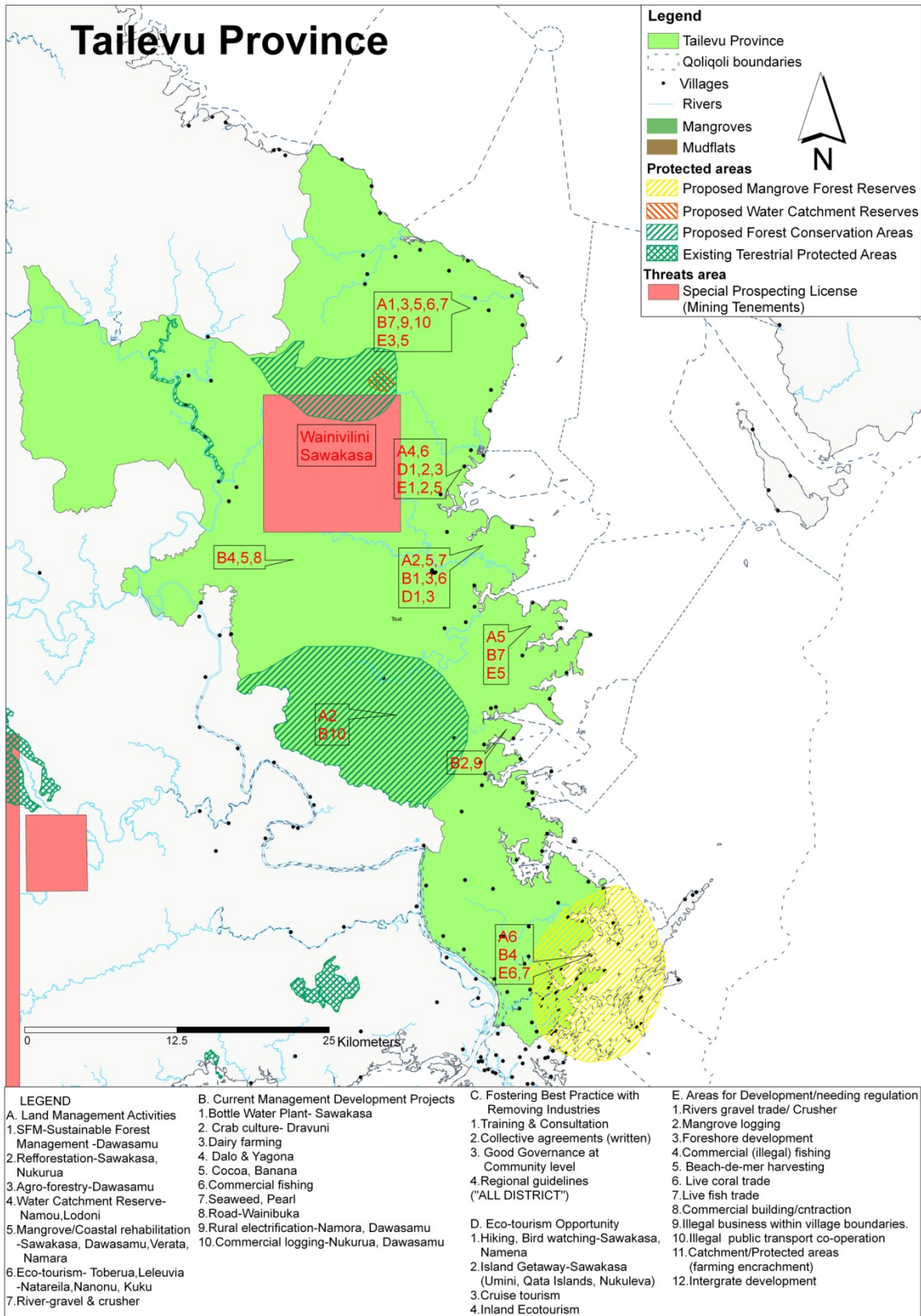


Figure 9. Locations of (A) land management activities, (B) current management development projects; (D) ecotourism opportunities; and (E) areas for enhanced regulation of development in Tailevu Province.

Ra

The Ra team developed a preliminary zoning scheme that differentiated between conservation, management and development areas (Figure 10). Initially, the team developed separate maps for where known activities were taking place within the province and then overlaid all of the information to identify appropriate draft boundaries for zones. Where conservation and management overlapped considerably, the group identified these areas as conservation zones. If development was happening in management areas, the group noted the need to increase the regulations. The final proposed zones are on the map in Figure 10 and include:

- C1 - Conservation over dive sites, including Vatu-i-Ra reef
- C2 - Nakorotubu Water Catchment Ecotourism
- C3 - Key Bird Area
- C4 - Native forest of Nakauvadra Range
- M1 - Navitilevu Bay - ecotourism
- M2 - LMMA sites
- M3 - Important bird area
- M4 - Baravi ni Nakorotubu
- D1 - Tourism development around Rakiraki region
- D2 - Rehabilitation of previously developed/cleared sites
- D3 - Infrastructure development
- D4 - Forestry areas

The Ra team discussed five activities required for land management which include: strengthened observation of vanua protocol and procedures; more reforestation projects; increased community-level awareness; development of model farms; and assurance that EIAs are properly carried out. For engagement with Primary Industries, the team suggested to: work with the Department of Forestry on establishment of nurseries; work with Ministry of Agriculture in developing model farms; and work with Department of Fisheries on aquaculture programs, MPAs and development projects. Numerous opportunities for ecotourism development were discussed, including: birdwatching at Vatu-i-Ra Island; diving around the Vatu-i-Ra Seascape; visiting cultural and heritage sites; observation of cultural practice (e.g. masi making); sales of agroforestry products (e.g. virgin oil, honey); and homestay programs. Other areas of regulation included: coastal development; involvement of cultural sites in EIAs; and ensuring that communities are consulted during EIA processes.

