MESCAL

Mangrove Ecosystems for Climate Change Adaptation and Livelihoods

Review of Policy and Legislation Relating to the Use and Management of Mangroves in Fiji

MANGROVE ECOSYSTEMS FOR CLIMATE CHANGE ADAPTATION AND LIVELIHOOD

IUCN

DEPARTMENT OF ENVIRONMENT FIJI

Pacific Mangroves Initiative

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- *Fisheries Act 1942 [Cap 158]*
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- *State Lands Act 1946 [Cap 132]*
- *State Lands (leases and licenses) Regulations 2007*
- *Sea Ports Management Act 2005*
- *Town Planning Act 1946 [Cap 139]*
- *Water Authority of Fiji Promulgation 2007*

ACRONYMS AND ABBREVIATIONS

AKTE	Ammal-Krabbei Tabu Eria
[Cap]	Chapter
ABS	Access and Benefit Sharing
C02	Carbon Dioxide
CBD	Convention on Biological Diversity
CCA	Community Conservation Area
CITES	Convention on International Trade in endangered Species of Wild Fauna and Flora
CTM	Customary Marine Tenure
DEPC	The Department of Environmental Protection and Conservation
DoF	Department of Forests
DoFis	Department of Fisheries
EIA	Environment Impact Assessments
EMCA	Environmental Management and Conservation Act
EPCA	Environment Protection and Conservation Act
ICZM	Integrated Coastal Zone Management
ITTO	International Tropical Timber Organization
IUCN	International Union for the Conservation of Nature
IUU	Unreported and Unregulated
LCI	Local Conservation Initiative
LMPC	Land Management and Planning Committee
MAGFF	Ministry of Agriculture, Quarantine, Forestry and Fisheries
MALFFB	Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity
MEA	Multilateral Environment Agreements
MESCAL	Mangrove EcoSystems for Climate change Adaptation and Livelihoods
MRM	Marine Resources Management
NAB	the National Advisory Board on Climate Change & Disaster Risk Reduction
NACCC	National Advisory Committee on Climate Change
NAPA	National Adaptation Programme for Action
NBSAC	National Biodiversity Strategy Advisory Committee
NBSAP	National Biodiversity Strategy Action Plan
NCSAP	National Capacity Self-Assessment Project
NGO	Non-Government Organisation
NICMF	National Integrated Coastal Management Framework

NLUPP	National Land Use Planning Policy
OPSP	Overarching Productive Sector Policy
PA	Protected Area
PAA	Priorities and Action Agenda
PEA	Preliminary Environmental Assessment
PMI	Pacific Mangrove Initiative
REDD+	Reducing Emissions from Deforestation and forest Degradation
SOP	Standard Operating Procedure
TMT	Traditional Marine Tenure
TRA	Timber Rights Agreement
UN	United Nations
UNCBD	United Nations Convention on Biological Diversity
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention to Climate Change
VEU	Vanuatu Environment Unit

Executive Summary

Fiji has the third most abundant stands of mangroves in the Pacific island region. The largest formations of mangrove in Fiji are found in deltas at the mouth of some of the large rivers in Ba, Rewa, Nadi, and Dreketi. Mangrove island clusters off the Rewa and Macuata coast are well-known fish nurseries for offshore reefs, e.g. Talailau and the Great Sea Reef.

Like many countries in the Pacific, mangroves in Fiji are valuable sources of many different types of food, firewood, building materials, as well as other products. Despite such values, mangroves continue to be degraded or destroyed due to unsustainable use and management, climate change and without a proper policy framework to support a sustainable management, use or conservation of mangroves which threaten the very existence of mangroves. Current losses of mangrove areas in Fiji are not clear with some estimates as high as 30% (Agrawala, et.al.2003).

The purpose of the review is to take stock and assess/analyse existing mangrove policies and legislation in Fiji. However, in the absence of a mangrove policy and legislation; policies, laws and regulations relating to the use and management of mangroves and mangrove ecosystems have been assessed for this purpose. The review also attempts to propose to Government recommendations they can and may wish to consider to better address issues relating to the use and management of mangroves in Fiji.

Policies

Mangroves in Fiji

Mangroves are extremely important to all local communities that utilize mangroves for firewood, construction materials, tools, medicines, dyes, and other products. More generally, the principal uses of mangroves may be classified as: traditional uses, sustenance of the capture fisheries, fuel wood production, shoreline protection, sewage processing, preservation for science/education and aesthetics, conversion for alternative uses. Estimates of mangrove areas are varied. In 1990, mangrove area was estimated at 41,808 hectares while in 2010 was estimated at 37,980 hectares. This shows a loss of mangrove cover of almost 4,000 hectares over this period.

Despite the ecological importance of mangroves and its mangroves in providing for the livelihoods of coastal dwellers, mangroves, particularly around urban and peri-urban areas, are under on-going pressure from unsustainable harvesting, future reclamation and development, overexploitation, pollution, waste disposal and their conversion for squatter settlements, housing, industrial and tourist development, in particular in urban areas.

Mangrove Management and Governance

In Fiji, there is no single government body or institution that deals specifically with mangroves. The Lands and Survey Department has been the custodian of mangrove resources of the country. The Forestry Department is responsible for issuing and regulating licenses for the commercial felling of mangroves for firewood or timber via the Forestry Act. There is no legal framework covering illegal felling or overexploitation of timber for subsistence use. The Fisheries Department is responsible for

issuing licenses to fish in coastal waters via the Fisheries Act (1991), while the Lands and Survey Department is responsible for foreshore land and reclamation of mangroves. The Department of Environment (DoE) through the Environment Management Act (Government of Fiji 2005) has the responsibility and duty to protect mangroves and associated biodiversity through the application of environment impact assessment (EIA) for all proposed foreshore developments.

In addition to the government departments having some mandate on mangroves, other key decision-making bodies in the form of committees are housed under the Department of Environment. These decision-making bodies include: the National Environment Council (NEC), Fiji National Biodiversity Strategy and Action Plan Steering Committee (FNBSAPSCC), Protected Areas Committee (PAC), Integrated Coastal Management Committee (ICMC), and Mangrove Management Committee (MMC).

Key Challenges for Management and Administration of Mangroves:

Key challenges affecting the management and administration of mangroves include:

- **The absence of a specific legislation and policy on mangrove.** It was also highlighted that current legislation like the Environment Management Act, State Lands Act does not have provisions for the sustainable management of mangroves. Mangroves should be regarded as a matter of national importance with regulations developed and amendments made to existing legislation like EMA to this effect.

- **The absence of a clear definition on mangroves.** This should provide a clear demarcation as to which department or ministry is responsible for the resource, for instance, if it is a forest resource then Department of Forestry would be responsible. Or if it is included as part of the foreshore resource, then clearly, Ministry of Lands and Mineral Resources is responsible.

- **The fragmented policies and legislation related to mangroves shared amongst various government departments.** This could be seen from the discussion in 2.4. Given that Ministry of Lands is the custodian of mangroves; possibly they should play lead role in the administration of mangroves and be the coordinating agency (in consultation and collaboration with the other approval agencies) on administration and management matters on mangroves.

- **The uncoordinated process or system in place for approvals and decisions on mangroves with key government departments and ministries.** For instance, once an application for foreshore development application is received by the Ministry of Lands and Mineral Resources, the application is sent to Department of Fisheries, Department of Environment, Department of Forestry, Department of Town and Country Planning, Provincial administration, and relevant government Ministry for their comments. A 30-day period is provided for these government agencies to provide comments and those who fail to respond within this period are deemed to have no comments.

In ensuring that comments are received from the respective government agencies, it was highlighted at the national consultation meeting on 20th September, 2013 that the Mangrove Management Committee screen and comment on any foreshore development application. This would require that key approval agencies and technical expertise are represented at the Mangrove Management

Committee. Alternatively, a technical committee having expertise to vet and comment on foreshore development application could be explored.

A more coordinated approach and approval process needs to be established by the Ministry of Lands and Mineral Resources to obtain comments from government approval agencies in a timely and coordinated manner.

- **The lack of communication and clear reporting mechanism on work and decisions relating to mangroves amongst government agencies.** A clear guideline or a Standard Operating Procedures (SOP) should be developed and made available at the Ministry of Lands and Mineral Resources to ensure approvals is expedited. This guideline or SOP should be communicated and disseminated to all government approval agencies and municipal councils. The private sector should be also made aware of these approval guidelines to avoid confusion.

- **The lack of human resource capacity and the availability of technical expertise in major government agencies and Ministries.** For instance, there is one foreshore development officer in Lautoka and one in Suva who process foreshore applications in their respective divisions. At the Department of Environment, a minimal of one (1) or two (2) Environment Impact Assessment officers assess, review and contribute to key decisions on EIA reports, EIA aspects of foreshore development lease received by the Department.

The establishment of a Conservation Unit within the Ministry of Lands was suggested at the national consultation meeting. This will address the human resource constraint at the Ministry and should strengthen and complement the work of the foreshore development unit in making decisions relating to mangroves and its conservation.

- **The lack of awareness on the importance of mangroves at all levels - policy, decision-makers and communities.** Mangroves may be and is still viewed by many as readily available resource without economical value or importance. The lack of data available on the value of mangroves taking into consideration its ecological and economic value may be one of the contributing factors of uninformed decisions made on the clearance of mangroves.

An economic valuation of mangroves and the carbon sequestration study undertaken by the MESCAL Fiji project could provide some data in this aspect to enable people to know the importance of mangroves.

- **The lack of enforcement, monitoring and evaluation of existing policies, legislation and procedures in place.** This is often one of the biggest issues for government given budgetary and resource constraint. However, it is important to enforce legislation and regulation, and monitor and evaluate policies and procedures in place to ensure their intended outcomes are achieved.

Policy Recommendations

Following the review and to ensure the sustainable use and management of our mangrove resources and ecosystems, the following options may and could be considered by Government:

Mangrove Policy: The development and formulation of a mangrove policy or a policy statement should be considered given the importance of mangroves. The policy or policy statement should look

at the use, protection and management of mangroves in Fiji. More importantly, the policy should promote the management of coastal wetlands to ensure that the many benefits they provide are sustained allowing sustainable use amongst the various users of the resource and one that will leave an enhanced heritage for future generations.

The need and call for a national mangrove policy was recommended and supported by stakeholders at the national consultation meeting given the continuous and extent of degradation to mangroves.

Fiji could use the draft policy and legislation on wetlands for Jamaica as a guide and to be tailor-made for Fiji. Jamaica's draft policy and legislation on wetlands, covers mangroves and sets the following five goals in support of the overall aim of sustainable use of wetlands:

(i) establish the guidelines by which wetlands can be developed in order to ensure their continued existence;
(ii) bring to an end all activities carried on in wetlands which cause damage to these resources;
(iii) maintain the natural diversity of the animals and plants found in wetlands;
(iv) maintain the functions and values of Jamaica's wetland resources; and
(v) integration of wetland functions in planning and development of other resource sectors such as agriculture, forestry, fisheries, ecotourism, and waste management.

Specifically the policy for Jamaica seeks to:

- Provide protection against dredging, filling, and other development;
- Designate wetlands as protected areas;
- Protect wetlands from pollution particularly industrial effluent sewage, and sediment;
- Ensure that all developments planned for wetlands are subject to an Environmental Impact Assessment (EIA); and
- Ensure that traditional uses of wetlands are maintained.

Necessary amendments should be made to the relevant legislation should the mangrove policy for Fiji be adopted, clearly demarcating the roles to be played by the agency.

Mangrove Management Plan. The Mangrove Management Plan has been being reviewed by Dick Watling. The plan could address all issues related to the use, protection and management of urban mangroves clearly defining and identifying mangrove zones and hot spots. Additionally, a mangrove management plan could be tailor-made to address specific issues pertaining to urban centres and possibly peri-urban centres.

A mangrove management plan for rural areas which may also see the establishment of mangrove protected areas could see the involvement of communities themselves as resource managers and users.

The recommendations from the revised Mangrove Management Plan could be approved by Government for consideration and possible implementation.

Clear definition on mangroves. A clear definition of mangroves needs to be provided. This should provide a clear demarcation as to which department or ministry is responsible for the resource, for instance, if it is a forest resource then Department of Forestry would be responsible. Alternatively, if

it is included as part of the foreshore, then clearly, Ministry of Lands and Mineral Resources is responsible.

Mainstream mangroves, mangrove conservation, protection and management. Mangroves, mangrove conservation, protection and management should be mainstreamed in key national policies and sectoral policies.

Government Ministry designated to oversee the management and administration system on mangroves. Given that no single government body manages and administers mangroves, it would be appropriate to designate a single and specific ministry or government department to be responsible for the management and/or administration of mangroves.

For Fiji, the Ministry of Lands and Mineral Resources, is the custodian of mangrove resources of the country. The Forestry Department is responsible for issuing and regulating licenses for the commercial felling of mangroves for firewood or timber via the Forestry Act. The Act does not regulate subsistence use of forest resources. The Fisheries Department is responsible for issuing licenses to fish in coastal waters via the Fisheries Act (1991), while the Lands and Survey Department is responsible for foreshore land and reclamation of mangroves. The Department of Environment (DoE) through the Environment Management Act (Government of Fiji 2005) has the responsibility and duty to protect mangroves and associated biodiversity which is exercised through the assessment of the environment impact of for all proposed foreshore developments.

Other government agencies responsible for mangroves include: Ministry of Primary Industries (formerly known as Ministry of Agriculture, Sugar and Land Resettlement), the iTaukei Lands Trust Board, the Department of Town and Country Planning and the Ministry of iTaukei Affairs (especially concerning traditional communal lands)

Better coordinated approach. Given the involvement of a number of government agencies and decision-making bodies within Government, there needs to be a coordinated approach in terms of better communication, better understanding the approval requirements and processes of the other government agencies, networking and information sharing amongst all stakeholders on mangrove use and management.

For instance, for foreshore applications, in ensuring that comments are received from the respective government agencies, it was highlighted at the national consultation meeting on 20th September, 2013 that the Mangrove Management Committee screen and comment on any foreshore development application. This would require that key approval agencies and technical expertise are represented at the Mangrove Management Committee. Alternatively, a technical committee having expertise to vet and comment on foreshore development application could be explored.

Mangrove Protected Areas. Protected areas are a widely used management tool that can help prevent mangrove loss and degradation in specific locations. The establishment of mangrove protected areas as identified in the NBSAP should be implemented and closely monitored and reviewed. The establishment of new mangrove protected areas ones like Talailau could be

considered. More importantly, the involvement of communities in such projects needs to be considered.

Standard operating procedures. Standard operating procedures for issuance of foreshore development lease should be developed. This should be widely circulated to key government stakeholders.

The foreshore development procedures/guidelines and processes should be re-looked into ensuring that a detailed and more comprehensive EIA is conducted prior to granting of approval for foreshore development lease.

Integration of role of mangroves in climate change adaptation and disaster risk reduction. These should be integrated in local and national adaptation plans. For instance, national adaptation and disaster risk reduction plans and actions should encourage the conservation and restoration of mangroves as part of 'natural coastal infrastructure', recognizing their role in reducing vulnerability and increasing resilience to climate change impacts.

Review development and environment policies. There is a need to review current environment and development policies to better reflect current environment issues, and in compliance with international conventions and agreements. Specifically, issues related on mangroves, the use and management of mangroves should be separately addressed in these documents as they are special ecosystems of high importance. Given also the focus on climate change issues and adaptation, the ecosystem or resource should be given high priority by Government and mangroves should be regarded as of “national importance”.

Implementation and monitoring of policies. The Department of Environment, Ministry of Lands and Mineral Resources, Department of Forestry, Department of Fisheries and other relevant government agencies need to closely monitor and implement the current policies they have in relation to mangrove use and management, such as conducting an Environmental Impacts Assessment of any development proposal on foreshore areas; compliance to buffer zone requirements.

Strengthening of capacity. Human resources, finance and capacity building of key government departments, ministries and institutions dealing with mangroves and mangrove ecosystems in their work programmes is also needed.

For instance, the establishment of a Conservation Unit within the Ministry of Lands and Mineral Resources was suggested at the national consultation meeting. This will address the human resource constraint at the Ministry and should strengthen and complement the work of the foreshore development unit in making decisions relating to mangroves and its conservation.

Increase and strengthen awareness and campaigns on mangroves. Increasing awareness across all sectors and at all levels on the importance of mangroves should be strengthened and encouraged. The launch of the media campaign on mangroves on May 26, 2013 by the Minster for Local Government, Urban Development, Housing and Environment is a good stepping stone towards this initiative. The selection of a champion on mangroves to play a lead role and be the advocate on mangrove issues should also be considered.

Different forms of medium for campaigns should be developed for the respective targeted audience. For instance, for government officials at the ministerial and decision-making levels, a presentation and/or briefing on mangroves should be conducted to them. This could be followed up with the preparation of a policy brief and cabinet paper to be submitted through the Minister for Local Government, Urban Development, Housing and Environment and/or the Minister for Lands.

The findings of the MESCAL project on economic valuation, mapping, carbon assessment, etc. should be shared with all relevant stakeholders, government decision-makers and communities at all levels.

True value of Biodiversity Ecosystems Services (BES). An accurate reflection of the true value of Biodiversity Ecosystems Services (BES) will help policy makers make more informed decisions and ensure that the benefits derived from mangrove ecosystem services are taken into account. The findings of the economic valuation of the mangrove ecosystems and services for the Rewa Delta should be widely disseminated and shared with policy makers for better and informed decisions on future activities relating to mangroves. Additionally, this should assist decision makers to make more efficient and justified cost-effective choices. Management interventions will only be successful when backed up by sound data and a broader knowledge, understanding and awareness for the need of these interventions.

The key role of mangroves as carbon stores and sinks needs to be highlighted in national and international strategies that address climate change.

A broad range of management measures and tools should be promoted to maximize the benefits and help secure the long-term future of mangroves and the people who rely on them. These could include: increase restoration efforts to recover lost mangrove forests and restore their ecosystem services; a concept that can be introduced to investors/developers; ensuring the involvement of local communities in mangrove management; establishment of protected areas which are a powerful tool for ensuring the protection of mangrove biodiversity and should form part of a wider management regime; encouragement and support of mangrove ecotourism to generate income and employment for local communities and to improve outreach and education.

Legislation

The review of the legislative framework relevant to mangrove ecosystems concluded that it is incoherent and does not effectively prevent the loss of mangroves and of their ecological, economic and social functions. A comprehensive law reform is required to enable the implementation of Fiji's policy choices for conservation and sustainable management of mangroves.

A range of legislation and subsidiary regulations, old and recent, regulate activities which may impact on mangroves but rarely do they expressly require special consideration for mangroves. However, they provide some legal tools and command and control powers which are probably not optimally utilized or enforced for the management and protection of mangroves and mangrove ecosystems, partly due to a lack of resources, capacity and awareness of these laws, and partly because the provisions which could be used to the benefit of mangrove conservation require strengthening.

One option for law reform consists in the creation of a new stand-alone mangroves legislation or subsidiary legislation such as a set of regulations under the Environment Management Act (EMA)

2005. The legislation could be developed through an intergovernmental cooperative process and after broad public consultation. Regulations could also be developed under the State Lands Act to clarify the rules, standards and procedures for the approval of lease of foreshore lands. Subsequent review and amendment of existing mangrove-related legislation would be required to harmonise with the mangrove legislation.

Another option is to dispense of any additional legislation, and confine law reform to the review of existing legislation.

Whether or not implemented through new legislation or amendment to existing legislation, a comprehensive a law reform for mangroves should aim to:

- mandate the consideration of mangrove ecosystems in decision-making processes, in particular the approval of activities and developments;
- provide for a coherent legislative framework for mangroves by ensuring consistency between statutes which are relevant to mangroves;
- articulate clearly the scope of responsibility of each authority with regards to mangroves;
- improve coordination within government;
- reduce ministerial discretionary power;
- prohibit the harvesting of mangroves for commercial purpose;
- phase out the use of mangroves as energy wood;
- enable the implementation of mangroves-related management plans and policies;
- make provision for a technical mangrove management committee to assist in the decision-making process. The assistance of such technical expertise is particularly needed in the EIA process (in definition of the terms of reference of the environmental impact report and in its review), and in advising the Department of Lands when assessing foreshore land lease applications;
- strengthen compliance and enforcement through management tools and command and control provisions complementing targeted public awareness campaigns and increased capacity to manage mangroves sustainably;
- provide for broad and effective public participation in decision-making processes; and
- enable the establishment and operation of collaborative and ecosystem-based management systems for mangroves, as may be directed by policy.

PART 1: INTRODUCTION

1.1 Background of the Review

The Mangrove EcoSystems for Climate Change Adaptation and Livelihood (MESCAL) project, a German Federal Ministry for Environment, Nature Conservation and Nuclear Safety-funded project is administered through the International Union for the Conservation of Nature Oceania Regional Office (IUCN ORO) in collaboration with the Government of Fiji, as being one of the five countries included in the project. The project is part of the broader Pacific Mangroves Initiative (PMI) with the key goal **'to assist the Pacific island countries and territories to implement sound practices and capacity building in mangrove management, including raising awareness of and maintaining high biodiversity values and ecosystem goods and services that can sustain or even improve the livelihoods and wellbeing of the local population depending off these coastal ecosystems'**. Moreover, MESCAL envisaged to increase the climate change resilience of Pacific islanders as well as improve their livelihoods through selected capacity support in adaptive co-management and restoration of mangroves and associated ecosystems.

The Government of Fiji, through the Department of the Environment is the focal point of the MESCAL project in Fiji. One of the components under the MESCAL project is the mangrove policy and legislative review which has been conducted by IUCN ORO.

1.2 Review Purpose, Scope and Methodology

1.2.1 Purpose of the Policy Review

The purpose of the review is to take stock and assess/analyse existing mangrove policies and legislation in Fiji. However, in the absence of a mangrove policy and legislation; policies, laws and regulations relating to the use and management of mangroves and mangrove ecosystems have been assessed for this purpose. The review also attempts to propose to Government recommendations they can and may wish to consider to better address issues relating to the use and management of mangroves in Fiji.

The specific objectives of the review are to:

(i) provide an overview of legislation, relating to the use and management of mangroves and/or mangrove ecosystems;
(ii) provide an overview of policies, relating to the use and management of mangroves and/or mangrove ecosystems;
(iii) assess these related legislations and policies being reviewed on mangroves and those relating to mangrove ecosystems use and management; and
(iv) propose to Government recommendations they may wish to consider to ensure better management and conservation of Fiji's mangroves.

The review specifically assessed the extent to which mangroves, mangrove ecosystems, its use and management are considered and addressed in the existing policies and legislation.

Policy Review Process

The primary components of the review were research, desktop-based review and one-to-one meetings/interviews with key stakeholders, using a structured questionnaire as a guide. The discussion of preliminary findings of the desktop-based research was shared at the Mangrove Management Committee meeting on December, 13, 2012 at the IUCN conference room in Suva, Fiji. This was followed further by one-on-one meetings and consultation in Suva with key relevant stakeholders from government and civil society organisations. The draft review report was widely circulated to stakeholders for comment.

Structure of the Report

The remainder of this report is structured as follows. Part 2 presents and discusses an overview of mangroves in Fiji. The importance of mangroves, key threats to mangroves, the governance and management of mangroves are also discussed in this section.

The key development, environment, sectoral and climate change policies which relate to the use and management of mangroves are reviewed and analysed in Part 3.

Part 4 presents and discusses Fiji's land and marine tenure systems and existing mechanisms for conservation. This section also examines legislations, regulating sectoral activities which may affect mangrove ecosystems. An analysis of the effectiveness of cross-cutting environmental management, pollution control and land use planning legislation in supporting mangroves' sustainable management and use is also covered.

Finally, the recommendations and options for policies and options for law reform that may be considered by Government are presented in Part 5 of the report.

