

Action Plan for Implementing the Convention on Biological Diversity's Programme of Work on Protected Areas



Fiji

Submitted to the Secretariat of the Convention on Biological Diversity October 6, 2011

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The Fiji national Protected Area Committee (PAC) was established in 2008 under section 8(2) of Fiji's *Environment Management Act 2005* in order to advance Fiji's commitments under the Convention on Biological Diversity (CBD)'s Programme of Work on Protected Areas (PoWPA). To date, the PAC has established national targets for conservation and management; collated existing and new data on species and habitats; identified current protected area boundaries; and determined how much of Fiji's biodiversity is currently protected through terrestrial and marine gap analyses.

Description of protected area system

National Targets and Vision for Protected Areas

(Insert national targets for protected areas/Target 11 of the Aichi Targets. Include rationale from protected area gap assessment, if completed, along with any additional information about the vision for the protected area system, including statements about the value of the protected area system to the country)

Fiji has a rudimentary system of protected areas, however, none of the areas have been selected on the basis of ecological knowledge or biodiversity values. Nonetheless, these sites in combination with other priority sites which have been identified for their biodiversity values, have the potential to provide the basis of a representative system of protected areas. The intention is for the representative system of protected areas to be augmented by a large number and variety of protected areas which are important at the provincial or local level.

Most of the priority sites have been identified for a long time but progress in the development of the proposals has been very slow. One of the major constraints is that at least five government departments or agencies are involved in protected area management. A priority clearly is to establish a practical institutional arrangement with clearly defined responsibilities. It is important that the landowners and/or traditional fishing rights owners (TFROs) are directly involved in the management and development of these sites. The current interest in and expansion in the number of ecotourism developments has the potential to deliver such benefits directly to landowners and TFROs.

According to World data base on Protected Areas, as on 2010 while 1.34% of Fiji's terrestrial surface is protected only 0.06% of its territorial Waters are protected.

Based on ecological gap análisis and other assessments conducted under PoWPA the realistic nacional targets for terrestrial and marine areas for target 11 are 30% marine and 20 % terrestrial by 2020:

Coverage

(Amount and % protected for terrestrial and marine; maps of protected area system)

Total country area: 18,333 sq/km

% terrestrial area protected: 2.9

% territorial waters protected: 1.2% of EEZ 12% inshore within traditional fisheries managed areas

Description and background

(Summary description)

Fiji has 48 terrestrial protected areas covering 488 km² or 2.7% of the nation's land area (Chape *et al* 2008). Eight Nature Reserves¹ were established under Forestry legislation in the 1950-60s – all of these remain but they have never received any formal conservation management. Only three of these have ecological significance – Ravilevu, Tomanivi and Savura. The Ravilevu NR and the Tomanivi NR are currently under advanced plans for de-reservation and a return to native land tenure. In 1972 a UNDP/World Bank Tourism study recommended eight protected forest areas.

Eight years later the National Trust for Fiji and WWF produced a landmark report detailing a proposed system of national parks and reserves along with information on how to establish, develop and manage them (Dunlap & Singh 1980). The report provided definitions for protected areas, guidelines for prioritising them and made recommendations for sites based on ecological and heritage values. A total of 88 terrestrial and marine sites were identified in seven planning regions. The report promoted 'ecodevelopment' for Fiji and provided a Draft Act for the establishment of national parks and reserves. None of the recommendations have ever been fully implemented.

In the mid 1970s the Namenalala island reserve was established – a landmark Native Land Trust Board-brokered lease for a combination of resort development (restricted to 6 acres) and conservation (the remaining 50 acres of the island). This was followed in 1980 by an informal agreement with the landowners for sanctuary status for Yadua Taba island. 24 years later, the island was formally leased from the landowners to the National Trust as a protected area. The J H Garrick Memorial Park, comprising 426 ha of lowland forest on freehold land in the Deuba-Namosi area, was donated to the State in 1983 and is now managed by the National Trust.

In 1988, the Native Lands Trust Board (NLTB) supported the first serious ecosystem-based study for forest conservation areas, nominating 15 sites for protection (Maruia Society 1988). Three of these sites have been set aside from logging, including – importantly – Sovi Basin, but management of the other sites is unchanged. Logging has taken place in several of the recommended conservation areas. In the same year, Cabinet passed a Decree for the establishment of the Sigatoka Sand Dunes National Park.

Four years after this study, the 1992 State of Environment Report noted that although neighbouring Pacific nations had internationally recognised protected areas, Fiji had none: *'Unless a system is set up quickly valuable aspects of Fijian heritage, both natural and cultural, will be lost.'* The report noted that:

- Protection forests (a Forestry Dept. classification with no legal standing) had no long term security for conservation
- Forest and Nature Reserves are under departmental and not national authority with inadequate legislation and institutional support to resist political or social pressure.
- De-reservation of Forest Reserves had increased in recent years.

