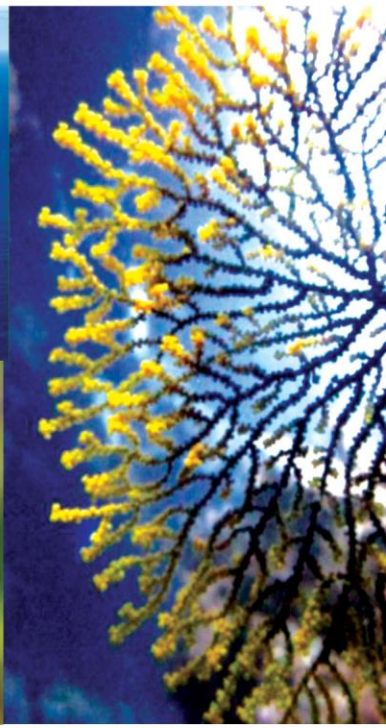
NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN FOR FIJI 2020 – 2025



The Fiji National Biodiversity Strategy and Action Plan 2020–2025 (NBSAP) is a national document recognised by Fiji's National Environment Council established under the Environment Management Act 2005. The NBSAP is also a requirement for all parties to the Convention on Biological Diversity (CBD) and its 2020 Aichi Targets. Implementation of the actions outlined herein will be undertaken through partnerships between various agencies within the Government of Fiji and nationally-based non-governmental organisations, working collaboratively with communities and the private sector.

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The 2020–2025 NBSAP was developed in collaboration and consultation between the Government of Fiji, non-government organisations, resource owners, the private sector and academic institutions.

The Government of Fiji acknowledges the contributions of individuals, experts who contributed to specific sections and organisations who played a key role in finalising the document by providing documentation, references and editorial advice.

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MINISTER'S FOREWORD

In 1992, Fiji joined 190 countries in signing the Convention on Biological Diversity (CBD) at the Rio de Janeiro committing to address the state of the world's biodiversity.

Our first National Biodiversity Strategy and Action Plan (NBSAP) was developed in 2003 and endorsed by Cabinet in 2007. The world is presently reeling under a severe biodiversity crisis. Extinction rates are estimated to be 1,000 times the background rate, and future rates could be 10,000 times higher. The incalculable loss of Biodiversity resulting from recent Bush fires in Amazon and Australia is another case in point with regard to how climate change is a catalyst for Biodiversity losses. In developing this revised and updated NBSAP (2020-2025), we have reflected on our progress, our successes and the gaps in our efforts towards effective and enduring conservation measures. It is necessary to continue working on addressing all drivers of biodiversity loss. Tourism, production and manufacturing industries, renewable energy development and the resilience of communities to address climate change are all impacted by how we choose to manage our natural resources and biodiversity.

The diversity and uniqueness of Fiji's flora and fauna is still being understood as species are discovered through new research and as our understanding grows of natural ecosystems and their interconnections. Many of these species are endemic to Fiji – found nowhere else on the Planet – and at times, only in a small area of our country. Sadly, we also hear of species that are no longer found and now considered locally or nationally extinct.

Nature is declining globally at rates unprecedented in human history — and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely. The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide. As a small island developing state vulnerable to the pressures of a globally changing climate, Fiji cannot afford to allow any cracks in our resilience – we may not be able to halt climate change in its immediacy but we can build our resilience to climatic changes by ensuring that our forests, mangroves, coral reefs, freshwater systems, wetlands and marine areas are thriving and healthy. Setting priorities for what biodiversity to conserve and where requires us to think about the world we want, a world in which most of the world's lands and waters function as diverse, resilient ecosystems. The NBSAP (2020–2025) seeks to strengthen the sustainable use, management and protection of the country's biodiversity. The NBSAP reflects the general vision and principles of Fiji's Green Growth Framework, which recognises the cross-cutting nature of many development issues and promotes working together in more integrated and inclusive ways towards sustainable development.

The NBSAP recognises that the collective efforts of the government, land/resource owners and consumers, scientists and researchers, and those who benefit from using our natural resources is crucial if we are to achieve our commitment under the CBD of halting biodiversity loss. The NBSAP further highlights practical ways forward for addressing gaps in our knowledge, particularly with regard to better understanding our specific conservation needs. The country targets and indicators, developed against the Aichi Targets and beyond, are designed to maintain the focus of the Strategy and will guide the NBSAP Implementation Framework.

Consultations and discussions with numerous stakeholders have been undertaken throughout the revision and updating of this national document. We acknowledge the active engagement and contributions of non-government organisations, civil society organisations and private sector partners and stakeholders, who have been supporting the Fiji Government in implementing the NBSAP.

The adoption of the NBSAP by all stakeholders and its integration into all sectors will stand our nation in good stead towards achieving sustainable and equitable economic growth and poverty alleviation. A great era of change and solidarity is upon us.

Dr Mahendra Reddy
Minister for Waterways and Environment

PERMANENT SECRETARY'S FOREWORD

As we step into the year 2020, our existing National Biodiversity Strategy Action Plan is nearing the end of its utility; of course it has sparked the formation of the new Action Plan.

This document is the product from a visionary process culminating in a bold, forward thinking plan focusing on environmental protection, conservation, institutional and Industry practice excellence reflected in our communities for the benefit of all Fijians.

The National Biodiversity Strategy and Action Plan NBSAP (2020 - 2025), is a mandatory requirement under the Convention on Biological Diversity. The NBSAP (2020-2025) will be used to convey Fiji's current status of biodiversity and will also direct us towards the urgency in protecting our biodiversity and secure a future for all Fijians (maintaining our quality of life and the long term health of our environment).

The requirement to integrate both conservation and sustainable use of biological resources into national decision-making, and mainstreaming issues across all sectors (of the national economy) and policy-making framework, are some of the complex challenges at the heart of the Convention. The leadership and the team at the Department of Environment will conduct its work through honouring environmental protection and conservation, and take an aggressive and bold approach towards achieving the environmental and conservation outcomes for Fiji.

The Department will seek and include guidance in establishing a pathway in achieving the strategic actions/initiatives, and key performance indicators. We will work within the available structures within the government by recognising every voice that supports our environment (of course within our available frameworks) and structures. I have encouraged our team to implement the plan in an inclusive, equitable, and diverse, manner as these priorities are vital to our Fiji's future and its success.

Scientifically, Fiji's biodiversity is highly regarded for its diversity, endemism and evolutionary adaptations, but it is also an inseparable part of our culture and how we identify ourselves as Fijians. Loss of biodiversity will greatly impact the quality of our lives and the long-term prosperity of our beloved nation, including the clean and fresh supply of drinking water, the fresh air that we breathe and the variety of fruits and vegetables that we are able to grow and consume.

We need to take immediate and sustained action to conserve our natural resources.

As you will see, this revised NBSAP (2020-2025) would reflect on how Fiji intends to fulfil the objectives of the Convention in light of specific national circumstances, and the related action plans will constitute the sequence of steps to be taken to meet these goals. The NBSAP (2020-2025) will help set priorities to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity.

I recognise that this is a living document and will be reviewed based on the targets agreed by parties at the CBD COP 15.

Hence, it will be crucial that we integrate, plan together, share and cooperate in meeting our goals.

My sincere gratitude to all our partners who took part in the consultations and discussions in revising and developing the NBSAP (2020-2025).

I am truly excited to see where this will lead us as we continue our Biodiversity Conservation Journey.

It's time to protect our environment (which includes our rivers and ocean), our natural resources, our land and marine species, and the best is yet to come!

:

Joshua Wycliffe

Permanent Secretary – Ministry of Waterways and Environment.

ACRONOYMS

ABS	Access and Benefit Sharing
BAF	Biosecurity Authority of Fiji
BIOFIN	Biodiversity Finance
CBAM	Community Based Adaptive Management
CBD	Convention on Biological Diversity
CHM	Biodiversity Clearing House Mechanism
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMS	Convention on Migratory Species
DD	Data Deficient
EEM	Enabling Environment and Mainstreaming (Focal Area)
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EMA	Environment Management Act
EPS	Endangered and Protected Species Act
FAO	Food and Agricultural Organization
FIST	Fiji Invasive Species Taskforce
FLMMA	Fiji Locally Managed Marine Area Network
FRCA	Fiji Revenue and Customs Authority
GCRMN	Global Coral Reef Monitoring Network
GEF	Global Environmental Facility
GMO	Genetically Modified Organism
GoF	Government of Fiji
CCA	Community Conserved Areas
ICM	Integrated Coastal Management
ICMC	Integrated Coastal Management Committee
IK	Improving our Knowledge (Focal Area)
IUCN	International Union for Conservation of Nature
LMMA	Locally Managed Marine Area
MEA	Multilateral Environmental Agreement
MMA	Marine Managed Area
MIS	Management of Invasive Species (Focal Area)
MWE	Ministry of Waterways and Environment
MoFis	Ministry of Fisheries
MoFor	Ministry of Forests
MOU	Memorandum of Understanding
MPA	Marine Protected Area
MPE	Ministry of Public Enterprise
MSAF	Marine Safety Authority of Fiji
NBSAP	Fiji National Biodiversity Strategy and Action Plan
NEC	National Environment Council
NFMV	Nature Fiji-Mareqeti Viti
NGO	Non-Government Organisation
NISSAP	National Invasive Alien Species Strategy and Action Plan
NRI	National Resource Inventory
PA	Protected Areas (Focal Area)
PAC	Protected Area Committee
PIP	Pacific Invasive Partnership
REDD+	Reducing Emissions from Deforestation and Degradation (+ Enhancing and Increasing Carbon Stocks)
SM	Species Management (Focal Area)
SIDS	Small Island Developing States
SPC	The Secretariat of Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
SUD	Sustainable Use and Development (Focal Area)
SWG	Species Working Group
TEEB	The Economics of Ecosystems and Biodiversity
TFRO	Traditional Fisheries Rights Owners
TLTB	iTaukei Land Trust Board
TOR	Terms of Reference
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	United Nations Framework Convention on Climate Change
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WCS	Wildlife Conservation Society
WHC	Convention Concerning the Protection of the World Cultural and Natural Heritage
WHO	World Health Organization

1.0 INTRODUCTION

Fiji is an archipelago of 330 islands, a third of which are inhabited. The country has a total land mass of 18,270 sq. km and an Exclusive Economic Zone spanning 1.3 million sq. km. of the South Pacific Ocean. The two largest islands are Viti Levu and Vanua Levu which make up 80% of the landmass.

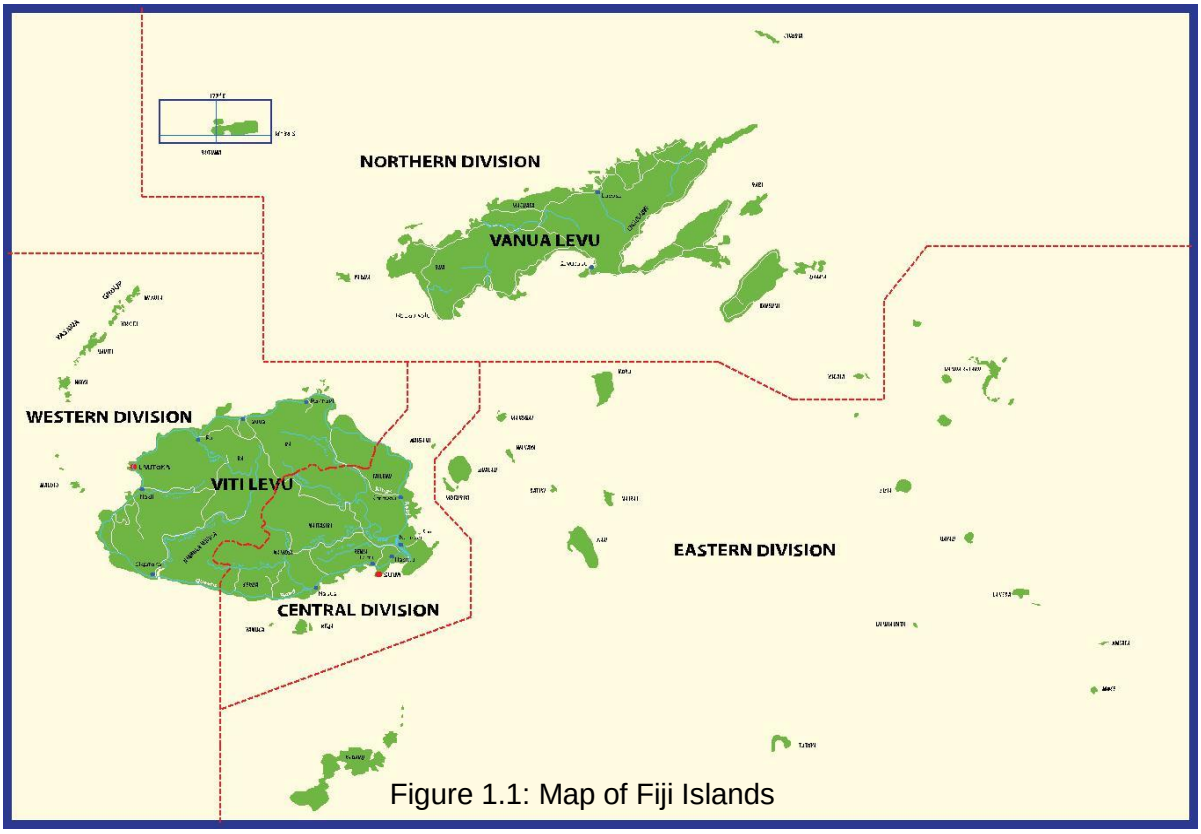


Figure 1.1: Map of Fiji Islands

Fiji consists of fragile island and ocean ecosystems where biodiversity and ecosystem goods and services play important roles in sustaining life and the economic well-being of the country. On 5 June, 1992, Fiji signed the International Convention on Biological Diversity (CBD) at the United Nations Conference on Environment and Development, joining 150 other countries and committing itself to:

(i) developing and implementing national strategies to conserve and use the components of biological diversity sustainably;
(ii) integrating biodiversity policy into relevant sectoral or cross-sectoral plans, programmes and plans; and
(iii) monitoring and periodically reporting on the status of biodiversity in the environment.

To realise these objectives, signatory countries were required to develop a National Biodiversity Strategy and Action Plan (NBSAP). The NBSAP is a national document that outlines national strategies and actions that will contribute to the halt of biodiversity loss.

Fiji's Fifth National Report to the CBD noted that the country's rich biodiversity contributes significantly towards food, agriculture, tourism, recreational sports and social activities, coastal protection, shelter, and role in traditional knowledge and practices (Government of Fiji [GoF], 2014a). However this biodiversity is also under growing pressure from threats, which range from overfishing, poor land use and agricultural run-off, unsustainable forest management practices, mangrove removal, poor waste management practices, and introduction of invasive alien species. In particular, habitat destruction in the coastal areas threatens mangroves, estuaries, coral reefs and foreshore ecosystems (GoF, 2014a).