PART 2: OVERVIEW OF MANGROVES IN FIJI

2.1 Mangrove Area

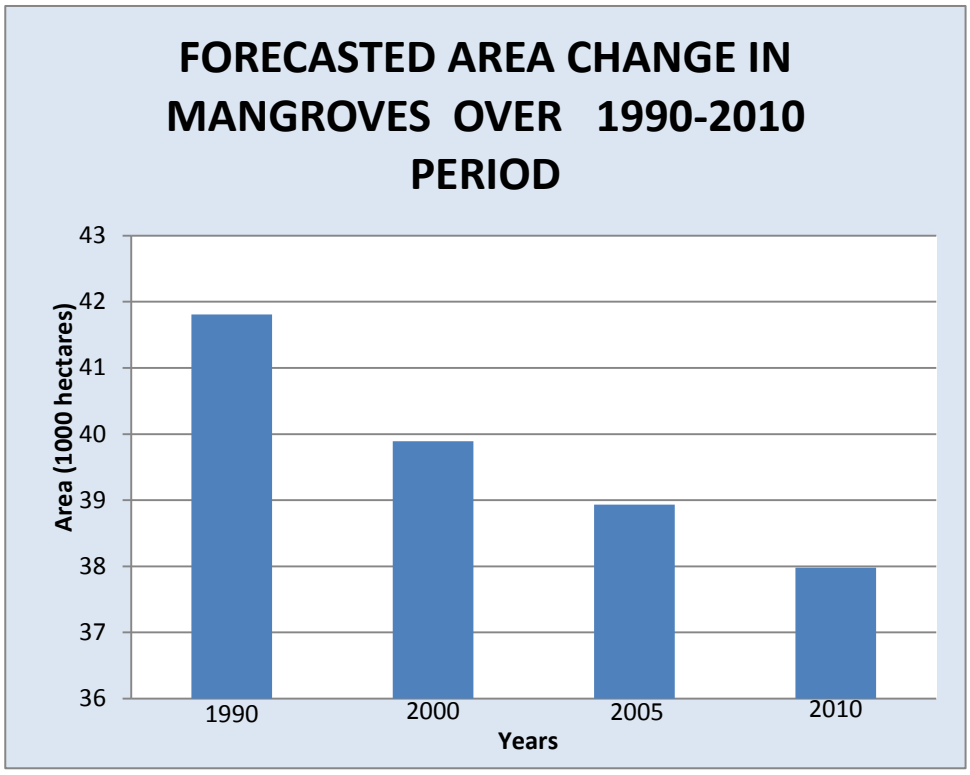
Fiji has the third most abundant stands of mangroves in the Pacific island region. The largest formations of mangrove in Fiji are found in deltas at the mouth of some of the large rivers in Ba, Rewa, Nadi, and Dreketi. Mangrove island clusters off the Rewa and Macuata coast are well known fish nurseries for offshore reefs, e.g. Talailau and the Great Sea Reef. Mangrove areas in Fiji were originally classified as conserved areas because of their high biological diversity, national and international importance (Ministry of Forestry, 2010). The documented estimates of total mangrove area and mangrove resources in Fiji are varied.

Watling (1985) estimated mangrove standing stock of 38,543 ha on the two main islands, Viti Levu and Vanua Levu. The Global Forest Resource Assessment report (Forest Resource Assessment, FAO. 2010) provides an estimate of the forecasted area change in mangroves over the 1990 to 2010 period and this is tabulated and graphically presented below. In 1990, mangrove area was estimated at 41,808 hectares while in 2010 it was estimated at 37,980 hectares. This shows a loss of mangrove cover of almost 4,000 hectares over this period.

Forecasted Area Change in Mangroves

National Class	Area (1000 hectares)			
	1990	2000	2005	2010
Mangroves	41.808	39.892	38.934	37.98

Source: Global Forest Resource Assessment 2010.



2.2 Mangrove Uses

Mangroves are extremely important to local communities that utilise mangroves for a range of uses such as firewood, construction materials, tools, medicines, dyes, and other products. Watling (1985) categorized 7 principal uses of mangroves as: traditional uses, sustenance of the capture fisheries, fuel wood production, shoreline protection, sewage processing, preservation for science/education and aesthetics and conversion for alternative uses. Moreover, they are also important for the sustenance of coastal fisheries, the principal beneficiaries being the coastal users. Mangrove-associated mollusks, prawns, crabs, mangrove lobsters, and around 70 species of finfish are commonly caught in mangrove areas and sold at local markets or on the roadside throughout Fiji (Lal 1991).

The economic value for mangrove for services rendered such as food production, nutrient cycling and habitat provision is assessed at F$100.88 million per year in 1994. This assessment is based on the unit value/hectare/year of F$2,402 (Fiji Biodiversity Strategy and Action Plan). The ecological functions of mangroves to act as buffers against seal level rise and storm surges and the need to preserve them as an adaptation measure to reduce the impacts from climate change is a common adaptation theme for Fiji (Nunn et.al. 1993; World Bank,2000); (Agrawala,et.al.2003).

The carbon-storage asset of mangrove forests is still yet to be recognised in Fiji and should be part of the REDD+ work. Mangrove forests serve as highly effective carbon sinks, with the organic carbon stored in mangroves, having the ability to remain sequestered for thousands of years. Thus, carbon storage is of growing interest to policy makers as many governments around the world are considering carbon offset investment as a method to reduce overall greenhouse gas emissions; something which aligns to the REDD+ initiative in Fiji.

Photo 1 Mangroves provide feeding ground for marine organisms

2.3 Major Threats to Mangroves

Despite such values highlighted in section 2.2, mangroves, particularly around urban and peri-urban areas, are under on-going pressure from unsustainable harvesting, reclamation and development, overexploitation, pollution, agriculture, sand mining, estuarine dredging for flood mitigation, waste disposal and their conversion for squatter settlements, housing, industrial and tourist development (Pillai 1985; Watling, 1985). This is mostly an irreversible process and has additional secondary negative effects on remaining mangrove areas in close proximity through increased pollution.

The range of unregulated activities together with growing population and urbanisation pressures suggest unsustainable use of Fiji's mangroves into the future. Increased vulnerability to external overarching threats of climate change and sea level rise will also affect Fiji, which is predicted to be one of the four countries worst hit by global climate change, in terms of its mangrove loss (Gilman, Lavieren et al. 2006).

Too often, the value of mangrove ecosystems is only appreciated once they are lost. If mangrove forests are not seen as a fundamental economic and ecological resource to be treasured, they will continue to be over exploited, degraded and lost. Economic valuations of mangrove ecosystems should be conducted to provide some powerful arguments for effective mangrove management.

Photo 2 Mangroves being cleared for a development project outside Lami, Suva.

2.4 Mangrove Management/Governance

The ownership over mangroves resources and land in Fiji are complex given the dual system of traditional tenure and a westernized system of state ownership. In the case of freehold land, all intertidal and land below the mean high water mark (MHWM) is owned by the state. Mangroves grow mostly in these intertidal zones; therefore, ownership of the mangrove areas, the land and resources within is by the State (Department of Forestry, 2001).

Fijians, however, have customary or traditional unalienable rights of use to the living resources in these intertidal areas, such as traditional fishing rights in their customary fishing grounds (Fiji. *qoliqoli*) under the Native Lands Act (Cap 33). Therefore, while customary use rights are recognized, there is no ownership over the resource. This arrangement further contributes to the complexity of effective mangrove management in Fiji.

There is no single government institution in Fiji that deals specifically with mangroves or being given the management responsibility of mangroves. The responsibilities over the resource are being shared among the Ministry of Lands and Mineral Resources, Ministry of Fisheries, Forests and the Department of Environment (see Table 2).

Government Ministry/Department	**Administrative Role Over Mangroves**
Ministry of Lands (and Mineral Resources)	• Custodian of mangrove resources of the country Under the State Lands Act • Responsible for issuance of lease for foreshore land and reclamation of mangroves
Department of Forestry	• Issue and regulate licenses for the commercial felling of mangroves for firewood or timber via the *Forestry Act* • However, there is no legal framework, covering illegal felling or overexploitation of timber for subsistence use
Department of Fisheries	• Issue licenses to fish in coastal waters via the *Fisheries Act* (1991)
Department of Environment	• Under the *Environment Management Act* (Government of Fiji 2005) has the responsibility and duty to protect mangroves and associated biodiversity through the application of environment impact assessment (EIA) for all proposed foreshore developments
OTHER KEY DECISION-MAKING BODIES – COMMITTEES	
National Environment Council (NEC)	• Broadly represented multi-sectoral body established under Section 7 of the Environment Management Act • Advise and coordinate the decision-making and initiatives, pertaining to national environmental issues • Provides advisory role to Cabinet on resource management policy, including mangrove issues and also the formulation of relevant policies
Fiji National Biodiversity Strategy and Action Plan Steering Committee	• Advise and assist the Department of Environment on the implementation of the Fiji National Biodiversity Strategy Action Plan

Government Ministry/Department	Administrative Role Over Mangroves
Protected Areas Committee (PAC)	• Carries out Fiji's commitment under the Convention of Biological Diversity (CBD)'s Programme of Work on Protected Areas (PoWPA) • Advise the NEC on protected area policies and priorities, assist with the establishment of an adequate and representative national protected area system; facilitate consensus on national priority areas for conservation; identify actions for the establishment and effective management of protected areas and identify options for resource protected area management
Integrated Coastal Management Committee (ICMC)	• Responsible for the preparation of the coastal zone management plan
Mangrove Management Committee	• Is a sub-group of the ICMC that deals specifically with sustainable mangrove management • A key task of the mangrove subcommittee is to bring together bodies that have legislative influence on mangrove management – mangrove management regulations that are currently being divided between department of Lands, Forestry, Fisheries and Environment • Is also the official steering committee for the IUCN MESCAL project which will do a nationwide baseline study of Fiji's mangroves and promote its sustainable management, as well as identifying areas to be declared as protected areas

Apart from the Ministry of Lands and Mineral Resources, the following entities also have some responsibility for land management and are, therefore, at least theoretically responsible for certain aspects of mangrove land. These are the Ministry of Primary Industries (formerly known as Ministry of Agriculture, Sugar and Land Resettlement), the *iTaukei* Lands Trust Board, the Department of Town and Country Planning and the Ministry of *iTaukei* Affairs (especially concerning traditional communal lands) (Berdach 2005). The high number of responsible departments complicates mangrove land issues, making processes less transparent and more complicated.

The iTaukei Affairs Board (TAB) has appointed Conservation Officers in the Provinces and the Ministry of *iTaukei* Affairs has also recently established a Joint Environment and Climate Change Forum with TAB to specifically look into environmental and mangrove issues. This is still in its inception stage.

In addition to the government departments having some mandate on mangroves, other key decision-making bodies in the form of committees are housed under the Department of Environment. These decision-making bodies include: the National Environment Council (NEC), Fiji National Biodiversity Strategy and Action Plan Steering Committee (FNBSAPSCC), Protected Areas Committee (PAC), Integrated Coastal Management Committee (ICMC) and Mangrove Management Committee (MMC).

Photo Mangrove Habitat, an important resource for the islands in Fiji.

2.5 Mangrove Management Challenges

The management and administration of mangroves in Fiji seems to be a problematic and cross-cutting issue between government departments and the various decision-making bodies of Government, having some responsibilities on mangroves. These issues were highlighted at the one-on-one meetings with stakeholders and at the national consultation meeting on 20th September, 2013.

Key challenges affecting the management and administration of mangroves include:

- The absence of a specific legislation and policy on mangrove. It was also highlighted that current legislation like the Environment Management Act, State Lands Act does not have provisions for the sustainable management of mangroves. Mangroves should be regarded as a matter of

national importance with regulations developed and amendments made to existing legislation like EMA to this effect.

- The absence of a clear definition on mangroves. This should provide a clear demarcation as to which department or ministry is responsible for the resource, for instance, if it is a forest resource then Department of Forestry would be responsible. Or if it is included as part of the foreshore resource, then clearly, Ministry of Lands and Mineral Resources is responsible.

- The fragmented policies and legislation related to mangroves shared amongst various government departments. This could be seen from the discussion in 2.4 above. Given that Ministry of Lands is the custodian of mangroves, they should clearly play lead role in the administration of mangroves and be the coordinating agency (in consultation and collaboration with the other approval agencies) on administration and management matters on mangroves.

- The uncoordinated process or system in place for approvals and decisions on mangroves with key government departments and ministries. For instance, once an application for foreshore development is received by the Ministry of Lands and Mineral Resources, the application is sent to Department of Fisheries, Department of Environment, Department of Forestry, Department of Town and Country Planning, Provincial administration, and relevant government ministry for their comments. A 30-day period is provided for these government agencies to provide comments and those who fail to respond within this period are deemed to have no comments.

In ensuring that comments are received from the respective government agencies, it was highlighted at the national consultation meeting on 20th September, 2013 that the Mangrove Management Committee screen and comment on any foreshore development application. This would require that key approval agencies and technical expertise are represented at the Mangrove Management Committee. Alternatively, a technical committee having expertise to vet and comment on foreshore development application could be explored.

A more coordinated approach and approval process needs to be established by the Ministry of Lands and Mineral Resources to obtain comments from government approval agencies in a timely and coordinated manner.

- The lack of communication and clear reporting mechanism on work and decisions relating to mangroves amongst government agencies. A clear guideline or a Standard Operating Procedure (SOP) should be developed and made available at the Ministry of Lands and Mineral Resources to ensure approvals is expedited. This guideline or SOP should be communicated and disseminated to all government approval agencies and municipal councils. The private sector should also be made aware of these approval guidelines to avoid confusion.

- The lack of human resource capacity and the availability of technical expertise in major government agencies and ministries. For instance, there is one foreshore development officer in Lautoka and one in Suva who process foreshore applications in their respective divisions. At the Department of Environment, a minimal of one (1) or two (2) Environment Impact Assessment officers assess, review and contribute to key decisions on EIA reports, EIA aspects of foreshore development lease received by the Department.

The establishment of a Conservation Unit within the Ministry of Lands was suggested at the national consultation meeting. This will address the human resource constraint at the Ministry and should strengthen and complement the work of the foreshore development unit in making decisions relating to mangroves and its conservation.

- The lack of awareness on the importance of mangroves at all levels - policy, decision-makers and communities. Mangroves may be and are still viewed by many as readily available resource without economical value or importance. The lack of data available on the value of mangroves when taking into consideration its ecological and economic value may be one of the contributing factors of uninformed decisions made on the clearance of mangroves.

An economic valuation of mangroves and the carbon sequestration study undertaken by the MESCAL Fiji project could provide some data in this aspect to enable people to know the importance of mangroves.

- The lack of enforcement, monitoring and evaluation of existing policies, legislation and procedures in place. This is often one of the biggest issues for government given budgetary and resource constraint. However, it is important to enforce legislation and regulation, and monitor and evaluate policies and procedures in place to ensure their intended outcomes are achieved.

PART 3: MANGROVE POLICIES AND POLICIES RELATING TO THE USE AND MANAGEMENT OF MANGROVE ECOSYSTEMS AND MANGROVES – OVERVIEW AND ANALYSIS

Key Messages

- There is no specific mangrove policy in Fiji. However, there is a mangrove management plan 1985/86
- Mangroves, its use, protection and management and mangrove ecosystems have been directly and indirectly addressed in the key policies reviewed
- There is fragmentation of current policies that have some relevance on mangroves
- Mangroves have been adequately addressed in the key policies – the NBSAP, Mangrove Management Plans, ICM Framework, Forest Policy, and Tourism Development Plan
- Mangroves, its use, management and mangrove ecosystems to be mainstreamed into all related policies – climate change policies, rural land use policy, housing policy, waste management policy, etc.
- Mangroves, its use, protection and management and mangrove ecosystems to be included as a section of its own if it is included in sectorial, development, climate change and environment policies
- The Department of Lands, Department of Forestry, Department of Fisheries and Department of Environment could possibly discuss and further review the roles they have on mangroves. Ideally, a single Ministry should be tasked to the administration and management of mangroves and be in charge of all mangrove matters in the country

For the purpose of this review, policies will be extended to also include frameworks, plans related to the use and management of mangroves and the mangrove ecosystems.

This section of the report presents and analyses the key policies relating to the use and management of mangroves which are being reviewed. The extent to which the use and management of mangroves has been reflected and covered in these policies will be assessed and analysed.

3.1 Development Policies and Plans

3.1.1 Roadmap for Democracy and Sustainable Socio-Economic Development 2009-2014

Key Messages and Policy Options: Roadmap for Democracy and Sustainable Socio-Economic Development 2009-2014 (2009)

- The policy objectives and strategies of the key sectors identified in the roadmap embrace sustainable development and management. The benefits of sustainably managing and developing these sectors would indirectly impact the mangrove ecosystems and mangroves given the reduction of pollution that would have been caused by the unsustainable practices from these sectors and the inter-linkages of terrestrial and marine ecosystems
- The use and management of mangroves and mangroves in general has not been adequately and explicitly addressed in the document given that this is one of the principal documents for government to act as a guide to the development of sectorial policies
- Mangroves, mangrove management, mangrove use and protection have been indirectly addressed in the key sectors of development addressed in the roadmap
- A detailed EIA to be submitted to the relevant authorities and government approval agencies for port, jetty development and any related marine transport development. This directly impacts mangroves and mangrove ecosystems
- Climate change, mangroves, disaster reduction and environmental sustainability should be mainstreamed into sectoral plans, policies and programmes given their importance in the context of sea-level rise in the global, regional and national level
- Climate change and its impacts and mangroves could be addressed as separate sections of their own. Alternatively, they could be included as part of the section disaster reduction (4.1.13) and/or environmental sustainability (4.1.1). This could see strategies being formulated that will ensure that specific strategies are formulated and developed to address mangroves. This would also translate to sectorial policies and plans
- The implementation of the strategies identified in the roadmap should be closely monitored and evaluated to ensure timely delivery of results. A structured and detailed monitoring framework had been provided in Chapter 5 of RDSSED

The Roadmap for Democracy and Sustainable Socio-Economic Development (RDSSED) 2010-2014, is an overarching policy document that sets the framework to achieve sustainable democracy, good and just governance, socio-economic development and national unity. The key foundation of the Roadmap is the Peoples Charter for Change Peace and Progress (PCCPP).

The section of the document that has relevance implicitly to the use and management of mangroves and mangrove ecosystems are: **3.2.8 – Land resources development and management; 3.2.9 Sugar; 3.2.10 Non-Sugar Agriculture and Livestock; 3.2.11 Forestry; 3.2.12 Marine Resources, 3.2.13 Mineral and Groundwater, 4.1.1 Environmental Sustainability, and 4.1.13 Disaster Risk Reduction and Disaster Management.** Key development constraints, challenges and strategies to the above-mentioned sectors include:

- Inappropriate land use leading to land and environmental degradation;
- awareness on proper farming techniques, conservation;
- the need for proper infrastructure in the form of access roads and port facilities for export;
- certification of products given global government concerns;
- adaptation of sustainable forest management practices;
- adoption of multi-pronged approach to fisheries management and adoption of resource management, conservation and service-orientation approach;
- the introduction of management plans;
- strengthening of resource management through enforcement of provisions in Environmental Management Act (EMA) and other legislation;
- an environmentally sustainable transport sector;
- mainstreaming disaster risk reduction into other sectoral development plans, policies and programs being crucial for sustainable development and community resilience; and
- the implementation of EMA and related program, allocation of adequate resources to address major environmental problems – deforestation, land degradation, air and water pollution, inappropriate refuse disposal, climate change and sea level rise, out-dated legislation and its inadequate enforcement and limited public awareness.

Any development in the transport sector and, in particular, the marine transport which sees the development and/or extension of ports or jetties should provide a detailed and comprehensive Environment Impact Assessment report to the relevant authorities. The relevant approval authorities should conduct all relevant checks being done before approval is granted for the commencement of marine-related projects. Development of jetties and ports directly impacts mangroves and mangrove ecosystems.

3.1.2 Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008-2010 (2007)

Key Messages and Policy Options: Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008-2010 (2007)

- SEEDS does not specifically cover and adequately address mangroves, mangrove use and management and mangrove ecosystems. However, these are indirectly covered in the discussion of key sectors of development highlighted
- Mangroves to be mainstreamed into SEEDS as a specific section on its own OR included in the relevant existing sections

The Sustainable Economic and Empowerment Development Strategy (SEEDS) is guided by the vision ''A better Fiji for All'' and is administered by the Ministry of Finance, National Planning and Sugar Industry (MFNP). The document outlines the strategic priorities of the Government in the areas of: good governance, growing the economy, reform of public service and financial institutions, access to land and land utilisation, and social and community development. The various strategies had been identified to be implemented by Government in meeting the vision of the plan.

The policy document is further guided by six (6) guiding principles and these are **: good governance, including the need for consistent and credible policies; environmental sustainability, respect for the Vanua and for the cultures and traditions of the indigenous Fijians and Rotumans and other communities in Fiji; respect for legal authority and law and order; respect for human and group rights; and honesty, integrity, transparency and accountability in public life and general standards of conduct which reflect our fundamental beliefs**.

Environmental sustainability is discussed in section 22.5 and 9.4 of SEED with the goal to see the 'sustainable use and management of Fiji's natural resources and ecological processes'. Section 9.4 of SEEDS highlights the policy objective in seeing that **''Fiji's environment is protected from degradation and provides the people with a healthy and clean environment''.** This objective is further guided by four strategies which are to:

i. promote awareness of environmental management at all levels and mobilise communities to manage their own environment as a priority over outside intervention by state and non-state actors;
ii. review and strengthen legislation which includes environmental management provisions (e.g. Forest Act, Public Health Act, and Litter Decree) and coordinate implementation in the framework of the EMA;
iii. enforce the EMA, giving priority to early full enforcement if provisions for EIA and Waste Management and Pollution Control; and
iv. continue the implementation of the Biodiversity Strategy and Action Plan and *Endangered and Protected Species Act* and the *Ozone Depleting Substance (ODS) Act*.

Also in this section, key environmental challenges for Government (in achieving sustainable development) were identified. These include: deforestation, lands degradation, over-exploitation of terrestrial and aquatic biological resources, improper waste management and pollution control, impact of climate change, sea level rise, out-dated legislation, inadequate enforcement of legislation, limited public awareness, the increased pressure placed on coastal resources due to increasing population, urbanisation, inappropriate refuse disposal, industrial/agricultural and other economic development.

Other key sectors covered in the SEEDS that relates to mangroves, its use, management and the mangrove ecosystems include water and sewerage (5.8), land resource and management (8.1), forestry (8.4), marine resources (8.5) and urban development (9.6). Sustainable development, sustainable management of resources, sustainable land use practices and environment protection forms key objectives for the strategies of these key sectors.

Section 5.8 of SEEDS on 'Water and Sewerage' in one of its strategies identified the expansion of the sewer reticulation network and sewerage treatment facilities and promoting the need for care of the environment.

The land resource and management section of SEEDS (Section 8.1) indirectly relates and affects mangroves and mangrove ecosystems. The inappropriate farming practices, deforestation and other land uses contributing to environment problems was highlighted. The plan therefore, espouses sustainable land use practices for the sector through the review of the *Land Conservation Act*; and

strengthening resource management and awareness on appropriate land use and watershed management practices from the community level.

'Urban Development' is discussed in section 9.6 of the SEEDS document. Critical issues of concern to urban development were highlighted and include: **(i) the absence of clear mechanisms to integrate urban development planning at the national, regional and local level; (ii) the limited effectiveness of the current urban-servicing process in facilitating the provision of land for development; (iii) the lack of policy coordination and integration between environment planning, urban planning and infrastructure development planning in areas inside and outside the approved town-planning scheme boundaries; and (iv) urban sprawl, including unplanned development in peri-urban and urban areas that require a more focused land use and land zoning plan within the urban boundaries.**

SEEDS, as an overarching policy document for Fiji, does not specifically cover and adequately address mangroves, mangrove use and management and mangrove ecosystems. However, these are indirectly covered in the discussion of key sectors of development highlighted. The principle of sustainable development and environment protection generally covers mangroves and mangrove ecosystems.