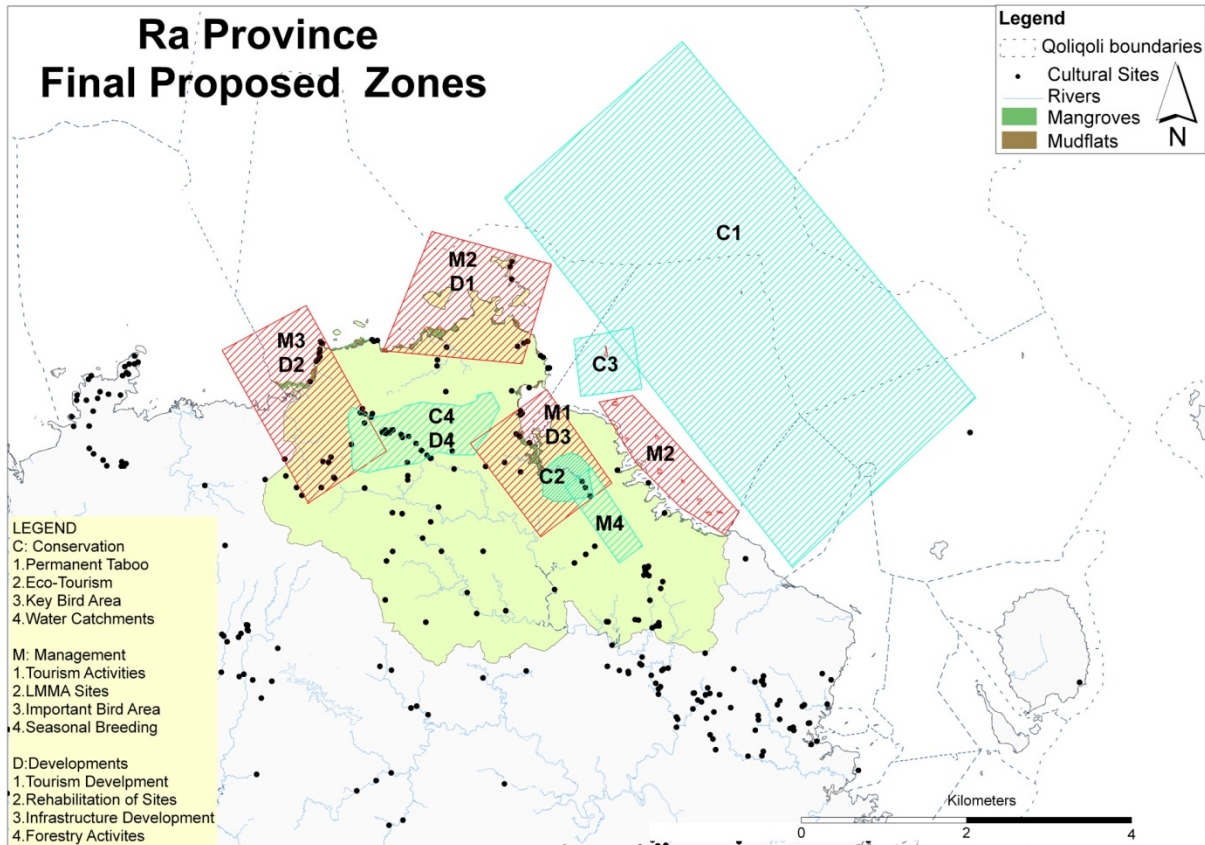


Figure 10. Draft zones for conservation, management and development activities in Ra Province.

Bua

During the discussions on zoning, the Bua team reviewed the state of knowledge of existing and proposed protected area sites within the province (Figure 11). With respect to marine protected areas, Kubulau District currently has three *permanent no-take reserves* for the entire district at Nasue, Namuri and Namena, with Namena additionally considered as an ecotourism zone. Additionally, there are currently another seventeen *village-managed periodically harvested tabu areas*. Following a recent adaptive management workshop in July 2011, the communities proposed to extend buffer zones around the district no-take reserves, consolidate two smaller tabu areas into a larger one, extend the boundaries of several smaller tabu areas, and create four new tabu areas, for a new proposed total of twenty-one (Jupiter and Weeks 2011). These decisions are awaiting endorsement by the Kubulau *Bose Vanua*. The districts of Wainunu, Nadi and Solevu were still awaiting a management planning workshop (held in November 2011) where the results of scientific surveys by WCS staff would be presented back to assist the communities to select new protected areas. As of September 2011, Wainunu District already had two *village-managed periodically harvested tabu areas*, Nadi District had one proposed site for a *permanent no-take reserve*, one proposed site for a *village-managed periodically harvested tabu area*, and one proposed site for a *seasonal, gear restricted area*. Vuya District has a *permanent no-take reserve* around Yadua Taba Island. Bua District has three year *gear restricted closures* around Bua Bay, including the mangroves adjacent to the bay. Additionally within Bua District there are proposed *marine aquaculture zones*, two for the

collection of spat and one seaweed farm. Navakasiga District currently has two *village-managed periodically harvested tabu areas* around Cobota Reef and mangroves.

With respect to terrestrial activities, landowners in Kubulau have proposed two sites for *community forest parks* at Nadicake and Kilaka, plus there is a *nature reserve* on Namenalala Island where a boutique resort operates under the condition of a conservation lease (Clarke and Jupiter 2010). In Wainunu and Dama districts, there are *freshwater aquaculture zones* for subsistence farming of tilapia: two in Nakawakawa village in Wainunu, and eleven total at two sites in Dama. The communities of Yadua Taba Island have established a *species management area* (crested iguana sanctuary), and an alternative site to breed a secondary iguana population is being explored, as the isolated iguana population of Yadua Taba can be exterminated due to natural or anthropogenic threats. Within Bua District, a mining lease has been granted for extraction of bauxite at Nawailevu and the Department of Forestry has established a *forest rehabilitation site* for sandalwood.