(GoF and Secretariat of the Pacific Regional Environment Programme [SPREP], 2014).

1.1 Overview of the Fiji Biodiversity Strategy and Action Plan

Background

The Fiji NBSAP is a nationally executed Programme of Work required under Fiji's obligations to the CBD and is a national document recognised under the Environment Management Act 2005. The NBSAP also supports the following environment related Acts:

- Biosecurity Act 2008
- Endangered and Protected Species Act 2002 and Endangered and Protected Species (Amendment) Act 2017
- Factories Act [Cap. 99] 1971
- Fisheries Act [Cap. 158] 1942
- Forest Decree 1992
- Litter Promulgation 2008 and Litter Decree (Amendment) 2010
- Marine Spaces Act [Cap. 158] 1978
- Mining Act [Cap. 146] 1978
- Ozone Depleting Substances Act 1998
- Petroleum (Exploration and Exploitation) Act [Cap. 148] 1985
- Public Health Act [Cap. 111] 1936
- Rivers and Streams Act [Cap. 136] 1882
- Quarries Act [Cap. 147] 1939
- Radiation Health Decree 2009
- Sewerage Act [Cap. 128] 1985
- Town Planning Act (Cap. 139) 1978
- Water Supply Act (Cap. 144) 1985

As such, the NBSAP underpins the protection of Fiji's unique biodiversity and essential ecosystem goods and services, which support the national economy, livelihoods and local food security. Fiji's first NBSAP was developed by the Department of Environment (DoE) under the Ministry of Local Government, Housing and Environment in 2003 and endorsed by Cabinet in 2007. An Implementation Framework (IF) 2010–2015 was developed in 2010 to coordinate the implementation of the 2007 NBSAP. An extensive review and consultations with stakeholders formed part of the IF development process, which was assisted by a Steering Committee consisting of chairs of the seven NBSAP thematic areas: Forest Conversion Management, Invasive Alien Species, Inshore Fisheries, Coastal Development, Protected Areas, Species Management and Inland Waters. See 7.4.1 NBSAP Steering Committee for details.

NBSAP Review Process

At the tenth meeting of the CBD Conference of the Parties, held in October 2010, in Nagoya, Aichi Prefecture, Japan, parties adopted a revised and updated Strategic Plan for Biodiversity 2011–2020, including the Aichi Biodiversity Targets. Parties committed to:

- Reviewing, and as appropriate, updating and revising their national NBSAPs in line with the Strategic Plan for Biodiversity 2011–2020;
- Developing national targets, using the Strategic Plan and its Aichi Biodiversity Targets as a flexible framework and integrating these national targets into the updated NBSAPs. The national targets are developed taking into account national priorities and capacities with a view of also contributing to the collective efforts to reach the global Aichi Biodiversity Targets;
- Using the updated NBSAPs for the integration of biodiversity into national development, accounting and planning processes; and
- Monitoring and reviewing implementation of the NBSAPs and national targets, using indicators.

The reviews process involved in-depth national stakeholder consultations with government, non-government organisations (NGOs), civil society and community representatives.

The review process -

(i) integrates existing policies into the revised version;
(ii) aligns the Fiji NBSAP with the global CBD Strategic Plan and Aichi Targets (see Box 1.1);
(iii) uses the IF 2010–2014 as a guiding document, since this was the result of stakeholder agreements; and
(iv) recommends the formulation of a new Implementation Framework for 2020–2025

This review took into account the latest environment national strategies and reports, including:

- Fiji Low Emission Development Strategy 2018-2050
- Fiji National Adaption Plan Framework - 2017)
- Fiji's National Reports to the United Nations Convention on Biological Diversity (1st to 5th) Fiji Implementation Framework – Thematic Areas Annual Reports
- Fiji Environment Strategy (draft)
- Natural Resource Inventory Reports of the Republic of Fiji – 2010
- Fiji National Climate Change Policy – 2012
- Fiji REDD-Plus Policy - 2011
- Fiji Integrated National Waste Management Strategy 2016–2020 (draft)
- Forest Policy – 2007
- Green Growth Framework for Fiji – 2014
- Integrated Coastal Management Programme – 2002
- Mangrove Management Plan (2013)
- National Plan for Disaster Management – 1998
- National Policy Plan for Fijian Mangroves – 1986
- National Rural and Land Use Policy – 2005
- Fiji State of Environment Report - 2013
- Tourism Development Plan – 2007
- Water-shed Management Master Plan – 1998

Customary Ownership and Tenure Systems

One of the most distinguishing characteristics of Fiji is our land and sea tenure systems. Land in Fiji can be categorised as being composed of three main types: freehold, state and iTaukei land. Out of these about 9% of the land is freehold, 3% is state land and the remaining 88% is iTaukei land (Shah, 2004). Therefore, close to 90% of land space in Fiji is under traditional ownership. This NBSAP outlines strategies to support and work within this unique tenure system.

Customary ownership of land is recognised by the Constitution of the Republic of Fiji 2013. Customary land owners are given rights of access and use of marine resources in Fiji under the Forest Decree 1992, which secures the customary rights of iTaukei Fijians on iTaukei land and the right to exercise any rights established by custom such as hunting, fishing or collecting fruits and vegetables growing wild.

Similarly, the Fisheries Act 1942 prescribes rights given to customary landowners to fish and collect shellfish without a permit within their respective mataqali fishing areas registered by the iTaukei Fisheries Commission in the Register of iTaukei Customary Fishing Rights. This is complemented by the Environmental Management Act 2005, which provides recognition of the ties that the indigenous people have with their land. Fiji's coastal and inshore marine resources also have formal and customary legal frameworks.

NBSAP and Fiji's Commitments to Climate Adaptation and Mitigation

Fiji places a strong emphasis on the integration of the NBSAP to our existing climate change strategies and commitments as climate change is one of the main key threats to our biodiversity and livelihoods. Fiji along with other Pacific Island countries and territories already experience a high level of risk from effects of extreme weather and climate variability, and these risks will continue to increase or alter as a result of climate change. As Chair of COP23 Fiji took the centre stage as a global leader and voice in climate change. Our commitments to climate change are outlined in our first National Climate Change Policy which was released in 2012, our new National Climate Change Policy (NCCP) (2017), National Adaptation Plan and the latest Fiji Low Emission Development Strategy 2018-2050 under the Paris Agreement.

There is growing scientific consensus that an average global warming of 2°C above the pre-industrial level would constitute a dangerous level of climate change with serious implications for the achievement of Sustainable Development Goals, the objectives of the Convention on Biological Diversity (CBD) and other Rio Conventions. Global greenhouse gas emissions are on an accelerating trend and if left unchecked, could lead to a 6.4°C (11.5° F) temperature increase by the end of the century, exceeding conservative estimates.

It is widely recognized that climate change and biodiversity are interconnected, not only through the effects of climate change on biodiversity, but also through changes in biodiversity and ecosystem functioning that affect climate change. The carbon cycle and the water cycle, arguably the two most important large-scale processes for life on Earth, both depend on biodiversity—at genetic, species and ecosystem levels.

We must act now to identify and implement priority ecosystem-based adaptation and mitigation measures to help reduce the risk of species extinctions and limit damage to ecosystem functions and services. We need to invest in preserving and restoring habitats, especially those sensitive to climate change as an essential "insurance policy" to safeguard against climate-change impacts. (Fiji Low Emission Development Strategy, 2018).

The iTaukei Fijians still maintain profound connection with their marine resources and areas and have traditionally had a land and marine tenure system embedded in their culture. The tenure system in Fiji's coastal areas is well demarcated and delineated through the iTaukei Land and Fisheries Commission (TLFC), which was established in 1880 primarily to register iTaukei lands; establish ownership of such lands; and to classify customary roles and migration records of communal units. The TLFC is now concentrating most on being a custodian of the various registers and complying with regulations covered by the iTaukei Lands Act Cap 133 and the Fisheries Act Cap 158 Section 14–20 as follows: (i) to ascertain what lands and fishing rights areas are the rightful and hereditary property of iTaukei owners; (ii) to register the ownership of iTaukei lands and customary fishing rights; (iii) to adjudicate in disputes on the rightful ownership of iTaukei lands and customary fishing rights; (iv) to adjudicate in disputes relating to customary headships or title; (v) to provide clients with information relating to the iTaukei Lands and Fisheries Commission roles; and (vi) to look at the proper demarcation of boundaries and set up a Project Unit to survey the boundaries and register ownership to customary fishing rights, demarcate and set aside sites as village reserves, to survey the un-surveyed Native Land (Native Lands Act 1905, Fisheries Act 1942).

Other Relevant Multilateral Environment Agreements

Fiji has signed, ratified, accepted, adhered to and/or acceded to a number of MEAs in addition to the CBD. These include:

- Convention on the Conservation of Migratory Species of Wild Animals (CMS) and relevant Memoranda of Understanding
- The Memorandum of Understanding on the Conservation and Management of Dugongs and their Habitats throughout their Range (Dugong MOU)
- The Memorandum of Understanding on the Conservation and Management of Marine Turtles and their Habitats of the Indian Ocean and South-East Asia (IOSEA Marine Turtle MOU)
- The Memorandum of Understanding for the Conservation of Cetaceans and their Habitats in the Pacific Island Region
- Convention on Wetlands of International Importance (Ramsar)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits
- Nagoya Protocol on Access to genetic resources and the fair and equitable sharing of benefits arising from their utilization (ABS)
- United Nations Convention on the Law of the Sea (UNCLOS)
- The Cartagena Protocol on Biosafety to the Convention on Biological Diversity
- United Nations Framework Convention on Climate Change (UNFCCC)
- Convention Concerning the Protection of the World Cultural and Natural Heritage (WHC).
- United Nations Conventions on Combating Desertification (UNCCD)

Box 1.1

STRATEGIC PLAN FOR BIODIVERSITY (2011–2020) AND ITS AICHI TARGETS

Purpose:

The purpose of the Convention on Biological Diversity's Strategic Plan for Biodiversity 2011–2020 and the Aichi Targets is to promote effective implementation of the Convention through a strategic approach comprising a shared vision, mission, strategic goals and targets that will inspire broad-based action by all Parties and stakeholders. It will also provide a flexible framework for the establishment of national and regional targets and for enhancing coherence in the implementation of the provisions of the Convention and the decisions of the Conference of the Parties, including the programmes of work and the Global Strategy for Plant Conservation as well as international regime on access and benefit-sharing.

Vision:

"Living in harmony with nature" where "By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people."

Mission:

The mission of the new plan is to:

- Take effective and urgent action to halt the loss of biodiversity in order to ensure that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication;
- To ensure this, pressures on biodiversity are reduced, ecosystems are restored, biological resources are sustainably used and benefits arising out of utilization of genetic resources are shared in a fair and equitable manner; and
- Adequate financial resources are provided, capacities are enhanced, biodiversity issues and values mainstreamed, appropriate policies are effectively implemented, and decision-making is based on sound science and the precautionary approach.

Targets:

The Strategic Plan includes 20 headline targets for 2020 (the Aichi Targets), organised under five strategic goals. The goals and targets comprise both: (i) aspirations for achievement at the global level; and (ii) a flexible framework for the establishment of national or regional targets. Parties are invited to set their own targets within this flexible framework, taking into account national needs and priorities, while also bearing in mind national contributions to the achievement of the global targets. Not all countries necessarily need to develop a national target for each and every global target. For some countries, the global threshold set through certain targets may already have been achieved. Other targets may not be relevant in the country context.

NBSAP AND CLIMATE CHANGE - NATIONAL ADAPTATION PLANS (NAPS)

Fiji's revised NBSAP is aligned to the CBD Strategic Plan for Biodiversity 2011-2020, the Aichi Biodiversity Targets, and Climate Change Adaptation Goals. The Strategic Plan for Biodiversity serves as the overarching framework on biodiversity for the entire UN system. It seeks to halt the loss of biodiversity, secure the Earth's variety of life, and contribute to human well-being and poverty eradication. Implementation of the Strategic Plan is driven by national and subnational actions, with supporting activities at the regional and global levels. Of the Strategic Plan's 20 Aichi Targets, the following are of particular relevance when considering synergies between NBSAPs and National Adaptation Plans.

Target 10: By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.

Target 14: By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities and the poor and vulnerable.

Target 15: By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification. The Strategic Plan for Biodiversity can be used as a vehicle for achieving synergies at national level because actions to achieve Aichi Targets 10, 14 and 15 will contribute to climate change adaptation as well as biodiversity objectives.

(UNEP/CBD/COP/12/INF/29 – 29 September 2014)

2.0 OVERVIEW OF FIJI'S BIODIVERSITY

2.1 Definition of Biodiversity

The definition of biodiversity under the framework of Fiji's NBSAP, is defined as:

> "Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems (CBD Article 2. Use of Terms).

Biodiversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. It provides for food security, human health, the provision of clean air and water; it contributes to local livelihoods, and economic development, and is essential for the achievement of the Sustainable Development Goals (SDGs), including poverty reduction. In addition, it is a central component of many belief systems, worldviews and identities.

Conserving biodiversity is an essential part of safeguarding the biological life support systems in Fiji. All living creatures, including humans, depend on these life support systems for the necessities of life, including water, food and energy. These ecosystem goods and services are fundamental to our physical, social, cultural and economic well-being. Ecosystem services can be further divided into four sub-servicing groups:

i. Provisioning services (e.g. food, fibre, fuel, fresh water);
ii. Cultural services (e.g. spiritual values, recreation and aesthetic values, knowledge systems);
iii. Supporting services (e.g. primary production, habitat provision, nutrient cycling, atmospheric oxygen production, soil formation and retention); and
iv. Regulating services (e.g. pollination, seed dispersal, climate regulation, pest and disease regulation, waste purification).