¹ Under the same legislation, 15 or more Forest Reserves were established. Only two of these have ecological significance....Taveuni Forest Reserve and the Wabu Forest Reserve. The majority have been converted to Mahogany plantations or de-reserved.

- Because of the land ownership system and lack of economic returns to landowners, current reserves had no long term security.
- Planning and limited attempts at implementation of reserves had been made by at least four institutions with inadequate objectives and co-ordination.
- With inaction Fiji risks the danger of picking up pieces that are left – without any basis of ecological or heritage values.

The associated National Environment Strategy (NES) drew up a list of 140 Sites of National Significance, proposing that a formal legislative process be enacted to give them greater protection from destructive development. In the 15 years since the NES, a several forest areas have been reserved either through formal leasing arrangements with landowners or through informal agreements. Notable among these are Waisali – established through a formal lease in 1996; and the ‘Heritage Parks’ of Bouma and Abaca, the former established as a result of an MoU between the landowners, NLTB, DoF and the New Zealand Government. These latter two areas were the key products of a push from NLTB to establish community-based ecotourism projects associated with forest conservation. They have attracted significant donor funds and Abaca was one of the regional sites of the GEF-Supported South Pacific Biodiversity Conservation Programme.

Significantly, the 20,000-hectare Sovi Basin is now well on the way to reserve status with an associated trust fund for landowners. Equally significant has been the establishment of over 200 locally managed marine areas.

The Navua Gorge Conservation Area is a privately managed protected area of a Site of National Significance, leased by the NLTB on behalf of the landowners. It was subsequently nominated and listed as Fiji’s first Ramsar site, as a wetland of international significance.

The Department of Water and Sewerage and the Fiji Electricity Authority hold reserves, leased from their landowners, for water catchment protection purposes in areas that are also of ecological significance. Amongst these are some of great ecological significance for example: Vaturu, Monasavu and Savura.

Currently the Fiji Locally Managed Marine Areas number some 216 sites which cover approximately 10,233 square kilometres or almost a third of Fiji’s inshore fishing area. Many of these have management plans.

Governance types

(Summary matrix of governance types)

Fiji’s currently recognised protected areas are summarised below.

Terrestrial Sites	Institutional Arrangement	IUCN Category	Year of Establishment	Area (ha)
Protected Areas - legally established - regarded as secure				

Sigatoka Sand Dunes National Park	Cabinet Decree	II	1988	240
JH Garrick Memorial Park	Freehold owned by National Trust	II	1986	428
Ravilevu	Nature Reserve (Forestry Decree). Vuo, Drauniboto-Labiko and Vunamoli have no ecological significance	I	1959	4,020
Naqarabuluti		I	1958	279
Nadarivatu		I	1956	93
Tomanivi		I (II)	1958	1,322
Vuo		I (II)	1960	1.2
Draunibota, Labiko		I (II)	1959	2.16
Vunimoli		I (II)	1968	20.2
Namenalala island		99 year lease by NLTB with conservation conditions	II	1984
Yadua Taba island	Ia		2004	50
Waisali Reserve	II		1991	120
Monasavu Catchment	99 year lease by NLTB (conditions not known)	VI	2004	c.1,000
Navua Gorge - Ramsar Site	25 year lease by NLTB with conservation conditions	II	1997	c. 640
Sovi Basin Reserve	5 year 'temporary lease'	II	2006	20,421
Other Protected Areas (without legal security)				
Taveuni Forest Reserve	Forest Reserve (Forestry Decree)	VI	1914	11,160
Wabu Forest Reserve		I (II)		c.1,200
Coloisuva Amenity Park		II	1952	91
Bouma National Heritage Park	Memorandum of Understanding – 99 years. NLTB, DoF, NZGovt.	II (VI)	1990	1,417

	Landowner managed			
Koroyanitu National Heritage Park	Landowner managed	II (VI)	1989	1,200
Total				43,748
Water Supply Catchments				
c.30 for metered water supplies. The following of ecological importance	Most of the older, larger ones gazetted under the Water Supply Act. Many have no legal arrangement but this is changing	VI		
Tamavua-Savura 1&2		VI		
Somosomo		VI		
Waievu		VI		
Vaturu		VI		
Marine Sites	Institutional Arrangement	Year of Establishment		Area (ha)
Ulunikoro Marine Reserve	Marine Reserve – Fisheries Act	2003		
216 Locally Managed Marine Areas	None	1995-2008		1,023,285

Key threats

(Description of key threats, and maps, if available)

Threat 1: De-reservation of Nature Reserves

The Nature Reserves were established in the colonial era under the Forestry Act (now Forest Decree). Political pressure has resulted in the Reserves (and other Crown A, B land tenure) being reverted to native land ownership. There is no assurance at this point in time that any form of protected area will eventuate.

Threat 2: Invasive species

Fiji suffers from a suite of invasive species common with most islands in the South Pacific including rats, cats, mongoose, cane toads, dogs, pigs, goats, horses, cattle, Indian Mynahs, red-vented bulbuls, *Merremia peltata* creeper etc. Not all these invasive species are on every island and so there are examples available to show the impacts of different species, as well as prevent further inter-island introduction.