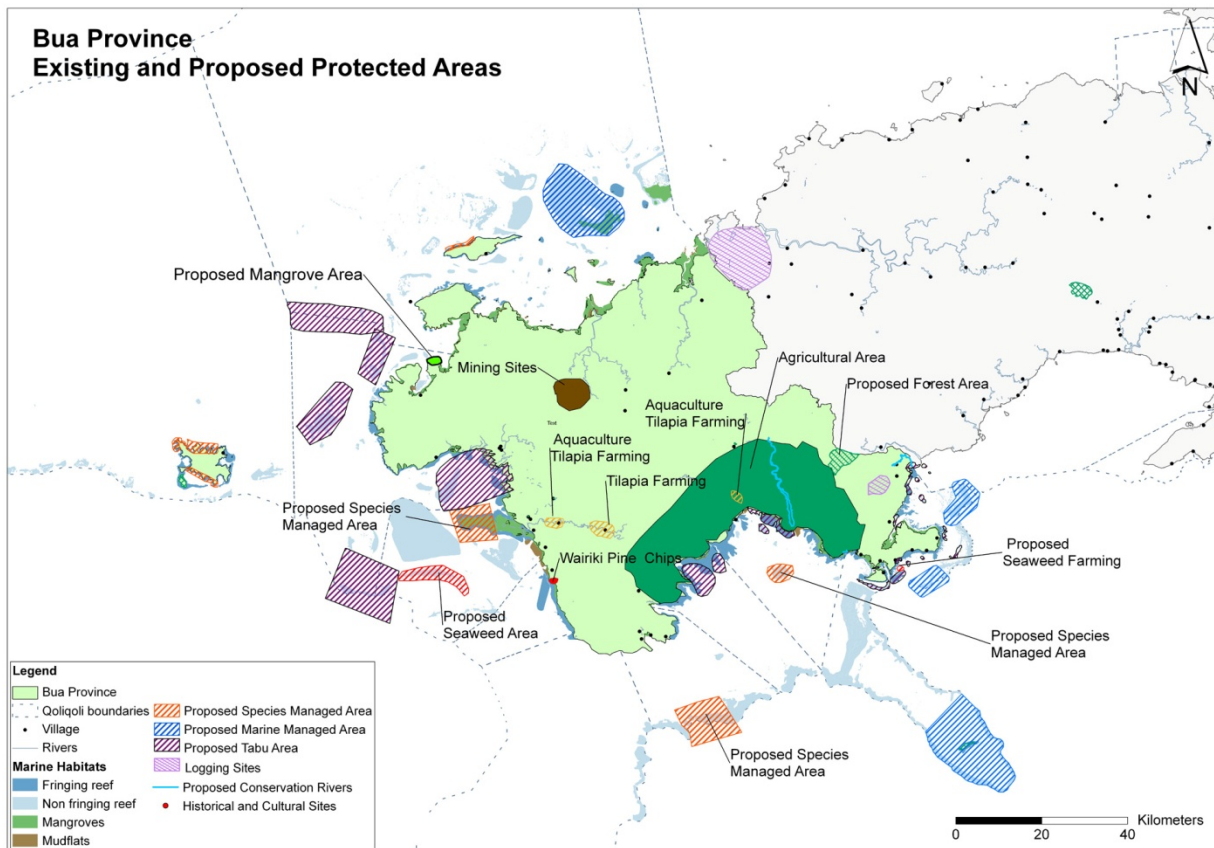


Figure 11. Existing and proposed protected areas and proposed "zoned" areas in Bua Province.

With regard to regulations on activities, the Bua team divided up the discussion by sector, with locations for known allocations and existing terrestrial activities displayed in Figure 12. With respect to *Fisheries*, *permanent no-take district reserves* appear to be working well, though there are issues with poaching from Suva, Ba, Ra, Yasawas, and Lomaiviti as monitoring and

surveillance are difficult. For *Forestry* activities, the team discussed options for selective logging, development of incentives (e.g. REDD+) to minimize logging, heightened protection for areas with endemic species, and increased resources for monitoring activities. To improve land management, the team described options for: banning burning; banning/regulating herbicide and fertiliser application; managing hillslope farming; mixing and diversifying crops; ensuring proper environment management plans are carried out for development; ensuring monitoring is being conducted; and increasing cooperation with government departments. As gravel extraction continues to be a large concern, the team suggested: ensuring that local authorities closely monitor activities; using community resource owners to assist with monitoring; increasing license fees; ensuring EIAs carried out and are credible; and building awareness of the issue. Lastly, the team will discuss the potential for developing ecotourism at historical and cultural sites at the next provincial level meetings, as the Fiji Museum has yet to make assessments of cultural sites within the province.