This chapter will present the status, trends and threats to Fiji's biodiversity with reference to the key ecosystems and the species they support:

- Forest ecosystems
- Freshwater ecosystems
- Coastal and Marine ecosystems
- Terrestrial and Freshwater vertebrates and Invertebrates
- Terrestrial and Freshwater Vertebrates
- Marine species – Plants, Invertebrates and Vertebrates
- Threatened species – Marine and Terrestrial
- Endemic species

It is noted that the 2007 NBSAP was based on baselines developed through an extensive and comprehensive technical assessment process. The status assessments in this section were extracted from a variety of studies, in particular, the Natural Resource Inventory of Fiji (GoF, 2010a and b), the NBSAP IF 2010–2014 (GoF, 2010b), Fiji State of the Environment Report (GoF and SPREP, 2014), Fiji's Fifth National Report to the CBD (GoF, 2014a) and the State of Conservation in Fiji Country Assessment Report (SPREP, 2016), Fiji's Special Unique Marine Areas (MACBIO/IUCN 2018). The Department of Environment is currently undertaking a national Natural Resource Inventory and compiling Fiji's State of the Environment Report. **Note: This document will be updated accordingly as and when new information/data becomes available.**

2.2 Forest Ecosystems

2.2.1 Status of Forest Ecosystems

Fiji has a total forest cover of approximately 1,054,419 ha, which is 58% of the country's total landmass of 1.8 million ha. It is estimated that 85.3% of the forest (approximately 899,000 ha) is natural forests, with 2.4% pine (*Pinus carribaea*) and 5% of mahogany (***Swietenia** macrophylla*) plantations (Department of Forests [DoF] and Secretariat of the Pacific Community [SPC], 2010).

Fiji's forests are home to the majority of the country's endemic flora and fauna. At least 2641 species of plants are found in the forests, of which 35% are endemic, 5024 species of insect whilst many species remain unknown and there are around 164 known species of amphibians, birds, mammals and reptiles, of which in total 28.7% are endemic species (NRI GoF 2010a,b; DoF and SPC, 2010).

Fiji's forest is classified according to their altitudinal gradient. These include the high altitudinal forest at elevations above 800m above sea level, the middle lowland forest at 600m above sea level and lower that includes the coastal littoral forest evident along the branches and super-tidal coastal area that encapsulates the inner margins of mangroves and small uninhabited offshore islands.

The country's forests are classified according to their location and include the high (above 800m) altitudinal

forests, the lowland forests (0-600m). The coastal littoral forest is found along beaches and super-tidal coastal areas and the inner margins of mangroves and small uninhabited offshore islands (D. Mueller and Fosberg 1997).

Fiji's insect fauna comprises of 5,024 recorded species belonging to 25 orders and 349 families with many more species unknown to science (Fiji Government, 2010). The largest insect order (beetles) comprises of 61 families make up roughly 28% of insect fauna followed by Lepiddoptera (moths and butterflies) 24% (Fiji Government, 2010).

2.2.2 Pressures and Threats to Forest Ecosystems

According to data from the Food and Agricultural Organization (FAO, 2010) there has been an increase in overall forest cover in Fiji from 52% of land mass in 1990 to 56% in 2010. However, during this same period there was a decline in primary forest cover from 490,000 ha in 1990 to 449,000 ha in 2010. Thus the increase in overall forest cover has been due to increased areas of softwood and hardwood plantations (predominantly pine and mahogany), which now make up 11% of the forest area of the country (GoF, 2010c). Of the total forest cover, 89% is of indigenous forests, and primary forest areas continue to be cleared for agriculture expansion, infrastructural development, logging, mining and traditional use (GoF, 2017)

There has been a loss of certain forest types, some of which were once extensive in Fiji (GoF, 2010c). Fiji's remaining native forest is now mainly confined to areas of high rainfall and elevation and steep slopes, with much of the accessible lowland forest cleared by loggers and converted to plantations (Ibid). The exploitation of forests for timber has played a major role in deforestation and significantly affected forest quality and diversity (GoF, 2010c).

It is estimated that 140,000 ha of Fiji's native forests have been converted to non-forest land-use since 1967 (GoF, 2010c). The four main causes of this include:

- clearing of forests for commercial agriculture and rural development projects;
- commercial and subsistence farming;
- the spread of small settlements and urban growth; and the creation of infrastructure such as roads to service settlements (GoF, 2010c).

Loss of forest cover and fragmentation has ramifications for terrestrial ecosystems. The first relates to biodiversity, as loss of habitat is a major cause of species loss and extinction which greatly impacts livelihoods e.g. access to fuel wood for rural population. The second relates to the impacts of land clearance in increasing erosion, which has flow-on effects on freshwater and coastal ecosystems as a result of siltation and sedimentation. Furthermore, land use change to agriculture increases agricultural pollution and nutrient levels in freshwater and marine ecosystems.

2.3 Freshwater Ecosystems

2.3.1 Status of Freshwater Ecosystems

Fiji comprises a group of high islands of volcanic origin, with barrier reefs, atolls, sand cays and raised coral islands. There are four main types of freshwater ecosystems in Fiji:

- Rivers;
- Creeks;
- Peat Swamps; and
- Lakes.

Most of these are on the two main high islands. Owing to the topographic connectivity and the intermediary forest, ground water systems, the agricultural wetlands and estuaries are considered of critical importance and a requirement for a freshwater wetland management and a "mountain to sea" monitoring approach.

Freshwater lakes are generally restricted to mountainous regions. The largest lake (213 ha) is Lake Tagimoucia located on Taveuni Island. Fiji's streams and rivers are highly variable in size and length. On the larger islands, many short coastal streams have very small catchment areas and few side-branches. Further inland, many streams are branches of much larger systems with collective catchments covering thousands of hectares. On some of the smaller steep-sided islands (e.g. Taveuni), the streams are short, unbranched and also relatively steep, often being interrupted by high waterfalls that may act as barriers to fish dispersal.

Rivers usually contain high levels of endemic species and these species exhibit behaviours and life-history traits that are fostered by a number of environmental factors such as unmodified flows, free passage, natural vegetation cover, quality estuaries, or the absence of introduced species. The larger islands are well watered by rivers and streams. Viti Levu alone is drained by five large rivers (the Rewa, Navua, Sigatoka, Nadi and Ba rivers) and on Vanua Levu the Dreketi River the largest, at 55 km long. Other freshwater systems include constructed reservoirs. In Viti Levu, there are two major dams: Vaturu Dam (160 ha), which provides water for Nadi and Lautoka of Viti Levu, and the larger Monasavu Dam (670 ha), which provides hydro-electricity for the whole island of Viti Levu. A new dam (80 ha) has been built at Wainikavika Creek near Navua to provide water for rice irrigation

Freshwater streams provide a wide range of microhabitats for fish and other freshwater fauna: fast flowing habitats, slow flowing zones, deep and shallow

zones (Boseto, 2006, Boseto and Jenkins, 2006). Freshwater fish and macroinvertebrate biodiversity can be highly localised and even small lake or stream systems may harbour unique locally evolved forms of life (Jenkins, 1986). The number of different species in any given freshwater habitat can be high even if the population of the individual species are low (Boseto and Jenkins, 2006)).

2.3.2 Pressures and Threats to Freshwater Ecosystems

Similar to many other Pacific Island countries, threats to freshwater ecosystems in Fiji are due to human activities such as poor land use practices as a result of logging, burning and mining; catchment alteration primarily for irrigation, weirs or hydropower dams; pollution from urban areas, industry and mines; and invasion of exotic species such as water hyacinth (Eichhornia crassipes) and tilapia (Oreochromis mossambica), an introduced fish species (Boseto, 2006).

Poor agricultural and mining practices often result in loss of riparian habitat, erosion of soil and increased turbidity, which may disrupt feeding success of fish. Dams or weirs reduce or block flow to the extent that lower reaches of waterways can no longer support aquatic life. They also impede access to migratory species such as eels and amphidromous species that migrate between fresh and salt water habitats, which lose their migratory paths and cannot complete their life cycles (NIWA, 2015).

Other threats to freshwaters include habitat loss due to land reclamation, pollution, overfishing and the aquarium trade. Loss of fish habitat through development can cause a major loss to the biodiversity of the local area that has been affected (Ibid).

Most recent work has confirmed the importance of good riparian management, forest cover and fish passage. Jupiter et al. (2012) have convincingly demonstrated that the factors most strongly related to fish presence/ absence and abundance are: sub-catchment forest cover; connectivity; and the presence of downstream overhanging culverts.

The nature of the catchments is also variable. Some have been deforested and repeatedly burned and grazed, others have been over-planted with exotic trees such as pine and mahogany, while in a few cases the indigenous forest of the catchments has been largely left intact. Many streams drain from limestone and sedimentary rocks, while others drain from acidic volcanic rocks (SOCO, 2013).

2.4 Coastal and Marine Ecosystems

2.4.1 Coral Reef Ecosystems

2.4.1a Status of Coral Reef Ecosystems

Coral reefs and their associated ecosystems are fundamental to Fiji life, livelihood and cultural practices, providing goods and services such as food from fish, molluscs and algae, tourism benefits and shoreline protection (Gonzales et al 2015).

Fiji's coral reefs are some of the most extensive and diverse in the South Pacific, and consist of a wide range of reef types. Fringing reefs, barrier reefs, platform reefs, oceanic ribbon reefs, drowned reefs, atolls and near-atolls span over 10,020 sq. km. An average live coral cover of 45% (range 8–60%) was reported in 2008 (Morris and Mackay, 2008). The Cakaulevu barrier reef or Great Sea Reef, north of Vanua Levu, is exceptional in being one of the longest barrier reefs in the world (Lovell and Sykes, 2004; Wilkinson, 2008). Coral cover varies with reef type across the country, from 28% on Viti Levu's Coral Coast fringing reefs, to over 70% in the deep-water pinnacles of the Vatu-i-Ra Passage.

Reef systems are vitally important to the large proportion of the populace dependent on subsistence or small scale commercial fishing, and also to Fiji's extensive tourism industry. In 2000 and 2002, Fiji's reefs suffered a temperature-related mass bleaching event with the subsequent loss of between 40% and 80% of stony corals across the country. At this time the Global Coral Reef Monitoring Network (GCRMN) Fiji node was formed to coordinate a variety of data about current reef health from around the region (Lovell and Sykes, 2004). Annual monitoring of up to 15 sites has shown a faster than expected recovery from coral bleaching, and by 2011, the national average hard coral cover and diversity was higher than before the event, showing the resilience of reefs across the country.

2.4.1b Trends and Threats to Coral Reef Ecosystem

Pressures on Fiji's coral reefs can be categorised into those arising from global factors, including climate change, and Fiji-specific local factors (Bryant et al., 1998).

Global threat categories

Pressures on the health of coral reefs globally include factors associated with climate change, periodic storms and cyclones, coral diseases and predator outbreaks.

- **Climate change –** factors relating to climate change may have a negative impact on the health of Fiji's coral reefs and include increasing sea surface temperature, ocean acidification, and increased intensity of storms and cyclones.
- **Cyclones** may cause local breakage of corals on shallow reef tops, and can cause large-scale damage depending on their severity, while in many cases cyclones have had a protective effect by dropping water temperatures by a full degree or more (Sykes and Morris, 2007; Mangubhai, 2016).
- **Coral Health –** little coral disease has been observed on Fiji's reefs, probably due in part to their physical remoteness from large land masses and other reef systems. Higher incidence of White Syndrome has been observed since the 2000 coral bleaching episode, but this may be due to more intensive surveying of coral reefs, than to an actual increase in incidence (Sykes and Morris, 2007).
- **Predation** from invasive species including crown-of-thorns stars (*Acanthaster planci*) and coralivorous snails (*Drupella sp*.) occur across the archipelago in what appear to be regular outbreaks, probably linked to increasing coral cover. This has been best documented on the Suva reefs and in the Mamanuca Islands. Removal and poisoning of the Crown of Thorns have been tried in the Mamanuca Islands but with limited success (Sykes and Morris, 2007).

Local Threat Categories

Increasing population has created greater pressure on reefs from fishing (especially near urban centres) and caused the loss of marine habitats and higher levels of pollution. Threats to the reefs include:

- Watershed-based - **pollution / sedimentation** from developments and deforestation – e.g. mining, vegetation clearance for agriculture and forestry;
- **Marine pollution** (ports, oil terminals, shipping channels, agricultural pesticides and fertilisers, untreated sewage effluents);
- **Coastal development** (cities, settlements, airports, mines, tourist resorts);
- **Over-fishing** as a result of higher population density and use of destructive fishing techniques; and
- **Over-harvesting** of corals and marine fish for the marine aquarium trade.

While most of Fiji's offshore reefs are in a good and stable condition, with good resilience, many reefs close to inhabited shores show chronic stress arising from local pressures, particularly nutrient and sediment pollution, which have the greatest impact on inshore reefs (Lovell and Sykes, 2004). The proliferation of high-impact logging operations in smaller coastal watersheds of Vanua Levu and Viti Levu is one of the major drivers of freshwater and coastal degradation (Atherton et al., 2006).

In certain areas around the larger islands, high levels of sedimentation and nutrient pollution arising from agricultural practices have changed the ecology of the fringing reefs from coral-dominated to algal-dominated reefs. Mangrove clearance and conversion in some parts of Fiji is impacting on important breeding grounds for some of the reef species.

2.4.2 Mangrove Ecosystems

2.4.2a Status of Mangrove Ecosystems

Mangroves are one of the vitally important coastal ecosystems in Fiji. Their complex root structures allow them to survive the roughest of weather, and to protect coastal communities from coastal erosion and storm damage. Mangroves also provide nursery and feeding grounds for fish and invertebrates that Fijians rely on for food security and income (Ellison, 2010).

Mangrove forests occur at the mouths of the river deltas in the tidal zone. Eight mangrove species are represented in these forests. *Rhizophora stylosa, R. samoensis* form a scrubby seaward fringe with the taller *R. x selala* occurring further inland. *Brugiera gymnorrhiza* follows behind the *Rhizophora* stands with a mixture of mangrove obligatory species in the understorey like *Excoecaria agallocha, Heritiera littorallis, Lumnitzera littorea* and *Xylocarpus granatum* (Tuiwawa et al 2013; Tuiwawa 2014).

Fiji has the third largest mangrove area in the Pacific Islands, after Papua New Guinea and Solomon Islands, with an estimated 43,650 ha of cover in 2007 (GoF and SPREP, 2014). The Fiji State of the Environment (SOE) Report, 2013 estimates that, based on satellite imagery analysis, mangrove areas have decreased in size from 46,150 ha in 1991 to 43,650 ha in 2007 (GoF and

SPREP, 2014). Much of the loss was experienced between 1991 and 2001 (~2000 hectares) and has slowed in the last 10 years. Larger mangrove areas have grown by 5 –10% in some areas. The largest of these stands (covering over 90% of Fiji's mangrove area) are found along the south-east and north-west coasts of Viti Levu with extensive cover around the deltas of the Rewa, Ba and Nadi rivers and on the northern shores of the Labasa river delta on Vanua Levu (Spalding et al., 2010; Watling, 2013).

2.4.2b Trends and Threats to Mangrove Ecosystems

The Fiji SOE Report (GoF 2013 and SPREP, 2014) states that urban area mangroves are being reduced due to the expansion of urban areas (both formal and informal), tourist development, and creation of waste disposal sites.