The specific coverage of mangroves and mangrove ecosystems in the SEEDS under the key sectors, for instance on urban development, could lead to specific strategies being formulated. This could provide some guide and direction which could translate to its inclusion in sectoral policies and plans being formulated by the relevant Government Ministry. The lack of coverage of mangroves, mangrove ecosystems and its related issues may contribute to its low regard and being a low priority area of concern for Government.

An overarching policy document like SEEDS provides a framework for key sectoral policies and plans to align to. The draft Mangrove Management Plan that is being reviewed and yet to be finalised by Dick Watling could provide some direction in protecting mangroves in light of the issue on urban development.

Mangroves and mangrove ecosystems need to be mainstreamed into SEEDS. This could be included as a specific section on its own or included in the existing section on environmental sustainability, urban development and marine resources.

3.1.3 Peoples Charter for Change, Peace and Progress (2008)

Key Messages and Policy Options: Peoples Charter for Change, Peace and Progress (2008)

- Environment protection, sustainable management and utilisation of natural resources are listed as key measures and actions under Pillar 5 “Achieving Higher Economic Growth While Ensuring Sustainability”
- Mangroves are indirectly covered in the policy under environment protection

The charter, a legal document to complement the Constitution of the Republic of the Fiji Islands establishes guidelines for any government policy in Fiji over the coming years. The charter listed a number of shared values, principles, and vision, one of which is stated as '**We seek to safeguard, preserve and value our environment as we benefit from it**'[1]. Further to that, one of the basic aspirations and principles of the Charter is '**sustainable economic growth**'.

Key pillars of the charter include:

1. Ensuring Sustainable Democracy and Good and Just Governance
2. Developing a Common National Identity and Building Social Cohesion
3. Ensuring Effective, Enlightened and Accountable Leadership
4. Enhancing Public Sector Efficiency, Performance Effectiveness and Service Delivery
5. Achieving Higher Economic Growth While Ensuring Sustainability
6. Making More Land Available for Productive and Social Purposes
7. Developing an Integrated Development Structure at the Divisional Level
8. Reducing Poverty to a Negligible Level by 2015
9. Making Fiji a Knowledge¬ based Society
10. Improving Health Service Delivery
11. Enhancing Global Integration and International Relations.

Pillar 5 'Achieving higher economic growth while ensuring sustainability'. The following are two of the key measures and actions that must be taken with due priority and urgency as stated in the charter.

- Strengthen institutional capacity for environmental management
- Give priority to the protection of environment, sustainable management and utilisation of natural resources

They indirectly relate to and would have some impact on mangroves as being part of the environment. The priority given to the protection of environment, sustainable management and utilisation of natural resources should also benefit the protection of mangroves.

[1] P4 of Peoples Charter for Change, Peace and Progress

3.2 Environment Policies

3.2.1 National Biodiversity Strategic Action Plan 2007 (NBSAP)

Key Messages and Policy Options: National Biodiversity Strategic Action Plan 2007 (NBSAP)

- Mangrove and mangrove ecosystems to be covered in detail
- Review of mangrove protected areas and inclusion of new ones like Talailau which are important fish nurseries for the Great Sea Reef
- Department of Environment to evaluate and assess how much is achieved of the Plan as part of the review process

The Plan was endorsed by Cabinet in 2003 and published in 2007 and is administered by the Department of Environment. It sets out Fiji's commitment under the Convention of Biological Diversity (CBD). The plan sets out Fiji's commitment under the CBD. At the same time it provides the principal instruments for implementing the Convention at the national level, ensuring that conservation and sustainable use of biological resources are integrated into national decision-making, and mainstreamed across all sectors of the national economy and policy making framework.

The goal of NBSAP is **'to conserve and sustainably use Fiji's terrestrial, freshwater and marine biodiversity and to maintain the ecological process and systems which are the foundations of national and local development',** (NBSAP Fiji, 2007). The plan is further guided by 19 principles, few of which are of relevance to the use and management of mangroves. These include:

- the conservation and sustainable management of Fiji's reefs, lagoons and mangroves, as well as its freshwater habitats are of critical significance to sustaining the traditional livelihoods of the majority of Fiji's rural communities; and
- the establishment of a comprehensive and representative system of reserves and conservation areas at the national and local levels is critical to successful biodiversity conservation.

Mangrove wetlands have been acknowledged in the plan as one of Fiji's habitats with high and extensive diversity and one that forms the basic components of Fiji's natural asset base and for which economic evaluation will be carried out. Valuation is for the purpose of providing some guide to development choices given that some of these major ecosystems are or may be threatened by overharvesting, pollution, or conversion to alternative uses. The services provided by mangroves ecosystems, ranging from erosion control and soil formation, nutrient recycling, cultural values, waste treatment, raw materials provision, biodiversity preservation and food production have been recognized in the plan.

Few of the mangrove areas have been identified in the plan as priority protected areas, namely mangrove areas of Ba Delta: Nawaqarua – Natutu; Rewa Delta: Muanicake-Nasoata R; Labasa Delta: Labasa R and Labasa Delta Mouth.

The sustainable management of mangroves has been identified as part of the community support, awareness, involvement and ownership programs.

The concept of mangrove ecosystems conservation and management has been covered, to some extent however, not as extensively as expected and in terms of specific actions dealing with the conservation and management of mangroves. The use of mangroves is briefly covered and mentioned in the plan. The identification of the involvement of all various stakeholders and recognition of community involvement, building onto their ethno biological knowledge and integration of this knowledge with scientific knowledge should provide a strong foundation to efforts in conserving biodiversity, of which mangrove and the mangrove ecosystems are a part of.

The plan is currently being reviewed by the Department of Environment and it would be beneficial to evaluate and assess how much has been achieved in terms of the various activities to be undertaken as highlighted in the NBSAP. It is also timely to review the mangrove areas to be identified as priority protected areas and to include new areas like Talailau.

3.2.2 Mangrove Management Plan Phase 1 and Mangrove Management Plan Phase 2

Key Messages and Policy Options: Mangrove Management Plan Phase 1 and& Mangrove Management Plan Phase 2

- Extensively cover mangroves and critical issues of mangroves
- Review of the Plans to revisit some of the earlier recommendations
- Revised Plan to highlight current mangrove issues
- Revised Plan to be tabled to the National Environment Council and Cabinet to approval and endorsement
- Revised Plan to be implemented and used as a guide in granting approvals on foreshore lease development and other related developments having an impact on mangroves

In 1985, a Mangrove Management Plan for Fiji was formulated, administered and used by the Department of Environment. It contains a characterisation, policies and maps of the mangrove locations, types and use zones for the main islands of Viti Levu, Vanua Levu, Ovalau, Gau and Kadavu. This policy suggested several zones for mangrove use and protection in Fiji and called for the establishment of mangrove area management. Zonation requirements and a plan for the mangroves of Ba, Labasa and Rewa Deltas have been discussed in Phase 1, while Phase 2 provides a plan for the mangroves of Nadi Bay and the Suva-Navua locales.

The plans cover, in detail, the issues facing mangroves and in particular reclamation of these areas for agriculture and development purposes. Given the vulnerability of these ecosystems and the growing pressures from development, a National policy on mangroves was highlighted in the Plans. Additionally, zonation through (1) mangrove reserves (resource reserve and national reserve); (2) managed resource areas (traditional use zone, wood production zone, shoreline protection zone) and (3) development zones (sewage processing, urban, tourism, agriculture) were recommended. The management and protection of mangroves have been considered extensively in these management plans. This document is still being used for decision-making purposes on foreshore reclamation of mangrove by the Department of Environment. The Plan is being reviewed at the time of this policy and legislative review. The revised management plan should revisit some of the zonation schemes earlier discussed in the 1985/86 management plans and better reflect the current situation facing mangroves and developing the management plan accordingly.

3.2.3 Implementation Framework 2010-2014 (for the NBSAP 2007)

Key Messages and Policy Options: Implementation Framework 2010-2014 (for the NBSAP 2007)

- Four strategies highlighted in the Framework indirectly impact and relate to the use and management of mangrove and mangrove ecosystems. The Mangrove Management Plan is currently being reviewed and is envisaged to provide a more focused and integrated approach to the management of mangroves in its current and modern context of environmental management
- The development of a national coastal development plan to regulate/monitor coastal development activities and the guidelines for the inter-sectoral coastal development should provide some form of management to the use of mangroves and the protection of mangrove ecosystems. These plans should specifically address coastal development activities and cover these related issues in more detail

The framework is administered by the Department of Environment. The Implementation Framework 2010-2014 (for the NBSAP 2007) provides a guide and road map to the NBSAP. The framework identified activities to be undertaken in the fulfilment of the strategies and objectives of the key thematic areas. Responsible agencies to see the implementation of these activities and the resources needed have been identified on the framework. Seven (7) key thematic areas for the implementation process have been highlighted and include:

1. Forest conversion management
2. Invasive alien species
3. Inshore fisheries
4. Coastal development
5. Species conservation: threatened and endangered species (trade and domestic consumption)
6. Protected areas
7. Inland waters.

The section of relevance to the use and management of mangroves is "Thematic Area 4: on Coastal Development" and "Thematic Area 7 on Inland Waters". Major threats were identified on Fiji's coastal resources, namely: increasing rates of mangrove reclamation, coral extraction, river dredging, unregulated developments, tourism developments, and the absence of updated information. There's a call for an integrated approach to sectorial and partnership planning and monitoring which is central to the coastal development thematic area to ensure proper management and utilization of Fiji's coastal resources.

Six (6) key objectives have been formulated out of these four strategies which include the following:

- **By 2014, 100 ecotourism agencies to be aware of the guidelines for the inter-sectoral coastal development;**
- **By 2014, 50% reductions in effluents discharged by industries;**
- **By 2014, a national coastal development plan to be developed to regulate/monitor coastal development activities;**
- **By 2012, new partnerships established between Government and communities for sustainable tourism development;**

- **By 2014, a regional tourism sustainable task force in place and chaired by four commissioners; and**
- **By end of 2010, the existing Mangrove Management Plan reviewed.**

The principles of ecotourism, sustainable tourism development& best practices, sustainable community level resource management; establishment and marketing of Protected Areas, education and awareness programs, and sustainable coastal development are encompassed in Coastal Development thematic area. For Inland Waters thematic area, increased protection, preservation and restoration of important wetland resources and ecosystem services to conserve biodiversity and maintain livelihoods have been recognised.

The framework directly covered mangroves, its management and protection in the coastal development and inland waters thematic area. Other thematic areas have provisions that indirectly relate and impacts mangroves, mangrove protection and management. For instance, the adherence and compliance to EIA processes and procedures for land use projects, development projects of any nature would see minimal damage to the ecosystem and environment including mangroves.

3.2.4 Fiji National Liquid Waste Management Strategy and Action Plan (2006)

Key Messages and Policy Options: Fiji National Liquid Waste Management Strategy and Action Plan (2006)

- All forms of liquid waste water covered in this strategy affect the mangroves and mangrove ecosystems in one way or another. The impacts of these forms of waste specifically to the mangroves and/or mangrove ecosystems have not been mentioned in the document however, its impacts on coastal waters and coastal environment have been highlighted. Coastal environment, as one would assume, is inclusive of mangroves and mangrove ecosystems. The extremely high tributyltin (TBT) concentrations detected in sediments in the immediate vicinity of slipways and boatyards in Suva Harbour and from mangrove oysters, indicating that they are exceedingly contaminated, were highlighted. Contamination of coastal water and environment from liquid wastes has been highlighted in the document
- Overall, the use and management of mangroves is not explicitly covered in the strategy and action plan

The National Solid Waste Management Strategy and Action Plan was developed in 2005 and is administered through the Department of Environment. The strategy sets the direction for sustainable liquid waste management in Fiji given the threats liquid wastes impose on public health and the preservation of natural resources. The goal of the strategy aims “to minimize the negative human health and environmental effects from liquid waste”. Specific objectives and activities to achieve the goal were determined, and it also identified lead agencies, key contributing agencies, output indicators, indicative costs and other resources needed.

The proposed strategy covers liquid wastes and includes: Domestic waste such as sewage and greywater which is collected by sewerage systems or goes into septic tanks etc.; Commercial and industrial wastewater, including that from the tourism industry; animal waste; marine shipping;

urban stormwater; leachate from landfills/dumps; sludge (septic tanks, industries, and sewerage treatment plants).

The key objectives of the National Liquid Waste Management Strategy[2] are to:

(i) reduce the amount of wastewater produced in Fiji;
(ii) improve and upgrade waste management and disposal systems to improve waste water quality;
(iii) improve coordination of departments/stakeholders involved in regulating and managing liquid waste; and
(iv) improve awareness and practices of the public in relation to sanitation/wastewater management.

The environmental impacts of waste water and the contamination of the coastal environment from waste water from industry, domestic waste, urban storm water and shipping related activities are highlighted in the strategy document. The impacts of liquid waste to mangroves have not been specifically and extensively covered in the document. However, this has been indirectly covered with in the context of coastal environment.

3.2.5 Fiji National Solid Waste Management Strategy 2011-2014

Key Messages and Policy Options: Fiji National Solid Waste Management Strategy 2011-2014

- The waste management strategy outlined in the document indirectly benefits the mangroves and provides some form of protection and management to them
- Impacts of the different forms of waste on the environment, in particular mangroves to be addressed in the strategy document
- Waste disposal in rural areas needs to be urgently addressed. Garbage collection services to villages near towns and urban centres to be considered

In recognition of the negative impacts solid waste has on Fiji's national development activities, including public health, the environment, food security, tourism and trade, the National Solid Waste Management Strategy 2011–2014 was formulated and is being administered by the Department of Environment. The vision of the National Solid Waste Management Strategy 2011-2014 is for 'Informed and Responsible Communities Committed to Sustainable Solid Waste Management'. The proposed goal is to 'increase the proportion of solid waste that is managed in a cost effective, financially sustainable legally compliant and environmentally-sound manner'. Further, this goal will be accomplished through an integrated approach, involving various actions in the identified eight (8) thematic areas, which are:

1. Sustainable Financing
2. Legislation
3. Awareness and Education
4. Capacity Building
5. Environmental Monitoring

[2] Page 9 of the strategy document

6. Policy and Planning
7. Solid Waste Industry
8. Integrated Solid Waste Management

The strategy provides an integrated approach to address the environmental, health and economic impacts of wastes and is supported by an implementation plan which sets out the key actions that will be taken to address the vision of the strategy.

An integrated approach is adopted for the implementation of the plan and strategies in the eight thematic areas. Moreover, this policy sets out strategic objectives addressing waste minimization, waste segregation and waste disposal in urban and rural settings.

The strategy covers the major waste types including: solid wastes from households, commercial, industrial, and institutional sources, medical or health care wastes from hospitals and clinics, agricultural wastes (specifically animal wastes), electrical and electronic wastes, hazardous solid wastes, including asbestos, mining wastes and contaminated soils, difficult solid wastes, such as end-of-life vehicles and tyres.

The environmental monitoring strategy component of the Fiji National Solid Waste Management Strategy ensures that the impact of the various types of wastes on the environment is regularly monitored.

An issue to seriously consider and has been highlighted in the document is the waste disposal and management in rural areas as there is no or irregular, if any, waste collection services in these areas. For villages close to the sea, rubbish is often dumped in the mangrove areas. Improper disposal of any type of wastes, location of rubbish dumps affect the mangrove and the mangrove ecosystems.

The improved sustainable management of wastes and its disposal contained in the strategy document would indirectly benefit management and protection of mangroves and mangrove ecosystems. The enforcement of legislations and the implementation of strategies by the relevant authorities should ensure compliance by every citizen of Fiji and all stakeholders.

3.2.6 Integrated Coastal Management (ICM) Framework of the Republic of Fiji : Opportunities and Issues for Managing our Coastal Resources Sustainably

Key Messages and Policy Options: Integrated Coastal Management (ICM) Framework of the Republic of Fiji (2011)

- Mangroves have been directly covered in section 4.6 of the report and indirectly through the coastal environment discussions
- The development of an ICM plan should directly impact the management of mangroves
- Mangrove management plans at the provincial level should greatly assist and ensure management of mangroves in villages. National ICM plan to cover ridge-to-reef area to ensure protection and sustainable management to coastal environments
- National land use planning and policy ensures protection and management of the coastal environment and resources
- The ICM Plan to address all coastal and mangrove issues highlighted in the framework

The framework was developed in 2011 is administered by the Department of Environment. It reviews 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, and assesses the current legal and institutional governing framework so as to recommend proposals for actions and policy towards sustainable coastal resource management for Fiji. More importantly, the ICM Framework provides an outline of the scope and structure of what an ICM plan should cover.

The framework is guided by the vision for coastal zones to: maintain ecological services and processes; preserve, enhance and rehabilitate natural resources; and improve health and well-being of the people of Fiji.

The importance of the National ICM plan to cover the 'ridge-to-reef' area ensures the effective protection and sustainable management of Fiji's coastal environments.

The clearing of mangroves and coastal vegetation had been identified as causes of coastal erosion in the framework. One of the recommendations of the framework is to develop ICM PLANS at the provincial level, and that the ICM plans at the provincial level would include a mangrove management plan, as well as coastal sensitivity atlas for disaster response planning and management.

It has also been highlighted that mangroves are referred to in several pieces of legislation (Forestry, Lands, Rivers, Fisheries and Streams Act), although none of the departments are responsible for their sustainable management. Such policy fragmentation implies the inability of government departments to manage resources in a way that maximizes the benefits of collaborating with other government departments and the wider ecological network.

The lack of protection of mangroves by the existing laws has been highlighted and its importance in the coastal ecosystems is recognized by the framework. Given its ecological importance, the protection and management of the mangroves and mangrove ecosystems has been covered and

forms a major component of the ICM Framework and would feature highly in an ICM Plan, if one is developed. The development of the mangrove management plan should be a key component of the National ICM plan. This would ensure proper management be accorded to mangroves.

Section 4.5 of the report focuses on mangrove health highlighting the importance of mangroves, key threats and management of mangroves being shared among several government departments.

3.3 Sectoral Policies

3.3.1 Fiji Forest Policy Statement

Key Messages and Policy Options: Fiji Forest Policy Statement (2007)

- Mangrove is well covered in the policy with the plan, as had been identified and one of the four (4) categories of protection forests. Protection forest category applies where the forests biological diversity and ecological integrity together with values, such as water supply, soil conservation, cultural or historical significance, or scenic appeal will be protected. Forest use will be restricted to harvesting of non-timber forest products, ecotourism and research. Mangroves are defined as a separate category in view of its ecological, economical and social importance
- To ensure protection, mangroves should continue to be categorized as protection forests or better, as protected areas
- The policy sees as a priority the conservation of mangrove ecosystems to maintain their ecological values
- Commercial harvesting of mangrove trees will be prohibited and should be enforced and closely monitored by the Department of Forestry

The forestry policy is administered by the Ministry of Fisheries and Forests and was formulated in 2007 to set out the goals of the forestry sector in Fiji. In recognizing the role of forests in maintaining a healthy and productive natural environment, and supporting primary economic activities in Fiji, the current forestry policy focuses on sustainable forestry practices, sustainable forest management principles, preservation of the environment and equitable sharing of forest derived benefits. The policy guides national level planning and implementation of forest-related resource extractions and protection, and pursues this through an integrated approach (Fiji 2007). The policy is guided by the vision **'sustainable wellbeing and prosperity from diversified forests'** and the national goal of **'sustainable management of Fiji's forests to maintain their natural potential and to achieve greater social, economic and environmental benefits for current and future generations'.**

The conservation, sustainable use and management of Fiji's forest resources are recognized in the policy. Intellectual property rights, the active participation of resource owners and their benefiting from the resource economically have been highlighted in the policy

The conservation of mangrove ecosystems and the management of harvesting of non-timber forest products in a sustainable way have been recognized in the policy as one of the key focus areas.

Mangroves have been defined as a separate protection forest category in view of its ecological, social and environmental importance. Four categories of forests have been identified, namely:

multiple-use forests; protection forests categories, forest plantations and mangroves (Ministry of Fisheries and Forests, 2007).

The priority given to the management of mangroves to maintain its ecological values has further been highlighted in section 5.1.3[3] and 5.1.5[4] of the policy.

Policy and strategy 5.1.5 covers mangrove management, highlighting the consultative process to be undertaken with a view to introduce an effective mangrove regulatory and management framework. Additionally, Government will consult widely in drawing up of guidelines or a plan to replace the Mangrove Management Plan for Fiji (Phase I&II 1985/1986). Two actions have been identified to be part of mangrove management and these are[5]:

1. 'the Forestry Department will contribute actively to a Government review of mangrove management and will undertake the role assigned to it following the review

2. the Forestry Department will advocate permanent conservation of mangroves to provide for sustainable customary uses, the sustenance of coastal fisheries, the protection of shorelines and as an adaptation measure against climate change impacts. Commercial harvesting of mangrove trees will be prohibited'

The use, conservation, protection and management of mangrove trees and mangrove ecosystems has been given due consideration and well covered in the policy statement. The development of forest management plans will also indirectly benefit the mangrove ecosystems. Given that the policy statements on the use and management of mangroves has been clearly spelt out, there is a need for the Forestry Department to collaborate with other government departments, having some stake on mangroves and, in particular, the Ministry of Lands to enforce and monitor these policy guidelines

In addition to the forest policy, the Forestry Department had developed the 'Licensing Procedures for Proposed Mangrove Harvesting' which is inclusive of a consultation process with the landowners and related stakeholders.

3.3.2 Rural Land Use Policy for Fiji (2006)

Key Messages and Policy Options: Rural Land Use Policy for Fiji (2006)

- The policy identified sound land use practices, prevention of land degradation, protection of the environment and management of water, land forestry, and other natural resources to be conducted in an ecologically sustainable manner, protection of forests for their biodiversity, conservation and production values, and protection of water and soil values as strategies to ensure sustainable land use in rural areas
- The policy document, if implemented, should indirectly benefit the mangroves and the overall coastal ecosystems

The Rural Land Use Policy presents rural land use policies in Fiji and provides guidelines for the allocation and management of resources in the rural sector. The policy also provides some guidance

[3] 5.1.3 strategy is on Biodiversity Conservation
[4] 5.1.5 strategy is on Mangrove Management
[5] Fiji Forest Policy Statement page 31

to the management of land for sustainable uses, balance production with protection, enhancement of diversity, and the leaving of an enhanced heritage for future generations.

The policy identified sound land use practices, prevention of land degradation, protection of the environment and management of water, land forestry, and other natural resources to be conducted in an ecologically sustainable manner, protection of forests for their biodiversity, conservation and production values, and protection of water and soil values as strategies to ensure sustainable land use in rural areas. The ridge-to-reef initiative introduced in Fiji could be seen as one way of managing the sustainable use of land upstream as they affect the environment downstream, including coastal environments, of which mangroves are a part. Land use practices affect the mangroves and mangrove ecosystems as unsustainable land use practices lead to sedimentation of rivers and coasts downstream

The policy document, if implemented, should indirectly benefit the mangroves and the overall coastal ecosystems. The strategies contained in the policy provide management measures on land use, which would indirectly provide positive impacts on the management and protection of mangroves. The involvement and recognition to involve the communities as land and resource owners would mean that they take lead role in the execution of such initiatives. Additionally, awareness on the sustainable use of resources and the importance of proper land use practices is achieved through involving the communities

3.3.3 National Housing Policy (2011)

Key Messages and Policy Options: National Housing Policy (2011)

- Key areas of the policy that are relevant to mangrove ecosystems, their use, conservation and management are highlighted in the policy measures, calling for provision of tenure to squatters and informal settlements on state and freehold land; improving land supply for urban development; urban and land use planning to better reflect housing needs, future expansion of cities, changing weather patterns, resulting from climate change and periodic updating of Master Plans and Zoning Plans by local governments and development authorities
- The implementation of the above measures will indirectly benefit the mangroves and act as some form of management measure on mangroves and mangrove ecosystems, for instance through some form of urban land use planning or zoning

The National Housing Policy intends to address the current piece-meal approach in the various housing sectors with regards to services. It provides strategic direction to the Government to ensure that recommended legal, administrative, institutional capacity-building, and structural changes in the housing sector (urban, rural, formal, informal and village housing) are made to facilitate the provisions of affordable and decent shelter for the people of Fiji. More importantly, the policy is in response to Government's recognition that a new policy approach is required to improve the housing conditions of the people as a national development priority. Additionally, the policy is designed to bring forth the true potential of the sector to better the housing circumstance of the people and its contribution to a growth economy.