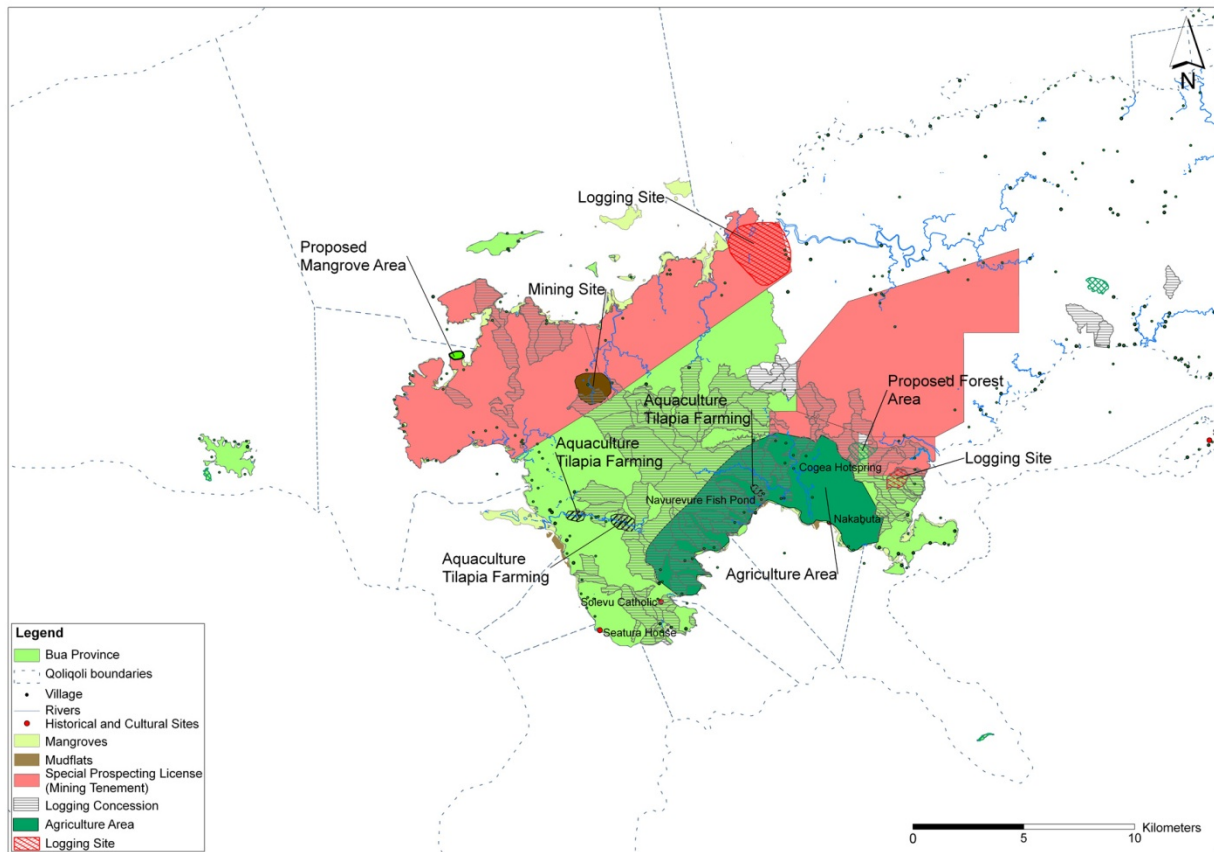


Figure 12. Development zones within Bua Province, including mining tenement and logging concession areas.

Conclusion

Over the next year, members of the Integrated Coastal Management Committee will work together with the Department of Environment and provincial offices throughout the Vatu-i-Ra Seascape to conduct follow-up planning work. Initially this may occur on an ad hoc basis, where

project funding has already been allocated to specific sites. However, there is a push through the Department of Environment to use some of Fiji's GEF 5 allocation for more structured consultations to develop comprehensive ICM plans that best meet the development and management needs of each province.

In the meantime, bottom-up planning at the community-level and good local governance are essential for sustainable use of the coastal zone. Partners of the FLMMA network need to continue to mentor and train Yaubula Management Support Teams to provide information and technical support to communities to ensure sound management decisions that are responsive to natural and anthropogenic change to the environment. We encourage communities who are eager to establish management plans to contact their divisional fisheries and forestry officers, as well as write letters of requests to the FLMMA secretariat. We also encourage cooperation among government and non-government partners to try to ensure that management gaps are filled both efficiently and in appropriate ways that best meet the needs of Fiji's coastal residents.

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Annex A. Vatu-i-Ra Seascape Stakeholders Workshop Agenda

September 8		
Time	Activity	Presenters
8:30 am	Registration	
9:00 am	Opening Prayer	TBD
9:05 am	Welcome Address	Bill Aalbersberg, Chairman of ICM Committee; IAS/USP
9:20 am	Workshop Overview	Akuila Cakacaka, WCS
9:30 am	Updates on Management Activities Since September 2010 PAC Workshop	Provincial Administrators from Ra, Tailevu, Bua& Lomaiviti
10:30 am	<i>Morning Tea</i>	
11:00 am	LIVING COASTAL RESOURCE UTILIZATION: FLMMA Future Scenarios	Stacy Jupiter, WCS
11:20 pm	Zoning Across Vatu-i-Ra	Azusa Makino, U. Queensland
11:40 pm	Integrated Coastal Zone Management Framework	Neema Nand, Dept of Environment
12:00 pm	Facilitated Discussion on Zoning Options	Rebecca Weeks, WCS
12:30 pm	<i>Lunch and Poster Session</i>	
2:00 pm	Break-out group discussion on zoning for marine management	
3:30 pm	<i>Afternoon Tea</i>	
4:00 pm	Group report back	
4:45 pm	Summary wrap up	
September 9		
8:30 am	Registration	
9:00 am	Opening Prayer	TBD
9:05 am	Day Two Overview	Akuila Cakacaka, WCS
9:40 am	LAND-BASED ACTIVITIES: Forest Restoration in Ra	Isaac Rounds, CI
10:15 am	Case Study: Vatu-i-Ra Island	Tuverea Tuanoto, BirdLife International
10:45 am	<i>Morning Tea</i>	
11:15 am	Case Study: Vatu-i-Ra Island cont.	Sione Gonewai, Yavusa Nagilogilo
12:00 pm	Environmental Impact Assessment Processes	Viliame Momoivalu, Dept of Environment
1:00 pm	<i>Lunch</i>	
2:00 pm	Case Study: Waitabu Marine Park	Helen Sykes, Marine Ecology
2:20 pm	Case Study: Moon Reef	Jay Bau, Dawasamu Environment Movement
2:40 pm	Case Study: Namena Marine Reserve	Paulo Kolikata, Kubulau Resource Management Committee
3:00 pm	<i>Afternoon Tea</i>	
3:30 pm	Group discussion on incorporation of land and coastal development activities into planning	
5:00 pm	Summary wrap up	