Loss of mangroves can reduce important fish and bird habitats, resulting in economic losses to communities, which rely on them. Mangroves also provide fuel, shelter and medicines for many communities and ecosystem services such as protection of shorelines against storm surges; filtration of toxins from freshwater runoff; and they are a major carbon sequestration source for mitigating greenhouse gas emissions (GoF and SPREP, 2014).

2.4.3 Seagrass Ecosystems

2.4.3 a. Status of Seagrass Ecosystems

The shallow subtidal and intertidal zones of Fiji's coastal areas often support large areas of seagrass, extending long distances away from the shoreline in lagoons and sheltered bays, and often adjoining coral reefs. Seagrass are of special interest to coastal fisheries worldwide because of the role they play in providing nursery areas for commonly harvested fish and invertebrates. Seagrass beds are important habitats and traditional collecting grounds for many fish and invertebrates. They are also important feeding grounds for turtles, and so are instrumental in the survival of these species, including Green Turtles from as far afield as American Samoa and French Polynesia (Craig et al., 2004; Sykes and Morris, 2007).

Seagrass and intertidal flats are also permanent habitats for several species of sea cucumbers that are largely exported (Mangubhai et al., 2016), and of molluscs gleaned for subsistence. Movement of nutrients, detritus, prey and consumers between mangrove, seagrass and intertidal habitats can have major effects on the structure and productivity of food webs, with nutrient and detritus increasing primary and secondary productivity, both directly and indirectly. Mangroves and seagrass improve water quality by trapping sediments, nutrients and other pollutants (Moore 2004).

Their growth and health is limited by several factors, including water clarity; nutrient availability; and exposure to wave action. Changes in these factors, whether caused by climate change or local human activities, may quickly destroy seagrass beds. Changes in seagrass availability are likely to impact on turtle populations relying on them for food.

Fiji has an estimated area of 16.5 sq. km of seagrass beds spread across the coastal intertidal flats around the country (Waycott et al., 2011) comprising five seagrass species and one sub-species (Tuiwawa et al, 2014; Ellison, 2009; Skelton and South, 2006).

Seagrass beds in many parts of Fiji appear to be in a healthy state, although others are being smothered with epiphytic algae and affected by terrestrial sediments.

Long-term ecological studies of seagrass meadows on Suva Reef revealed that losses occurred in some years because of major disturbances such as tsunami, cyclones and flood (Vuki, 1994). Analysis of spatial patterns of seagrass meadows from airborne images revealed oscillations in abundance on Suva Reef; seagrass meadows extended towards the lagoon in some years and regressed in others (McKenzie and Yoshida, 2007).

2.4.3b Trends and Threats of Seagrass Ecosystem

Pressures on seagrass beds are similar to those for coral reef ecosystems and include global pressures related to climate changes such as increasing cyclone incidence and alterations to rainfall, temperature and light levels. Sea level rise is expected to result in the loss of those seagrass growing in deep water at their present depth limit. Loss of seagrass habitats in Fiji as a result of factors related to climate change are estimated <5% by the year 2035, and between 5–20% loss by 2100 (Waycott et al., 2011).

Local threats to seagrass include coastal residential and tourism development, inadequate disposal of solid waste, sewage pollution, depletion of fisheries, coral harvesting, coastal erosion, storm surge and flooding, siltation of rivers and coastal areas as a result of soil erosion inland agriculture and forestry and sand mining (McKenzie and Yoshida, 2007).

2.5 Terrestrial and Freshwater Invertebrates

Fiji's invertebrate fauna research has tended to concentrate on species of economic importance. The

following sections summarise some of the more readily available data, and their status.

2.5.1 Insects

A total of 350 families, 2,254 genera and 4,945 species of insects have been recorded to date in the Fijian archipelago (Evenhuis, 2006). A total of 25 aquatic insect families have been recorded for Fiji. Fiji is known to have high levels of endemism compared to most other Pacific island groups. Fiji has a diverse and distinctive ant fauna (Order Hymenoptera, Family Formicidae), with 43 genera, 187 known species and endemism rates of over 70%, including the endemic genus *Poecilomyrma*. The Order Odonata (dragonflies and damselflies) records close to 80 species (including some undescribed species new to science) and records a 60% endemism rate for those that have been described (Marinov, 2015). Fiji has an endemic genus within the Odonata group, *Nesobasis*, with records of some 40 species (Van Gossum et al., 2008). 380 species of Macrolepidoptera (butterflies and macromoths) have been recorded. About 50% of these are endemic to Fiji (Robinson, 1978; Clayton, 2004). The Fijian Cerambycidae (long-horned beetle) has a total of 45 genera, 124 described species and approximately 80% endemism (Dillon and Dillon, 1952).

Fiji is home to the second largest beetle in the world, *Xixuthrus heros,* commonly known as the Fijian giant long-horned beetle with individual adults typically measuring up to 16 cm in length (Yanega et al., 2004). The Fijian Cicada *(Raiateana knowlesi)* locally known as "Nanai", is currently featured in the Fijian One Hundred Dollar Bill due to its rarity. It is endemic to Fiji and the adults only emerge after a period of eight years. Both species are of cultural significance in Fiji (GoF, 2010a).

2.5.2 Molluscs

Fiji freshwater mollusc fauna consists of 9 families and 71 species, of which 30 (43%) are endemic (Haynes, 2015). There are 28 species of Truncatelloidean (springs snails) gastropods *(Fluviopupa spp.)* in the genus *Fluviopupa* in Fiji (Haase et al., 2006; Zielske and Haase, 2014). Two additional endemic gastropods, *Acochlidium fijiense* and *Fijidoma maculata* are considered to be threatened and of conservation interest. The monotypic genus *Fijidoma maculata* is endemic to Viti Levu and found in tributaries of major rivers; headwaters of Lami, Sigatoka and Rewa rivers and the Nakauvadra catchment. Introduced gastropods include *Melanoides tuberculata,* which is found in ditches, streams, rivers and ponds on all tropical islands; and *Cipangopaludina chinensis,* formerly known as *Viviparus japonicas,* which was accidentally introduced into Naduruloulou, Nausori, Nasinu and Navua (GoF, 2010a).

2.5.3 Crustaceans

Fiji's known crustaceans included 10 Palaemonid prawn species (all native to Fiji except *M. rosenbergii*), 14 species of shrimp of which only three (21%) are endemic (*C. devaneyi, C. fijiana and C. nudirostris)* and three crab species *(Varuna litterata, Labuanium trapezoideum and Utica gracilipes),* which are widely distributed throughout the Indo-Pacific region. Introduced crustaceans include the giant freshwater prawn *(Macrobrachium rosenbergii),* which was introduced into ponds from Hawaii and Tahiti and is now found in Viti Levu rivers (GoF, 2010a).

2.6 Terrestrial and Freshwater Vertebrates

2.6.1 Birds

166 species of birds are in Fiji. There are 80 species known to breed locally, of which 35 are endemic (44%), including the endemic breeding seabird, the Fiji Petrel *(Pseudobulweria macgillivrayi).* Of the locally breeding species, 54 are land birds, 18 are seabirds (see 2.7.3(c)) and 12 are introduced. Another 73 species are known to visit Fiji occasionally, but breed elsewhere: 39 seabirds, 30 shorebirds and 2 land birds (BirdLife International 2016). There are five endemic genera: the Shining or Musk Parrots *(Prosopeia);* the Collared Lory or Kula *(Phigys);* Fruit Doves *(Chrysoena),* the Long-legged Thicket bird or Warbler *(Trichocichla)* and the two species of Silktail *(Lamprolia).*

2.6.2 Mammals

Fiji's only indigenous mammals are bats of which there are six known species. Four of these are large fruit bats *(Megachiropterans)* and two are small insectivorous species *(Microchiropterans).* The Fijian Monkey-faced bat *(Mirimiri acrodonta)* is endemic to the cloud forest of Taveuni Island. The Mirimiri also belongs to an endemic genus, making it one of the rarest bat species globally (D.Watling, 2010 Fiji also has an endemic bat sub-species *(Pteropus samoensis nawaiensis). P. samoensis nawaiensis* is uncommon, but is widely distributed throughout the Fijian archipelago. Five species are globally threatened with extinction and listed on the IUCN Red List (Wilson and Graham, 1992; Flannery, 1995; Helgen, 2005; Palmeirim et. al., 2007). With the exception of feral populations of soft domesticated species such as cats, dogs, pigs and goats, there are five other introduced species. These are

the Black Rat *(Rattus rattus),* Brown rat *(R. norvegicus),* Pacific Rat *(R. exulans)* and two mongoose species *(Herpestes javanicus and H. fuscus).*

2.6.3 Reptiles

Fiji's terrestrial reptile fauna currently consists of:

- 4 snakes (including one endemic genus and one newly identified endemic species);
- 5 iguanas (four endemic species);
- 14 skinks (eight endemic species); and
- 10 geckos (two endemic species)

Of the total 32 terrestrial reptile species, 14 are endemic (Zug, 2013). The single endemic genus is the elapid Fiji Burrowing Snake *(Ogmodon vitianus).* The introduction of the Flowerpot or Brahminy Blindsnake *(Ramphotyphlops braminus),* is likely to have been through horticultural imports. In 2008, an unknown blindsnake was also identified on Taveuni Island, now known as the Taveuni Blindsnake *(Ramphotyphlops spp.),* and is thought to be an endemic species but is yet to be taxonomically named (Watling et al., 2010).

(Ramphotyphlops braminus), is likely to have been through horticultural imports. In 2008, an unknown blindsnake was also identified on Taveuni Island, now known as the Taveuni Blindsnake *(Ramphotyphlops spp.),* and is thought to be an endemic species but is yet to be taxonomically named (Watling et al., 2010).

Genetic testing assisted to identifying new species in other reptilian groups that occur in Fiji. Of note are the discovery of the Fiji Banded Iguana (Brachyolophus bulabula), which was found to be a distinct species from the Lau Banded Iguana (B. fasciatus) (Keogh et al., 2008), and the Gau iguana (B. gau), found on the island of Gau (Fisher et al., 2017). The fourth local iguana species is the endemic Fijian Crested Iguana (B. vitiensis) (Gibbons, 1981).

New species have also been found in the Fijian skinks (Scincidae): the species Emoia oriza, endemic to Rotuma was recorded in 2012 (Zug, 2012) and is closely related to E. tongana also found on Rotuma.

The gecko fauna of Fiji has been well documented and no new species discoveries have been made for almost three decades (Zug, 2013). Geckos are well known human commensals, often hiding in household items transported from one island to the next destination. A consequence of the anthropophilic nature of geckoes is the low endemism on the volcanic Pacific Islands, 20% in Fiji alone (Fisher, 1997; Zug, 2010). Rare geckoes include the Rotuman Forest Gecko (Lepidodactylus gardeneri) and the Fiji Forest Gecko (Lepidodactylus manni) (Zug, 2010).

Human-aided transport is indicated in the introduction of the invasive Green Iguana (Iguana iguana) (Thomas et.al. 2011)). The now feral American Iguana, as it is known in Fiji, has spread from Qamea Island to the neighbouring islands Matagi, Taveuni and Vanua Levu. Current efforts to minimise its spread, both natural and human-aided, have been limited by funding. The impact that this much larger (~2 m long) iguana will have on native Fijian iguanas is unknown, but is likely to involve competition for resources such as space and food.

2.6.4 Amphibians

Fiji has two frogs (genus Platymantis), both of which are endemic, namely the Fiji Ground Frog (Cornufer vitianus) and the Fiji Tree Frog (C. vitiensis). These frogs are the westernmost extent of any frog genus into the South Pacific islands. The Fiji Ground Frog occurs in widespread but small populations on Vanua Levu, Taveuni, Viwa, Gau and Ovalau. A relict population can still be found in the Nakauvadra Range of northern Viti Levu (Thomas, 2009).

The Fiji Tree Frog has undergone dramatic population decline and is only found in small and distinct populations on Viti Levu and Vanua Levu (Osborne et al., 2013). Habitat loss in combination with forest incursion by invasive predators like feral cats (Felix catus) and mongoose (Herpestes javanicus and H. auropunctatus), have been likely agents of the apparent reduction in range of the tree frog. C. vitiensis is currently classified as Near Threatened by the IUCN Amphibian Red List Authority (Zug et al. 2004).

The only introduced amphibian, the cane toad (Rhinella marina), is naturalised and maintains large populations on the main islands. It is largely regarded as a pest species both in human modified and natural habitats in Fiji. It is known to be omnivorous and is thought to compete with the native ground dwelling frogs for space and food, and may even prey on native froglets (Thomas, Morrison et al., 2011). An attempt to eradicate the cane toad population on Viwa Island with the involvement of the Viwa villagers was largely well met (Saunders et al., 2007), although the current status has not been monitored since.

2.6.5 Freshwater Fish

The location and nature of Fiji's landmass largely determines its freshwater fauna. A total of 166 species (47 families) of freshwater and estuarine fishes have been estimated, including 13 (8.3%) that are endemic (Jenkins, 2009).

Purposeful or accidental introduction has resulted in 10 introduced alien species in Fiji. The tilapia (Oreochromis mossambica) has thrived in every river to which it has been introduced and is considered to have had a detrimental effect on the status of certain native species. Studies conducted by Wildlife Conservation Society (WCS) and other groups show that the tilapia are consuming the larvae and juvenile fish of several native species of goby fish that live in both fresh and salt water and begin their lives in island streams (Science Daily Incorporation, 2010).

2.7 Marine Species

2.7.1 Marine Algae

A total of 422 taxa of seaweeds marine algae have been identified (N'Yeurt et al., 1996). One seaweed *(Eucheuma)* is introduced.

2.7.2 Marine Invertebrates

Historically, marine invertebrates of Fiji have been under-researched in Fiji and there are significant gaps in information.

2.7.2a Corals

An analysis of collection research of Fiji's coral reefs recorded 50 genera and 144 species of coral; estimates for six major reef systems (Morris and Pratt, 1997). Fiji's National Environment Management Strategy provided a detailed description of corals, with a preliminary listing of 198 species from the Mamanucas and Southern Viti Levu (Zann and Lovell, 1992). A reference collection of Fijian stony corals is housed at the University of the South Pacific and contains a total of 212 species represented by voucher specimens. From the reference collection and field survey, Lovell and McLardy (2008) recorded 342 species within 72 genera of Scleractinian hard corals in Fiji. A further 12 non-Scleractinian species within five genera also occur in Fiji (Lovell and McLardy, 2008).

2.7.2b Marine Molluscs

Marine molluscs include gastropods (abalone, limpets, conch, sea hares, sea butterflies, sea slugs, nudibranchs), bivalves and cephalopoda (squids). An assessment in 1998 noted that 760 species of Fijian bivalves and gastropods have been recorded (Morris, unpublished). Brodie (1990) noted that 253 species of opisthobranchs have been collected mainly from southern Viti Levu. Six species of bivalves (oysters and mussels) have been introduced.