Threat 3: Lack of capacity and enforcement

None of the Government departments or agencies currently responsible for PA management have the necessary technical and financial resources provided by the central government to exercise proper enforcement and/or management.

Threat 4: Commercial and unsustainable fishing practices

Despite the success of the Locally Managed Marine Areas initiative, none of them have a formal or legislative basis and enforcement is an increasingly difficult challenge. Some of the areas remain badly over-fished, and others are targeted by commercial fishermen from other areas. Consequently, the long-term effectiveness and sustainability of these community-managed marine areas, in respect of biodiversity conservation remains questionable

Barriers for effective implementation

(Description of key barriers for effective implementation)

Barrier 1: Weak government leadership and coordination

No one government department has the specified mandate to lead conservation and protected area initiatives. There is a recommendation in the National Environment Strategy for government to set up a Department of Conservation but this has never eventuated primarily due to financial and manpower constraints. As a result of this the Department of Environment, itself new and understaffed and underfinanced has been left to lead on conservation issues. Other government ministries such as Forestry, Fisheries, Agriculture and Mineral Resources also have some legal responsibilities. This has prevented a clear government led agenda and programme to address conservation issues in the country but in recent years the National Trust of Fiji, a government statutory body has emerged as a likely focal point for conservation issues in particular those related to protected area management.

Barrier 2: Lack of PA priorities

Current PA priorities are contained in the Fiji Biodiversity Strategy and Action Plan which were drawn from the 1993 National Environment Strategy - which in turn identified priority PAs based primarily on the 1989 Maruia Society – NLTB report.

There has been a great deal of survey, research and conservation documentation in the last decade (documented in the Initial PoWPA Assessment) such that there is now a bewildering array of recommended PAs. The consequence of this for government is best exemplified by decisions relating to

the National Forestry Inventory 2007-8 (the 3rd Forest Inventory). In 1993, the 2nd national forest inventory incorporated priority or significant PA proposals into a 'Forest Functions' classification. But the current inventory only identifies legally or formally protected forest, of whatever origin. No 'proposals' or community managed sites (unless formally secured) are included on the primary forest management maps. This can be regarded as regressive step, however, in the circumstances of a bewildering new suite of PA proposals without government-led priority setting, is entirely understandable. Nonetheless, there are many currently rare or endangered habitat types which were once more widespread and which are not adequately represented in existing PAs or priority 'proposed' PAs (documented in the Initial PoWPA Assessment).

Currently, Fiji needs to adopt a new approach to defining and establishing an effective national PAs system. This is very important for NGOs and donors, so as to enable them to continue work, however, it needs to be a Fiji government directed initiative and be cognisant of the political backdrop.

Barrier 3: Weak legislation

Current legislation for PAs is dispersed among several different departments and agencies. As such responsibilities are dispersed, and the frequent shifting of several of these departments between different ministries (ie DoEnv. and DCulture & Heritage; National Trust) makes it very difficult for these agencies to attract consistent political and institutional support. This situation has not changed since it was first identified as problematic in the National Trust-WWF study of 1980, which resulted in draft PA legislation being drafted then.

Fiji's Forest Decree's Nature Reserve legislation is no longer a credible instrument in a modern context, this has been demonstrated during the Sovi Basin work which has revealed that NLTB will not accept it. This is a highly significant development which indicates that what has hitherto been considered the most secure legislation for terrestrial protected areas is actually no longer workable. Equally serious are the advanced plans for the Tomanivi and Ravilevu Nature Reserves to be reverted from crown freehold to native tenure.

Recent developments with the FLMMMA network and local community control of qoliqoli have shown that the Fisheries legislation for Marine reserves is also not a credible instrument in a modern context.

Status, priority and timeline for key actions of the Programme of Work on Protected Areas

Status of key actions of the Programme of Work on Protected Areas

Action	Status	Priority	Timeline
Multi-stakeholder advisor committee	4		
Gap assessment	3 ²	VH	2012
Protected area integration	3	VH	2015
Transboundary	1	H	2020 ³
Site-level management	3	H	2020 ⁴
Threat assessment	3	VH	2012
Equitable benefit sharing	1	VH ⁵	2012 ⁶
Governance	3	VH	2012 ⁷
Participation	4		
Policy environment	2	VH	2015 ⁸
Values	1	VH	2014 ⁹
Capacity needs	1	H	2016
Appropriate technology needs	0	M	2016
Sustainable finance	1	VH	2015 ¹⁰
Public awareness	1	H	2013
Best practices and minimum standards	1	H	2013
Management effectiveness	2 ¹¹	H	2013
Effective PA monitoring system	2	M	2016
Research program	3	H ¹²	2012

² Gap assessment could be updated to look at amount of cultural sites currently protected based on data from Fiji Museum

³ Melanesian Spearhead Group developing ideas. Lau-Tonga Corridor proposed.