Appendix B. Participant List

	Name	Organisation
1	Sunil Raj Prasad	Coral Reef Alliance
2	Laisiasa Kurutani	Forestry Northern
3	Alivereti Tuinamata	Fisheries Northern
4	Mosese Nasese	Nakorotabu. Ra
5	Apolosi Silaca	FLMMA Northern
6	Alivereti Senikau	Fisheries-Western
7	Josaia Ravalaca	Bua
8	Paulo Kolikata	Bua
9	Jale Sigarara	Bua
10	Viliame Ratudradra	Bua
11	Ratu Peni Rasigare	Bua, Kubulau resource management committee
12	Stacy Jupiter	Wildlife Conservation Society
13	Natalie Askew	Wildlife Conservation Society
14	Akuila Cakacaka	Wildlife Conservation Society
15	Viv Tulloch	University of Queensland
16	Azusa Makino	University of Queensland
17	Mesake Draniatu	FLMMA Eastern Rep
18	Inoke Navuetaki	Levuka District
19	Loraini Sivo	Conservation International
20	Kasaqa Tora	National Trust of Fiji
21	Mere Laveti	WWF
22	Neema Nand	Department of Environment
23	Seini Tawakelevu	WWF
24	Elia Nakoro	Fiji Museum
25	Ana Tagivetaua	Lomaiviti Provincial Office
26	Helen Sykes	Marine Ecology / Resort Support
27	Epeli Nakautoga	IUCN
28	Adriano Rabolabiu	Bua, KBDC
29	Peni Were	Bua, KBDC
30	Josaia Moce	Ra
31	Senikarawa Mar	Live and Learn
32	Aminisitai Tagaga	Tailevu, Mata ni tikina Sawakasa
33	Aporosa Kaunisela	Nasau
34	Penijamini Velitokadua	Lomaiviti
35	Waqa Tikoisuva	Nausori Rural
36	Veresi Sakunitoga	Tailevu Provincial office
37	Isoa Manulevu	Namena
38	Manueli Cakautabu	Department of Forestry
39	Kiniviliame Ravonoloa	FLMMA Western
40	Jone Tabukausivo	Turaqa-ni-koro Nasau (Vatu-i-Ra)
41	Jolame Sikoliu	FLMMA Central
42	James Comley	University of the South Pacific - Institute of Applied Science
43	Margaret Fox	Wildlife Conservation Society

44	Akanisi Cagintoba	Wildlife Conservation Society
45	Bill Aalbersberg	University of the South Pacific - Institute of Applied Science
46	Josefa Bau	Nataleira / Dawasamu Environment Movement
47	Patrina Dumaru	University of the South Pacific - Institute of Applied Science
48	Cara Miller	Whale and Dolphin Conservation Society
49	Kini Koto	Wildlife Conservation Society
50	Jone Tokaitavua	Dawasamu Environment Movement
51	Rebecca Weeks	Wildlife Conservation Society
52	Janette Kaipio	Wildlife Conservation Society
53	Aporosa Rabo	Fisheries
54	Saras Sharma	Fisheries
55	Pretika Prasad	Fisheries
56	Tuverea Tuamoto	Birdlife International
57	Sione Gonewai	Vatu-i-Ra
58	Isoa Koroiwaqa	University of the South Pacific - Institute of Applied Science / Dawasamu Environment Movement
59	Timoci Ratu	Ra Provincial Office
60	Aminisitai Tagaga	Tailevu
61	Alumeci Nakeke	SeaWeb
62	Usaia Gaunavou	Fiji Museum
63	Sirilo Dulunaqio	Wildlife Conservation Society/Coral Reef Alliance
64	Isaac Rounds	Conservation International
65	Viliame Momoivalu	Dept of Environment
66	Aisake Batibasaga	Fisheries

Appendix C. Questionnaire Submitted to Provincial Offices

Questionnaire to Assess Priorities for Provincial-Level Integrated Coastal Management Plans

Name: _____

Title: _____

Province: _____

[Please return this questionnaire in the enclosed stamped envelope to: WCS, 11 Ma'afu St, Suva]

Please select **two** topics below from the list of themes from the Department of Environment's Framework for a National Coastal Plan which most reflect the interests and needs of your province:

Coastal Development
e.g. residential and commercial construction; landfills and reclamation; coastal protection; dredging; coastal sand extraction

Marine Activities
e.g. disposal of vessel generated waste; oil spills; shipwrecks and abandoned vessels

(Eco-) Tourism Development
e.g. reclamation and construction; tourism waste management; ecotourism and conservation initiatives

Natural threats/disasters
e.g. tropical cyclones, severe storms and floods; tsunamis; sea level rise

Land-Based Activities
e.g. wastewater; solid waste; land-use activities; agricultural and bush/forest burning

Data Collection and Monitoring
e.g. assessing data needs for baseline assessments and evaluation of effectiveness

Living Coastal Resource Utilisation
e.g. inshore fisheries; aquaculture; marine invasive species

Appendix D. Classification of Development Activities with Reference to Requirements for an EIA under *Environment Management Act*

SCHEDULE 2

(Section 27)

DEVELOPMENT PROPOSALS

PART 1 - APPROVED BY EIA ADMINISTRATOR

1. The following development proposals are to be approved by the EIA Administrator-

- (a)* a proposal that could result in erosion of any coast, coastline, beach or foreshore;
- (b)* a proposal that could result in the pollution of any marine waters, ground water, freshwater body or other water resource;
- (c)* a proposal that could result in the contamination or degradation of any agricultural area or land important for agriculture;
- (d)* a proposal for construction of an airport;
- (e)* a proposal for construction of a hotel or tourist resort;
- (f)* a proposal for mining, reclaiming of minerals or reprocessing of tailings;
- (g)* a proposal for construction of a dam, artificial lake, hydro-electric scheme or irrigation project;
- (h)* a proposal for heavy industrial development or noxious industrial development;
- (i)* a proposal for commercial logging or for a saw milling operation;
- (j)* a proposal that could alter tidal action, wave action, currents or other natural processes of the sea, including but not limited to reclamation of the sea, mangrove areas, foreshore, rivers or creeks, or construction of a jetty, dock, wharf, pier or bridge;
- (k)* a proposal that would introduce pollutants or properties to the air that are disagreeable or potentially harmful to people and wildlife;
- (l)* a proposal that could jeopardize the continued existence of any protected, rare, threatened or endangered species or its critical habitat or nesting grounds;
- (m)* a proposal that could deplete populations of migratory species including, but not limited to, birds, sea turtles, fish, marine mammals;