2.7.2c Marine Crustaceans

Crustaceans (crabs, lobsters, prawns, shrimp, barnacles etc.) are moderately studied in Fiji, and a total of 26 species from four families have been identified (Morris and Pratt, 1997).

2.7.2d Marine Echinoderms and Ascidians

Other than sea cucumbers, Fijian echinoderms are under researched. Sea cucumbers are an important source of income for many coastal communities. Several of the high value species are listed on the IUCN Red List as endangered or vulnerable (Conand et. al., 2014) and depletion of high value species is leading to extraction of medium and low value species, putting greater pressure on the overall sea cucumber industry and earnings from export (Ram et al., 2016; Mangubhai et al., 2016; 2017).

Ascidians (sea squirts) are primitive chordates that spend most of their life attached to a base (e.g. coral or rock), and 60 species have been described from reefs in Viti Levu and Kadavu (Morris and Pratt, 1997).

2.7.3 Marine Vertebrates

2.7.3a Fish

Fiji's fish fauna is moderately well known, with 33 of the 2,031 marine fishes recorded from Fiji considered marine endemics (Seeto, 2010).

2.7.3b Marine Reptiles

Five of the seven living species of sea turtles are found in Fiji waters - green (Chelonia mydas), hawksbill (Eretmochelys imbricata), leatherback (Dermochelys coriacea), loggerhead (Caretta caretta), and olive ridley (Lepidochelys olivacea). The first three of these species nest in Fiji from October to April every year (Maison et al., 2010). Three species of sea snake breed in the Fiji Group, namely Laticauda colubrine, L. laticauda and Hydrophus melanocephalus. The oceanic bellied sea snake (Pelamis platuris) is an occasional visitor (Morris and Pratt, 1997).

2.7.3c Seabirds

Eighteen species of seabird breed in Fiji and include Frigatebirds, Tropicbirds and Boobies, Noddies and Terns, Storm-petrels, Petrels and Shearwaters (Jenkins, 1986; Watling, 2004; Tuamoto and Sukal, 2009). The Fiji Petrel (Pseudobulweria macgillivrayi), known only from the island of Gau, is a Critically Endangered, single island endemic, sighted irregularly. The search for its nesting grounds is therefore a high priority (Priddel et al., 2008). Other globally threatened seabirds nesting in Fiji are Polynesian Storm-Petrel (Nesofregetta fuliginosa) (not proven breeding since the 19th century) (Jenkins, 1986) and Collared Petrel (Pterodroma brevipes) (nesting colonies known on Gau and likely still on Kadavu) (Watling, 1986; O'Brien et al., 2016). The Collared Petrel used to nest in the highlands of Viti Levu prior to the introduction of mongoose. Many of the common seabird species that nest here do so in significant colonies – such as Lesser Frigatebird (Fregata ariel), Red-footed Booby (Sula sula), Brown Booby (Sula leucogaster), Black Noddy (Anous minutus) and Tahiti Petrel (Pseudobulweria rostrata) (Masibalavu and Dutson 2006; Tuamoto and Sukal, 2009). In addition, a further 39 species of seabird have been recorded, more or less frequently, on passage in Fiji waters (Birdlife International, 2017). This number is continuing to increase as the number of observations of birds at sea increases.

2.7.3d Marine Mammals

A review carried out about four years ago confirmed 10 cetacean species in Fiji's waters - common minke whale (Balaenoptera acutorostrata), humpback whale (Megaptera novaeangliae), short-finned pilot whale (Globicephala macrorhynchus), killer whale (Orcinus orca), false killer whale (Pseudorca crassidens), pantropical spotted dolphin (Stenella attenuate), spinner dolphin (Stenella longirostris), common bottlenose dolphin (Tursiops truncates), sperm whale (Physeter macrocephalus) and Blainville's beaked whale (Mesoplodon densirostris) (Miller et al., 2016). Another 14 cetaceans are likely to be present in Fiji, but more evidence are needed to confirm these species (Miller et al., 2016). A total of 13 hotspots are known to be particularly important for cetaceans within the Vatu-i-Ra and Lomaiviti passages (including Levuka, Wakaya, Gau, and Makogai) and Monkey Face passage. Fiji declared its entire EEZ a Whale Sanctuary in 2003 and has adopted the Pacific Islands Regional Guidelines for Whale and Dolphin Watching (IFAW, 2008) and supports the development of a Whale and Dolphin Action Plan by SPREP and other countries in the Pacific islands region. Whales, particularly sperm whales, are culturally significant to Fiji.

2.8. The ocean of Fiji

The ocean of Fiji, beyond the edge of the reef, is home to many of the marine animals described above (e.g. marine mammals, seabirds and turtles) and contains an incredible diversity of habitats. Recent analysis has determined that Fiji's ocean contains 16 seabed geomorphological features (e.g. seamounts, ridges, canyons) (Harris et al, 2014), 23 deepwater marine bioregions (Wendt et al 2018) and 20 special, unique offshore marine areas (Sykes et al 2018). This ocean and its biodiversity suffer impacts from global threats (e.g. climate change) and local threats (e.g. overfishing, pollution, destructive fishing, deep sea mining, and shipping).

2.9 Threatened Species

As of August 2013, 1,417 species in Fiji were assessed according to the IUCN Categories and Criteria for inclusion in the Red List of Threatened Species. Table 1 provides a summary of these species (SPREP, 2016). While the majority of assessed species are found in marine habitats, a greater percentage of terrestrial species are threatened. This can be explained by the more restricted range of many terrestrial species and the extent of human impact on terrestrial ecosystems.

2.9.1 Marine Threatened Species

Some of the marine species of Fiji that are severely under threat and are included on the IUCN Red List are:

Critically Endangered - Hawksbill turtle *(Eretmochelys imbricata)* (Mortimer and Donnelly, 2008)
Endangered - Green turtle *(Chelonia mydas)* (Seminoff, 2004)
Whale Shark *(Rhincodon typus)* (Pierce and Norman, 2016)
Vulnerable - Squaretail grouper *(Plectropomus areolatus) (*Rhodes, 2018)
Green Humphead parrotfish *(Bolbometopon muricatum)* (Chan et al. 2012)
Common Spotted seahorse *(Hippocampus kuda)* (Aylesworth, 2014)
Oceanic white tip shark *(Carcharhinus longimanus)* (Baum et al. 2015)
Sharptooth lemon shark *(Negaprion acutidens)* (Pillans, 2003)
White shark *(Carcharodon carcharias)* (Ferguson et al. 2009)
Porcupine Ray *(Urogymnus asperrimus)* (Chin and Compagno, 2016)
Brown marbled grouper *(Epinephelus fuscoguttatus)* (Rhodes et al., 2018)
Camouflage grouper *(Epinephelus polyphekadion)* (Rhodes et al., 2018)
Near threatened-Orange spotted grouper *(Epinephelus coioides)*

The Oceania sub-population of humpback whales (*Megaptera novaeangliae*) is classified as least concern on the IUCN Red List in 2018 (Cooke, 2018). However, in 2008, the humpback whale was listed as endangered in the IUCN Red List. This, classification was largely based on the small number of individuals visible on tropical breeding grounds in comparison to pre-whaling abundance estimates, including comparisons between historical and recent land-based counts conducted in Levuka, Ovalau (A. Peter Klimley, 2008)

2.9.2 Terrestrial Threatened Species

One species of bird has been recorded as extinct: the Bar-winged Rail (Hypotaenidia poeciloptera) (BirdLife International, 2016); and one species of plant (Weinmannia spiraeoides, Order Rosales) (World Conservation Monitoring Centre, 1998). Extinction of the rail is thought to have been caused by predation by introduced cats and mongoose. The Fiji Long-legged Warbler (Trichocichla rufa) was thought to be extinct, but sightings in Viti Levu since 2002 have confirmed its continued existence. There have been no sightings in Vanua Levu since 1974 (Masibalavu and Dutson, 2006).

To date 14 bird species have been included as threatened on the 2013 IUCN Red List, along with six mammals, 14 reptiles and one amphibian.

Of the total 191 non-Cnidarian threatened species recorded in the IUCN Red List in Fiji, invasive species and agriculture are the two primary threats to species of flora and fauna in Fiji – impacting 42% and 36% of threatened species respectively (see Table 2).

In terms of invasive species, predators such as cats (Felis catus), rats (Rattus sp.) and mongoose (Herpestes javanicus), and habitat modifiers such as goats (Capra hircus) and pigs (Sus scrofa) have the greatest impact on single country endemics in Fiji. Potential future introductions due to weak enforcement of predators such as the giant African snail (Achatina fulica), the rosy wolf snail (Euglandina rosea) and the flatworm (Platydemus manokwari) are also a major concern.

Table 1: Fiji Species included on the IUCN Red List (version 2013.1)

Taxonomic Group	Sub group	Number of Species Assessed	Number of species assessed as threatened (CR, EN, VU[1])	Number of species assessed as Data Deficient	Estimated number of species described*
Plants	Bryophytes	0			300
	Ferns and allies	1			250
	Cycads	1	1		8
	Conifers	8	3		21
	Gnetopsida	1			unknown
	Magnoliopsida *(Dicotyledons)*	118	51	1	1320
	Liliopsida *(Monocotyledons)*	42	10	1	390
	Algae	0			100
Vertebrates	Birds	101	14		101
	Mammals	26	6	10	26
	Reptiles	25	14	1	36
	Amphibians	2	1		2
	Bony fish (freshwater and marine)	361	7	39	1200
	Cartilaginous fish	15	6		15
Invertebrates	Insects	8		3	750
	Arachnids	0			65
	Hard Corals *(Anthozoa)*	410	87	16	410
	Molluscs *(Bivalves and Gastropods)*	204	68	20	unknown
	Crustaceans	41		6	unknown
	Hydrozoa	6			unknown
	Holothuroidea (sea cucumbers)	45	10	14	45
		2		2	unknown
Fungi		0			415
Totals		**1417**	**278**	**114**	**5104***

* These are likely to be under-estimates in many cases, and include only native species.

[1]The IUCN Red List of Threatened Species categorises threatened species according to their level of vulnerability to extinction in the wild. The categories are Critically Endangered (CR), Endangered (EN) or Vulnerable (VU), with a species listed as CR being at the highest risk of extinction in the wild.

Table 2: Threats faced by extant IUCN Red Listed Threatened Species in Fiji (excluding Cnidaria species)

Relative ranking	Threat type	No. of species	% species
1	Invasive species	80	42
2	Agriculture	69	36
3	Habitat loss	34	18
4	Development	23	12
4	Climate	19	10
5	Mining	17	9
5	Human disturbance	17	9
6	Fire	6	3
6	Exploitation	6	3
7	Pollution	4	2

(Source: SPREP 2016)
** "Agriculture" refers to agriculture, farming and forestry. "Habitat loss" refers to anthropogenic un-categorised habitat loss, degradation or fragmentation. "Development" includes transport. "Climate" refers to extreme weather and climate change. "Mining" includes energy production. "Fire" may be either natural or anthropogenic in origin (i.e.: unspecified).

2.10 Endemics

According to the State of Conservation in Fiji Country Report 2013, there are 258 extant Fijian endemics. Of these, 45% are plants and 34% are molluscs. Over half (56%) of these endemics have been assessed as threatened, with 32% listed as critically endangered. Limited data is available for at least 50% of all endemics; however, in general the threats to endemics are the same as those impacting threatened species. Invasive herbivores or predators species including cats, pigs, goats and the black rat (*Rattus rattus*) represent the greatest threat to endemics (and threatened endemics) in Fiji (Table 3). The other major threat is agricultural expansion, which is associated with habitat disturbance and an increase in invasive species.

Table 3: Total number and percentage of extant IUCN Red List single country endemic species in Fiji impacted by threat type

Relative ranking	Threat type**	No. of endemics	% endemics
1	Invasive species	85	33
2	Agriculture	81	31
3	Habitat loss	24	9
4	Development	23	9
5	Climate	21	8
6	Exploitation	18	7
7	Mining	8	3
8	Fire	7	3
9	Human disturbance	4	2
10	Pollution	4	2

(Source: SPREP 2016)

** "Agriculture" refers to agriculture, farming and forestry. "Habitat loss" refers to anthropogenic un-categorised habitat loss, degradation or fragmentation. "Development" includes transport. "Climate" refers to extreme weather and climate change. "Mining" includes energy production. "Fire" may be either natural or anthropogenic in origin (i.e.: unspecified).

3.0 THE BENEFITS OF BIODIVERSITY CONSERVATION FOR ECOLOGICALLY SUSTAINABLE DEVELOPMENT

3.1 Contributions of Biodiversity and Ecosystems Services to Human Well-Being and Socio- Economic Development

Ecosystems and biodiversity are the life support system for human well-being, providing the food, water, clean air, shelter, raw materials and favourable climatic conditions that contribute to our survival, health and well-being. Changes in the ecosystem and biodiversity may lead to adverse effects on livelihoods, migration and occasional political conflict (Millennium Ecosystem Assessment, 2005).

Biodiversity loss has direct and indirect negative effects on several factors:

Food security: The availability of biodiversity is often a "safety net" that increases food security and the adaptability of some local communities to external economic and ecological disturbances. Farming practices that maintain and make use of agricultural biodiversity can also improve food security.

Vulnerability: Many communities have experienced more natural disasters over the past several decades. For example, because of the loss of mangroves and coral reefs, which are excellent natural buffers against floods and storms, coastal communities have increasingly suffered from severe floods.

Health: A balanced diet depends on the availability of a wide variety of foods, which in turn depends on the conservation of biodiversity. Moreover, greater wildlife diversity should increase traditional medicines and availability of food supply.

Energy security: Wood fuel provides more than half the energy used in developing countries. Shortage of wood fuel occurs in areas with high population density without access to alternative and affordable energy sources. In such areas, people are vulnerable to illness and malnutrition because of the lack of resources to cook food, and boil water.

Clean water: The continued loss of forests and the destruction of watersheds reduce the quality and availability of water supplied for household use and agriculture. In the case of New York City, for example, protecting the ecosystem to ensure continued provision of clean drinking water was far more cost-effective than building and operating a water filtration plant.

Social relations: Many cultures attach spiritual, aesthetic, recreational, and religious values to ecosystems or their components. The loss or damage to these components can harm social relations, both by reducing the bonding value of shared experience as well as by causing resentment toward groups that profit from their damage.

Freedom of choice: Loss of biodiversity, which is sometimes irreversible, often means a loss of choices. The notion of having choices available irrespective of whether any of them will be actually used is an essential constituent of the freedom aspect of well-being.