Key areas of the policy that are relevant to mangrove ecosystems, their use, conservation and management are highlighted in the policy measures, calling for provision of tenure to squatters and informal settlements on state and freehold land; improving land supply for urban development; urban and land use planning to better reflect housing needs, future expansion of cities, changing weather patterns, resulting from climate change and periodic updating of Master Plans and Zoning Plans by local governments and development authorities

These measures related to housing, if implemented, will indirectly benefit the mangroves and act as some form of management measure on mangroves and mangrove ecosystems, for instance through some form of urban land use planning or zoning

3.4 Climate Change Policies

3.4.1 National Climate Change Policy (NCCP) (2012)

Key Messages and Policy Options: National Climate Change Policy (NCCP) (2012)

- Mangroves is indirectly covered in the adaptation and mitigation objectives and strategies of the NCCP calling for resource management planning (such as integrated coastal and watershed management plans), ecosystem-based approach, vulnerability assessments, best-practice adaptation measures, implementation of key policies such as REDD+ Policy, Fiji Biodiversity Strategy and Action Plan
- Specific adaptation and mitigation activities in the policy should, however, focus on mangroves, its use and management measures.
- The link between climate change and mangroves as an adaptation measure does not come out clearly in the policy document

The National Climate Change Policy for Fiji, was formulated to reflect current and emerging climate change issues at the local, national and international level. The policy is administered by the Climate Change Unit within the Ministry of Foreign Affairs and International Cooperation and shares a vision of **'a responsible and exemplary Fiji, leading the Pacific in combating climate change and achieving resilience, while attaining sustainable development'**. More specifically, the policy is envisaged to guide efforts in following an effective and integrated approach to addressing climate change issues in Fiji and, in particular, to promote the integration of climate change issues in national planning, budgeting and implementation processes.

The policy provides guidelines for sectors to ensure that current and expected impacts of climate change are considered in their planning and implementation programmes. Additionally, the policy defines objectives and accompanying strategies to facilitate the mainstreaming of climate change issues into relevant sectors and to support the provision of necessary technical and financial resources.

Eight thematic areas are covered in the NCCP, namely: **mainstreaming; data collection, storage and sharing; awareness raising; education and training; adaptation; mitigation; financing and international and regional participation.** To oversee the implementation of the strategies of the policy, five sub-committees covering the eight thematic areas were formed.

The adaptation and mitigation objectives and strategies of the NCCP indirectly relate to mangroves calling for resource management planning (such as integrated coastal and watershed management plans), ecosystem-based approach, vulnerability assessments, best-practice adaptation measures, implementation of key policies such as REDD+ Policy, Fiji Biodiversity Strategy and Action Plan.

Specific adaptation and mitigation activities in the policy should, however, focus on mangroves, its use and management measures. This could further enforce the importance of such an ecosystem and resource plays as a climate change adaptation and mitigation measure. The link between climate change and mangroves as an adaptation measure does not come out clearly in the policy document.

3.4.2 Fiji REDD-Plus Policy: Reducing Emissions from Deforestation and Forest Degradation in Fiji (2011)

Key Messages and Policy Options: Fiji REDD-Plus Policy: Reducing Emissions from Deforestation and Forest Degradation in Fiji (2011)

- Mangroves are classified under protected forests under the draft forest decree and is also considered as nature reserves and national heritage sites. Given this classification, mangroves are covered under the REDD-PLUS policy and thus its use and management will be taken care of under this policy
- On the other hand, should mangroves not be included in the above definition of forests then its inclusion could and should be reconsidered in the policy
- The ownership rights of the mangroves resource should be clearly defined, given the dual ownership over the resource between the state and the *qoliqoli* owners
- Addressing REDD-Plus for mangrove areas in Fiji will require careful consideration, especially when defining ownership and rights claims from various sectors (Fisheries, Forestry and Tourism, etc.) and how this will be administered

The National REDD+ Policy contains Fiji's contribution to the global effort to reduce carbon emission through the conservation of Fiji's forests and, at the same time, benefit from the continued environmental services from the standing forests, including benefits through the conservation of its forest biodiversity. The policy sets the framework for the development of REDD-PLUS activities in Fiji and is administered through the Ministry of Agriculture, Fisheries and Forests.

There are two major components of the policy. The first primarily focuses on facilitating Fiji's readiness for participation in REDD+. The second focuses on the measurement, reporting and verification (MRV) of REDD+ activities. The eligible activities under the REDD+ Policy encompass the following: (a) reducing emission from deforestation via forest protection and improved forest management; (b) reducing emission from degradation via forest protection and improved forest management; (c) afforestation/reforestation; (d) forest energy sector linkages (biomass electricity generation; (e) forest linkages (biomass residue); (f) combination linking afforestation/reforestation with REDD+ (Forestry 2011). Forests are defined in the document to include: '**areas with bamboo and palms, provided that height and canopy cover criteria are met … forest in national parks, nature reserves and other protected areas such as those of scientific, historical, cultural or spiritual interest … '.**

Mangroves are classified under protected forests under the draft forest decree and are also considered as nature reserves and national heritage sites (Lal, S. pers. comm, 2013). Given this classification, mangroves are covered under the REDD-PLUS policy and thus its use and management will be taken care of under this policy. On the other hand, should mangroves not be included in the above definition of forests then its inclusion could and should be reconsidered in the policy

The ownership rights of the mangroves resource should be clearly defined, given the dual ownership over the resource between the state and the qoliqoli owners

Although mangrove forest areas are included within the policy, the emphasis on the land-owner rights may be contested for mangrove forests given the shared responsibilities between the state

and land owners. Addressing REDD-Plus for mangrove areas in Fiji will require careful consideration, especially when defining ownership and rights claims from various sectors (Fisheries, Forestry and Tourism, etc.) and how this will be administered

Mangroves may account for only 3 per cent of carbon sequestered by the world's tropical forests, but an impressive 14 per cent of the total carbon sequestered in the coastal oceans (intertidal to shelf edge) (Van Lavieren, et al. 2012). He further added that mangrove forests store over three times more carbon per unit of surface area compared to other forest types, especially below ground

3.4.3 Fiji's Tourism Development Plan 2007-2016

Key Messages and Policy Options: Fiji's Tourism Development Plan 2007-2016

- The section covering Coastal development under the Sustainable Development chapter recognizes the link between tourism and the environment
- A set of guidelines has been recommended to be adopted as a basis for approvals of new tourism accommodation, attractions, activities and facilities
- The protection of mangroves has been acknowledged and recognized in Fiji's Tourism Development Plan. The roles of mangroves as part of the coastal ecosystems have been highlighted in the report
- The monitoring and enforcement of tourism development projects, as per the approval guidelines set out in the plan should be closely undertaken by the relevant government authority. This is to ensure compliance of tourism development projects

The Fiji Tourism Development Plan 2007-2016 provides a framework for the sustainable growth of tourism in Fiji. The Plan is supported by an Action Plan and a series of regional strategies.

The overall vision of the tourism industry reflected in the plan states that in 2020, Fiji's tourism will: **exceed expectations, be an aspirational destination, have a comparative advantage, be seen as a benefit, embrace social and cultural traditions and practices, have reduced its ecological footprint, support poverty alleviation, reduce urban migration, assist regional prosperity, provide its own infrastructure, support its communities, support service and supply enterprises and make a substantial contribution to national economic growth.** In a broad sense, the key principles for Fiji's tourism stipulated in the plan development area are based on the concepts of: **Brand Fiji, Sustainable Development, Guiding Future Growth, Balanced Supply, Diversity, Regional Prosperity, Team Fiji, Farm Fiji, Encourage Initiative, Social Equity, Creating the Future and Safe and Secure.** The key to planning for Fiji's ongoing sustainable tourism development is to ensure that there is balance between these four planks of prosperity: social; cultural; environmental; and economic.

Sustainable development, i.e. the need for Fiji's tourism to be environmentally sustainable has been recognized as the foundation for tourism growth. Ecotourism, as being the preferred product type for tours and activities has also been highlighted in the plan as an area to be promoted, adding cultural and natural presentation to existing Fiji ecotourism products so that they meet market expectations. As part of the regional strategy for the Yasawas, it has been mentioned to '**encourage the development of marine protected areas and discourage over-fishing of reef shellfish and reef finfish in key areas to feed tourists; resource and implement a program of installing sewage treatment to all resorts; and all new properties must be water self-sufficient (not taking from a community-used resource) and provide ecologically sustainable waste water and solid waste disposal solutions'.** Mangrove replanting in Nacula, as part of the climate change adaptation programme provides some good progress in the involvement of communities in these types of environment projects.

The impact of coastal development on mangroves in the Nadi Bay/Nadi River was highlighted. Additionally, it was also suggested to consider identifying some coastal precincts not for

development (e.g. the Nadi River mouth between Denarau and Sonaisali Islands). Moreover, in the Nadi Bay area, it is important to protect the majority of remaining mangroves. The ongoing development of smaller resorts and hotels along the coast in the Wailoaloa area is appropriate. A coastal plan which identifies beaches/land for future public open space would be desirable, as otherwise tourism development may restrict access to the coast for community leisure (which will become more important as Nadi's population grows, owing to the growth of tourism).

The Coral Coast – strategies have also made reference to considering the cumulative impact of further coastal development which affects mangroves and fringing reefs. Environmental certification has also been highlighted for areas from Lautoka, Ba, Rakiraki and Nananu-i-ra.

The section covering Coastal development under the Sustainable Development chapter recognizes the link between tourism and the environment. Environmental Impact Assessment has been highlighted as vital for the sustainability of tourism development and it is mandatory that all tourism accommodation development projects submit an EIA for approval of construction from the Department of Town and Country Planning (DTCP).

A set of guidelines has been recommended to be adopted as a basis for approvals of new tourism accommodation, attractions, activities and facilities in the following areas: water supply, surface water, erosion and sediment control, wastewater, solid waste recycling and disposal, coastal development, marine protection, forest protection, wildlife protection, landscape protection, scenic amenity and eco efficiency – water, energy and waste, such as Fiji's Green globe programme.

The section on coastal development states that tourism development should not adversely affect coastal processes. The specific role of mangroves and coastal wetlands in marine ecology in providing nursery for fish breeding (a key ecosystem process, but also of key economic concern to maintain fish stocks) was recognized in the plan. Thus, it has been highlighted that tourism development should avoid disturbance of mangrove and other intact littoral habitats, as far as possible. The current policy of a 30 m set back from the high water mark for buildings was noted in the plan. The assessment of impacts on coastal processes should address the totality of the development and its potential to cause change in coastal systems, rather than just a setback on buildings.

The protection of mangroves has been acknowledged and recognized in Fiji's Tourism Development Plan. The roles of mangroves as part of the coastal ecosystems have been highlighted in the report. The Environmental Impact Assessment report is the major tool that will and should ensure that the total impact of tourism development on the mangroves is fully considered to avoid unnecessary loss of mangroves. The monitoring and enforcement of tourism development projects, as per the approval guidelines set out in the plan should be closely undertaken by the relevant government authority. This is to ensure compliance of tourism development projects.

PART 4: LEGISLATION

This review provides an overview of the laws and regulations in force in Fiji which have relevance to mangroves ecosystems; analyses the provisions which support or inhibit their sustainable use and management, and proposes some options and recommendations for legal reform. It should be noted that such legal reform would be best conducted with the guidance of national mangroves and coastal zones management policy.

The review of legislation is structured as follows: Fiji's land and marine tenure systems and existing mechanisms for conservation are explored in section 4.1. The legislation regulating sectoral activities which may affect mangrove ecosystems are review in section 4.2. Section 4.3 analyses the effectiveness of cross-cutting environmental management, pollution control and land use planning legislation in supporting mangroves' sustainable management and use.

The summary of the legislation review key findings, as well as recommendations and options for law reform are presented in Part 5 of the review.

4.1 Overview of the Fiji's Legal and Governance Framework

Fiji's legal environment is marked by its recent turbulent political history. At the time of drafting this review, following the abrogation in 2009 of the 1997 Constitution, the new Constitution of the Republic of Fiji was assented to by the President of Fiji on 6 September 2013. A Parliament will be elected according to the new Constitution with general elections scheduled for September 30 2014. In the interim, legal reform is occurring by decrees.

Fiji's legal landscape was shaped by its culture and history, and is characterized by a national common law system established during British colonial time and customary law. Customary rights are, to a large extent, preserved by national law, and customary law is recognized to the extent that it is not inconsistent with national law. This dual national and customary local governance and regulation system coexists at times in synergy, other times in conflict, and affects the use and management of coastal land and marine natural resources[6], including mangroves.

The regulation of mangroves ecosystems' use and management stems from of a mosaic of statutes and other legal instruments, regulating various activities superimposed on the land, marine and natural resources customary governance system which has regulated natural resources for centuries.

In addition, Fiji has ratified (or acceded to) Multilateral Environment Agreements (MEAs), committing the Government to develop national policies and legislation to give effect to these agreements. The UN Convention on Biological Diversity (CBD), the UN Framework Convention on Climate Change (UNFCCC) and its Kyoto Protocol, the UN Convention to Combat Desertification (CCD), the Convention on International Trade of Endangered Species (CITES), the Ramsar Convention on Wetlands of International Importance, the World Heritage Convention, the UN Convention on the Law of the Sea (UNCLOS) and the International Convention for the Prevention of Pollution from Ships (MARPOL) are some of the MEAs which entail obligations of relevance to mangroves.

[6] See case study by Clarke (P.) and Jupiter (S.), *Law, custom and community-based natural resource management in Kubulau District (Fiji),* Environmental Conservation 37 (1) Foundation for Environmental Conservation (2010) p.98-106.

In compliance with its obligations under the CBD, Fiji has developed a National Biodiversity Conservation Strategic Action Plan (NBSAP) in 2007, and its implementation framework for 2010-2014 provides for the review of legislation to improve natural resources management, including mangroves. The Upper Navua Conservation Area in Viti Levu is Fiji's first Ramsar Site, officially designated when Fiji became a party to the Ramsar Convention on Wetlands of International Importance 1971, in April 2006.

Fiji is also party to regional environmental law agreements which have implications for mangrove ecosystems, such as the Noumea Convention for the Protection of Natural Resources and Environment of the South Pacific and the Waigani Convention to ban the Importation of Hazardous and Radioactive Wastes into Forum Island Countries and to Control the Transboundary Movement and Management of Hazardous Waste within the South Pacific region. Some statutes make express reference to the implementation of international and regional obligations, such as the *Endangered and Protected Species Act* and the *Environment Act*, and the *Environmental Management Act*.

4.2 Land and Marine Tenure, and Legal Mechanisms for Conservation

Mangrove forests grow in intertidal areas, with '*one foot on land and one foot in the sea*[7]', and their management is influenced by both land and marine tenure systems[8]. These systems governed by a combination of national laws based on statutes and common law, and customary law.

Land ownership in Fiji is classified in three categories which include:

a) State Land - 4%
b) Native/*iTaukei* Land – 88%; and
c) Freehold Land – 8%

State Land is owned by the Government of Fiji and may be leased to the public for use in accordance with the State Lands Act. Native or *iTaukei* land is owned by *iTaukei* land-owning units. The *Mataqali* is the customary unit usually recognised as the land-owning unit. Such land is held in trust by the *iTaukei* Lands Trust Board (TLTB) (formerly Native Lands Trust Board) and available land is leased by TLTB in accordance with the *iTaukei* Lands Trust Act. Freehold land, on the other hand, is land that is privately-owned and may be alienated by the owner in accordance with the Land Transfer Act.

The surfaces rights for each category of land ownership belong to the owner but what is beneath the surface of these lands is owned solely by the State.

[8] Land and marine tenure in the context of this paper means *'the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land / marine areas.'* This definition is based on the FAO definition of land tenure in FAO Land Tenure Study-3- Land Tenure and Rural Development, at http://ftp.fao.org/docrep/fao/005/y4307E/y4307E00.pdf

4.2.1 State Ownership of Foreshore Lands

4.2.1.1 State Lands Act

The *State Lands Act*[9] defines 'State land' to mean **'***all public lands in Fiji, including foreshores and the soil under the waters of Fiji, which are, for the time being, subject to the control of Her Majesty by virtue of any treaty, cession or agreement, and all lands which have been or may be hereafter acquired by or on behalf of Her Majesty for any public purpose***.'** [10]

The term 'foreshores' is not expressly defined in the Act, but is understood to mean the area of the shore between the average high water mark and the average low water mark.

Ownership of land entails ownership of natural resources on the land (including the natural forests' trees), except when otherwise provided by law. Therefore, in Fiji, the State owns the mangroves growing in the State-owned foreshore lands.

The *State Lands Act* is administered by the Ministry for Lands and Mineral Resources, and specifically by the Department of Lands and Survey. Foreshores (and the soil under the waters of Fiji) are regulated by special provisions contained in Part V of the Act, requiring the Minister to administer Fiji's foreshores, specifically when approving leases in the public interest[11] and are managed by a special the Foreshores Unit within the Department. Although the Act does not expressly refer to mangroves, these special provisions can be inferred to effectively give the Ministry of Lands stewardship over mangroves, and responsibility to manage mangroves in the public interest.

4.2.1.2 State Acquisition of Lands Act

The State may acquire land for public purpose pursuant to the *State Acquisition of Lands Act [Cap 135].* Public purpose is defined broadly as *'the utilisation of land necessary or expedient in the interests of defence, public safety, public order, public morality, public health, town and country planning, or the utilisation of any property in such a manner to promote the public benefit'*[12]*.* The power to acquire land is vested in an 'acquiring authority' that may acquire land in fee simple or for a term of years in consideration for payment of compensation as required[13].

The Act's definition of 'public purpose' may not expressly refer to environmental conservation however, it can be inferred to extend to environmental protection and conservation purposes and used, for example, for the acquisition of land adjacent to environmentally significant mangrove areas in the context of the implementation of a national mangroves management plan. It should be highlighted however, that never in the history of the enforcement of the Act have these provisions been used to acquire state land for such purposes. An amendment to the Act may be required to achieve this outcome.

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[9] *State Lands Act 1946* (Cap 132).
[10] Section 2 of the *State Lands Act 1946* (Cap 132).
[11] Section 21 (1) of the *State Lands Act 1946* (Cap 132).*No lease of any Crown foreshore land or of any soil under the waters of Fiji shall be made without the express approval of the Minister and such approval shall not be granted unless the Minister declares that such lease does not create a substantial infringement of public rights'.*
[12] Section 2 of the *State Acquisition of Lands Act 1940* (Cap 135)
[13] Section 3 of the *State Acquisition of Lands Act 1940* (Cap 135).

4.2.2 Leasing of Foreshore Lands

4.2.2.1 State Lands Act [Cap 132] and State Lands (leases and licences) Regulations

The *State Lands Act* and the State Lands (leases and licences) Regulations regulate the sale and leasing and licensing of activities on State lands.

The power to approve leases and licences on State Land under the Act is generally vested in the Director of Lands[14]. However, leases of foreshore land or of any soil under the waters of Fiji are subject to special provisions[15] (Part 5). These leases require, inter alia:

- approval of the Minister[16], which may be granted following public notice, and consideration by the Minister of any objections raised[17], and subject to the Minister, declaring that that the lease does not create a substantial infringement of public rights; [18]
- the disclosure of the purposes for which such foreshore or soil is required; [19] and
- the payment of compensation for any rights that may be infringed by the lessee to the owner of any alienated or *iTaukei* land which adjoins the leased foreshore. [20]

The State Lands (leases and licences) Regulations creates nine classes of leases: agricultural, residential, commercial, grazing, industrial, dairying, tramway, quarry, and special purposes. [21] Standard lease conditions apply to some or all of the nine classes of lease are provided in sections 15 to 21 of the Regulations. Most conditions allow for the clearing of vegetation for the activities within the purpose of the lease. However, certain activities are prohibited, of which some are relevant to mangroves such as:

- General lease conditions[22] prohibits the lessee to dispose or sell any forest produce growing on the land with the prior consent of the lessor, or had obtained special conditions under the Forest Regulations
- The holder of an agricultural lease is not to fell trees or clear or burn bush or cultivate land within a distance of 7 metres from the bank of the river or stream[23]

Section 3 of the *State Lands Act* subjects the approval of sale, leasing and licensing agreements on State land to the requirements of any other legislation in force.

4.2.2.2 Rivers and Streams (Cap 136)

The Rivers and Streams Act is a short legislation that regulates the public's right of access to rivers and streams, and along their banks, except if another use was approved under the Town Planning

[14] Section 10 of the *State Lands Act 1946* (Cap 132). The power however is subject to sections 21, 22, 25 & 26 of the Act and any general or special directions of the Minister of Lands.
[15] Part V- Special provisions relating to foreshore land and soil under waters of Fiji, of the *State Lands Act 1946* (Cap 132).
[16] Section 21 (1) of the *State Lands Act 1946* (Cap 132).
[17] Section 21 (2) and (3) of the *State Lands Act 1946* (Cap 132).
[18] Section 21 (1) of the *State Lands Act 1946* (Cap 132).
[19] Section 22 (1) of the *State Lands Act 1946* (Cap 132).
[20] Section 22 (3) of the *State Lands Act 1946* (Cap 132).
[21] Section 7 of the *State Lands (Leases and Licences) Regulations 2007.*
[22] Section 21 of the *State Lands (Leases and Licences) Regulations 2007.*
[23] Section 14 (c) of the *State Lands (Leases and Licences) Regulations 2007.*

Act.[24] It is administered by the Ministry of Lands and Mineral Resources that provides additional rights to residents living adjacent to rivers and streams to apply for additional rights to extract water[25] and to erect permanent building structures, upon approval by the Minister or the Director of Lands[26].

Decisions of the Director of Lands on the matters discussed above may be appealed to the Minister[27]. Although not addressed in the Act, activities that may be authorised by the Department of Lands may also require approval from the TLTB and the Department of Environment (extractive activities are subject to EIA).

[24] Section 3 of the *Rivers and Streams Act 1882* (Cap136).
[25] Section 7 of the *Rivers and Streams Act 1882* (Cap136).
[26] Section 10 of the *Rivers and Streams Act 1882* (Cap136).
[27] Section 11 of the *Rivers and Streams Act 1882* (Cap136).