(*n*) a proposal that could harm or destroy designated or proposed protected areas including, but not limited to, conservation areas, national parks, wildlife refuges, wildlife preserves, wildlife sanctuaries, mangrove conservation areas, forest reserves, fishing grounds (including reef fisheries), fish aggregation and spawning sites, fishing or gleaning areas, fish nursery areas, urban parks, recreational areas and any other category or area designated by a written law;

(*o*) a proposal that could destroy or damage an ecosystem of national importance, including, but not limited to, a beach, coral reef, rock and gravel deposit, sand deposit, island, native forest, agricultural area, lagoon, sea-grass bed, mangrove swamp, natural pass or channel, natural lake or pond, a pelagic (open ocean) ecosystem or an estuary;

(*p*) a proposal that would result in the introduction of genetically modified organisms or of non-native species that could compete with or destroy any native species;

(*q*) a proposal for the construction of a landfill facility, composting plant, marine outfall or waste water treatment plant;

(*r*) a proposal that involves dredging or excavating a river bed;

(*s*) a proposal that is controversial from an environmental standpoint, or is not supported for environmental or resource management reasons by a significant number of representatives from the local community, local government, churches, villages and other groups;

(*t*) a proposal that could lead to the depletion of non-renewable resources;

(*u*) a proposal that could challenge or contravene established customary controls over the use of natural resources;

(*v*) a proposal that could result in any trans-boundary movement of wastes that could have an impact on human health, the environment or natural resources in any neighbouring country;

(*w*) a proposal financed by an international or local development finance institution and which requires an EIA as a condition of the finance;

(*x*) a proposal for farming or agricultural method or system that could result in the contamination or degradation of any agricultural area or land important for agriculture;

(*y*) a proposal for a residential subdivision for more than 10 lots.

PART 2 - APPROVED BY APPROVING AUTHORITY

1. The following development proposals are to be approved by an approving authority-

(a) a proposal that requires processing only because it could endanger or degrade public health or sanitation;

(b) a proposal that requires processing only because it could harm or destroy important cultural resources including, but not limited to, archaeological sites, cemeteries, historic sites and landmarks;

(c) a proposal for a residential subdivision of not more than 10 lots;

(d) a proposal for civic or community development;

(e) a proposal for general commercial development;

(f) a proposal for general industrial development.

2. For the purposes of this Part, "civic or community development" means development for purposes of-

(a) a market;

(b) a car park, taxi park or any other similar development;

(c) a bus station;

(d) a town park, swimming pool, library or any other similar development;

(e) a fire station;

(f) a police station, court house, prison or any other similar development;

(g) an animal pound;

(h) government offices;

(i) recreational facilities provided by a local authority;

(j) a parade ground or barracks for the Republic of the Fiji Military Forces or for the Fiji Police Force;

(k) a radio or telecommunication installation;

(l) a library or reading room;

(m) a church, cemetery or crematorium;

(n) a school or other educational establishment and associated living accommodation;

(o) an assembly room;

(p) a kindergarten or crèche;

(q) a hospital or health care centre;

(r) a social, private or sporting club registered under a written law;

"dam" means a barrier constructed to hold back water for the purpose of production of electricity, irrigation, controlling of flooding, catchments of piped water systems or waterways;

"general commercial development", "general industrial development", "heavy industrial development" and "noxious industrial development" have the meanings respectively given to those terms under the Town Planning Act.

PART 3 - DEVELOPMENT PROPOSALS THAT MAY NOT REQUIRE THE EIA PROCESS OR AN EIA REPORT

1. Subject to section 27(4)(c), the following development proposals do not require the EIA process or an EIA report-

(a) a proposal for the construction of a single family residential building in an approved residential development area, if the construction is at least 30 metres from any river, stream or the high water mark;

(b) a proposal for an addition to an existing residential dwelling if the addition is to be used only for residential purposes and is at least 30 metres from any river, stream or the high watermark;

(c) a proposal for the construction of a traditional or customary structure (including the Fijian villages within native reserves under the Fijian Affairs Act or villages on the islands of Rotuma and Rabi made from traditional materials, or from natural rock, sand, coral, rubble, or gravel, if the construction or the customary structure is at least 30 metres from any river, stream or the high water mark;

(d) subject to paragraph 2 and 3, a proposal for emergency action.

2. For the purposes of this Part, an emergency action referred to paragraph 1(d) is action that must be performed immediately, without time for normal planning, design or review, in order to protect against catastrophic loss of property or life, or serious harm to the environment.

3. A person or agency undertaking emergency action under this Part must make all reasonable efforts to consult with the Department and to incorporate in the emergency action measures that will reduce, mitigate or avoid adverse environmental effect.

Appendix E. Responses to questions about EIA Process

Given the intensity of the discussions during the EIA process session at the workshop, we have included the questions and answers for reference. The following text is an edited transcript of the questions asked to EIA officer, Viliame Momoivalu, and his responses. Further inquiries can be made to:

Department of Environment
G.P.P Box 2109, Suva
Ph: 331 1699
Email: viliame.momoivalu@environment.gov.fj
lote.rusaqoli@environment.gov.fj
aminiase.qareqare@environment.gov.fj

Q. Suppose we are setting up a resource centre for Kubulau District, how do we go about doing that?

A. We have received the proposal but you need to discuss the plan with the Bua rural authorities. They will decide if an EIA is needed.

Q. Is there an assessment for, during and after development?

A. For the EIA process, once a decision is made prior to EIA report, approval will be made for the project to go ahead and may be accompanied by conditions. The developer is required to submit a management plan. The approval letter also will stipulate a committee to be established to monitor the development.

Q: What steps should communities or local authorities follow if there is a breach of the conditions?

A. After the initial screening, all stakeholders will be identified. All development with native land goes through iTaukei Land Trust Board, and before a Terms of Reference (ToR) is drawn up, communities are consulted for their concerns. In rural areas we have health inspectors, these are the first point of contact. Concerned parties can also write directly to Director of Environment or one of the 3 satellite offices: Suva, Labasa (looks after Northern development) and Lautoka. People can also visit the offices directly.