⁴ By 2020, all protected areas have management plans consistent with new PA legislation

⁵ ABS committee formed. Membership has been revised based on endorsement of Cabinet paper. Committee should be advising government on signing Nagoya Protocol. There is a separate committee on Intellectual Rights spearheaded by Solicitor General's office

⁶ Information for policy framework needs to be collated prior to deadline to ratify Nagoya Protocol.

⁷ By 2012, Fiji has defined categories of PAs and governance types to be recognized under new PA legislation

⁸ By 2015, there will be clear mechanisms to provide for legal recognition of multiple types of PAs and legislative frameworks to enable good governance and management

⁹ GEF PAS project design Object 4.2 is to develop Methodology for valuing resources.

¹⁰ By 2015, PA legislation approved with regulations documenting process for tax-benefit system for PAs. By 2020, Fiji has implemented a tax-benefit system for PA management

¹¹ NTF has administered questionnaire for Forest and Nature Reserves. This needs to be distributed for all other sites.

Opportunities for marine protection	2	H ¹³	2014
Incorporation of climate change considerations	2	VH	2014

Status: 0 = no work, 1 = just started, 2 = partially complete, 3 = nearly complete, 4 = complete

(Insert notes as appropriate)

Priority actions for fully implementing the Programme of Work on Protected Areas:

(Insert priority actions)

Action	Priority
Integration of protected areas into wider land and seascapes to showcase mainstreaming of biodiversity with other sectors and ecosystem based approaches to adaptation to climate change adaptation and leading to mitigation through carbon sequestration	<ul style="list-style-type: none"> • Integrated Coastal Management (ICM) planning • Integrated terrestrial management through Corridor planning. • Offshore marine spatial planning . • Agro biodiversity/local/traditional variety management. • Soils conservation for carbon sequestration.
Institutionalize management effectiveness assessment towards assessing 60% of the total areas by 2015 and ensure that the results of the assessments are implemented;	<ul style="list-style-type: none"> • Assessing ecological effectiveness of different management types. • Assessing ME for different governance type. • Formalize and finance a monitoring body. • Capacity building for conducting assessments.
Diversification of governance types and recognition of ICCAs including through acknowledgement in national legislation or other effective means, formal inclusion in the national systems,	<ul style="list-style-type: none"> • Clearly define protected areas categories inclusive ICCAS. • Appropriate incentives in place for institution. • Develop Protected Area legislations and regulations including best practices and minimum standards.
Development and implementation of sustainable finance plans for protected area systems.	<ul style="list-style-type: none"> • Develop green tax. • Developing a tax benefit system for Protected Areas
Assessing the values and contribution of protected areas to the national and local economies and to achieving MDGs	<ul style="list-style-type: none"> • Develop economic valuation for protected areas for each category. • Develop communication strategies for protected areas.

¹² Feeling that academic research is not necessarily aligned to government priorities. Government needs to come up with list of priorities to distribute to research institutions. Need better reporting templates.

¹³ EBSA meeting Nov 2011 to provide guidelines. Offshore Fisheries Decree in development which will give provisions for offshore MPAs.

Timeline for completion of key actions

(Insert timeline)

Priority	Timeline (Completion)
Integrated Coastal Management (ICM) planning	2015
Integrated terrestrial management through corridor planning	2015
Offshore marine spatial planning	2015
Agrobiodiversity/local/traditional variety management	2020
Soils conservation for carbon sequestration	2020
Assessment of ecological effectiveness of different management types	2014
Assessment of management effectiveness for different management types	2016
Formalization and financing of a monitoring body	2016
Capacity building for conducting assessments	2016
Clear definition of protected area categories inclusive of ICCAs	2011
Appropriate incentives in place for management institutions	2016
Develop Protected Areas legislation and regulations including best practice and minimum standards	2012
Green tax	2015
Tax-benefits system for Protected Areas	2015
Economic valuations for each protected area category	2015
Communication strategies for protected areas	2015

Action Plans for completing priority actions of the Programme of Work on Protected Areas

(Insert detailed action plans)

Action 1: Policy Framework

Key steps	Timelines	Responsible Parties	Indicative Budget
Gap analysis of legal, policy and community based framework	2011	DoE, PAC, FELA	\$25K
Conduct consultation on gap analysis findings	2012	DoE	\$30K
Drafting and formalising of appropriate policy and legislation, including strengthening of community-based decision-making frameworks	2012	DoE	\$30K
Awareness, training and capacity building to enable implementation and enforcement of legislation and policies	2016	DoE, PAC, NGOs, FELA	\$150K

Formalize and finance a monitoring body ¹⁴	2016	DoE	\$150K
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Action 2: Protected Area Integration