4.2.3 Designation of Foreshore Lands

4.2.3.1 The Land Use Decree 2010

Key Messages and Law Reform Options: The Land Use Decree 2010

- Foreshore lands, including mangroves forests they host, are owned by the State, giving the Minister of Lands a primary role in the management of mangroves
- The State is empowered to acquire land adjacent to significant mangroves areas for conserving the ecological, social and economic values of mangroves, pursuant to the power vested in the state to acquire land for public purpose
- The *State Lands Act* and State Lands (Leases and Licensing) Regulations generally require little consideration of environmental and social impacts in the decision-making process for lease, sale or licensing of State lands, including of foreshores. Some provisions are however, broad enough to allow interpreting the Act as requiring consideration for environmental and social impacts in the decision-making process, in accordance with policy direction
- The special provisions of the *State Lands Act* for foreshores and soil under the waters of Fiji requiring consideration for infringement of public rights were originally established to preserve public access to the sea, but in the current context, it should be interpreted more broadly to require consideration for public interest, including the preservation of the environmental, social and economic functions of mangroves ecosystems
- The *State Lands Act* expresses requirement for compliance with the provisions of any other legislation in force, such as forestry, environmental impact assessment and *iTaukei* land legislation has proved largely ineffective due partly to the absence of established procedures for intergovernmental consultation and coordination
- The Ministry of Lands and Mineral Resources, increasingly conscious of the value of mangroves and of popular concerns over the destruction of urban mangroves, has recently taken measures to address it. Standard operation procedures are adopted to ensure an effective intergovernmental coordination prior to the issuance of leases and licences on foreshores; and a moratorium on the approval of all new development applications on foreshores/mangroves land is applied, pending the release of the new Mangroves Management Plan

Consistent with Fiji's national mangroves management and other relevant policy direction as may be defined, the following options for legal reform through amendment of existing legislation are recommended for consideration:

- Amend the *State Lands Act* to expressly empower the Minister for Lands a stewardship role over mangroves, and mandating that foreshores be managed in the public interest and in close collaboration with the Department of Environment, Forestry, the TLTB and other relevant government authorities and customary land and *qoliqoli* owners
- The *State Lands Act* to be amended to make express reference to mangroves ecosystems in Part V
- The *State Lands (Leases and Licences) Regulation* to be amended to enshrine in the regulations the foreshores standard operating procedures, and prescribe:
  - Effective intergovernmental consultation with relevant government authorities (Environment, Forests, Department of Fisheries, *iTaukei* Affairs) and statutory bodies (including TLTB, NEC, Mangroves Management Committee, Integrated Coastal Management Committee) prior to the issuance of leases and other permits on foreshores
  - Effective public consultation process with customary rights holders and local communities
  - Consistency with the relevant policy directives and management plans relevant to mangroves, coastal management, forests, environment and natural resources and land use planning and zoning

State Lands, including foreshores, along with *iTaukei* land, may be designated for use under the *Land Use Decree 2010.* The objective of the *Land Use Decree* in relation to State Lands is *'to utilise designated State land with a view to achieving optimal return to the government'.* [28] The designated land is then registered in the 'Land Bank' [29] established by the Decree, and managed by the 'Land Use Unit' [30] established within the Ministry of Lands.

Although conservation may not at first be the obvious purpose for which the *Land Use Decree* was designed, a thorough evaluation of economic value of mangroves, accounting for their diverse benefits for fisheries, livelihood, climate change adaptation and mitigation enable using the Decree to lock in significant mangrove areas for conservation for up to 99 years under protected lease.

4.3 iTaukei Tenure Rights and Mangroves

Customary law is recognized in Fiji to the extent that it is consistent with statutes and the Constitution. The 2013 Constitution of the Republic of Fiji, continues to protect the customary rights and interest of *iTaukei, Rotuman and Banaban* land by their current customary owners[31] and all ownership of land, and all rights and interests in land, including land tenancies and leases that existed immediately before the commencement of the Constitution (when enforcement commences), shall continue to exist[32]. The 2013 Constitution affirms the "communal ownership of *iTaukei,* Rotuman and Banaban lands and access to marine resources[33]".

[28] Section 3 (1) of the *Land Use Decree 2010.*
[29] Section 7 of the *Land Use Decree 2010.*
[30] Section 8 of the *Land Use Decree 2010:* The Land Use Unit is responsible for the valuation of the land, issuance and renewal of lease, collection of rental and other matters that are related to the designated lands .
[31] Section 28, 2013 Constitution of the Republic of Fiji.
[32] Section 29, 2013 Constitution of the Republic of Fiji
[33] Section 27 (9)(g),, 2013 Constitution of the Republic of Fiji

4.3.1 Land Tenure

Key Messages and Law Reform Options: Land and Marine Tenure

- Customary landownership rights are entrenched in Fiji's legislation, subject to their control and administration by the *iTaukei* Land Trust Board for any commercial transaction (leases and licences)
- Customary rights over natural resources are preserved by law, including on state-owned foreshore lands
- A dual tenure system governs marine tenure, with *iTaukei* fishing rights preserved by law in customary fishing grounds and ownership of the foreshores and seabed vested in the State
- A *Qoliqoli* Bill was drafted in 2006, transferring all proprietary rights to and interest in *qoliqoli* areas within Fiji's fisheries waters in the *qoliqoli* owners, and establishing co-management framework. This bill was not enacted
- Designation of foreshore lands under the *Land Use Decree* could be used for the purpose of locking in the conservation of significant mangroves areas in accordance with a national mangroves policy and management plan

Legislative reform is recommended aiming at harmonizing the dual tenure system and establishing clear rights and responsibilities of the State and customary rights holders in foreshores and in-shore marine areas and supporting co-management arrangements. These arrangements would enhance transparency of both customary and formal decision-making processes, and address some key barriers to the effective implementation of customary right owners and statutory sustainable management of mangrove ecosystems resources measures.

The *iTaukei Lands Act [Cap 133*] gives legal recognition to *iTaukei* customary lands rights. It provides that *iTaukei* lands *"shall be held by native Fijians, according to native custom as evidenced by usage and custom"*[34]. The Act also enables the registration of customarily held land and establishes the *iTaukei* Lands Commission. Land is held in customary communal tenure, with the *mataqali* usually recognised as the land owning units[35].

The exercise of *iTauke*i ownership rights over their land is qualified by the control and administration of *iTaukei* land by the *iTaukei* Land Trust Board pursuant to the *iTaukei Land Trust Act* and regulations. The TLTB approves leases and licences on *iTaukei* land for the benefit of their owners if the land is not a native reserve and if the land is or will not be required by the customary owners for their own use, during the term of the proposed lease or licence[36].

Although ownership of land adjacent to foreshores traditionally extended to the foreshores and in-shore waters, the *iTaukei Lands Act* echoes the *State Lands Act* and expressly excludes customary land ownership of foreshores when defining *iTaukei* land as *'land which is neither State (formerly Crown) land nor the subject of a State nor iTaukei grant (…)*[37]'

iTaukei Land (Forest) Regulation *iTaukei* Land Trust corroborates the *iTaukei* customary right of access and use of natural resources, stating that *'any native fishing and hunting rights established by*

[34] Section 3 of the *iTaukei Lands Act 1905* (Cap 133).
[35] For more land tenure, see *' Land Tenure Systems in Fiji'* by the Department of Lands and Surveys (Ministry of Lands and Mineral Resources) accessed via http://www.lands.gov.fj/downloads/landtenuresystems.pdf
[36] Section 8 and 9 of the *iTaukei Land Trust Act 1940* (Cap 134).
[37] *iTaukei Lands (Amendment) Act No. 13 of 2002.*

native custom or to prohibit the cutting and removal from native land by any Fijian of any timber, reeds or other forest produce, which may be necessary for the construction or repair of a dwelling-house for the permanent abode of himself and his family, for the construction of temporary huts on any land lawfully occupied by him, for the upkeep of his fishing stakes and landing places, for firewood to be consumed for domestic purposes or for the construction and upkeep of any work for the common benefit of the native inhabitants of his village.' [38]

The *Forest Decree 1992* contains provisions for 'saving of customary rights' in forest areas such as the right to hunt, fish and collect fruits and vegetables growing wild, as well as the cutting or removal of forest products for domestic local use, without requirement for payment of fees or royalties[39]. These provisions however, only apply to un-alienated *iTaukei* land, and on alienated State and *iTaukei* land with the consent of the lessee[40]. They do not apply to nature reserves and forest reserves on *iTaukei* land, and interestingly do not expressly apply to un-alienated State land, the latter including un-alienated foreshore lands.

4.3.2 Marine Tenure

A dual tenure system governs marine tenure, with fishing rights preserved by law on customary fishing grounds (*qoliqolis*) and ownership of the foreshores and seabed vested in the State.

The *Fisheries Act [Cap 158]* under the '*Protection of iTaukei customary rights'* part, makes provision for the recognition of exclusive rights in *qoliqoli* through the establishment of a permit system. The *Fisheries Act* reserves, in principle, the rights to take fish without a permit to the members of the *mataqali* or other customary units whose rights have been duly registered[41] with the Fisheries Commission created by the Act[42] (hereafter referred to as 'resource owners'). Permits are issued at the discretion of the Commissioner of the *iTaukei* Fisheries Commission, after consultation with the rightful resource owners[43]. Such permit may exclude certain fish species, certain areas and/or certain fishing methods. In practice, in most cases, management and permits decision-making are left to the chief of the *qoliqoli* rights holder group alone, and with the requirement for a traditional give of *yaqona* or payment of a 'goodwill' fee. [44]

However, persons other than resource owners are not required to obtain a permit when fishing' with hook and line or with a spear or portable fish trap which can be handled by one person'[45]. This provision, in effect, authorizes any one to fish anywhere for subsistence purposes and undermines the principle of exclusive non-commercial fishing rights of customary resource owners. It also means that any taboo or customary fisheries management measures are not enforceable by law fish wardens or other enforcement officers.

Resources owners are not exempt from the licence requirement when fishing for trade or business.

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[38] Section 17 (1) of the *iTaukei Land (Forest) Regulations, iTaukei Land Trust Act (Cap 134).*
[39] Section 21 (a) of the *Forest Decree 1992.*
[40] Section 2 of the *Forest Decree 1992* defines *'Alienate land'* to mean '*land the ownership of which is held by a person other than the State and State and native land which has been leased to a person other than the State'.*
[41] Section 13 of the *Fisheries Act 1942* (Cap 158).
[42] Section 14 of the *Fisheries Act 1942* (Cap 158).
[43] Section 13 (1) of the *Fisheries Act 1942* (Cap 158).
[44] SPC Traditional Marine Resource Management and Knowledge Information Bulletin #5 April 1995, at http://www.spc.int/DigitalLibrary/Doc/FAME/InfoBull/TRAD/5/TRAD5_02_Cooke.pdf
[45] Section 13 (1) (a) of the *Fisheries Act 1942* (Cap 158).

4.4 Legal Mechanisms for Conservation

4.4.1 Customary Mechanisms for Conservation

Key Messages and Law Reform Options: Customary Mechanisms for Conservation

- There are a range of conservation tools available in existing legislation which may be used for the purpose of providing protection of mangroves
- The Conservation orders under the *Land Conservation and Improvement Act* are particularly suited to provide such protection to mangroves, as discussed below under the review of the *Land Conservation and Improvement Act*
- Express reference to mangroves may be included in the criteria for proclaiming conservation areas
- A new 'rehabilitation order' and 'offset order' may be added in the *Land Conservation and Improvement Act*

Traditional knowledge has maintained natural resources for centuries. Taboo, or temporary marine closure, is a common customary management practice in Fiji as in other Pacific islands. A taboo may be declared for various traditional reasons, including increasingly for natural marine resources conservation. Taboos are usually applied or used in the prohibition of fishing in certain marine areas, or on certain species of fish, but they may also be declared to preserve mangrove areas. Their revival is associated with the development of community–based resource management practices which are characterised by a combination of conventional science-based marine resource management and of traditional governance systems, based on traditional knowledge.

These customary coastal zone conservation and management measures are not enforceable by public enforcement authorities unless they coincide with breach of formal laws or by-laws.

4.4.2 Statutory Mechanisms for Conservation

Land conservation mechanisms established by law may be used towards the conservation of foreshores and of mangrove forests. They are briefly outlined below.

4.4.2.1 Forest Reserves and Nature Reserves under the Forest Decree 1992

In 1933, all mangroves were designated as Reserved Forest to be managed by the Forestry Department. However, in 1975 these Reserved Forests were de-notified, and all mangroves were placed under the jurisdiction of the Department of Lands and Survey as an integral part of the foreshore with a development objective.

The *Forest Decree* provides for 'forest and nature reserves' to be declared by the Minister, upon recommendation of the Forestry Board, on land which has already been reserved for public purposes, whether un-alienated State land, lands leased to the State or un-alienated *iTaukei* land (the latter to be subject to the prior consent of the owner of the land and of the *iTaukei* Land Trust

Board[46]). Alienated land may also be acquired for public purposes under the *State Acquisition of Land Act* and subsequently be declared as forest and nature reserve[47].

The exercise of customary rights (as specified) may be restricted on *iTaukei* land that is in a forest reserve or nature reserve[48].

Forest reserves shall be managed as permanent forest in order to provide, on a permanent basis, the optimum combination of benefits of protection and production of which they are capable[49].

Licences for up to 10 years (or more in certain circumstances) [50] may be issued to permit activities in forest reserves, such as to fell or extract timber; to take other forest produce; to take peat, rock, sand, shells and soil other than minerals as defined in the *Mining Act*; and to hunt or fish[51]. This last provision reduces the potential of forest reserves to provide protection for mangrove forests.

Nature reserves shall be managed for the exclusive purpose of permanent preservation of their environment, including flora, fauna, soil and water[52]. The Minister, upon recommendation from the Forestry Board may, however, abolish a nature reserve[53]. The Decree does not define any criteria which could motivate such decision.

Mangrove forests may be classified as 'protected forests' and benefit from special protection under the new draft Forest Decree that is expected to be passed by Government.

4.4.2.2 Conservation Orders under the Land Conservation and Improvement Act [Cap 141]

This Act makes provision for the conservation of land and water in Fiji, mainly for mitigating farming-related impacts. The Land Conservation Board appointed under this Act has wide powers to make conservation, closing and work orders which may include prohibiting the clearing of land and directing the carrying out of works for the conservation of the land or water resources[54]. The Minister may appoint Conservation Committees to advise the Board on matters relating to the conservation of land and water resources in the area for which the Committee is appointed.

A conservation order may prohibit, regulate or control the breaking up or clearing of land for cultivation or any other purpose; the grazing and watering of livestock; and the lighting of fires and burning of vegetation[55].

The Board also has the powers to make Closing Orders where the land has become degraded[56]. Once closing orders are issued, the occupation or cultivation of land, de-pasturing of cattle, and cutting or destroying of vegetation is prohibited[57].

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[46] Section 6 (1) of the *Forest Decree 1992.*
[47] Section 6 (3) of the *Forest Decree 1992.*
[48] Section 21 of the *Forest Decree 1992.*
[49] Section 7 (1) of the *Forest Decree 1992.*
[50] Section 11 of the *Forest Decree 1992.*
[51] Section 9 of the *Forest Decree 1992.*
[52] Section 7 (2) of the *Forest Decree 1992.*
[53] Section 6 (2) of the *Forest Decree 1992.*
[54] Section 5, 7, 8, 9 of the *Land Conservation and Improvement Act 1953* (Cap 141).
[55] Section 7 (2) and (3) of the *Land Conservation and Improvement Act 1953* (Cap 141).
[56] Section 8 (1) of the *Land Conservation and Improvement Act 1953* (Cap 141).
[57] Section 8 (2) of the *Land Conservation and Improvement Act 1953* (Cap 141).

Under a work order, the Board may require any owner or occupier of any land to construct and maintain on the land such works for the conservation of land or water resources[58].

The landowner or occupier can appeal to the Minister against an order. The Minister may reject or uphold the appeal, or modify the order[59]. Conservation or closing orders may be altered by the Board at any time. [60]

The Act does not however, go as far as to empower the Board to order restoration of areas that are degraded/damaged, unless restoration is contemplated in for certain types of works, including construct and maintain such works for the conservation of land or water resource'.

4.4.2.3 Conservation covenant under the National Trust of Fiji Act [Chap 265]

The National Trust of Fiji is a statutory body funded jointly by the Fiji Government and independent donors for **'the protection of Fiji's natural, cultural and national heritage[61]'**. The Department of Culture and Heritage administers the government funding for the Trust and manages the relationship with the Government. The National Trust undertakes a wide range of activities in its attempts to protect Fiji's heritage which includes heritage conservation, biodiversity conservation, science experiments, surveys and partnerships with communities and organisations[62].

The purpose of the National Trust under the Act includes promoting the permanent preservation for the benefit of the nation of those items, including lands (which include reefs), having national, historic, architectural or natural interest or beauty and to protect animal and plant life[63]. Its special powers include entering into an agreement with a landowner, either permanently or for a specified period to restrict the planning, development or use of the land[64]. Conservation covenants could potentially be used to protect mangroves as part of Fiji's natural heritage.

4.4.2.4 iTaukei reserves under the iTaukei Land Trust Act

The Act provides for land to be set aside as *iTaukei* reserve with the consent of the *iTaukei* owners. *iTaukei* reserves limits the *iTaukei* Land Trust Board's capacity to lease this land. Although not directly relevant to mangroves conservation, there could be potential for *iTaukei* reserves to contribute to the protection of mangrove forests areas where *iTaukei* land borders State-owned mangrove areas, if the latter was also protected.

4.5 Sectoral Legislation Regulating Activities which may Affect Mangroves

This section explores the regulation of sectoral activities, including fisheries, forestry, mineral extraction and agriculture, which may affect mangroves and their ecosystems.

[58] Section 9 (1) of the *Land Conservation and Improvement Act 1953* (Cap 141).
[59] Section 10 of the *Land Conservation and Improvement Act 1953* (Cap 141).
[60] Section 15 of the *Land Conservation and Improvement Act 1953* (Cap 141).
[61] The National Trust of Fiji website accessed via http://www.nationaltrust.org.fj/aboutus.html on 4th May 2012.
[62] *Ratu Mosese Volavola, The Heart Of Fiji's Land Tenure Conflict: The Law Of Tradition And Vaka Vanua, The Customary 'Way Of The Land'*, Crosetto (J.), Pacific Rim Law and Policy Journal, Volume 14, Number 1 (2005) p.71..
[63] Section 3 of the *National Trust for Fiji Act 1970* (Cap 265).
[64] Section 10 of the *National Trust for Fiji Act 1970* (Cap 265).

4.5.1 Regulation of Fisheries: *Fisheries Act 1942 [Cap 158]*

Key Messages and Law Reform Options: Regulations of Fisheries: Fisheries Act 1942 [Cap 158]

- The *Fisheries Act* was drafted in 1942 and does not establish the legal foundations for sustainable fisheries management required for responding to the contemporary pressures on fisheries stocks. In particular, it does not provide for the preservation of mangroves as essential fish habitat and nursing grounds
- The superposition of state and customary rights on intertidal and in-shore marine areas, without provision for the harmonization of these rights is detrimental to their effective management and should be resolved by legally-anchored collaborative management systems
- Although Fiji is recognised internationally for its collaborative management practice through Fiji Locally Managed Marine Area network (FLMMA), there is no solid legal basis for their development
- The Minister has broad discretionary powers which may be exercised without consultation or expert advice or consistency with fisheries management plans, and are not appealable
- Although the Act recognises *qoliqoli* owners' rights, the requirement for consultation is limited to the approval of permits. No consultation is required for the approval of licences. There are no provisions for enforcement of *taboo* or other customary fisheries management practices
- Recreational fishing is not regulated by the Act, and effectively anyone can fish for non-commercial purpose anywhere in the waters of Fiji, without regard for the rights of *qoliqoli* owners or fisheries management plan
- Enforcement of the provision of the Act is problematic due partly to the vastness and remoteness of marine areas to police and to human and financial resources constraints
- The Department of Fisheries is a member of the Fiji Locally Managed Marine Areas network which contributes to developing arrangements for collaborative fisheries management. There is, however, no legal foundation for these arrangements
- Gazetting of customary fishing rights owners management plan would enable their enforcement by fish wardens, however, some fishing rights owners are reluctant to this for fear of loss of customary management control and of flexibility
- Newly introduced Fisheries Decrees, namely the *Offshores Fisheries Management Decree*, the draft *Inshore Fisheries Management Decree* and the draft *Aquaculture Management Decree*, are to replace the *Fisheries Act*. The *Offshore Fisheries Management Decree* was passed in December 2012. The draft *Inshore Fisheries Management Decree* is most essential to mangroves ecosystems but is yet to be finalised and passed. It is understood that the current draft envisages provision for collaborative management and development plans for in-shore fisheries with customary fishing rights owners, but does not contain any express reference to the preservation of mangroves as fisheries habitat

Consistent with Fiji's policies and management plans, relating to fisheries, mangroves and other relevant policies, it is recommended that the issues identified above be addressed by legal reform, and particularly that:

- The draft *Inshore Fisheries Management Decree* provides the legal basis for collaborative marine management systems and for the recognition of customary fisheries management plans. These plans should be required to provide *inter alia* for the sustainable use and preservation of fish habitat, including mangroves
- The draft Aquaculture Management Decree requires special consideration for the impact of aquaculture on mangrove ecosystems

The *Fisheries Act* regulates a wide range of activities related to fishing and marine life within Fiji's waters. Fiji's waters are defined as *'all waters appertaining to Fiji and include all internal waters,*

archipelagic waters, territorial seas and all waters within the exclusive economic zone'[65]. '*Fish'* under the Act means *'any aquatic animal whether piscine or not, and includes shellfish, sponges, bêche-de-mer, sea-urchins, crustaceans and turtles and their eggs* [66].' The Act is administered by the Department of Fisheries, under the Ministry of Primary Industries[67].

The Act makes provision for the survey and registration of traditional fishing grounds (*qoliqoli*) by the *iTaukei* Fisheries Commission[68] discussed above. Fisheries are regulated through a system of licences and permits. Any person is required a licence for the taking of fish for the purpose of trade or business by any person, including *qoliqoli* owners[69], except *'a person who takes fish with a line from the shore or with a spear shall'* and a person who is exempt from the necessity of possessing such a licence by ministerial regulation. Licences are issued at the discretion of the licensing officer, and they are renewed annually.

Permits to take fish in *qoliqoli* are issued for a period of one to three years by the *iTaukei* Fisheries Commissioner after consultation with the Fisheries Officer and the relevant *qoliqoli* owners[70].

The Minister has broad powers under the Act including, the power to exempt any person from licensing requirements, and from the prohibition of certain fishing methods, such as the use of dynamite or any other explosives for the purposes of catching fish. The Minister may, on the other hand make regulations pertaining to the conservation and protection of certain fish stock, prohibition of areas, fishing equipment and their usage[71].

There is no provision for appeal from the decisions of the Minister or of licensed officers. An Appeal Tribunal is established by the Act, to hear appeals from the decision of the *iTaukei* Fisheries Commission on ownership of customary fishing rights[72].

The Act is enforced by fish wardens. Any licensing officer, police officer, customs officer, honorary fish warden and any other officer empowered in that behalf by the Minister, may enforce the act with powers of examination and detention.

[65] Section 2 of the *Fisheries Act 1942* (Cap 158).
[66] Section 2 of the *Fisheries Act 1942* (Cap 158).
[67] The Departments of Fisheries and Forests have always been identified as Departments falling under the Ministry of Fisheries and Forests. However, under the current Government Portfolios, they now fall under the Ministry of Primary Industries..
[68] Section 13 and 15 of the *Fisheries Act 1942* (Cap 158).
[69] Section 5 (2) of the *Fisheries Act 1942* (Cap 158),.noting that (a) a person who takes fish with a line from the shore or with a spear shall not be required to obtain such a licence.
[70] Section 13 (2) of the *Fisheries Act 1942* (Cap 158).
[71] Section 9 of the *Fisheries Act 1942* (Cap 158).
[72] Section 17 of the *Fisheries Act 1942* (Cap 158).