Q. What steps should communities or local authorities follow to inquire about a development where they believe that an EIA should have happened but none was done?

A. It is illegal to do development without an EIA. All development listed in Part 1 of Schedule 2 of EMA 2005 require approval by an EIA administrator and all development listed in Part 2 of Schedule 2 require approval by an approving authority (Appendix D). When screening proposed developments, we need to have a community support letter. All queries on breach of this protocol should be written to the Director of Environment.

Q. There is a machine from mining speculators that sits on Wainunu soil but is digging and damaging in Kubulau. What processes are in place for such community concerns?

A: Concerned residents should write their complaints to the Mineral Resources Department as there are various pieces of legislation concerning the different government departments. Residents can also raise their queries with the Department of Environment office in Labasa.

Comment (Helen Sykes): As a registered consultant, if you have questions then you can ask me (helen@marineecologyfiji.com). I would encourage people to complain *if* they have valid concerns *that could be addressed to ensure the development was more environmentally sustainable*, but to be sure that you are *not* complaining simply to get compensation.

Q. Can you explain about the ownership of the EIA report. As a marine consultant, I get asked by companies for copies, so who is allowed to see the reports?

A. For the EIA report, anyone can view the report. Feel free to contact DoE and make arrangements to view these reports. After the report is done, it belongs to the government so there are proper ways to get the report.

Q: How can resource owners access EIA reports regarding development in their area?

A: Once an EIA report is produced, there are a few copies that are made. One copy goes to the DoE while the other copies will be sent to the different stakeholders. For example, for a development proposal in Yasawa, all the copies will be sent to the various stakeholders: One copy will go to the office of the Commissioner Western, another to Dept of Environment – Lautoka office and one to Lautoka Rural Local Authority. You can enquire at these offices to view a copy of an EIA report. However, if you would like to obtain copies of certain EIA reports in your area (as a concerned resource owner), you can request the developer(s) to pay for another copy to be produced for you.

Q. Is there a time frame when the reports can be released or must queries come through DoE?

A. Queries must come through DoE.

Q. What are some examples of activities that may not require an EIA?

A. Single family residence or traditional/customary structure >30 m from stream or high water mark. Expansion of existing residence (See Part 3 of Schedule 2 in Appendix D).

Q. We have noted construction of private jetties on Koro Island. Has approval been issued by DoE for these jetties?

A: Prior to any development, the resource owners have the authority to enquire if any EIA has been conducted. Resource owners can seek advice at any of the DoE offices in the country. There has to be a letter of consent to DoE from the *qoliqoli* traditional fishing rights owners prior to any jetty construction before the Director of Lands can issue an approval for jetty development. Director of Lands will only issue approval after receiving the green-light from DoE, and DoE will only issue approval to Lands after receiving *qoliqoli* owners' consent letter. [Viliame Momoivalu suggested that the Koro YMST representation write a letter regarding his concerns to DoE.]

Q. Regarding the destruction of the environment from the quarry in Sawakasa (Tailevu), has the development been approved by DoE?

A. [Viliame Momoivalu will follow up on this with his office.]

Q. With respect to extraction of sand and gravel by the Department of National Roads, can resource owners raise concerns about the negative impacts of these extractive activities and if an EIA is needed for this?

A: Despite these resources (gravel & sand) being owned by the Government (refer to Lands Act), *qoliqoli* traditional fishing rights owners have the right to raise their concerns to DoE and Department of National Roads on the impacts of these extractive activities. However, these environment laws only came into full effect in 2008. So if any of these activities were done prior to 2008, some do not have EIA reports. DoE has requested that these developers submit a Construction Environmental Management Plan (CEMP) to clarify new development being done to specify, for example, the volume of gravel to be extracted, etc. DoE is trying to work closely with the Department of National Roads. Viliame reiterated that unfortunately, environment faces this sort of trade-off with development, but there are measures in place to reduce the negative impacts on the environment when development take place. DoE has requested that the Public Works Department allow for site visitations to their gravel pits, so they can formulate their Environmental Management Plan.

Comment (Kasaqa Tora). Maps with existing and proposed protected areas can be sent for government to review when considering proposals to approve for development.

Q. When communities do make attempts to complain or highlight breach of conditions, is a phone call or a letter sufficient to get concerns noted or do they have to provide any specific evidence? And what would be an expected time of response from the Department?

A. At DoE, there are various sections (EIA section, waste management section), which are all linked to the Register of Complaints. When there is complaint lodged by phone, this is recorded in their register books. However, complainants are also encouraged to write. Once DoE (EIA unit) receives this letter, this starts a new case, which will compel DoE to undertake a site visitation to confirm the damage that has taken place. There is no specific timeline to respond to these complaints.

Q. Could you give us more information on bauxite mining in Nawailevu, Bua.

A: The extraction will be done in sections. For example, they might work in area of approximately 100 m² and upon completion, the developers will bury this area and wait for a approval before moving to another area.

Q. What is the relationship between conservation and development with respect to Mt Kasi? That is, once the proposed work at Mt Kasi has been approved by government and an EIA has been conducted, what are the mechanisms in place to monitor that the activity complies with EIA? Who will carry out the monitoring?

A: DoE carries out monitoring. No approval has been issued yet for the development at Mt Kasi.

Q. We have concern about run-off and impacts from mining to neighbouring areas, particularly on downstream ecosystems and communities and extending to the marine areas. For the case at Mt Kasi, runoff from the mine have flowed into the river system and down to the sea. What about the *qoliqoli* traditional fishing rights owners that live downstream that are impacted by this development?

A: That is the purpose of having an Environmental Management Plan – to mitigate the negative impacts caused by these developments. With the case of Mt Kasi, they can check with the DoE Northern office in Labasa to follow up on this. [Viliame Momoivalu noted this concern and he will follow up with the DoE Northern office if any monitoring has been done regarding compliance by the developers at Mt Kasi.]

Q. There is a Chinese company extracting (digging) black sand in Ra province under a prospecting permit for 6 months to explore whether the iron ore content in the sand could be developed into a mineral extraction industry. Is there a need for an EIA to be conducted for prospecting purposes such as this?