Key steps	Timelines	Responsible Parties	Indicative Budget
Host provincial level workshops to introduce concept of ICM Framework	2012-2014	DoE, ICMC, PAC, NGOs	\$200K
Consultations with landowners/TFROs and industry	2012-2015	DoE, ICMC, PAC, NGOs	\$300K
Establish management arrangements for Viti Levu forest corridors	2015	DoE, CI, NTF	\$300K
Establish provincial-level zoning plans	2016	DoE, ICMC, NGOs	\$30K
Formalize and finance a body to oversee development in the coastal zone, including capacity building for assessing adherence of proposals to ICM plans and Environment Management Act regulations	2016	DoE, ICMC	\$50

Action 3: Valuation

Key steps	Timelines	Responsible Parties	Indicative Budget
Develop a policy framework and criteria for valuation of natural resources in Fiji	2012	DoE, PREEN, SPC, IUCN, CI, USP	\$20K
Conduct training on evaluation process	2014	DoE, PREEN, SPC, IUCN, CI, USP	\$50K
Implement case studies	2015	People who get trained	\$160K

¹⁴ This could potentially be a Statutory Body under the new Protected Area legislation

Key assessment results

Ecological gap assessment (insert summary findings if available)

Information on gap analysis is drawn from the report “ Filling the gaps :identifying candidate sites to expand Fiji’s national protected area network”¹⁵, of the UNDP/GEF Early action grant Project and a grant For Fiji, where comprehensive distribution data is not available for most species or species assemblages, habitats represent a good proxy and there is reasonable spatial information on a number of different terrestrial and marine habitat types.

Terrestrial

The terrestrial working group for the PAC is composed of representatives from the University of the South Pacific (USP) Herbarium, Conservation International (CI), National Trust of Fiji (NTF), BirdLife International and NatureFiji/Mareqeti Viti. In setting the terrestrial habitat targets for Fiji, the working group chose to follow the recognized principle vegetation types for Fiji proposed by (Mueller-Dombois and Fosberg 1998). These include: lowland rainforest; upland rainforest; cloud/montane forest; dry forest; talasiga vegetation; freshwater wetland vegetation (e.g. peat and sago swamp); mangrove forest and scrub; coastal strand vegetation (including coastal littoral forests); and smaller island vegetation (Mueller-Dombois and Fosberg 1998). The list was later modified to include karst forests on uplifted limestone (Table 1).

Mangroves were considered in the marine gap analysis. The working group arrived at the percentage targets for protection and management through consensus among members. The 100% protection targets for remaining upland rainforest, cloud/montane forest, dry forest, freshwater wetland vegetation, and coastal strand vegetation reflects their current rarity due to anthropogenic habitat modification.

Table 1. Principle vegetation types of Fiji (modified from Mueller-Dombois and Fosberg 1998) with habitat targets and definitions.

Vegetation type	Target	% currently protected	Definition
Lowland rainforest	60% managed; 40% protected	3.7	Forest on land greater than 2 m and less than or equal to 600 m elevation
Upland rainforest	100% of remaining	13.2	Forest on land greater than 600 m and less than or equal to 850 m elevation
Cloud/montane rainforest	100% of remaining	19.2	Forest on land greater than 850 m elevation
Dry forest	100% of	0.0	Mesic forest of the <i>Dacrydium - Fagraea</i>

¹⁵ Jupiter S, Tora K, Mills M, weeks R, adams V, Quaqaq I, Nakeke A, Tui T, Nand Y, Yakub N (2011) Filling the gaps: identifying candidate sites to expand Fiji’s national protected area network. Outcomes report from rovincial planning meeting, 20-21 September 2010. Wildlife Conservation Society, Suva, Fiji, 65

	remaining		type
Talasiga	0% protected; % for restoration TBD		Fire modified and degraded forest to be targeted for restoration with teak and fuel wood
Freshwater wetland vegetation	100% remaining	8.9	<i>Pandanus</i> and sedges on peats and gley soils
Mangrove forest and scrub	100% managed; 30% protected		Mangroves and mangrove associates found in four environmental settings classified by Woodroffe (1987)
Coastal strand vegetation	100% remaining	N/A	Herb, shrub, tree zonation affected by natural physical disturbance from surf
Smaller island vegetation	60% managed; 40% protected	N/A	

When the current boundaries of existing protected areas were overlaid with the vegetation type map of Fiji's main islands, nearly all habitat types were found to be underrepresented. The most significant gaps in protection were found in dry forests, freshwater wetlands and upland rainforests (Table 1).

Marine

The core members of the marine working group includes representatives from the Wildlife Conservation Society (WCS), Department of Fisheries, WWF South Pacific Programme, Wetlands International-Oceania (WIO) and USP, all of which are FLMMA partners. In addition, the group has received contributions from marine experts from SOPAC, BirdLife International, Whale and Dolphin Conservation Society (WDCS) and private sector groups (i.e. Beqa Adventure Divers, Marine Ecology Consulting;. In June 2009, WCS facilitated a workshop to identify key marine species and surrogate habitat targets. These targets were later refined based on data availability and a follow-up workshop in March 2010 (Table 2).