Economic Asset: Biodiversity provides various goods or economic asset
- such as plants and animals - that individuals need in order to earn an income and secure sustainable livelihoods. In addition to agriculture, biodiversity contributes to a range of other sectors, including "ecotourism", pharmaceuticals, cosmetics, and fisheries.

3.2 Summary Value of Fiji's Ecosystem Services

In 1994, the total value of Fiji's ecosystem services was estimated at FJD 973 million (or 42%) of the national Gross Domestic Product of FJD2, 312 million (FBSAP TWG5, 1998).

In 2015, a study by IUCN looked at seven marine and coastal ecosystem services categories in Fiji (Gonzalez et al., 2015). These were:

(i) subsistence food provision;
(ii) commercial food harvesting;
(iii) mineral and aggregate mining;
(iv) tourism;
(v) coastal protection;
(vi) carbon sequestration; and
(vii) research and education.

The study found that at the national level, the value of these seven environmental services categories ranged from FJD2,200 to FJD2,239 million (USD1,101 million to USD1,121 million) per annum (Table 4). For a global comparison, the economic value of ecosystem services for the entire biosphere was estimated at USD33 trillion per year, compared with the annual global gross national product of USD18 trillion (Costanza et al., 1997).

Table 4: Summary of environmental services from marine and coastal resources in Fiji

ECOSYSTEM	Units	UNIT VALUE FJD (per hectare/year)	UNIT VALUE USD (per hectare/ year)	TOTAL VALUE FJD (per year)	TOTAL VALUE USD (per year)
INSHORE subsistence food provision	6,704 km^2	88.07	44.09	24.25M	29.56M
INSHORE – Commercial Food Harvesting OFFSHORE – Commercial	6,704 km^2 1,290,000 km^2	21.74-80.08 0.16	10.88-40.09 0.08	14.57-53.69M 20.11M	7.3-26.88M 10.07M
TOURISM – Coral Reef and Lagoon TOURISM – Mangrove	6,704 km^2 38,500 ha	1,367.3 5,952.33	684.52 2,979.89	916.66M 229.16M	458.90M 114,73M
TOURISM - Coast	1,130 km	202,800.8/km	101,527.3/km	Alternatively for Mangrove or coast	Alternatively for Mangrove or coast
TOURISM – Coastal land	1,130 km^2	2,028.00	1,015.27	Alternatively for Mangrove or coast	Alternatively for Mangrove or coast
TOURISM – Country's land	18,274 km^2	627.02	313.90	Alternatively for Mangrove or coast	Alternatively for Mangrove or coast
Coastal Protection	2,615km			FJD12.7-21.2M	6.6-11M
OCEAN – Carbon Sequestration	1,290,000 km^2	6.77	3.39	812.97M	406.99M
SEAGRASS – Carbon Sequestration	N/A	1,515.25	758.3	N/A	N/A
TIDAL MARSH– Carbon Sequestration	N/A	2,759.94	1,381.70	N/A	N/A
MANGROVES – Carbon Sequestration	385 sq.km	3,835.60	1,920.19	147.67M	73.93M
TOTAL		**11,271.97-11,330.3**	**5,643.04-5.672.25**	**2,200.18M-2,239.3M**	**1,101.5M-1,121.1M**

Source: Gonzales et al 2015

4.0 BIODIVERSITY CONSERVATION INITIATIVES - PROGRESS AND GAPS

Fiji has actively been engaging and implementing initiatives for biodiversity conservation throughout the country, and these are documented in Fiji's Fifth National Report to the CBD (GoF, 2014a). The 2013 State of Conservation in Fiji assessment also outlines key achievements in conservation in Fiji, with particular focus on the size, number and type of protected areas and governance initiatives in the country (SPREP, 2016).

Initiatives include education/awareness programmes; enforcement of environmental legislations (including requiring Environment Impact Assessments for development projects) and governance structures; the designation of protected areas (formal and informal); identification of national priority sites for conservation, Key Biodiversity Areas (KBA), Important Bird Areas (IBA), Endemic Bird Areas (EBA), Alliance for Zero Extinction (AZE) Sites, nationally significant wetland sites, fish aggregation and spawning sites; and more recently, identification of special and unique marine areas and undertaking Fiji's Natural Resources Inventory and State of the Environment report. The Government of Fiji has also allocated more resources to ensure environmental protection. Some of the Key initiatives are summarised in Section 4.2.

4.1 Protected Areas

In 2008, Fiji established a National Protected Areas Committee (PAC) under section 8(2) of the Environment Management Act 2005 which is administered by the Department of Environment. Between 2009 and 2010, terrestrial and marine working groups within the PAC carried out work to establish national targets for conservation and management; collate existing and new data on species and habitats; identify current protected area boundaries; and determine how much of Fiji's biodiversity is currently protected through terrestrial and marine gap analyses. The term "protected area" is defined as "a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives" (Article 2 of the Convention on Biological Diversity). Well-governed and effectively managed protected areas are a proven method for safeguarding both habitats and populations of species and for delivering important ecosystem services. Annex 3 shows the list of designated protected marine and terrestrial areas in Fiji.

Terrestrial Protected Areas

Fiji's Fifth National Report to the CBD notes that there are 23 existing terrestrial protected areas in Fiji, covering 50,000 ha. Approximately 35,000 ha of this is on Viti Levu and the remaining 15,000 ha on Vanua Levu and Taveuni. In total, this accounts for just 2.7% of Fiji's land mass and protects less than 19% of the country's terrestrial ecosystems and falls "short of Fiji's protection targets for the main vegetation types in Fiji" (GoF, 2014a). Management plans for many of the Protected Areas are being developed although the National Trust is piloting management plans for Sigatoka Sand Dunes National Park and Sovi Basin Protected Area.

Priority locations for terrestrial protected areas have been identified by the PAC and were endorsed by the National Environment Council in 2013 (see Map Annex 4). The prioritisation built upon gap analyses by Olson et al. (2009) and Jupiter et al. (2011) and was based on a number of criteria, including endemic biodiversity richness, number of vegetation types, economic importance, size, degradation, scarcity, conservation practicality, cultural importance and priority connectivity forest areas. The Sovi Basin is the largest remaining undisturbed tract of lowland forest in Fiji and is managed by National Trust of Fiji. As an alternative to logging and agricultural conversion, a conservation agreement was developed to create new protected areas on land owned by traditional owners. This has been facilitated by Conservation International in collaboration with the Fiji Government and the local landowners. The landowners receive lease and royalty payments in return. A total of 16,344ha of the basin is now protected under Conservation Lease, conserving 11 different forest types and 10 endemic bird species, one of which is the endemic and endangered long legged warbler (*Trichocichla rufa*). This bird was previously considered extinct and then rediscovered in 2003 (Masibalavu and Dutson, 2006). However, any development activities including the proposed copper mine and construction of a dam may threaten the protected area in the Sovi Basin in the long term.

A similar conservation lease by the Wildlife Conservation Society is being finalised for the Kilaka Forest Conservation Area, which has been protected by clan (mataqali) members for over 10 years and offers an alternative to logging (WCS, 2012). Kilaka Forest has a management plan in place (WCS, 2016). Other local community conservation areas have been proposed for a number of other terrestrial sites in Fiji from Yadua Taba to Natewa on Vanua Levu and sites where local livelihoods and conservation benefits go hand in hand such as Culanuku or Korovuli.

Marine Protected Areas

Coral Reefs only covers 2.3% Fiji's marine environment which is being met by inclusion of coastal reefs in community-managed Locally Managed Marine Areas (LMMAs) within some of the iQoliqoli (traditional fisheries management areas) in the country. The LMMA system works through customary tenure and resource access, and makes use of existing community strengths in traditional knowledge and governance, combined with a local awareness of the need for action (GoF, 2010).

In 2013, the Fiji Locally Managed Marine Areas (FLMMA) network included 415 tabu (protected) areas within 143 iQoliqoli, covering about 965 sq. km (FLMMA, 2013). Community managed areas in Fiji have led to improvements of reef ecosystems "with the return or increasing abundance of hundreds of coastal species, which had disappeared or declined in abundance over the past 50 years" (Thaman et al., 2013). Fiji recognises that despite these successes, the greatest opportunity to significantly expand the management of Fiji's waters and make substantial progress against the 30% target is to establish offshore Marine Managed Areas outside of the boundaries of the iQoliqoli areas. The total area covered by all of Fiji's 410 iQoliqoli accounts for only 2.3% of the country's territorial waters.

Meeting the 30% commitment made at the Second Small Island Developing States Conference held in Mauritius in 2005, will thus require significant expansion and commitment in marine managed areas beyond the iQoliqoli areas into Fiji's offshore waters. In addition, important ecosystem sites identified for conservation (see section 4.2), will need to have management plans to ensure key threats are adequately addressed (GoF and SPREP, 2014).

In 2016, the PAC supported a marine prioritisation process building on the 2003 Fiji Island Marine Ecoregion analysis (WWF, 2004), the Ecologically or Biologically Significant Area (EBSA) analysis conducted under the CBD in 2011, and the national gap analysis under the CBD Programme of Work on Protected Areas (PoWPA) (Jupiter et al. 2011). A list of Wetland Sites of National Significance was developed during the national gap analysis conducted under PoWPA (see Annex 5). In 2018, all this work was consolidated and validated through national expert workshops and meetings and results in a comprehensive report of Fiji's special, unique marine areas (Annex 6) (Skykes et al 2018).

These terrestrial, marine and wetland sites in combination have been identified for their biodiversity values, and have the potential to provide the basis of a representative system of protected areas for Fiji. The intention is for the representative system of protected areas to be augmented by a large number and variety of protected areas which are important at the provincial or local level, and include all areas identified of national priority. Other sites have also been identified as ecologically important and may be relevant for national prioritisation process. These are briefly outlined in section 4.2.

4.2 Other Conservation Priorities Important Bird Areas (IBAs) and Endemic Bird Areas (EBAs)

There are 28 Important Bird Areas (IBAs) confirmed in Fiji (Annex 7). IBAs are sites of global biodiversity conservation importance selected because they may hold threatened birds, birds restricted to particular regions or biomes, or significantly large populations of congregatory water birds. The Fiji Islands region (excluding Rotuma) has been designated an Endemic Bird Area (EBA), while Rotuma qualifies as a Secondary EBA. EBAs are defined by BirdLife International as regions of the world where the distributions of two or more restricted-range species (species restricted to a range smaller than 50,000 sq. km) overlap.

The Fiji EBA includes the Long-legged Thicket bird (Trichocichla rufa) (endangered on the IUCN Redlist), the Pink-billed Parrotfinch (*Erythrura kleinschmidt*) (vulnerable), the Ogea Monarch *(Mayrornis versicolor*), the Crimson Shining-parrot (Prosopeia splendens) and the Shy Ground-dove (*Gallicolumba stairi*). All the restricted-range species occur in forest and some occur in man-modified habitats. Many species are widely distributed through the islands, but two are confined to Vanua Levu and Taveuni, three to Viti Levu and four to Kadavu. The Ogea Monarch (M. versicolor) is restricted to Ogea in the Lau archipelago (BirdLife International, 2013). The Rotuma Secondary EBA includes five endemic birds: Purple-capped Fruit-dove (*Ptilinopus porphyraceus*), Rotuma Myzomela (*Myzomela chermesina*), Polynesian Triller (*Lalage maculosa*), Fiji Shrikebill (*Clytorhynchus vitiensis*) and Polynesian Starling (*Aplonis tabuensis*) (BirdLife International 2013).

Alliance for Zero Extinction (AZE) Sites

The Alliance for Zero Extinction (AZE) is a joint initiative of biodiversity conservation organisations from around the world, which include Birdlife International, Conservation International and WCS. It aims to prevent extinctions by identifying and safeguarding key sites, which are the last remaining refuge of one or more Endangered or Critically Endangered species. There are currently five recognised AZEs in Fiji and these are detailed in Annex 8.

Key Biodiversity Areas (KBA)

Key Biodiversity Area (KBA) approach builds on and complements other conservation priority setting approaches but extends to all taxonomic groups. KBAs can be useful tools in decision-making to expand protected area networks, and for targeting conservation action. KBAs can be used to guide landscape-level conservation planning and for maintaining effective ecological networks aimed at preventing biodiversity loss. In the Pacific, KBAs have been identified in three biodiversity hotspots, namely the Polynesia-Micronesia hotspot, the East Melanesia Islands hotspot, and the New Caledonia hotspot, which collectively include all Pacific Island Countries and Territories (PICTs), except for mainland PNG. Fiji lies within the Polynesia-Micronesian Biodiversity Hotspot. Thirty-two KBAs are recognised in Fiji including 10 marine IBAs and are shown in Annex 9.

Ecologically or Biologically Significant Areas

Ecologically or Biologically Significant Areas (EBSAs) in the global marine realm are classified based on seven scientific criteria: (1) Uniqueness or rarity; (2) Special importance for life history of species; (3) Importance for threatened, endangered or declining species and/ or habitats; (4) Vulnerability, fragility, sensitivity, slow recovery (fragile); (5) Biological productivity; (6) Biological diversity; and (7) Naturalness. EBSAs recognised in Fiji are shown in Annex 1.

5.0 THE STRATEGY AND ACTION PLAN

5.1 Our Goal

To conserve and sustainably use Fiji's terrestrial, freshwater and marine biodiversity, and to maintain the ecological processes and functioning of the ecological systems which are the foundation of national and local development and immense global significance.

5.2 Principles underpinning the Strategy

Principle 1: Community participation and ownership

This Principle is based on the premise that most natural resources in Fiji are owned and used by indigenous and local communities. Biodiversity conservation in Fiji is greatly dependent on the manner in which landowners and local user communities choose to manage their landholdings ownership and fishing rights. The Principle calls on national partners and stakeholders to actively recognise, respect and support:

- Community property rights including traditional rights over natural resources, indigenous intellectual property rights relating to natural resources and cultural knowledge.
- Community decision-making structures and practices, while ensuring gender inclusivity in decision-making.
- Active participation and ownership of resource owners in conservation and resource management initiatives will ensure long term sustainability and success of biodiversity conservation.
- Biodiversity conservation initiatives should be implemented in a way that local communities – men and women and youth are actively involved in their planning, implementation, monitoring and evaluation.
- While communal land ownership has played, and continues to play a positive role in biodiversity conservation, the increasing commercialisation of natural resource use is threatening this system and constitutes a major challenge to biodiversity conservation
- Recognition of the value of traditional knowledge and wise use management practices to sustainable biodiversity management.