4.5.2 Regulation of forestry: the Forest Decree 1992

Key Messages and Law Reform Options: Regulation of forestry: the Forest Decree 1992

- There are no special provisions for mangrove forests in the current forestry legislation, and no effective recognition of customary rights on these forests which are not under customary land tenure
- The administration of mangroves forests by the Ministry of Forestry is inhibited by the absence of specific legal procedures for the recognition of the role of the Ministry of Forestry in the administration of mangrove forests, and a lack of intergovernmental coordination, specifically with the Ministry of Lands. This has resulted in significant mangroves deforestation due to non-compliance with forestry licence requirements
- The *Forest Decree 1992* does not reflect Fiji's Forests Policy Statement 2007 and its sustainable forestry approach; nor does it reflect the EMA 2005 which has come into force since the Decree was passed. At the time of writing this review, a new Forest Decree is in draft form and is expected to reflect the sustainable forest management policy principles, including special consideration for mangrove forests management

Consistent with Fiji's forestry policy, it is recommended that the issues identified above be addressed in the new draft Forest Decree, and particularly that:

- A conservation mechanism be established and adapted to preserve the multiple functions of significant mangroves forests, with express reference to mangroves policy and management plans, as may be developed or included
- The participation of the Department of Forestry in intergovernmental consultative management processes as may be established under the leadership of the *State Lands Act* or other legislation (such as a mangrove management legislation or regulation)
- Strict obligations for rehabilitation and/or offset of deforested mangroves to be included as standard licensing condition
- A code of best practice for mangroves management

Mangroves are trees and mangrove forests thus fall within the jurisdiction of the Department of Forestry, which was until the mid-1970's the lead Department for mangroves management.

The Decree is administered by the Conservator of Forests and the Forestry Board responsible to the Department of Forests under the umbrella of the Ministry for Primary Industries[73]. It regulates the commercial utilisation and management of forest resources by a system of licensing of prohibited activities[74]. Prior to the issuance of a licence, consent must be obtained from the land owner or their representative (the *iTaukei* Land Trust Board for *iTaukei* land and the Director of Lands for State land) [75]. Such licences may be issued with conditions which the licensing officer may think fit and in accordance with good logging practice. [76]

Most forests in Fiji are on *iTaukei* land except for mangrove forests which are mostly located in State land (foreshores). However, customary or subsistence harvest of mangroves, which are preserved by the Forest Decree as well as by the *State Lands Act*, is not regulated by the Forestry law.

[73] Section 3 and 4 of the *Forest Decree 1992.*
[74] Section 8 and 9 of the *Forest Decree 1992.*
[75] Section 8 and 9 of the *Forest Decree 1992.*
[76] Section 13 (1) (e) of the *Forest Decree 1992.*

The *Forest Decree* contains limited consideration for sustainable forest management: the creation of *forest and nature reserves* and reference to management in accordance with the National Code of Logging Practice. The *Forest Decree* does have provisions for damages and compensation but they do not expressly relate to any breach of environmental conditions. No provision is made for appeal of decisions by interested parties.

Forestry and logging activities require an EIA as stipulated in Part 1 Schedule 2[77] of the *EMA 2005.* The EIA requirement provides the opportunity to fully review and impose conditions for conservation management where relevant.

[77] Part 1, Schedule 2 (i) of the *Environment Management Act 2005.*

4.5.3 Regulation of Extractive Activities

Key Messages and Law Reform Options: Regulation of Extractive Activities

- The environmental impacts of mining operations, including mining waste management can cause significant damage to mangroves ecosystems. Major risks include erosion, contamination of land and water (both groundwater and surface water) by soil and chemicals, land disturbance and deforestation, leading to loss of biodiversity. The inadequate regulation of the extractive industry results in long-term social and economic costs far outweighing short-term financial benefits
- The legislation regulating the extractive industry currently in force in Fiji is old and is purposed to facilitate the development of the industry with minimum concern for sustainability and mitigation of social and environmental impacts
- The legislation regulating extractive industries in Fiji is old, development-oriented and does not provide for consideration of environmental and social impacts in decision-making, nor to requirements under other legislation. Extractive activities, including gravel extraction, are, however, expressly captured by Schedule 1 of the *EMA 2005.* Any development proposal for extractive activities requires approval by the EIA administrator pursuant to Schedule 2 of the EMA 2005 (except prospecting in some cases)
- There is no provision for public consultation of proposals for extractive activities under the *Mining Act*
- Quarrying activities, when undertaken on foreshores or on river banks are particularly detrimental to the health of adjacent mangroves ecosystems. The *Quarries Act* does not regulate possible impacts. Licencing of these activities is, however, ensured by the Ministry of Lands and Mineral Resources or the TLTB, as well as subject to EIA under the EMA 2005 and EIA regulations
- Compensation provisions of the Mining Act only benefit the persons entitled to the surface rights of the land, with no consideration for compensation to local communities for environmental degradation of land and water in the catchment areas of the mining operations, including on mangroves ecosystems
- The Minister for Lands and Mineral Resources is given broad discretionary powers, which can undermine the consistency of the mineral extraction's regulation

In accordance with Fiji's policies, including mangroves and integrated coastal management policies, it is recommended that the legislation regulating the extractive industry be reviewed to address the issues identified above, and particularly that it:

- Integrates Fiji's policy requirement for environmental and social impacts and for sustainable development, including mangroves/coastal zone management policies and relevant management plans
- Makes express reference to the requirement to comply with environmental management legislation and other relevant legislation
- Provides for intergovernmental consultation and coordination prior to decision-making
- Provides for effective and extensive public consultation processes of all population likely to be affected by the impact of the extractive operations, including LMMAs
- Reduces the discretionary powers of the Minister, and specifically removes from the *Mining Act* the power of the Minister to set aside the Act
- The *Quarries Act* should also be reviewed to establish clear responsibility over licensing and permit system and integrate consideration for reef to ridge impact

The extractive industry is increasingly becoming part of Fiji's economy. Gold, silver and cement represent the major part of production and export.

In Fiji, all minerals, including crude oil in all lands are the property of the State and the legislation is

administered by the Minister of Lands and Mineral Resources.

4.5.3.1 Mining Act 1966 [Cap 146]

Under the *Mining Act*, licences for mineral prospection and operations are issued by the Director, subject to approval by the Minister responsible for Mining[78].

Certain portions of land are closed to mining under section 11 of the Act, such as land within 60 metres of any water supply or any catchment area for water supply, Fijian villages, land for other public purpose and land within town areas and reserved forests.

Mining leases are issued, typically for seven to ten years duration, upon completion of the statutory requirements, including environmental impact assessment[79], environmental management plan and site rehabilitation plan and payment of a security deposit.

The Minister is given broad discretionary powers, including the extraordinary power to approve for the Director to set aside the provisions of the Act in granting a mining tenement to any person[80].

Part 3 of the Act provides for compensation and damages payable for damage to surface of land and improvements thereon to be paid by the mining tenement holder to 'person entitled to the surface rights of the land' (presumably the owner or occupier of the land). The amount of compensation is to be agreed between the holder of the mining tenement and the persons entitled to compensation. However, if the parties are unable to agree, the Director may assess the amount of compensation payable or likely to become payable. Compensation is not to be paid when the surface of land has been restored in accordance with Section 43 of the Act.

4.5.3.2 Quarries Act and the Quarries Regulation [Cap 147]

This short Act applies to the excavation of minerals not covered by the *Mining Act*, such as rocks, earth, clay, sand, soil, gravel, limestone or other common mineral substances as declared by the Minister[81]. Such quarrying is in some areas a major cause of mangrove ecosystems degradation.

The *Quarries Regulations* are extensive but their main emphasis is on work safety requirements on quarry sites.

Essentially, the Act empowers the Minister to prescribe regulations, including for the prevention of nuisances of all kinds, arising from quarrying operations and the treatment or crushing of any materials the product of quarrying operations, but does not establish a permit or licensing system.

In practice, the extraction of gravel and other minerals not covered by the *Mining Act* is authorised by the Ministry of Lands and Mineral Resources or, when the extraction occurs on *iTaukei* land by a licence issued by the TLTB by agreement with the Ministry of Lands and Mineral Resources.

[78] Section 5 an 18 of the *Mining Act 1966* (Cap 146): The Director may grant subject to directions from the Minister the following tenements, prospector's rights; prospecting licences; special prospecting licences; permits to mine; mining leases; special mining leases; special site rights and road access licences.

[79] Section 27 (f) of the *Environment Management Act 2005*

[80] Section 11 (3) of the *Mining Act 1966* (Cap 146).

[81] Section 2 of the *Quarries Act 1939* (Cap 147).

In all cases, extraction of gravel sands and other common minerals is subject to approval by the Department of Environment pursuant to the EIA process.

4.5.3.3 Petroleum (Exploration and Exploitation) Act 1978 [Cap 148]

The *Petroleum (Exploration and Exploitation) Act* regulates the issuance of licences for petroleum exploration and exploitation. There are three types of licences issued under the Act. Exploration Licences[82], Production Licences[83] and Pipeline Licences[84].

Any person, except a government officer, may apply to the Minister for Lands and Mineral Resources for these licences[85]. Apart from the other required information that an applicant is to provide, the application for these licences is to be accompanied by particulars for proposals of the work[86].

The State, in its own capacity or in conjunction with others, has the right to explore and carry out any operations to extract petroleum on any land without an exploration or production licence for purposes of scientific investigation, provided that there is no unreasonable interference with existing operations being carried out lawfully by others[87]. Every licence holder is compelled to take up good oil-field practices to prevent oil pollution on the environment[88].

4.5.4 Regulation of Agricultural Activities

Key Messages and Law Reform Options: Regulation of Agricultural Activities

- The legislation regulating agricultural leases does not make any provision for consideration of environmental or social impacts of agricultural activities
- The *Land Conservation and Improvement Act*, which purpose is essentially the conservation of land and water, is potentially and with the impetus of policy direction, a pivotal instrument for the preservation of healthy mangroves ecosystems

In accordance with Fiji's policies, including mangroves and integrated coastal management policies, it is recommended that the legislation regulating the agricultural activities be reviewed to address the issues identified above, and particularly:

- The Agriculture Landlords and Tenants Act (ALTA) be reviewed to require consideration of environmental impacts on mangroves when an agricultural lease is negotiated
- Ensure that mangroves management issues are considered in the decisions of the Land Conservation Board by appointing members of relevant statutory authority (Mangrove Management Committee) and reference to mangroves policies and ministries relevant to mangroves management
- The Conservation Committee created under the *Land Conservation and Improvement Act* includes members with expertise on mangroves

Cultivation of crops, particularly sugar cane, and livestock husbandry in lands situated adjacent to foreshores or in their catchment areas carry risks of environmental impacts detrimental to mangroves ecosystems, such as erosion, land water contamination and quality degradation, such as

[82] Part II of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).
[83] Part III of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).
[84] Part IV of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).
[85] Section 15, 25 and 37 of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).
[86] Section 15 (1), 25 (5)(c) and 37 of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).
[87] Section 4 of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).
[88] Section 62 of the *Petroleum (Exploration and Exploitation) Act 1978* (Cap 148).

the discharge of stale sugar cane mill, causing fish kills.

Most agricultural lands in Fiji are *iTaukei* land and are therefore, held in customary tenure subject to the *iTaukei* Land Trust Board control of commercial transactions. Leasing of land for the purpose of agriculture is regulated by the *Agricultural Landlord and Tenant Act [Cap 270](*ALTA). The Act essentially regulates the relations between landlords and tenants of agricultural land and their respective roles in relation to land use. The Act provides for a lease to include conditions, described ***as 'the term of the tenancy, a sufficient description of the land referred to in such instrument and such other conditions as may be agreed or prescribed'***[89], but no provision on consideration of environmental impacts of farming activities when an agricultural lease is approved. These are regulated by the *Land Conservation and Improvement Act [Cap 141]*. The Act provides for the establishment by the Minister of a Land Conservation Board with members representing key government departments relevant to land and water resources. The Board is empowered to make conservation, closing and work orders for the preservation of land and water resources, as was discussed earlier in the section on legal conservation mechanisms of this review[90]. The Minister is also empowered under the Act to appoint Conservation Committees[91] ***'****to advise the Board on matters relating to the conservation of land and water resources in the area for which the Committee is appointed.'*

[89] Section 8 (2) of *the Agricultural Landlord and Tenant Act 1967* (Cap 270).
[90] Section 6 (2) of the *Land Conservation and Improvement Act 1953* (Cap 141).
[91] Section 6 (1) of the *Land Conservation and Improvement Act 1953* (Cap 141).

4.5.5 Regulation of Maritime Transport Activities

Key Messages and Law Reform Options: Regulation of Maritime Transport Activities

- The development and operations of ports facilities and of ship traffic constitute immediate threats to mangroves ecosystems and the legislation does not expressly provide for environmental safeguards except for the control of pollution through discharges into the waters of the ports
- Any infrastructure developed in relation to the matters regulated under the *Sea Ports Management Act* is subjected to the approval of the EIA administrator, as are all developments likely to cause significant environmental or resource management impact. These developments fall also under Schedule 2 of the EMA as proposals which *(a)* could result in erosion of any coast, coastline, beach or foreshore and *(b)* result in the pollution of any marine waters, ground water
- Pollution control measures in the *Sea Ports Management Act* are only targeted at pollution discharges from vessels, an owner or occupier of a property (this is vague but it can be inferred that it means a property within the vicinity of the port or port waters) and an owner or occupier of land (again this is vague but it can be inferred that it means a land within the vicinity of the port or port waters) but is silent on pollution control of port infrastructures. Port facilities/infrastructures are subject to waste discharges permits under the EMA 2005

In accordance with Fiji's policies, including mangroves and integrated coastal management

- the location of ports and related infrastructures consider the mitigation of impacts on sensitive and important mangroves ecosystems, with reference to national mangrove policy and mangrove management plan
- compliance with the 'Standards for Effluent Discharge to Ports' be strengthened by taking the form of an enforceable permit or licence

In addition to their vulnerability to terrestrial pollution and coastal developments, including the port developments required for fisheries, trade of goods and other sea-based activities[92], mangroves are highly vulnerable to sea-borne pollution.

The *Marine Act 1986* is administered by the Fiji Islands Maritime Safety Administration (FIMSA) under the Ministry of Works, Transport and Public Utilities (Water and Energy).

The Department is responsible for all maritime matters within the waters of the Fiji Islands. It monitors international shipping within these waters and regulates inter-island shipping services in accordance with the requirements of the *Marine Act 1986* and subsidiary Regulations. The *Marine Act* is based on International Maritime Organization (IMO) Conventions, and encompasses technical legislation. The urgent need to revise this old Act, which fails to give consideration to any ship-borne pollution, has prompted this year the revision of the Act and the drafting of two decrees - the *Maritime Transport Decree* and the *Ship Registration Decree* – which are expected to address the gaps in the Act and reflect Fiji's obligations under the IMO conventions[93].

[92] The preservation of the coastal environment, margins of wetlands, lakes and rivers is a matter of national importance under section 3 (3) (a) of the *Environmental Management Act 2005*, and therefore requires environmental impact assessment.

[93] The conventions adopted under the auspices of the IMO fall into three main categories. The first group is concerned with maritime safety; the second with the prevention of marine pollution; and the third with liability and compensation,

4.5.5.1 Sea Ports Management Act 2005

The *'Standards for Effluent Discharge to Ports*' were developed in 1998, setting maximum allowable concentrations of heavy metals, chemicals and other pollutants which supported the enforcement of provisions, relating to the control of pollution under the *Maritime and Ports Authority of Fiji Islands Act*. However, there is no reference made of this Standard under the current *Sea Ports Management Act* and Regulations.

The Sea Ports Management Act repeals the *Maritime and Ports Authority of Fiji Islands Act* and the *Ports Authority (Validation) Act* (Cap.181A) and allows for the reorganization of the management of sea ports in accordance with the *Public Enterprises Act,* which in actual effect shifts the management of sea ports from a statutory body (as it was under the *Maritime and Ports Authority of Fiji Islands Act*) to what is termed in the Act as 'port management companies'.

Under the *Sea Ports Management Act* 2005, the effective management of ports and the approaches to ports is now vested in the Fiji Ports Corporation Limited.[94] The Act transfers the ownership of Ports Terminal Limited to the Fiji Ports Corporation Limited until such time when the privatization of Ports Terminal Limited is completed in accordance with Part 13 of the Act.

The Fiji Ports Corporation Limited and any other port management company that may be created under the *Sea Ports Management Act* has the power to grant licence to any person for the purpose of accessing a port or conducting commercial operations within a port or the approaches to a port[95]; give directions in relation to the berthing, mooring, or anchoring, and the method of anchoring, of any vessels in a port or the approaches to a port[96]; direct the removal of any vessel from any berth, station or anchorage to another berth, station or anchorage[97]; and regulate the movement of vessels generally[98].

The development and operation of ports infrastructures and the movements of ships carry significant risks for mangroves. The Act does not provide for environmental safeguards in the development and operations of ports but provides for the prescription of regulations relating to the prevention of oil, rubbish or other things being discharged or thrown into the area of a port or the approaches to a port[99].

The Sea Ports Management Regulations 2008 provides for the control of pollution. The Regulations ensure that vessels are not discharging oil or oily mixtures, noxious liquid substances and harmful substances into the waters of the port[100]. The onus is on the master of a vessel to ensure that

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especially in relation to damage caused by pollution. Outside these major groupings are a number of other conventions dealing with facilitation, tonnage measurement, unlawful acts against shipping and salvage, etc. (source: International Maritime Organization – at www.imo.org/about/conventions/Pages/Home.aspx

[94] Section 6(1), Sea Ports Management Act 2005

[95] Section 23(1), Sea Ports Management Act 2005

[96] Section 26(1)(a), Sea Ports Management Act 2005

[97] Section 26(1)(b), Sea Ports Management Act 2005

[98] Section 26(1)(c), Sea Ports Management Act 2005

[99] Section 48 (1)(o), Sea Ports Management Act 2005

[100] Regulations 101 (1), Sea Ports Management Regulations 2008

a) sewage is discharged into the waters of the port if the vessel is equipped with an approved sewage treatment plant and the conditions set out under the International Convention for the Prevention of Pollution from Ships 1973[101];

b) garbage is not discharged into the waters of the port[102];

c) ballast water discharged into the waters of the port is not contaminated[103];

d) bathroom and laundry waste discharged into the waters of a port do not come within the definition of oil, oily mixture, noxious liquid substances or sewage[104];

e) contaminated tank washings or cargo washings are not discharged from the vessel into the waters of the port[105]; and

f) refuses is not discharged overboard from the vessel or the scuppers of the vessel while the vessel is in a port[106].

The Regulations also ensures that an owner or occupier of a property shall ensure that no oil, oily mixture, spirit, any flammable liquid or harmful substance is discharged from that property[107] and an owner or occupier or land[108] shall not permit any sewer or drain on that land to discharge into the waters of a port except with the written approval of the port management company.

4.6 Cross-Sectoral Legislation Regulating Environmental and Natural Resources Management, Environmental Assessment, Pollution Control and Land Use Planning

This section analyses the cross-sectoral legislation regulating all developments and activities and their impacts on the environment, including on mangroves.

[101] Regulation 102 (1), Sea Ports Management Regulations 2008
[102] Regulation 103 (1), Sea Ports Management Regulations 2008
[103] Regulations 104 (1), Sea Ports Management Regulations 2008
[104] Regulations 105 (1), Sea Ports Management Regulations 2008
[105] Regulation 106 91), Sea Ports Management Regulations 2008
[106] Regulation 108 91), Sea Ports Management Regulations 2008
[107] Regulation 109(1), Sea Ports Management Regulations 2008
[108] Regulation 110(1), Sea Ports Management Regulations 2008

4.6.1 Environmental Management: Fiji Islands Environmental Management Act 2005 (EMA)

Key Messages and Law Reform Options: Environmental Management: Fiji Islands Environmental Management Act 2005 (EMA)

The EMA adopts a holistic approach to environmental management and establishes institutional arrangements and command and control tools for environmental management, environmental impact assessment and waste and pollution control.

- Fully implemented and enforced consistently, the EMA and subsidiary legislation would establish solid basis for mitigating the impact on mangroves of land and marine developments and activities
- The full environmental benefits intended by the Act are undermined in practice by insufficient human and financial resources and capacity, and sometimes will, for monitoring and enforcement, and by poor coordination between government departments. This is particularly detrimental to mangroves management, which by definition involves the administrative control of multiple government departments and authorities. Legal reform is not necessarily the answer for addressing these issues, but public awareness of development approval's condition and strengthening of the capacity of local governments, including through the development of Environmental Management Units at provincial level may be more effective. The appointment of persons or groups of persons outside the Department as inspectors, accompanied with appropriate training, should assist in achieving better monitoring, enforcement and compliance
- The scoping of the EIA is of paramount importance for the effectiveness of the whole EIA process. Requirement for cumulative impact assessment, and broad boundaries to enable the consideration of possible impacts on coastal zone should be systematic
- Increased awareness and effective participation of local communities – as opposed to rights owners only – in the EIA process would also contribute to improved monitoring and enforcement
- Some important features of the EMA have not to-date been implemented. The Environmental Tribunal is yet to be established and only very few Environmental Management Units have been created in ministries, and other national and provincial local authorities
- Appeal rights to the Environmental Tribunal Appeal cannot be exercised, pending its establishment. However, recent developments have taken place with the Environmental Management (Tribunal Rules) and Environmental Management (Fee) regulations passed in March 2013. The actual creation of the Tribunal should be prioritized

A revision of the EMA may be considered in order to:

- Require mandatory compliance with mangroves management policy instruments such as mangrove management plan, mangrove policy as part of the EIA process
- Nominate mangroves as a 'matter of national significance'
- Create an integrated coastal management and mangroves Committee within the Department, aligned to the Integrated Coastal Management and Mangroves Management Committee, with expertise and responsibility for screening development applications on these matters
- Require that the scoping of the EIA and the Terms of Reference adopt a 'reef to ridge' approach to environmental impact, and broaden the terms of reference of the EIA process accordingly
- Strengthen the public participation in the EIA process, in particular for consultation with relevant customary land and fishing rights owners and groups, and with local communities who may be affected by the development or activity considered
- Require the EIA approval prior to the issuance of any development or consent or permit on foreshores by the Department of Lands
- Establish an environmental law unit within the Department
- The DoE to require the establishment of Environmental Management Units in key Government Agencies, including Lands and Mineral Resources, Fisheries, Forests and Town and Country Planning. It should be accompanied by regulations prescribing the establishment of these agencies in each of these government agencies
- DoE to require the establishment of Environmental Committees in all facilities conducting activities which have an impact in coastal zones and mangroves

In the absence of specific mangroves legislation, the regulation of environmental management constitutes arguably the most effective instrument for the sustainable management of mangroves.

The *Environmental Management Act, 2005* came into force on 1 January 2008, together with the Environment Management (EIA Process) Regulations 2007 and the Environment Management (Waste Disposal and Recycling) Regulations 2007 ('Waste Disposal Regulations'). It is administered by the Department of Environment under the Ministry of Local Government, Urban Development, Housing and Environment.

The EMA is **'an Act for the protection of the natural resources and for the control and management of developments, waste management and pollution control and for the establishment of a national environment council and related matters'**. It consolidates and builds upon the previous set of ad hoc laws regulating specific environmental issues. The EMA is a progressive and comprehensive piece of legislation that supports the sustainable use and management of mangroves and includes:

- an integrated approach: the EMA provides for the protection of natural resources, as well as the control and management of developments, waste management and pollution control;
- the requirement for environmental impact assessment of a wide range of development activities and the establishment of an Environmental Impact Assessment Unit within the Department of Environment;
- the establishment of a National Environment Council, an intergovernmental and a multi-stakeholder body; the Council is mandated to establish a Resource Owners Committee to advise the Council on any environment matter affecting their resources and may appoint a committee for coastal zone management to prepare a coastal zone management plan;
- the requirement for environmental management tools: National Environment Report, National Environment Strategy, National Resource Inventory and National Resource Management Plan;
- the establishment of Units within the Department to support the implementation of the Act, including an EIA Unit, a Resource Management Unit, a Waste Management and Pollution Control Unit;
- Environmental Management Units in ministries, departments, statutory authorities and local authorities, established upon request from the Department;
- the establishment of an Environmental Management Committees in facilities upon request from the Department;
- the establishment of a pollution offence and permit system;
- the appointment of inspectors with broad powers to enforce the act; and
- provision for the establishment of an Environmental Tribunal.