To assess achievement towards the conservation targets set at the March 2010 workshop, the marine working group collaborated with researchers at James Cook University and collated information on the distribution of ecosystems, management strategies, and the ecological effectiveness of each strategy for different species groups. The management strategies for which national-scale spatial data were available included: permanent closures; conditional closures with controlled harvesting; conditional closures with uncontrolled harvesting; and other management within the broader LMMA (see Table 5 for definitions). This information was then used to assess the achievement of national marine conservation targets in Fiji under the assumption that different management strategies vary in their effectiveness for species and ecosystem conservation.

Habitat	Main species	% Target
Intertidal mudflats	Shorebirds, invertebrates	30% (with 100% of mudflats known to be important to waders in 2009)

Mangroves	Fish, invertebrates, seabirds, bats, mangroves	30%
Fringing reef	Coral, invertebrates, fish	30%
Non - fringing reef	Coral, invertebrates, fish	30% (with 100% of reef channels known to support spawning aggregations)
Other benthos < 30m	Invertebrates, fish, seagrass, turtles	10% (with 100% of highest quality turtle feeding ground known from 2009)
Permanent sandy cays, beaches and coastal littoral forests	Turtles, seabirds	50% (with 100% of priority seabird and turtle nesting sites known from 2009)

While national targets for other benthic habitat were achieved at all depths across all habitats, the gap analysis results indicated that Fiji will require approximately an additional 10-20% effective coverage across fringing reefs, non fringing reefs, mangroves and intertidal habitats .This can be accomplished through implementing the range of different management strategies across the remaining unprotected inshore marine areas in Fiji. For example, to meet the national target of 30% effective coverage of fringing reefs would require the addition of 402 km² of permanent closures, 574 km² of conditional closures with controlled harvesting or 2,010 km² of other management. Given that there is only 867 km² of unmanaged fringing reef in Fiji, it will be necessary to think about establishing larger and more numerous permanent closures and conditional closures with controlled harvesting.

Management effectiveness assessment (Insert summary findings if available)

A management effectiveness framework has been adapted by the Fiji Protected Areas Committee to be applied to existing state managed protected areas. The Fiji Locally Marine Managed Areas network has developed a Site Audit and Learning document for the purpose of monitoring and management.

Sustainable finance assessment (Insert summary findings if available)

Financing of protected areas in Fiji have been established through cost sharing, benefit sharing, investment and enterprise funds in active collaboration between international NGO partners, the government of Fiji, multilateral or private foundation and sector funders as well as community driven monitoring and adaptive management.

Market based resource-use fees, tourism charges and payments for ecosystem services contribute to PA management however the revenue generated is only a fraction of the cost to manage PA. For this reason there is continual discussion on sustainable financing mechanism that supports and diversifies the scope of PA management to allow resilience to impacts of climate change.

Sustainable financing mechanism is important to support continuity of current PA work. Recent assessment on Fiji Locally Managed Marine Area Cost Analysis and Financing Framework¹⁶ indicate an estimated capitalization fund of \$5-10 million as Trust Fund to cover the full cost of maintaining 102 FLMMA. Considering the cost sharing aspect, actual capitalization requirement is reduced \$2.5-5 million. In any event, the Trust Fund for MPA will require a strong fundraising campaign targeted at key philanthropic donors. In addition to this donor support, community support should also be considered. For terrestrial ecosystem, enterprise funding is site specific with the view of creating a model that can be replicated to other PA sites. The Trust Fund set up for Sovi Basin Conservation area is valued at \$4.75m, with matching funds from Fiji Water Foundation, Conservation International and other business enterprise. Mechanism for administering the Trust Fund is established through extensive consultation with all stakeholders.

There is a need to undertake scoping study to assess the total cost of protecting significant, connected PA system creating corridors from ridge, reef and wider seascape. The scoping study must also consider investment and enterprise funding mechanisms as well as taxation incentives.

Capacity needs assessment (Insert summary findings if available)

To date, Fiji has not carried out a systematic assessment of capacity needs from its existing protected areas. There is an aspiration that the new Protected Area legislation will provide the policy framework to formalize a statutory body that would be responsible for carrying out capacity needs assessments as part of their remit to monitor protected areas. This body could be based on the ideas for a "Conservation and National Parks Authority" within the Department of Environment proposed in Part XVII of the Draft Sustainable Development Bill (1997).

Policy environment assessment (Insert summary findings if available)

Current legislation for PAs is dispersed among several different departments and agencies. As such responsibilities are dispersed, and the frequent shifting of several of these departments between different ministries (ie DoEnv. and DCulture & Heritage; National Trust) makes it very difficult for these agencies to attract consistent political and institutional support. This situation has not changed since it was first identified as problematic in the National Trust-WWF study of 1980, which resulted in draft PA legislation being drafted then.