Principle 2: Biodiversity is foundation for all development and inter-generational equity

Biodiversity conservation is a collective responsibility of all levels of government, the private resource users and landowners. It places biodiversity at the heart of policy, legislation, plans and projects highlighting the benefits of taking biodiversity into account – and the associated costs – and the risk of business as usual.

- To ensure that future generations of landowners and citizens, as well as today's youth and children, all have an equal opportunity to use and enjoy Fiji's biodiversity.
- Service delivery – delivering key ecosystem services through green, cheaper and low energy infrastructure.
- Risk reduction – including disaster and climate risk reduction in key sectors.
- Financial value – through certain products and species that may be tradable.
- National economic diversification – through habitat, species and genetic diversity that present options and alternatives e.g. tourism and forestry.
- 'Vanua' [1] - intrinsic and cultural value (i.e. biodiversity supports our identity, tradition, social cohesion, recreation and spirituality).
- The principle of polluter and/or user pays is adhered to when assessing responsibilities relating to the use and conservation of biodiversity.

Principle 3: Biodiversity Mainstreaming and Ownership

This Principle is based on the understanding that lasting conservation in Fiji can only be achieved if biodiversity conservation is mainstreamed into development and poverty reduction initiatives and if partners (including communities) take responsibility for leadership of the design, implementation and evaluation of all conservation programmes in their respective areas and commit to: Reciprocal biodiversity-development mainstreaming – ensuring collaboration and partnership between biodiversity and development and Cross-sector coordination - strengthening links and action between sectors and associated public and private sector institutions that affect and/or benefit from biodiversity e.g. tourism, agriculture, forestry, mining and fisheries.

[1] *Vanua* means "the land area one is identified with", but also *"the people, their traditions and customs, beliefs and values, and the various other institutions established for the sake of achieving harmony, solidarity and prosperity within a particular social context. It provides a sense of identity and belonging. The vanua is an extension of the concept of the self."*

Principle 4: Gender mainstreaming and equality

Gender perspective must be mainstreamed or integrated into all NBSAP related policies, strategies actions and project stages. It must also ensure equal rights, possibilities and obligations for both men and women in society. It will ensure that stereotyped concepts of gender roles must not restrict the opportunities of individuals and there is equal appreciation of the values, choices and life experiences typical of both women and men.

Principle 5: Adopting an ecosystem-based management approach

All conservation and development programmes to adopt and ecosystem-based, ridge to reef or island system approach and principles to include:

- Adopt integrated approach to ecosystem-based management.
- Maintain healthy, productive and resilient ecosystems.
- Maintain and restore connectivity between social and cultural values.
- Incorporate economic, social and cultural values.
- Involve stakeholders through participatory governance.
- Recognise uncertainty and plan for adaptive management.
- Use relevant forms of scientific, traditional and local knowledge.

Principle 6: Managed and Protected Areas (for species protection, forest, watersheds and marine areas) should be comprehensive and representative

The establishment of a comprehensive and representative system of terrestrial and marine reserves and conservation areas at the national and local levels is critical to successful biodiversity conservation. A comprehensive and representative system is one that includes all representative habitats and species.

- Biodiversity is best conserved in those places where it naturally occurs (*in situ*), however *ex-situ* conservation may be needed to assist in the conservation management of threatened species or forms.
- The conservation and sustainable management of Fiji's natural forests is the single most important means of conserving the vast majority of Fiji's endemic fauna and flora.
- 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.
- The control of invasive organisms is critical to the success of biodiversity conservation. This is because of the devastating impact of certain introduced plants and animals on indigenous island biodiversity which has been demonstrated (e.g. rats, mongoose) and in many other oceanic island.

Principle 7: Improving knowledge, capacity and intellectual property

- The intellectual property rights to biodiversity, genetic resources, bio-derivate knowledge about biodiversity is recognised and that appropriate mechanisms to ensure, fair remuneration, credit or other benefits are received by local communities, the discoverer or developer, and the nation.
- Improved scientific knowledge of biodiversity and enhanced ethno biological understanding is required for improved conservation management and sustainable use.
- Inadequate knowledge should not be used to defer or prevent biodiversity conservation
- Biodiversity conservation is a specialised discipline which requires advanced training, skills and international collaboration.
- Education, public awareness and local knowledge are essential for enabling the conservation of biodiversity.
- Building effective and sustainable conservation capability and organisations through on-going capacity development.
- Ensuring conservation is continuously improved by recording, disseminating and incorporating lessons learned and best practices.

Principle 8: Financial Sustainability and accountability

- This principle reflects the fact that conservation initiatives must be adequately supported if they are to be successful.
- Ensuring that conservation programmes are of scale and budget appropriate to the local context.
- Long-term strategic planning and resource mobilisation that sustains conservation over time.
- Ensure international and national partners are accountable to the communities and countries they work in for their investment and engagement in conservation programmes.

Principle 9: Ecosystem-based adaptation (EbA) and Eco-Disaster Risk Reduction:

The principle or approach which is the use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people adapt to the adverse effects of climate change. EbA aims to maintain and increase the resilience and reduce the vulnerability of people and the ecosystems they rely upon in the face of the adverse effects of climate change. The ecosystem based approach has been recognized as an important strategy for disaster risk reduction (Eco-DRR), defined as "sustainable management, conservation and restoration of ecosystems to reduce disaster risk, with the aim to achieve sustainable and resilient development".
This will:

- Enable people to adapt to the impacts of climate change and disasters by using opportunities created by sustainably managing, conserving and restoring ecosystems to provide ecosystem goods and services.
- Aim to maintain and increase resilience and reduce vulnerability of ecosystems and people to adverse effects of climate change, and should therefore be integrated into broader adaptation and development strategies.
- Both build upon and use approaches that already exist in the practices of biodiversity and ecosystem conservation, climate change adaptation and livelihood development. Examples include implementing forest and grasslands conservation to protect communities and settlements from erosion and sandstorms, or integrating vegetation into urban spaces such as in green walls and green roofs, to reduce the urban heat island effect and improve air quality.
- contribution to sustainable livelihoods by maintaining the ecosystem services that provide clean water, food and fibre; supporting poverty reduction; heritage conservation; and preservation of local identities.

5.3 Focus Areas, Strategies and Actions

The six priority focus areas to be addressed under the 2020 – 2025 NBSAP:

Focus 1: Improving our knowledge (IK)
Focus 2: Developing Protected Areas (PA)
Focus 3: Species Management (SM)
Focus 4: Management of Invasive Species (IS)
Focus 5: Enabling Environment and Mainstreaming (EEM)
Focus 6: Sustainable Use and Development (SUD)

Strategic areas and objectives have been identified for each focus area and the framework provides an outline of the proposed actions towards implementing these objectives.

Focus Area 1: Improving our Knowledge (IK)

CBD Strategic Goal A: Addressing the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.

Aichi Target 1: By 2020, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.

Fiji Target: Fijians are aware of the values of biodiversity, and traditional knowledge and practices are integrated with the latest scientific knowledge into sustainable biodiversity conservation practices.

Indicators:

- Increased trends in public engagements with biodiversity.
- Increased trends in awareness and attitudes to biodiversity.
- Increased integration of traditional knowledge and practices in biodiversity conservation.
- Increased research and knowledge on Fiji's rich biodiversity.
- Increased biodiversity knowledge applied in different sectors such as education, health, agriculture, forestry and industries to make management decisions.
- Increased willingness to use technology and systems.

Addressing the direct and underlying drivers of biodiversity loss will ultimately require behavioural change by the general public, individuals, organisations and governments. However, this will require the participation of public and private sectors together with NGOs. Understanding, awareness and appreciation of the diverse values of biodiversity underpin the willingness of individuals to make the necessary changes and actions and to create the political will for governments to act. Given this, actions taken towards this target will greatly facilitate the implementation of Fiji's NBSAP and ultimately the CBD Strategic Plan. Biodiversity is not widely understood and as a result its economic, social and environmental importance is often unrecognised.

The values of biodiversity should be interpreted in the broadest sense, including environmental, cultural, economic and intrinsic values. While a better understanding of the values of biodiversity is important in building the motivation for action, it is not enough. Individuals also need to be aware of the types of actions they themselves can take in order to conserve and sustainably use biodiversity.

Different segments of society can take different actions depending on the types of activities they have control or influence over. Such information can help to empower individuals to take action.

Fiji has ratified the Nagoya Protocol. Improving our knowledge and understanding of the potential value of genetic resources and associated traditional knowledge is essential if ABS is to be successfully implemented. The Department of Environment has been consulting stakeholders on the draft ABS Policy for improved knowledge to strengthen efforts for preservation of biological resources that contain genetic material (Department of Environment 2018/2019).

Strategic Area IK1: Strengthen public awareness of biodiversity, including understanding and application of traditional knowledge and practices in biodiversity conservation and protection.

Objective IK1a: To conduct national education and awareness activities on the important role of biodiversity to people's livelihoods and overall wellbeing.

Action Plan:

IK1.1 Develop an NBSAP Communication Strategy to guide the national awareness and education programmes on conservation and sustainable use of biodiversity.

IK1.2 Provide support, information and training to government, private sector, NGOs and civil society field officers to conduct and disseminate biodiversity awareness and information.

IK1.3 Engage private sector and civil society, such as churches, to promote biodiversity messages and best practices.

IK1.4 Develop messages, training programmes and delivery modes to target specific sectors of the population, such as the resource owners, farmers, school children and youth.

IK1.5 Develop national awareness radio and television programmes on the value and role of biodiversity with aim of reaching wider Fiji society.

Objective IK1b: Integrate traditional ecological knowledge, innovations and good practices of Fijian communities into conservation and sustainable use of biodiversity.

Action Plan:

IK1.6 Improve the collection and documentation of traditional knowledge, cultural values and best practices relating to biodiversity and make readily available to support biodiversity conservation such as village level biodiversity and heritage registers.

IK1.7 Support tangible and non-tangible mapping of cultural knowledge and practices as defined by UNESCO.

IK1.8 Integrate traditional knowledge and practices in school curriculum to promote traditional values and practices for the protection and wise use of natural resources.

Objective IK1c: Improve science-based knowledge on ecosystem services and biodiversity values.

Action Plan:

IK1.9 Support learning and best practice network to improve science and practice.

IK1.10 Include biodiversity conservation science and management in all primary and secondary school curriculum.

IK1.11 Develop systematic storage systems for research data and information and enable their accessibility to all stakeholders in Fiji.

IK1.12 Encourage taxonomic and applied research to document Fiji's biodiversity, understand threats, and to find practical solutions for management.

Focus Area 2: Developing Protected Areas

CBD Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity.

Aichi Target 11: By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are identified, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascape.

Fiji Targets

Terrestrial Target: Areas of high biological importance have been identified by the Department of Environment and endorsed by the National Environment Council (see Map in Annex 2).

Marine Target: Areas of high biological importance have been identified by the Department of Environment and endorsed by the National Environment Council. At least 30% of Fiji's offshore areas is effectively managed and part of a national marine protected area network; and by 2025, 100% of inshore traditional fishing grounds (iQoliqoli) are effectively managed within locally managed areas.

Indicators:

- Total area of representative coverage of formally and informally recognised terrestrial and marine protected areas and locally managed areas.
- Total area and number of protected areas that are effectively managed based on agreed national protected area criteria for evaluating management effectiveness.
- Measurement of ecosystem services and equitable benefits from protected areas.
- Measure if trends in connectivity of protected areas and other area based approaches integrated into landscapes and seascapes.

Protected areas should be integrated into the wider landscape and seascape, and relevant sectors, bearing in mind the importance of complementarity and spatial configuration. In doing so, the Ecosystem-Based Management Approach should be applied, taking into account ecological connectivity and the concept of ecological networks, including connectivity for migratory species (through, for example, "fly-ways" for migratory birds). As discussed in Chapter 4, designation of protected areas should take into account the identified conservation priority areas. Protected areas should also be established and managed in close collaboration with, and through equitable processes that recognise and respect the rights of, indigenous and local communities, and vulnerable populations.

However, one of the constraints is that at least five government departments or ministries are involved in protected area management. A priority is to establish clear legal mechanisms and a practical institutional arrangement with clearly defined responsibilities. The NEC could play an important role in ensuring coordination at the national level. Resource owners could also play an important role in the management and development of these protected sites. The current interest in and expansion of the number of ecotourism developments has the potential to deliver ecosystem benefits.

Strategic Area PA1: Expanded national representative network of protected areas, accounting for community engagement, sustainably managed under good governance systems.

Objective PA1a: To carry out marine, terrestrial and wetlands gap analyses to guide the development of a national representative network of protected areas.

Action Plan:

PA1.1 Complete a gap analysis and prioritisation for marine, terrestrial and wetland ecosystems to identify key biodiversity areas for biodiversity protection to meet Fiji's national targets and international commitments.

PA1.2 Analyse, map and document the occurrence and status of all existing terrestrial, wetlands, and marine protected areas, including their governance structures.

PA1.3 Prioritise key biodiversity areas for focal species, species/groups, habitats and important ecological processes.

PA1.4 Identify sites that can achieve multiple objectives and outcomes such as biodiversity, fisheries culture and heritage, sustainable tourism, to ensure they provide benefits to local people.

Objective PA1b: To develop an implementation plan to meet Fiji's 30% commitment to establish a representative network of marine protected areas within Fiji's inshore, archipelagic and offshore waters, to protect marine biodiversity

support communities and livelihoods and the national economy.

Action Plan:

PA1.5 Develop 30% marine protected area objectives and conduct mapping of priority biodiversity areas.

PA1.6 Finalise the mapping of Fiji's marine bioregions, the typology for marine protected areas, and design principles and processes.

PA1.7 Adopt a national marine protected area system to meet Fiji's 30% commitment through government gazette, provincial endorsements and supported by national sector strategies and plans.

Strategic Area PA2: Expand Fiji's protected area network at the national, provincial, district and community level to achieve national targets.

Objective PA2a: Develop a national monitoring and evaluation framework for Fiji's protected areas to assess the management effectiveness of protected areas and promote adaptive management.

Action Plan:

PA2.1 Create a national register of protected area sites, with priorities identified for immediate attention.

PA2.2 Develop a national monitoring and evaluation framework for Fiji's protected areas.

PA2.3 Develop and establish a national protected areas management effectiveness tool and mechanism.

PA2.4 Ensure monitoring and evaluation is fed into adaptive management.

Objective PA2b: To develop context specific co-management plans, recognising both informal and formal protected area sites at national, provincial and local level.

Action Plan:

PA2.5 For each priority protected area, establish opportunities for mutually beneficial co-management arrangements, which take into account and build upon the existing good governance practice.

PA2.6 Ensure that for each protected area there are extensive participatory discussions with local communities and key stakeholders to discuss opportunities for co-management.