The purposes of the EMA is (a) to apply the principles of sustainable use and development of natural resources; and (b) to identify matters of national importance for the Fiji Islands[109].

Matters of national importance for Fiji are defined at Section 3 of the Act, which provides that:

[109] Section 3 (2) of the *Environment Management Act 2005.*

'A person required to perform any function under this Act relating to the use and utilization of natural and physical resources must recognize and have regard to the following matters of national importance[110]:

a) the preservation of the coastal environment, margins of wetlands, lakes and rivers;
b) the protection of outstanding natural landscapes and natural features;
c) the protection of areas of significant indigenous vegetation and significant habitat of indigenous fauna;
d) the relationship of indigenous Fijians with their ancestral lands, waters, sites, sacred areas and other treasures; or
e) the protection of human life and health.'

Further, the EMA provides that **'A person performing a function under this Act relating to the use of natural resources must have regard to the following***:*

a) the traditional owners or guardians of resources;
b) the maintenance and enhancement of amenity values;
c) the intrinsic values of ecosystems;
d) the maintenance and enhancement of the heritage values of building and sites;
e) the maintenance and enhancement of the quality of the environment.'

Key features of the EMA that are also of particular use with regards to mangroves sustainable management are:

- The requirement for the screening of the environmental impact of all development activities or undertakings,[111]
- The requirement of a permit for facilities to (a) discharge any waste or pollutant into the environment; (b) handle, store, process, or control any hazardous substance; (c) produce or generate any waste, pollutant or hazardous substance; or (d) engage in any activity that may have an adverse impact on human health or the environment, unless the facility is issued with a permit.[112]

Those two features are discussed in some details below.

Environmental Assessment of Developments: The Environment Impact Assessment Process under the *Environmental Management Act 2005* and the Environmental Management (EIA PROCESS) Regulations 2007.

It is mandatory for every development proponent to apply to an approving authority for a decision to be made for an EIA before undertaking any work that will impact on the land, and its surrounding environment, upon which the development is proposed.[113] Part IV of the EMA sets out the process for EIA of development proposals, while the Environment Management (EIA Process) Regulations contain detailed provisions for implementing this process.

[110] Emphasis added for particular relevance to mangroves
[111] Part IV of the *Environment Management Act 2005*
[112] Part V of the *Environment Management Act 2005*
[113] Section 3(2) of the *Environment Management (EIA PROCESS) Regulations 2007*

The EIA process consists of three steps: screening, scoping and EIA report[114].

Step 1: Screening

Screening requires the 'approving authority[115]' to examine every development proposal received by it and determine whether the activity or undertaking in the development proposal is likely to cause significant environmental or resource management impact. Upon determination, the approving authority then categorises the development proposal as one of the three categories of developments defined by the Act[116], namely:

1. Developments that require an EIA under Schedule 1 Part 2 of the Act and must be sent to the Ministry of Environment (major developments).
2. Developments that require EIA and which must be processed by the approving authority pursuant to Schedule 2 Part 2 *of the Act*.
3. Developments that do not require an EIA unless required otherwise by the EIA Administrator.

Determination by the approving authority is guided by the definition of 'significant environmental or resource management impact' and a set of mandatory considerations including:

- the nature and scope of the activity or undertaking in the proposed development;
- the significance of any environmental or resource management impact;
- whether there exist any technically or economically feasible measures that would prevent or mitigate any adverse environmental or resource management impact; or
- any public concern relating to the activity or undertaking[117].

The definition of significant environmental or resource management impact, which in relation to a development proposal, means an impact on the environment, either in the context of the setting of the proposed development or in the context of the intensity of the proposed development's effect on the environment, and includes, but is not limited to-

a) the degree to which public health and safety are affected;
b) the degree to which the unique characteristics of the geographic area are affected;
c) the degree to which effects on the environment are likely to involve controversy;
d) the degree to which unique or unknown risks are taken;
e) the degree to which a precedent for future action is created;
f) the potential for cumulative environmental impacts;
g) the degree to which the natural functioning of the ecosystem is likely to be inhibited;
h) the degree to which a cultural, traditional, natural, scientific or historic resource maybe threatened;
i) the potential threat to the existence of protected and endangered species or their critical habitat;

[114] Section 28 (1) of the *Environment Management Act 2005.*
[115] Section 2 of the *Environment Management Act 2005* defines the 'approving authority' as 'Ministry, department, statutory authority, local authority or person authorised under a written law to approve the proposal'.
[116] Regulation 7 and 8 of the *Environment Management (EIA PROCESS) Regulations 2007.*
[117] Section 27 (2) of the *Environment Management Act 2005.*

j) the degree to which fish and wildlife resources of ecological, commercial, subsistence, and recreational importance are jeopardised; or
k) the extent to which one aspect of use of a resource may conflict or contrary with another aspect of use of that resource.

Proposals for developments which will impact on mangroves are to be submitted for approval to the EIA Administrator as major developments under Schedule 2, Part I of the Act, which include *inter alia:*

l) a proposal that could result in erosion of any coast, coastline, beach or foreshore;
m) 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; threatened or endangered species or its critical habitat or nesting grounds;
n) a proposal that could deplete populations of migratory species, including but not limited to, birds, sea turtles, fish, marine mammals;
o) 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;
p) 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; or
q) a proposal that could challenge or contravene established customary controls over the use of natural resources.

Step 2: Scoping

The primary objective of scoping is to identify possible environmental impacts which will require further assessments through the environmental impact report. Scoping involves site inspection and public participation[118]. The terms of reference for the EIA study are thereafter prepared, and may involve the participation of other lead agencies and stakeholders[119].

Step 3: EIA Report

The EIA Process Regulations describe in details the process for the EIA report. An EIA report must be prepared in accordance with the terms of reference[120] and provide for mitigation measures, management plan, rehabilitation plan where applicable, a monitoring plan and other prescribed matters[121]. There are provisions for consideration of social impacts, as well as account of indirect,

[118] Section 18 of the *Environment Management (EIA PROCESS) Regulations 2007.*
[119] Terms of Reference are prepared in accordance with Section (19) (1-5) of the *Environment Management Act 2005* and Section (19) of the *Environment Management (EIA PROCESS) Regulations 2007.*
[120] Section 29 of the *Environment Management Act 2005.*
[121] Section 32 (1) of the *Environment Management Act 2005.*

cumulative, long and short-term impacts[122].

The completed report is either reviewed by a review committee appointed by the EIA Administrator or the approving authority, or independently by a consultant appointed by the EIA Administrator[123].

The proponent must conduct one or more review meetings, for public consultation[124]. The EIA Administrator or the approving authority may then approve the report with or without conditions or recommend any additional studies to be undertaken or not approve the report[125].

The Act provides for appeal, whereby a person disagreeing with a decision of the EIA Administrator or approving authority in relation to the EIA report may within 21 days from the date of the decision appeal to the Environmental Tribunal[126].

4.6.2 Natural Resource Management: The *Endangered and Protected Species Act* (EPS) 2002 and Endangered and Protected Species Regulations 2003

Key Messages and Law Reform Options: Natural Resource Management: The Endangered and Protected Species Act (EPS) 2002 and Endangered and Protected Species Regulations 2003

- The EPS Act provides protection of the listed endangered and protected species only in their international trade. The Act therefore, does not give much protection to mangroves which are predominantly harvested for non-commercial use (subsistence use), or are degraded as a result of environmental impact of land or sea-based activities
- The vulnerability of mangroves formally recognised by their listing in the EPS Act should dictate their protection and sustainable management under other legislation

The Department of Environment has prime responsibility over the management of Fiji's natural resources. The Department's Resource Management Unit oversees the implementation of Fiji's natural resources management policies in compliance with Fiji's obligation under the multilateral environmental agreements to which it is a party. These multilateral environmental agreements include:

a) Ramsar Convention on Wetlands of International Importance;
b) Convention on Biodiversity (CBD);
c) Cartagena Protocol on Biosafety;
d) Nagoya Protocol on access to genetic resources and benefit sharing; and
e) Convention on International Trade of Endangered Species (CITES).

The legislation enabling the implementation of CITES at the local level is the *Endangered and Protected Species Act* 2002, and the Endangered and Protected Species Regulations 2003. The

[122] Section 18 (1) and 24 (2) of the *Environment Management Act 2005.*
[123] Section 30 (1) of the *Environment Management Act 2005.*
[124] Section 30 (2) of the *Environment Management Act 2005.*
[125] Section 31 (1) of the *Environment Management Act 2005.*
[126] Section 31 (4) of the *Environment Management Act 2005*, provides for the creation of the Environmental Tribunal, which, at the time of drafting this review, is yet been established.

purpose of the Act is **'to regulate and control the international trade, domestic trade, possession and transportation of species protected under the convention on international trade in endangered species of wild fauna and flora (cites) and for related matters.'** To achieve this objective, the Act implements a permit system, regulating the export and import of endangered and protected species that are defined at Section 3 and listed in Appendices and Schedules to the Act. Mangroves species are listed and therefore, protected under the Act.

Under the Act, no person must export or import any specimen mentioned in section 3, except with an export permit issued by the Management Authority.

Part III of the Act provides for the creation of the *Fiji Islands CITES Management Authority*, which advises the Government on its obligations under the CITES, and the *Fiji Islands CITES Scientific Council* which advises the Authority on export permits.

4.6.3 Waste Management and Pollution Control

While an important ecological function of mangroves ecosystems is its role as a natural waste water treatment plant, the increase in the production of solid and liquid waste and in the water pollution associated with a growing population and with agricultural and industrial activities goes beyond mangroves' absorption capacity and constitutes a major threat to the health of mangroves.

The key piece of legislation for waste management and pollution control in Fiji is the EMA (Part 5), which enables the implementation of the Fiji's waste policies. Many other laws regulate some aspects of solid and liquid waste on land and at sea, including the *Water Authority of Fiji Promulgation*, the *Conservation and Improvement Act*, *Sea Ports Management Act* and the *Public Health Act.*

4.7 *Environmental Management Act* - Waste management and Pollution control - Permits to discharge waste or pollutants

Key Messages and Law Reform Options: Environmental Management Act - Waste management and Pollution control - Permits to discharge waste or pollutants

- The sustainable management and use of mangroves in Fiji would benefit from a revamp of the land use planning and zoning legislation in order to provide a coherent and consistent approach to land use in Fiji, integrated consideration for environmental and social impacts of land use and consistency with national and provincial land planning policy instruments
- A national zoning system reflecting the economic value of mangroves (including the economic value of mangroves' environmental and social services) would remove the perverse incentive created by current cheap value of mangroves areas
- The *Town Planning Act* is old and the planning process it establishes does not enable public participation mechanism in the decision of establishing town planning schemes, nor mandatory considerations of environmental or social impacts, including on mangroves
- The *Town Planning Act* was drafted with a focus on town development, which limits its usefulness in protecting mangroves in rural and remote areas of Fiji
- The only provision in the *Town Planning Act* specifically referring to foreshores is found in the Schedule of the Act (Sections 8 and 9), which addresses 'matters which may be dealt with by general provisions in a town planning scheme', including for the 'Conservation of the natural beauties of the area', foreshores of harbours listed as one of its components
- Town planning schemes however, have the potential to provide the basis protection of foreshores/mangroves areas, should the local and national authorities be willing to prioritise mangrove protection
- The public interest is not supported by provision for appeal of the decisions on the grounds of public interest
- There are no provisions to judicial recourse to the decisions of the Minister

In accordance with Fiji's policies, including mangroves and integrated coastal management policies, the following changes to the legislation regulating land use planning may be considered:

- Require the development of a national strategic planning instrument. This national land use and zoning plan should reflect the national mangroves management plan and/or policy, as well as the Integrated Coastal Management Framework
- Require the development of provincial land use planning instruments, conform to the national strategic plan
- Establish effective public participation procedures in the development of planning instruments
- Contribute to the establishment of an integrated decision-making process for coastal areas, including foreshore land and mangroves ecosystems, including by a requirement for cumulative impact assessment of developments
- Establish a standardized approval process by defining a set of mandatory considerations for decision makers, including principles of sustainable development, rules of custom, climate change vulnerability, and relevant policies, including a mangroves policy and/or mangrove management plan, and an effective consultation process inclusive of customary landowners, local communities and community resource management groups
- Broaden the right to appeal decisions to land use planning and development control decisions to include a right to appeal on the grounds of public interest
- Give jurisdiction to the Environment Tribunal to hear appeals from the decisions of Minister

Section 35 (1) of the *EMA* provides that *'A facility must not (a) discharge any waste or pollutant into the environment; (b) handle, store, process, or control any hazardous substance; (c) produce or generate any waste, pollutant or hazardous substance; or (d) engage in any activity that may have an adverse impact on human health or the environment, unless the facility is issued with a permit.*'

Subsidiary regulations were enacted to enable the implementation of the Act. They are the:

a) *Environment Management (Waste Disposal and Recycling) Regulations 2007,*
b) *Litter Promulgation (2008)* and
c) *Litter (Amendment) Decree 2010.*

The Waste and Pollution Control (WPC) Administrator is empowered under the Act to grant the permits with conditions, refuse to grant or vary or suspend a permit or conditions of a permit.[127] There are five different permits under the regulations which apply to any facility that generates solid, liquid, hazardous or livestock waste or air pollutants. The Regulations emphasise these by providing in detail the process for application for these permits and the criteria upon which these permits are granted.

A requirement for the consideration of potential impacts on mangroves as part of the Waste permits' issuance process could contribute to the conservation of mangroves. Strengthening monitoring and enforcement capacity, a major impediment to effective waste management in Fiji, is also a prerequisite to preventing or mitigating the impact of waste on mangroves.

Cumulative impact of littering washed off from land or from sea vessels is very harmful to mangroves. The legislation adopts a 'carrot and stick' approach, with penalties for emitting waste.

4.7.1 Land Use and Planning

4.7.1.1 Fiji's Town Planning Act [Cap 139]

Economic development and demographic pressures in Fiji generate competing demand for land for housing, industrial activities, ports, commercial and tourism developments and resources extraction, which often involve foreshore lands and mangroves. The purpose of land use planning is to establish a rational process, enabling the optimum allocation of land to satisfy the competing demands in a sustainable manner. A national land use planning and zoning policy and enabling legislation are thus critical in preventing the unsustainable loss of mangroves.

In Fiji, land use planning is primarily governed by the *Town Planning Act*.[128] Responsibility for the implementation of the Act lies with the Director of Town and Country Planning, under the authority of the Minister for Local Government, Urban Development, Housing and Environment.

The Act regulates the scope, tools and processes for land use planning and for the approval of developments.[129] The main focus of the *Town Planning Act* is the growth of cities and towns, although it also shapes development outside of towns, including in hotels and resort areas. As most

[127] Section 36 of the *Environment Management Act 2005*
[128] The Subdivision of Land Act (Cap 140) regulates the creation and reconfiguration of allotments.
[129] Development is defined in the Act as any building works (excepting minor alterations) and change of use (excepting for a purpose incidental to dwelling). Section 2 of the Town Planning Act [Cap 139]

old legislation, the *Town Planning Act* is development-driven and essentially does not integrate consideration for environmental sustainability.

The main 'forward planning' tool provided by the Act is the 'town planning scheme[130].' Town planning schemes are developed in areas defined by a 'town planning area.' The Director or any local authority with the approval of the Director may apply to the Minister for the constitution of a town planning area '*in any area'* (s.6(1)).

Once a town planning area has been constituted, and pending the approval of a town planning scheme, developments in this area are restricted and require the permission of the local authority (s.7.1).

The general object of a town planning scheme is to control the development of the land and regulate traffic, transportation, disposition of commercial, residential, and industrial areas, proper sanitary conditions, amenities and conveniences, parks, gardens and reserves, and to make 'suitable provision for the use of land for building or other purposes[131]'. Town planning schemes are prepared by local authorities[132], and approved by the Director[133]. Local authorities are responsible to 'enforce and carry into effects schemes[134].'

Land use changes are regulated through a process of development approval. Development is defined in the act as any building or rebuilding and any use of the land which is 'materially different from the purpose for which the land or building was last being used[135].'

The Director for planning has significant discretionary powers under the Act with provision for appeal. Decisions of the Director on Town Planning Schemes and decisions on development applications may be appealed to the Minister within 28 days of notification. The Town and Country Planning Advisory Committee advises the Minister on appeals[136]. The right to appeal is, however, restricted essentially to local authorities, and persons with 'interest in the land[137]. Objectors, defined restrictively as owners and occupiers, may appeal a development application decision. There are no 'open standing-type' right of appeal based on the recognition of public interest, and the decisions of the Minister are final[138].

4.7.1.2 Subdivision of Land Act [Cap 140]

The *Subdivision of Land Act* regulates planning and development outside of towns. The Act excludes un-leased State land, urban areas under the *Local Government Act*, and native reserves under the *Native Trust Land Act*[139].

[130] Part II of the Town Planning Act [Cap 139]
[131] Section 16(1) of the *Town Planning Act [Cap 139]*
[132] Section 18 of the *Town Planning Act [Cap 139]*
[133] Section 26 (1) of the *Town Planning Act [Cap 139]*
[134] Part III of the *Town Planning Act [Cap 139]*
[135] Section 2 of the *Town Planning Act [Cap 139]*
[136] Section 5(1) of the *Town Planning Act [Cap 139]*
[137] Section 5(2) of the *Town Planning Act [Cap 139]*
[138] Section 5(1) of the *Town Planning Act [Cap 139]*
[139] Section 2 of the *Division of Land Act [Cap 140]*

The Act contains very little details on the application and approval process, and on guidance for the Director’s decisions. It is the Director’s discretion to decide whether a proposed development is 'undesirable' or 'unsuitable.'

PART 5: NEXT STEPS

Key Findings and Recommendations for Policy

5.1 Key Findings of the Policy Review

The review has provided stocktaking of the current mangrove policies relating to mangroves, its use and management. The key findings of the review are presented below:

5.1.1 Mangroves in Fiji

Mangroves are extremely important to all local communities that utilize mangroves for firewood, construction materials, tools, medicines, dyes, and other products. More generally, the principal uses of mangroves may be classified as: traditional uses, sustenance of the capture fisheries, fuel wood production, shoreline protection, sewage processing, preservation for science/education and aesthetics, conversion for alternative uses. Estimates of mangrove areas are varied. In 1990, mangrove area was estimated at 41,808 hectares while in 2010 was estimated at 37,980 hectares. This shows a loss of mangrove cover of almost 4,000 hectares over this period.

Despite the ecological importance of mangroves and its mangroves in providing for the livelihoods of coastal dwellers, mangroves, particularly around urban and peri-urban areas, are under on-going pressure from unsustainable harvesting, future reclamation and development, overexploitation, pollution, waste disposal and their conversion for squatter settlements, housing, industrial and tourist development, in particular in urban areas.

5.1.2 Mangrove Management and Governance

In Fiji, there is no single government body or institution that deals specifically with mangroves. The Lands and Survey Department has been the custodian of mangrove resources of the country. The Forestry Department is responsible for issuing and regulating licenses for the commercial felling of mangroves for firewood or timber via the Forestry Act. There is no legal framework covering illegal felling or overexploitation of timber for subsistence use. The Fisheries Department is responsible for issuing licenses to fish in coastal waters via the Fisheries Act (1991), while the Lands and Survey Department is responsible for foreshore land and reclamation of mangroves. The Department of Environment (DoE) through the Environment Management Act (Government of Fiji 2005) has the responsibility and duty to protect mangroves and associated biodiversity through the application of environment impact assessment (EIA) for all proposed foreshore developments.

In addition to the government departments having some mandate on mangroves, other key decision-making bodies in the form of committees are housed under the Department of Environment. These decision-making bodies include: the National Environment Council (NEC), Fiji National Biodiversity Strategy and Action Plan Steering Committee (FNBSAPSCC), Protected Areas Committee (PAC), Integrated Coastal Management Committee (ICMC), and Mangrove Management Committee (MMC).

The involvement of a number of government departments over mangroves and the absence of a legal or policy framework stating which authority is responsible for the management of mangroves

may be viewed as a contributing factor to the low priority being given to mangroves and the continued degradation of the resource. Additionally, this may also result in the poor management and conservation of mangroves.

5.1.3 Key Challenges for Management and Administration of Mangroves:

Key challenges affecting the management and administration of mangroves include:

- **The absence of a specific legislation and policy on mangrove.** It was also highlighted that current legislation like the Environment Management Act, State Lands Act does not have provisions for the sustainable management of mangroves. Mangroves should be regarded as a matter of national importance with regulations developed and amendments made to existing legislation like EMA to this effect.

- **The absence of a clear definition on mangroves.** This should provide a clear demarcation as to which department or ministry is responsible for the resource, for instance, if it is a forest resource then Department of Forestry would be responsible. Or if it is included as part of the foreshore resource, then clearly, Ministry of Lands and Mineral Resources is responsible.

- **The fragmented policies and legislation related to mangroves shared amongst various government departments.** This could be seen from the discussion in 2.4. Given that Ministry of Lands is the custodian of mangroves; possibly they should play lead role in the administration of mangroves and be the coordinating agency (in consultation and collaboration with the other approval agencies) on administration and management matters on mangroves.

- **The uncoordinated process or system in place for approvals and decisions on mangroves with key government departments and ministries.** For instance, once an application for foreshore development application is received by the Ministry of Lands and Mineral Resources, the application is sent to Department of Fisheries, Department of Environment, Department of Forestry, Department of Town and Country Planning, Provincial administration, and relevant government Ministry for their comments. A 30-day period is provided for these government agencies to provide comments and those who fail to respond within this period are deemed to have no comments.

In ensuring that comments are received from the respective government agencies, it was highlighted at the national consultation meeting on 20th September, 2013 that the Mangrove Management Committee screen and comment on any foreshore development application. This would require that key approval agencies and technical expertise are represented at the Mangrove Management Committee. Alternatively, a technical committee having expertise to vet and comment on foreshore development application could be explored.

A more coordinated approach and approval process needs to be established by the Ministry of Lands and Mineral Resources to obtain comments from government approval agencies in a timely and coordinated manner.

- **The lack of communication and clear reporting mechanism on work and decisions relating to mangroves amongst government agencies.** A clear guideline or a Standard Operating Procedures (SOP) should be developed and made available at the Ministry of Lands and Mineral Resources to ensure approvals is expedited. This guideline or SOP should be communicated and disseminated to

all government approval agencies and municipal councils. The private sector should be also made aware of these approval guidelines to avoid confusion.

- **The lack of human resource capacity and the availability of technical expertise in major government agencies and Ministries.** For instance, there is one foreshore development officer in Lautoka and one in Suva who process foreshore applications in their respective divisions. At the Department of Environment, a minimal of one (1) or two (2) Environment Impact Assessment officers assess, review and contribute to key decisions on EIA reports, EIA aspects of foreshore development lease received by the Department.

The establishment of a Conservation Unit within the Ministry of Lands was suggested at the national consultation meeting. This will address the human resource constraint at the Ministry and should strengthen and complement the work of the foreshore development unit in making decisions relating to mangroves and its conservation.

- **The lack of awareness on the importance of mangroves at all levels - policy, decision-makers and communities.** Mangroves may be and is still viewed by many as readily available resource without economical value or importance. The lack of data available on the value of mangroves taking into consideration its ecological and economic value may be one of the contributing factors of uninformed decisions made on the clearance of mangroves.

An economic valuation of mangroves and the carbon sequestration study undertaken by the MESCAL Fiji project could provide some data in this aspect to enable people to know the importance of mangroves.

- **The lack of enforcement, monitoring and evaluation of existing policies, legislation and procedures in place.** This is often one of the biggest issues for government given budgetary and resource constraint. However, it is important to enforce legislation and regulation, and monitor and evaluate policies and procedures in place to ensure their intended outcomes are achieved.