Fiji's Forest Decree's Nature Reserve legislation is no longer a credible instrument in a modern context, this has been demonstrated during the Sovi Basin work which has revealed that NLTB will not accept it. This is a highly significant development which indicates that what has hitherto been considered the most secure legislation for terrestrial protected areas is actually no longer workable. Equally serious are

¹⁶ Conservation and Community Investment Forum. February 2011. Fiji Locally Managed Marine Area (FLMMA) Cost Analysis and Financing Framework. Unpublished.

the advanced plans for the Tomanivi and Ravilevu Nature Reserves to be reverted from crown freehold to native tenure.

Recent developments with the FLMMA network and local community control of qoliqoli have shown that the Fisheries legislation for Marine reserves is also not a credible instrument in a modern context.

The lack of a national policy and legislative framework was identified as one of the key gaps that need to be addressed.

In 2011 the Fiji Government approved the process to commence the drafting of a national policy and legislative framework for Protected Areas Management in Fiji. The PAC through the Department of Environment will work in close consultation with the Office of the Solicitor General to develop a draft policy and legislative framework. A legal consultant will be commissioned to assist with this process.

The draft will then undergo a wide consultative process including public consultations before a final draft is submitted to the National Environment Council. The National Environment Council through the Department of Environment will advise the Minister for Local Government, Urban Development, Housing and Environment and make recommendations for further action.

Protected area integration and mainstreaming assessment (Insert summary findings if available)

The 2005 Environment Management Act (EMA) stipulates the development of a coastal management plan under Section 3(8). In 2011, the Fiji Department of Environment released a draft *Integrated Coastal Management (ICM) Framework* that begets the coastal management plan (to be called the *National ICM Plan*) by delineating the plan's scope and structure. The framework was produced by 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. The *ICM Framework* describes how protected areas can be integrated into coastal zone planning as a strategy for sustainable management of coastal resources.

The 2007 Fiji National Biodiversity Strategy Action prioritised 16 terrestrial, marine and mangrove areas for protection based on an *ad hoc* system of selection. Most of the sites have yet to be legally recognised although they have been referred to when assessing proposed developments.¹⁷ In addition to this, local resource owner initiatives placing restrictions on harvesting in traditional fishing grounds areas have expanded from early 1990s to now covering almost a third of Fiji's inshore fisheries area.¹⁸ Resource owners, with the help of the Department of Fisheries and various local and international conservation organisations have established the Fiji Locally Managed Marine Areas Network (FLMMA)

¹⁷ Jupiter S, Tora K, Mills M, Weeks R, Adams V, Qauqau I, Nakeke A, Tui T, Nand Y, Yakub N (2011) Filling the gaps: identifying candidate sites to expand Fiji's national protected area network. Outcomes report from provincial planning meeting, 20-21 September 2010. Wildlife Conservation Society Fiji, Suva, Fiji 65 pp

¹⁸ Ibid.

comprising at least 216 *tabu* areas.¹⁹ With coastal communities being more attentive to customary marine resource use practices,²⁰ the institutionalisation of the FLMMA framework may prove effective to achieving ICM goals nationally. The new Fisheries Legislation may recognise these community-based management plans and *tabu* areas.

Various groups have also proposed selected habitats and species to be prioritised for protection. The Protected Area Committee (PAC) recently put together maps of the following localities for conservation and management identified on a national scale:²¹

- localities where endemic plants and snails and marine and estuarine fish have been confirmed (endemic species).
- 19 important bird areas
- 40 priority forest areas
- 48 wetland sites of national and international significance
- Priority connectivity areas (Viti Levu and Vanua Levu)
- 35 priority marine ecoregion areas (of which 5 are globally important)

Through a facilitated workshop led by members of the PAC in September 2010, provincial administrators further identified sites of significance for conservation and management for each of Fiji's 14 provinces. The PAC is currently working towards facilitating the effective management of the above sites through collaboration with resource owning communities, government and other local and overseas agencies. The identified sites may be useful for initiating dialogue with stakeholders in developing ICM plans at the provincial level.

The above mentioned plans, schemes and areas of interest are linked to distinct groups of stakeholders with various interests and intentions and an essential component of ICM planning would be to consolidate these "mapped" interests and intentions into spatial zones. Indeed, such a process would have to be linked to the national landuse planning process given the importance of sustainable watershed management to the health of coastal ecosystems. A sustainable and relevant ICM plan will be one for which most if not all stakeholders share a sense of ownership. Given the competing stakeholder interest and scientific uncertainties that are likely to affect such a process, it may be more effective to approach the ICM planning process on a provincial basis.