A. Prior to any mineral extraction (mining), there has to be a permit issued by the Mineral Resources Department (MRD). For cases like this, they will issue a Special Prospecting Licence (SPL) to allow them to prospect. However, there are various types of prospecting activities (such as digging or drilling,) depending on the mineral which they are searching for. We encourage resource owners to express concerns with DoE prior to issuance of an SPL.

Q. Elaborating on the previous discussion, prospecting is currently being done at bottom of Navitilevu Bay, on the beach, up to Navunivi Village, and this will affect the mangroves and the surrounding environment in that area.

A. MRD issues the Special Prospecting Licence (SPL). Prior to any prospecting, prior permission has to be obtained from the Director of Mines and the Director of Environment, describing the area that can be prospected once permission is obtained.

Comment [Kasaqa Tora]: Prior to any SPL being issued, there is a designated number (CX) for the development proposal. This number is circulated by Mineral Resources Department (MRD) to various agencies, for instance, the Forestry Department and to National Trust, to identify whether there are existing protected areas (including marine protected areas) within the locale earmarked for prospecting. These maps are then forwarded to MRD and they will decide whether to issue an SPL or not.

Q. Still on SPL –if the prospectors do not find what they are looking for, what mechanisms do you have in place to ask the questions about the communities regarding their land?

A: For mining development, when they provide us with EIA, a Mining Plan is sent to the MRD. It will include regulations and the mining can be stopped if in breach of the regulations. For the Special Prospecting Licence during that period, they will collect samples and once they are satisfied that the proposed area has the minerals, then they will start with the actual work.

Q. What mechanisms do the provincial office have to address some of these concerns, bearing in mind that they are eyes and ears of the community and provide the link between community and government, like for cases such as in Kubulau where the machine is sitting on Wainunu land and excavating into Kubulau land?

A: I believe one of the reports is with Bua Rural Local Authority, i.e. one of the 3 reports produced, and 1 is with Commissioner Northern Office. Resource owners can write a letter regarding their concerns and requests.

Comment. With respect to gravel extraction occurring in the districts of Namena and Sawakasa, let's remind ourselves that for every development, there will be damages to the environment. If we want to have roads, then gravel will be extracted. The first company that came to construct roads (in Tailevu) did not want gravel from streambeds but excavated rock from the hillside in Natovi and produced gravel from it. Nowadays, gravel (for road construction/maintenance) is being extracted from stream beds and resource owners are financially compensated for this (stream bed gravel extraction). Maybe, we can revert to how the first company produced gravel and instead of extracting gravel from streambeds, current developers can extract rock from hillsides and produce gravel from that instead.

A. For resource owners – if you notice some development taking place in your community without any approval, you have the right to stop the development and question them if any approval has been granted. For I'Taukei resource owners, approval needs to be granted by the head of the *yavusa* or *mataqali*, and this has to go through the I'Taukei Land and Trust Board (formerly known as NLTB), before any development takes place.

Q. Can you please come to our next tikina meeting (in Ra) to explain about EIA processes? Our next tikina meeting will be next week.

A. If you can please send a request letter to our head unit so that one of our staff at our office here in Suva or from our Lautoka office can come to attend the tikina meeting.

[NOTE: Communities and districts should follow this example and request to the DoE offices for presentations at the local level to explain EIA processes.]

Q. What about leases (native or crown)? What are the EIA processes involved for these types of leases, especially by hotel developers, since this will impact the resource owners who live within the vicinity of this place? We know that as resource owners, once we signed over the agreement to lease this area, we cannot go in there.

A. Once a place is leased, you have surrendered your authority to occupy or use that area. However, if any development is going to take place in any place, there needs to be an EIA, irrespective of whether a lease agreement has been signed or not. So you as a resource owner have a right to question the developers regarding the impact it will have to the environment as it will affect your livelihood. You can also follow this up with the relevant authorities to verify permission has been granted for this development.

Q. After development, communities come to Department of Culture and Fiji Museum concerned with issues surrounding burial grounds. Please make suggestions to include that as components of EIA.

A. The social component of an EIA should account for that in addition to physical and biological components. In fact, some of these ancient cultural (including burial) sites are protected by national law.

Q. Do other government departments have to comply with EMA? Does DoE have jurisdiction over other government departments. For example, when the Prime Minister was coming through on a visit to Bua, the PWD (currently known as Department of National Roads) extracted gravel for road upgrade for the PM's trip without an EIA.

A. In such cases, EMA was enforced in 2008. Most of these gravel pits have been in existence prior to 2008. Currently, DoE trying to work with Department of National Roads to formulate a Management Plan for these existing gravel pits.

Q. These are new sites (post 2008).

A. For new sites, the land owners have the right to question the Government or question those who are carrying out the work. As we know, the main focus of the Government now is road construction, and gravel and sand are the main ingredients for road construction. However, this does not stop the landowners from querying.

Q. I had given approval for a road to be constructed in our area. Unfortunately, the company initially carrying out the development had their contract terminated and another company has taken over the construction. However, the initial contactor caused a lot of damage. Who is responsible for this damage, this company or the Government?

A. The Government.

Q. How many personnel work for the EIA unit?

A: Right now, there are only 2 of us (in the Suva office) and another has just joined (total of 3 in Suva now). There is one in our Northern and another in our Western office. Health inspectors and other government officials also support our unit, and you can seek advice from these officers. However, we as resource owners should be concerned for our environment and our heritage. As I'Taukei, we have a traditional culture of keeping quiet and accepting things, however, if you have any concerns, please enquire at any of our offices as we have the authority to follow this up with other Government departments so we can address your concerns.

Q: Regarding the *Environment Management Act* – are there any copies in I'Taukei version?

A: We are currently translating the Environmental Management Act into I'taukei language. Every year, our dept goes to certain provinces conducting awareness on environmental laws. I encourage you to send us a letter of request if you want us to conduct an awareness program for your provinces.