Mangrove Policies

There is currently no formalized National policy and/or framework for mangrove use and updated mangrove resources management in Fiji. Mangroves are directly and indirectly covered in the existing policies. Few of the existing policies provide a good coverage of mangroves as in the forest policy, mangrove management plans and NBSAP.

The lack of enforcement and monitoring of the existing policies, having some relevance to mangrove use and management is a concern which may be contributing to the continuing destruction of our mangrove resources, particularly in peri-urban and urban areas at the cost of development. The fragmentation of current policies, having some relevance on mangroves needs to be relooked into and possible harmonization, consolidation or a separate stand-alone mangrove policy/framework be explored.

5.2 Recommendations and Options for Policy

Following the review and to ensure the sustainable use and management of our mangrove resources and ecosystems, the following options may and could be considered by Government:

5.2.1 Mangrove Policy: The development and formulation of a mangrove policy or a policy statement should be considered given the importance of mangroves. The policy or policy statement should look at the use, protection and management of mangroves in Fiji. More importantly, the policy should promote the management of coastal wetlands to ensure that the many benefits they provide are sustained allowing sustainable use amongst the various users of the resource and one that will leave an enhanced heritage for future generations.

The need and call for a national mangrove policy was recommended and supported by stakeholders at the national consultation meeting given the continuous and extent of degradation to mangroves.

Fiji could use the draft policy and legislation on wetlands for Jamaica as a guide and to be tailor-made for Fiji. Jamaica's draft policy and legislation on wetlands, covers mangroves and sets the following five goals in support of the overall aim of sustainable use of wetlands:

(i) Establish the guidelines by which wetlands can be developed in order to ensure their continued existence;
(ii) Bring to an end all activities carried on in wetlands which cause damage to these resources;
(iii) Maintain the natural diversity of the animals and plants found in wetlands;
(iv) Maintain the functions and values of Jamaica's wetland resources;
(v) Integration of wetland functions in planning and development of other resource sectors such as agriculture, forestry, fisheries, ecotourism, and waste management;

Specifically the policy for Jamaica seeks to:

- Provide protection against dredging, filling, and other development;
- Designate wetlands as protected areas;
- Protect wetlands from pollution particularly industrial effluent sewage, and sediment;
- Ensure that all developments planned for wetlands are subject to an Environmental Impact Assessment (EIA); and
- Ensure that traditional uses of wetlands are maintained;

Necessary amendments should be made to the relevant legislation should the mangrove policy for Fiji be adopted, clearly demarcating the roles to be played by the agency.

5.2.2 Mangrove Management Plan. The Mangrove Management Plan has been being reviewed by Dick Watling. The plan could address all issues related to the use, protection and management of urban mangroves clearly defining and identifying mangrove zones and hot spots. Additionally, a mangrove management plan could be tailor-made to address specific issues pertaining to urban centres and possibly peri-urban centres.

A mangrove management plan for rural areas which may also see the establishment of mangrove protected areas could see the involvement of communities themselves as resource managers and users.

The recommendations from the revised Mangrove Management Plan could be approved by Government for consideration and possible implementation.

5.2.3 Clear definition on mangroves. A clear definition of mangroves needs to be provided. This should provide a clear demarcation as to which department or ministry is responsible for the resource, for instance, if it is a forest resource then Department of Forestry would be responsible. Alternatively, if it is included as part of the foreshore, then clearly, Ministry of Lands and Mineral Resources is responsible.

5.2.4 Mainstream mangroves, mangrove conservation, protection and management. Mangroves, mangrove conservation, protection and management should be mainstreamed in key national policies and sectoral policies.

5.2.5 Government Ministry designated to oversee the management and administration system on mangroves. Given that no single government body manages and administers mangroves, it would be appropriate to designate a single and specific ministry or government department to be responsible for the management and/or administration of mangroves.

For Fiji, the Ministry of Lands and Mineral Resources, is the custodian of mangrove resources of the country. The Forestry Department is responsible for issuing and regulating licenses for the commercial felling of mangroves for firewood or timber via the Forestry Act. The Act does not regulate subsistence use of forest resources. The Fisheries Department is responsible for issuing licenses to fish in coastal waters via the Fisheries Act (1991), while the Lands and Survey Department is responsible for foreshore land and reclamation of mangroves. The Department of Environment (DoE) through the Environment Management Act (Government of Fiji 2005) has the responsibility and duty to protect mangroves and associated biodiversity which is exercised through the assessment of the environment impact of for all proposed foreshore developments.

Other government agencies responsible for mangroves include: Ministry of Primary Industries (formerly known as Ministry of Agriculture, Sugar and Land Resettlement), the iTaukei Lands Trust Board, the Department of Town and Country Planning and the Ministry of iTaukei Affairs (especially concerning traditional communal lands)

5.2.6 Better coordinated approach. Given the involvement of a number of government agencies and decision-making bodies within Government, there needs to be a coordinated approach in terms of better communication, better understanding the approval requirements and processes of the other government agencies, networking and information sharing amongst all stakeholders on mangrove use and management.

For instance, for foreshore applications, in ensuring that comments are received from the respective government agencies, it was highlighted at the national consultation meeting on 20th September, 2013 that the Mangrove Management Committee screen and comment on any foreshore development application. This would require that key approval agencies and technical expertise are represented at the Mangrove Management Committee. Alternatively, a technical committee having expertise to vet and comment on foreshore development application could be explored.

5.2.7 Mangrove Protected Areas. Protected areas are a widely used management tool that can help prevent mangrove loss and degradation in specific locations. The establishment of mangrove protected areas as identified in the NBSAP should be implemented and closely monitored and

reviewed. The establishment of new mangrove protected areas ones like Talailau could be considered. More importantly, the involvement of communities in such projects needs to be considered.

5.2.8 Standard operating procedures. Standard operating procedures for issuance of foreshore development lease should be developed. This should be widely circulated to key government stakeholders.

The foreshore development procedures/guidelines and processes should be re-looked into ensuring that a detailed and more comprehensive EIA is conducted prior to granting of approval for foreshore development lease.

5.2.9 Integration of role of mangroves in climate change adaptation and disaster risk reduction. These should be integrated in local and national adaptation plans. For instance, national adaptation and disaster risk reduction plans and actions should encourage the conservation and restoration of mangroves as part of 'natural coastal infrastructure', recognizing their role in reducing vulnerability and increasing resilience to climate change impacts.

5.2.10 Review development and environment policies. There is a need to review current environment and development policies to better reflect current environment issues, and in compliance with international conventions and agreements. Specifically, issues related on mangroves, the use and management of mangroves should be separately addressed in these documents as they are special ecosystems of high importance. Given also the focus on climate change issues and adaptation, the ecosystem or resource should be given high priority by Government and mangroves should be regarded as of “national importance”.

5.2.11 Implementation and monitoring of policies. The Department of Environment, Ministry of Lands and Mineral Resources, Department of Forestry, Department of Fisheries and other relevant government agencies need to closely monitor and implement the current policies they have in relation to mangrove use and management, such as conducting an Environmental Impacts Assessment of any development proposal on foreshore areas; compliance to buffer zone requirements.

5.2.12 Strengthening of capacity. Human resources, finance and capacity building of key government departments, ministries and institutions dealing with mangroves and mangrove ecosystems in their work programmes is also needed.

For instance, the establishment of a Conservation Unit within the Ministry of Lands and Mineral Resources was suggested at the national consultation meeting. This will address the human resource constraint at the Ministry and should strengthen and complement the work of the foreshore development unit in making decisions relating to mangroves and its conservation.

5.2.13 Increase and strengthen awareness and campaigns on mangroves. Increasing awareness across all sectors and at all levels on the importance of mangroves should be strengthened and encouraged. The launch of the media campaign on mangroves on May 26, 2013 by the Minster for Local Government, Urban Development, Housing and Environment is a good stepping

stone towards this initiative. The selection of a champion on mangroves to play a lead role and be the advocate on mangrove issues should also be considered.

Different forms of medium for campaigns should be developed for the respective targeted audience. For instance, for government officials at the ministerial and decision-making levels, a presentation and/or briefing on mangroves should be conducted to them. This could be followed up with the preparation of a policy brief and cabinet paper to be submitted through the Minister for Local Government, Urban Development, Housing and Environment and/or the Minister for Lands.

The findings of the MESCAL project on economic valuation, mapping, carbon assessment, etc. should be shared with all relevant stakeholders, government decision-makers and communities at all levels.

5.2.14 True value of Biodiversity Ecosystems Services (BES). An accurate reflection of the true value of Biodiversity Ecosystems Services (BES) will help policy makers make more informed decisions and ensure that the benefits derived from mangrove ecosystem services are taken into account. The findings of the economic valuation of the mangrove ecosystems and services for the Rewa Delta should be widely disseminated and shared with policy makers for better and informed decisions on future activities relating to mangroves. Additionally, this should assist decision makers to make more efficient and justified cost-effective choices. Management interventions will only be successful when backed up by sound data and a broader knowledge, understanding and awareness for the need of these interventions.

The key role of mangroves as carbon stores and sinks needs to be highlighted in national and international strategies that address climate change.

5.2.15 A broad range of management measures and tools should be promoted to maximize the benefits and help secure the long-term future of mangroves and the people who rely on them. These could include: increase restoration efforts to recover lost mangrove forests and restore their ecosystem services; a concept that can be introduced to investors/developers; ensuring the involvement of local communities in mangrove management; establishment of protected areas which are a powerful tool for ensuring the protection of mangrove biodiversity and should form part of a wider management regime; encouragement and support of mangrove ecotourism to generate income and employment for local communities and to improve outreach and education.

5.3 Key Findings and Recommendations for Law Reform

5.3.1 Key Findings of the Review of Mangroves' Legislative Framework in Fiji

Sustainable use and management of mangrove ecosystems in Fiji is hindered by the absence of clear policy direction and effective regulatory control. This situation does not enable the preservation of the important environmental, economic and social functions of mangrove ecosystems.

Key factors contributing to unsustainable use and management of mangroves have been identified through this review of legislation. They include:

- The fragmentation and complexity of the legislative framework for mangroves, which results in a lack of clarity on legal requirements, loopholes and overlaps and generally poor coherence
- Most of the laws which regulate activities which have potential impacts on mangrove ecosystems are old, development-oriented and fail to consider in any meaningful way environmental, social and economic impacts generally, and impacts on mangroves in particular[140]
- Compliance with existing regulatory requirements remains inconsistent, largely caused by insufficient resources and capacity for monitoring and enforcement
- There is an absence of guiding principles or technical expertise available for government department staff- in particular in relation to EIA and land lease - when dealing with proposed development involving mangroves, such as a mangrove policy or management plan
- The absence or ineffectiveness of processes for intergovernmental coordination has resulted in clearing of mangroves, in particular in urban areas, without full compliance with existing regulatory controls
- The threats to mangroves stem partly from developments and activities regulated by statutes, and partly from customary uses and activities undertaken by land and marine rights owners for non-commercial purpose and therefore, unregulated by legislation
- A lack of linkages and coherence between the national and the customary governance systems which apply to foreshores and in-shore fisheries further inhibit the effective management of mangrove ecosystems
- Customary conservation mechanisms and local management plans are not recognised under national law and therefore, not enforceable by national enforcement authorities, particularly fish wardens
- Fiji's land use planning legislation does not provide the tools required for coherent environmental planning and zoning which could support mangroves' sustainable management at national and sub-national levels

The value of mangroves ecosystems services is increasingly recognised by the Government and people of Fiji. This recognition of the value of mangroves has led to some positive developments, including the following:

- The Department of Lands, which has primary control over foreshores developments, and may be inferred to have stewardship of mangroves, has adopted standard operative procedures, instituting intergovernmental coordination processes prior to the issuance of foreshore leases and licences
- Fiji has pioneered the Locally Managed Marine Areas (LMMA) network, and Fiji LMMA (FLMMA) which includes all stakeholders is commended internationally as a model supporting the development of community-based marine resources conservation and management plan

- Cross-sectoral legislation regulating environmental and natural resources management waste and pollution control are generally more recent pieces of legislation. They establish command and control tools (such as permits and licensing systems) which, with some adjustment to ensure proper consideration for coastal and mangrove ecosystems in decision-making process, can give some protection to mangroves
- The current revision of pieces of legislation important in the regulation of the use and management of mangroves, including the *Forest Decree* (the draft Decree intending to provide a protection status to mangrove forests) and the *Fisheries* Act (with a draft In-shore Fisheries decree)
- The appointment of Environmental Officers at Provincial level under the impetus of the Ministry of iTaukei Affairs
- The Mangroves Management Committee was revived under the leadership of the Department of Lands, and a new National Mangroves Management Plan is being drafted.

5.4 Options and Recommendations for Law Reform

One option for law reform consists in the creation of a new stand-alone mangroves legislation or subsidiary legislation such as a set of regulations under the Environment Management Act (EMA) 2005. The legislation could be developed through an intergovernmental cooperative process and after broad public consultation. Regulations could also be developed under the State Lands Act to clarify the rules, standards and procedures for the approval of lease of foreshore lands. Subsequent review and amendment of existing mangrove-related legislation would be required to harmonise with the mangrove legislation.

The potential benefits of a mangrove legislation or subsidiary legislation include to:

- enhance legislative coherence;
- facilitate intergovernmental coordination;
- establish the basis for the consistent revision and interpretation of sectoral legislation and cross-cutting legislation;
- facilitate the implementation of Fiji mangrove management plan and/or mangroves policy
- provide clear rules for decision-makers, developers and civil society, including by reflecting the recommendations of the Mangrove Management Plan (such as protection of identified critical mangrove ecosystems, maximum loss of mangrove in each defined ecological area or province);
- set standard requirements for rehabilitation of mangroves degraded sites and compulsory offset of mangroves clearing (replanting);
- establish a regime for compensation of fisheries rights owners and for all persons suffering a loss as a result of the approval of developments and leases involving reclamation or clearing of mangroves under the respective Acts;
- Institute a transparent and (merits and judicial) unencumbered appeal process;
- provide a legal basis for the integration of climate change adaptation functions of mangroves in the legislation;

- highlight the linkages with international incentive mechanisms for maintaining the ecological functions of mangroves, such as the REDD+ mechanism under the UNFCCC, and the Access and Benefit Sharing (ABS) provisions under the CBD;
- establish the legal basis for cooperative and ecosystem-based management of foreshore lands and mangroves ecosystems, in accordance with policies;
- contribute to improved compliance by strengthening monitoring and enforcement of the law; and
- provide for deterring penalties for illegal clearing of mangroves.

Alternatively to what may be construed as an unnecessary additional layer in an already complex mangrove legislative framework, law reform could be confined to a comprehensive review and amendments of existing legislation, informed by the suggestions made in the thematic sections of this review of legislation. Existing broad provisions may be used strategically to regulate the use and management/conservation of mangrove, and amendments made where necessary. In summary, such legal reform should aim to:

- mandate the consideration of mangrove ecosystems in decision-making processes, in particular the approval of activities and developments;
- articulate clearly the scope of responsibility of each authority with regards to mangroves;
- provide for a coherent legislative framework for mangroves by ensuring consistency between statutes which are relevant to mangroves;
- improve coordination within government;
- reduce ministerial discretionary power;
- prohibit the harvesting of mangroves for commercial purpose;
- phase out the use of mangroves as energy wood;
- enable the implementation of mangroves-related management plans and policies;
- Make provision for a technical mangrove management committee to assist in the decision-making process. The assistance of such technical expertise is particularly needed in the EIA process (in definition of the terms of reference of the environmental impact report and in its review), and in advising the Department of Lands when assessing foreshore land lease applications;
- strengthen compliance and enforcement through management tools and command and control provisions complementing targeted public awareness campaigns and increased capacity to manage mangroves sustainably;
- provide for broad and effective public participation in decision-making processes; and
- enable the establishment and operation of collaborative and ecosystem-based management systems for mangroves, as may be directed by policy.

The effectiveness of any mangroves law reform will however, ultimately depend upon consistent compliance, which requires both the active engagement of communities and adequate capacity and resources for implementation and enforcement.

BIBLIOGRAPHY AND REFERENCES

Argrawal, T. Ota, et al. (2002). DEVELOPMENT AND CLIMATE CHANGE PROJECT: CONCEPT PAPER ON SCOPE AND CRITERIA FOR CASE STUDY SELECTION, Working Party on Global and Structural Policies Working Party on Development Co-operation and Environment.

Agrawala, S., Ota, T., Risbey, J., Hagenstad, M., Smith, J., van Aalst, M., Koshy, K and Prasad, B. (2003). Development and Climate Change in Fiji: Focus on Coastal Mangroves. Organisation for Economic Cooperation and Development, Paris.

Berdach,J.T. 2005. Country Environment Analysis: Mainstreaming Environmental Considerations in Economic and Development Planning processes. Asian Development Bank, Manila.

Cox, M., G. Arnold, and S. Villamayor Tomás (2010). A review of design principles for community-based natural resource management Ecology and Society, 15 (4).

Department of Environment.nd. Convention on Biological Diversity 1997 National Report to the Conference of the Parties. Ministry of Local Government, Housing and Environment, Suva.

Department of Environment. 2008. Environment Impact Assessment Guidelines. Government of Fiji, Suva.

Department of Environment.2007. Fiji Biodiversity Strategy and Action Plan. Department of Environment, Suva.

Department of Environment. 2010. Fiji Fourth National Report to the United Nations Convention on Biological Diversity. Department of Environment, Suva.

Department of Environment.2009. Implementation Framework 2010-2014 for the National Biodiveristy Strategy and Action Plan 2007. Department of Environment, Suva.

Department of Tourism. nd. Fiji Tourism Development Plan 2007-2016. Department of Tourism, Suva.

Donato, C. D., J. Boone Kauffman, et al. (2001). 'Mangrove among the most carbon-rich forests in the tropics.' Nature Geoscience: 5.

Dumaru, P.2011.Integrated Coastal Management Framework of the Republic of Fiji 2011: Opportunities and issues for managing our coastal resources sustainably. Department of Environment, Suva.

Evans, N.2006. Natural Resources and the Environment in Fiji: A review of existing and proposed legislation. SPREP, Samoa.

FAO, (2005). Policy and legislative frameworks for co-management. FAO, Italy.

FAO.2010. Global Forest Resources Assessment 2010: Country Report Fiji. FAO, Rome.

Fiji Forestry Department. (2011). Fiji REDD-Plus Policy: Reducing emission from deforestation and forest degradation in Fiji. Secretariat of the Pacific Community, Suva.

Govan, A. B, et al. (2008). 'Locally Managed Marine Areas: A Guide to Supporting Community Based Adaptive Management.' The Locally Managed Marine Area Network.

Govan, H. (2009). 'Community Conserved Areas: A review of Status & needs in Melanesia and Polynesia.'

Government of Fiji. 2008. People's Charter for Change, Peace& Progress: National Council for Building a better Fiji. Government of Fiji, Suva.

Grazia Borrini-Feyerabend, M. Taghi Farvar, Jean Claude Nguinguiri and Vincent Awa Ndangang. (2000). Co-management of Natural Resources Organising, Negotiating and Learning-by-Doing. Kasparek Verlag, Germany.

Howorth, R. 2006. Fiji Country Environment Profile. Government of Fiji, Suva.

Institute of Applied Sciences (IAS). (2002). A Background Paper prepared for the Fiji National Workshop on Integrated Coastal Management: April 9-11, 2002, Suva, Fiji.

International Waters of the Pacific Islands.2006. Fiji National Liquid Waste Management Strategy and Action Plan. Ministry of Local Government, Housing and Environment, Suva.

Kailola, P.nd. Thematic Assessment: The Convention on Biological Diversity and the Cartegena Protocol on Biosafety. Department of Environment, Suva.

Kailola, P, Vanualailai, P and Limalevu,L. 2008. The National Self Capacity Assessment Project-Fiji. Department of Environment, Suva.

Lane, M. B. (2006). 'Evaluating the governance of coastal resources and environments in Vanuatu.'

Leslie, D. and I. Ratukalou. (2002). Rural Land Use Policy for Fiji. Secretariat of the Pacific Community, Noumea, New Caledonia.

Li, T. (2002). Engaging Simplifications: Community-Based Resource Management, Market Process and State Agendas in Upland Southeast Asia. World Development 30 (2).

Ministry of Local Government, Urban Development, Housing and Environment. nd. Fiji National Solid Waste Management Strategy 2011- 2014. Government of Fiji, Suva.

Ministry of Finance, National Planning & Sugar Industry. 2007. Sustainable Economic and Empowerment Development Strategy (SEEDS) 2008¬2010 : "A Better Fiji for All". Ministry of Finance, National Planning & Sugar Industry, Suva.

Ministry of Fisheries and Forests. 2007. Fiji Forest Policy Statement 2007. Ministry of Fisheries and Forests, Suva.

Ministry of Fisheries and Forests. 2007. Fiji Forest Policy Statement: Summary. Ministry of Fisheries and Forests, Suva.

Ministry of National Planning. 2009. Roadmap for Democracy and Sustainable Socio-Economic Development 2010-2014. Ministry of National Planning, Suva.

Nand, N. (2011). Mangrove Ecosystem Management for Climate Change Adaptation and Livelihood - YEAR 1 PROGRESS REPORT August 2010 - July 2011 Project Planning Phase. Suva, Department of Environment.

Nunn, P., Ravuvu,A., Kay, R., and Yamada,K. (1993). Assessment of coastal vulnerability and resilience to sea level rise and climate change. Case study: Viti Levu. Phase 1: concepts and approach. Technical report, South Pacific Regional Environment Programme.

Ostrom, E. (2008). 'The Challenge of Common-Pool Resources.' Environment 50(4): 8-21.

Ostrom, E. (2009). 'A General Framework for Analyzing Sustainability of Social-Ecological Systems.' Science 325(5939): 419-422.

Phillips, A. (2002). Management Guidelines for IUCN Category V Protected Areas: protected Landscapes/ Seascape. Gland, IUCN, Gland Switzerland and Cambridge UK.

Secretariat of the Pacific Community. 2012. National Climate Change Policy. Secretariat of the Pacific Community, Suva.

Seidel, H. and P. N. Lal (2010). Mangrove management in Fiji: An overview. A report prepared for the Mangrove Ecosystem for Climate Change Adaptation and Livelihoods (MESCAL) project. International Union for the Conservation of Nature: 31.

Techera, E. J. and S. Troniak (2009). Marine Protected Areas Policy and Legislation Gap Analysis: Fiji Islands. Suva, IUCN Regional Office for Oceania.

Thaman, B. and B. Aallbersberg (2004). Initiating Integrated Coastal Management (ICM) in the Fiji Islands. Coastal Zone Asia-Pacific (CZAP) symposium.

Tuinivanua, O and Leslie, A. 2010. Fiji Forestry Outlook Study. FAO, Bangkok.

UN Habitat. (2011). Republic of Fiji The national housing policy: Affordable and decent housing for all. Ministry of Local Government, Urban Development, Housing and Environment, Suva.

Watling, D. (1985). A Mangrove Management Plan for Fiji Phase 1: Zonation Requirements and a plan for the mangroves of the Ba, Labasa and Rewa Deltas. South Pacific Commission, Suva.

Watling, D. (1985). A mangrove management plan for Fiji Phase 2: A plan for the mangroves of the Nadi Bay and Suva-Navua locales. South Pacific Commission, Suva.

Watling, D. and S. Chape (1993). The National Environment Strategy. Suva, Fiji, The World Conservation Union.

World Conservation Society. 2012. Ecosystem Based Management Plan: Wainunu District, Vanua Levu, Fiji. World Conservation Study, Suva.

Ellison, J.C. 2010. Vulnerability of Fiji's mangroves and associated coral reefs to climate change. WWF South Pacific Programme, Suva.