In response, the Wildlife Conservation Society and other government and non-government stakeholders facilitated a pilot workshop in September 2011 bringing together government and community representatives from the four provinces (Ra, Tailevu, Lomaiviti, Bua) that border on the Vatu-i-Ra Seascape. The participants used the outcomes of the September 2010 workshop as a starting point to discuss how protected areas might become integrated into broader ICM plans that consider living coastal resource utilization, coastal development and ecotourism, and land-based activities. At the same time, planning of protected area integration into wider landscapes is occurring upland of coastal watersheds. For example, areas have been proposed for management as corridors between Viti Levu

¹⁹ Mills M, Jupiter SD, Pressey RL, Ban NC, Comley J (in press) Incorporating effectiveness of community-based management strategies in a national marine gap analysis for Fiji. *Conservation Biology*

²⁰ Teh LCL, Teh LSL, Starkhouse B, Sumaila UR (2009) An overview of socio-economic and ecological perspectives of Fiji's inshore reef fisheries. *Marine Policy* 33:807-817

²¹ Jupiter S, Tora K, Mills M, Weeks R, Adams V, Qauqau I, Nakeke A, Tui T, Nand Y, Yakub N (2011) Filling the gaps: identifying candidate sites to expand Fiji's national protected area network. Outcomes report from provincial planning meeting, 20-21 September 2010. Wildlife Conservation Society Fiji, Suva, Fiji 65 pp

forests designated as key biodiversity areas (e.g. matrix of landscape outside of the Waimanu, Sovi Basin, Nadrau Plateau, Nadarivatu, and Nakavaudra range KBAs).

Protected area valuation assessment (Insert summary findings if available)

In Fiji, economic valuation has not yet been formally adopted as an aid to coastal resource management. Between 1990 and 2007 there have been only four economic valuations associated with coastal resources in Fiji. Two studies in 2005 valued the extraction of live coral for the aquarium trade according to the financial revenue to local villagers from coral reef harvest only. In 2007 a further study estimated the total economic value of the coastal ecosystems within the Navakavu *locally managed marine area* in the southeast of Fiji, on the Muaivuso Peninsula, 13km from the capital of Suva. The key goods and services provided by the coral reefs, lagoon and mangroves in this area were: fisheries (direct use, extractive value), bequest value (non-use value), research and education benefits (direct use, nonextractive value) and coastal protection (indirect use value). The economic values estimated in this study accrue to local communities only.

The study of the LMMA of Navakavau is the first initiative to estimate the Total Economic Value of a coastal ecosystem (including coral reefs, lagoon and mangroves) in Fiji and the evaluation of LMMA sites to local economies. Knowledge on the economic benefits of LMMAs can be used to compare the costs and benefits of different management options, such as conservation, controlled fishing and/or ecotourism, and hence, assist in policy decision-making²².

Climate change resilience and adaptation assessment (Insert summary findings if available)

Fiji's coastal ecosystems are known to be among the most diverse and functionally intact coral reefs in the Pacific. Nevertheless, anthropogenic pressure on these resources is increasing, and changes due to the effects of climate change are inevitable. Coastal communities in this region depend upon healthy coral reefs, mangroves and seagrass ecosystems to provide food, building materials, coastal protection and other benefits. If these communities are to thrive into the future, action is required now to maximise ecological resilience to climate change and to increase community capacity to prepare for and adapt to climate change impacts on their environment.

There are currently several examples of site-based implementation to improve social and ecological resilience to climate change in Fiji. The Wildlife Conservation Society (WCS) is leading a project to: (1) adapt the Kubulau marine protected area network (MPAs) and existing ecosystem-based management (EBM) plan to improve reef resilience to increasing frequency and severity of disturbance due to global climate change; and (2) develop, in concert with local stakeholders, a new, resilient, linked network of MPAs in the four adjacent districts. To incorporate resilience into MPA network design, WCS has adopted the following strategy: subject to meeting targets for habitat representation, sites with high

²² O'Garra, T. 2007. Estimating the Total Economic Value (TEV) of the Navakavu LMMA (Locally Managed Marine Area) in Viti Levu Island (Fiji). Component 2A-Project 2A2 Knowledge, monitoring, management and beneficial use of coral reef ecosystems. FINAL REPORT.

predicted resilience to coral bleaching are prioritised, followed by sites whose resilience might be improved by management. For example, sites that have low herbivore abundance or functional diversity (as a result of fishing pressure) but rate highly against other resilience criteria are prioritised over sites that rate poorly against criteria that cannot be improved through management. Sites with low resilience scores are not be prioritised for inclusion in the MPA network, but may be selected if they are required to fulfil other criteria, for example if they contain a rare habitat type or have a very low implementation cost.

The WWF South Pacific Programme is currently leading an AusAID funded national "Building Resilience" project, partnered with Department of Land Use and Planning, Department of Environment, National Trust of Fiji, and Learn and Learn Environment Education. The Building Resilience project intends to define adaptation strategies in its planning and vulnerability assessment process at village, district, municipal and provincial level plans, consequently aligning them to national adaptation policies. The project hopes that it can build local capacity, enhance awareness, integrate its lessons into policy and support community-based adaptation. With two of the largest river deltas and associated mangrove forests in the country, Ba and Macuata have been identified as key provinces for the project's river-related adaptation activities. These areas were targeted due to the relatively large population density on lands heavily used for agriculture, which has had consequent negative effects on ecosystem function and resilience.