PA2.7 Build capacity at all levels, with strong focus on supporting provincial and district level committees to implement protected areas.

PA2.8 Diversification of indigenous integrated community conserved areas (ICCA) through acknowledgement in national legislation or effective means of formal inclusion in the national systems.

Objective PA2c*:* To maintain the integrity of protected area networks by ensuring they are recognised and supported by other sectors, the national sustainable development agenda, and other government policies and frameworks.

Action Plan:

PA2.9 The Department of Environment to coordinate with relevant natural resource use sectors such as agriculture, forestry, fisheries, mining and tourism sector to develop specific sustainable natural resource management activities to support protected area management and systems.

PA2.10 Incorporate protected area planning (both marine and terrestrial) within broader national planning exercises including integrated coastal management, spatial planning through depositing maps of terrestrial and marine protected area network at the Department of Environment and other Government Departments for reference during decision making process.

PA2.11 Support the implementation of the Environment Management Act 2005 as a platform for the integration of the Aichi Targets of the Convention on Biological Diversity into Departmental programmes and activities.

PA2.12 Assess the value and contribution of protected areas to national and local economies and to achieving the Sustainable Development Goals.

PA2.13 Establish and effectively manage protected-area systems to ensure the continued delivery of ecosystem services that increase resilience to climate change.

PA2.14 Sustain and restore the water-related services that both aquatic (wetland) and terrestrial ecosystems provide. For instance, wetland restoration is already being implemented as a means to improve water security.

Strategic Area PA3: Develop sustainable financing mechanisms for new and existing protected areas.

Objective PA3a: To establish sustainable financing mechanisms to support protected area establishment, management and long-term effectiveness.

Action Plan:

PA3.1 Calculate financial costs for managing a protected area network for Fiji, including establishment as well as long term-management costs.

PA3.2 Identify innovative sustainable financing mechanisms to support the establishment and management of protected areas in Fiji. These may include, for example, green tax, environmental levies, tax benefit systems for protected area, establishment of trust funds or endowment funds, etc.

PA3.3 Set up the legal, policy and institutional framework for establishing the financial structures and mechanism for a national protected area network.

PA3.4 Ensure meaningful participation and provide equitable incentives and remuneration to resource owners for protected area establishment and management.

Strategic Area PA4: Share best practices and lessons learned to improve management effectiveness and governance.

Objective PA4: To develop and collate best practice guidelines and disseminate among local and national protected area sites.

Action Plan:

PA4.1 Collate best practices for management, governance and sustainable financing from existing protected area sites in Fiji.

PA4.2 Identify key lessons learned and make these available to management authorities across national protected area sites.

PA4.3 Develop appropriate information kits, manuals, toolkits specific to different stakeholders such as planners, community leaders, researchers and practitioners.

PA4.4 Promote Fiji's best practices for protected area management, governance and sustainable financing in local, regional and international fora.

PA4.5 Develop and implement a communication strategy to promote protected areas in Fiji.

Strategic Area PA5: Develop legislation and policy to establish and manage a protected area network for Fiji.

Objective PA5: To identify areas where existing legislation should be strengthened or new legislation drafted to improve enabling environment for establishment of a protected area network.

Action Plan:

PA5.1 Review existing legislation and legislative reviews to identify legislative, institutional and administrative challenges in current legal and policy framework (if needed).

PA5.2 Finalise and pass amendments or new legislation required for implementing a national protected area system and network aligned to new Protected Area Policy framework.

Strategic Area PA6: Improve institutional, governance and administrative frameworks for protected areas.

Objective PA6: To establish clear and effective institutional arrangements for the governance and administration of a national protected area network for Fiji.

Action Plan:

PA6.1 Develop a Protected Areas Policy for Fiji to mandate Department of Environment to manage and oversee Fiji's protected areas network under the Environment Management Act 2005. Develop Protected are regulations under the Environment Management Act 2005 and guidelines.

PA6.2 Ensure the legislative framework for protected areas clearly defines roles of different government departments and agencies in the implementation and enforcement of Protected Areas typology and management plans

PA6.3 Strengthen the capacity of the Department of Environment, and other relevant agencies to contribute to the implementation of a national protected area network.

PA6.4 Improve legal governance framework around local community tenure systems.

PA6.5 Define the mandate through the NEC and secure funding for the Fiji Protected Area Committee.

Focus Area 3: Species Management (SM)

CBD Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Aichi Target 12: By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Aichi Target 13: By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.

Fiji Target
By 2025, at least 10 known threatened plant and animal species have been protected and their conservation status, particularly of those most in decline, has been improved and sustained.

Indicators:
- Reduced trend in extinction risks of Fiji's 10 priority plant and animal species
- Increased trend in population of the 10 priority threatened plant and animal species for Fiji
- Increased trend in distribution of the 10 selected plant and animal species

Though some extinction can occur naturally, as a result of human action, globally, current rates of extinction are some 100 to 1000 times the background extinction rate. While reducing the threat of human-induced extinction requires action to address the direct and indirect drivers of change, imminent extinctions of known threatened species can in many cases be prevented by protecting the sites or habitats where such threatened species are located, by combating particular threats, and through ex situ conservation. Additional actions, which directly focus on species, include the implementation of species recovery and conservation programmes, and the re-introduction of species to habitats from which they have been extirpated. Similar actions can be used to improve the conservation status of species more broadly. One relevant indicator for this target is the change in status of threatened species and their habitats. The IUCN Red List provides good baseline information for this target.

Individual species are the most readily recognisable and appreciated components of biodiversity and are often the focus of conservation initiatives. Fiji is known to have lost several species to extinction and many species threatened with extinction have been identified. Many of these are endemic to Fiji and Fiji will ensure that they are protected under the Endangered and Protected Species Act 2002 that is administered by the Department of Environment.

The biology, ecology and evolutionary processes of Fiji's threatened species are little known. Because of the limited data available, some species may actually be threatened but have not been identified as such. More research and conservation management is needed.

To date, Fiji's management of threatened species has been limited to controls on hunting and trade. Development pressures increase and natural habitats are increasingly disturbed, the need for research, monitoring and active management becomes ever more important. The very complexity of ecosystems makes any form of management a daunting task. Therefore it is imperative that understanding is focused at the species level of the organisms which comprises the ecosystem.

Strategic Area SM1: Increase access to expertise/ increased efforts made in the quality research.

Objective SM1: To develop and maintain species resource inventories and databases, for easy updating and use.

Action Plan:

SM1.1 Re-establish, maintain and update the National Resource Inventory (NRI) database by 2021 for all species and their status, including those that are endemic to Fiji, of cultural/subsistence/ economic value, and/or are nationally endangered or threatened.

SM1.2 Link the terrestrial (including insects) and freshwater/marine biodiversity resource inventory database to the Biodiversity Clearing House Mechanism (CHM) under the CBD website maintained by the Department of Environment in collaboration with the Species Working Group (SWG) under NBSAP.

SM1.3 Prioritise for targeted conservation/ management effort, and in consultation with relevant stakeholders, including communities, 20 species that are endemic to Fiji, of cultural/ subsistence/economic value, and/or are nationally endangered or threatened.

SM1.4 Undertake conservation management-oriented research, in consultation with relevant stakeholders and communities, on the 20

prioritised species identified in SM1.3.

SM1.5 Explore potential sustainable use of non-threatened and non-endangered species such as Ivi (*Inocarpus fagifer*) and *Ficus spp* to increase the value of their habitat (in collaboration with relevant Government staff and community representatives).

SM1.6 Develop appropriate procedural protocols for public and institutional access to Fiji's biodiversity

SM1.7 Draw up an appropriate framework and mechanism for identifying and monitoring the conservation status of indicator species regularly (linking to database).

SM1.8 Draw up an appropriate framework and mechanism for identifying and monitoring the status of the 20 priority species as identified under SM1.3.

SM1.9 Monitor climate change impacts on species diversity and ecosystem diversity to enhance implementation of the CBD at the local level.

Strategic Area SM2: Decrease in illegal trade of endangered and threatened species

Objective SM2a: To assist in the improvement of local port/border control enforcement and monitoring, and increase support and capacity for enforcement and monitoring of the Convention on International Trade in Wild Species of Fauna and Flora (CITES).

Action Plan:

SM2.1 Further strengthen relationships/collaborations with border control and enforcement authorities (e.g. Biosecurity Authority of Fiji (BAF), Fiji Islands Revenue and Customs Authority (FRCA), Marine Safety Authority of Fiji (MSAF), and the Police) through a memorandum of understanding or agreement.

SM2.2 Draw up an appropriate framework and mechanism for identifying and monitoring the status of CITES listed species.

SM2.3 Strengthen surveillance and reporting of marine vessels including ships and yachts.

Objective SM2b: To increase capacity for enforcement and monitoring of the Endangered Protected Species Act (EPS) 2002 and Regulations.

Action Plan:

SM 2.4 Review the schedules of the listed native species EPS Act 2002. The Act is administered by the Department of Environment

SM 2.5 Draw up an appropriate framework and mechanism for identifying and monitoring the status of rare and endangered species.

SM 2.6 Enforce the EPS Act 2002

SM 2.7 Establish administrative responsibilities and strengthen capacity within relevant line ministries and authorities.

SM 2.8 Work with Fish and Forest wardens within the communities to strengthen capacity in identifying and preventing poaching/removal of protected species.

Strategic Area SM3: Increase Government's contribution to conservation budgets

Objective SM3: To secure a national budget allocation for species conservation.

Action Plan:

SM3.1 Devise conservation fund derived from one or more sustainable financing option (including departure tax, environmental levy, etc.).

SM3.2 Establish a conservation fund to be managed by National Trust of Fiji under government budgetary process.

Strategic Area SM4: Improved communication amongst stakeholders, including communities, on threatened and endangered species

Objective SM4a: To establish practical systems and processes for information sharing on threatened and endangered species.

Action Plan:

SM4.1 Include threatened and endangered species in the Biodiversity Clearing House Mechanism.

SM4.2 Produce, in all languages, guides on the 20 priority endemic, endangered, or threatened species of plants and animals in Fiji (as identified in SM1.3).

SM4.3 Produce appropriate educational resources on the 10 priority endemic, endangered or threatened species of plants and animals in Fiji for use in the primary and secondary school system.

SM4.4 Develop and implement a communications strategy for priority species that are of cultural, subsistence or economic value.

Objective SM4b: To develop mechanisms for facilitating community feedback to the Department of Environment on species management and conservation.

Action Plan:

SM4.5 Increase Department of Environment's representation/participation/presentation at District/Provincial meetings.

SM4.6 Establish a reporting mechanism in collaboration with District and Provincial Councils.

Focus Area 4: Management of Invasive Species (MIS)

CBD Strategic Goal B. Reduce the direct pressures on biodiversity and promote sustainable use

Aichi Target 9: By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.

Fiji Target
Fiji's invasive alien species (IAS), pathways, risks and threats to biodiversity and livelihoods are identified; priority IAS are controlled or eradicated; and by 2023 measures are in place to manage pathways to prevent their introduction and establishment.

Indicators:

- Assessment and measure of impact of invasive alien species on biodiversity and food security.
- Impact of policy responses, legislation and management plans to control and prevent spread of invasive and alien species.

Definition:
Invasive Alien Species (IAS) are organisms found outside of their native geographical ranges that have spread and become invasive in their new habitats and cause harm to biodiversity and other things that humans value. IAS include a wide range of weeds, vertebrate and invertebrate animals and micro-organisms and diseases that just as serious, but often harder to prepare for and recover from than natural disasters, overexploitation, environmental degradation and economic downturns. It should be noted that some indigenous, non-alien organisms can, given environmental degradation or change, also become invasive.

Intentional and unintentional introductions of IAS are a major threat to biodiversity and ecosystem services and their control requires constant vigilance and resolute action. Harmful invasions by alien species are generally regarded to be the second-most serious threat to biodiversity after habitat loss, but for an oceanic island like Fiji, they may be the most harmful. The problems of invasive species are likely to become even more severe in the future, with increasing global trade and international travel, changing global climate and changing land use patterns.

Pathways for the introduction of IAS into a country can be managed through improved border controls and quarantine, including through better coordination with national and regional bodies responsible for plant and animal health. The Biosecurity Authority for Fiji (BAF) is the lead agency for border control and quarantine.

However, given the multiple pathways for invasive species introductions and that because multiple alien species are already present in many countries, BAF, the Department of Environment and NGOs will work closely to prioritise control and eradication efforts on those species and pathways which will have the greatest impact on biodiversity and/or which are the most resource effective to address. Furthermore, it is evident that there is a need for measures to be introduced to prevent the spread of invasive species within Fiji's 300 plus islands. Currently there is only very limited awareness of internal quarantine requirements and this is confined mainly to species of agricultural or economic significance.

The control of introduced pests of economic crops, either insects or weeds, has always been much better developed than any consideration of biodiversity. However, dramatic evidence of the damage introduced species cause is evident in Fiji by the invasive mongoose, which has devastated the reptile and ground nesting bird fauna of the islands on which it was introduced. Fiji still has several islands that are mongoose-free and these islands exhibit very conspicuous faunal differences, making a clear case for also targeting species that may not have direct impact on economic crops. Biodiversity issues also need to be very thoroughly evaluated in the licencing of introduced plants and in bio control programmes.

While well-developed and globally-applicable indicators are lacking, some basic methodologies do exist which can serve as a starting point for further monitoring or provide baseline information. Pi\- and weed management in several islands: Ringgolds, Vatu-i-Ra, Monuriki (for crested iguanas), Yadua taba (goats only). This work has been led by BirdLife International and the National Trust of Fiji have led this work.

Strategic Area MIS1: Target research to support improved knowledge on invasive alien species in Fiji.
Objective MIS1a: To identify pathways for invasive alien species introduction.

Action Plan:
MIS1.1 Identify invasive alien species pathways as potential threats (to biodiversity) within Fiji and outside national borders.
MIS1.2 Prioritise invasive alien species threats and pathways for intervention.

MIS1.3 Complete risk assessments and develop response procedures for invasive alien species threats and pathways (at national and inter-island borders).

MIS1.4 Identify and prioritise knowledge gaps for priority invasive alien species /pathways and support research needs.

MIS1.5 Conduct research on the integration of impacts of invasive alien species on biodiversity cultural and commercial values.

Objective MIS1b: To establish and maintain a national invasive alien species database.

Action Plan:

MIS1.6 Conduct national invasive alien species stocktake survey in consultation with all stakeholders with invasive alien species data and knowledge.

MIS1.7 Develop a framework for data sharing in support of centralising access to invasive alien species information (particularly biodiversity threats) in Fiji.

MIS1.8 Put in place an invasive alien species information review process to continually assess gaps.

Strategic Area MIS2: Strengthen national legislation, policies and strategies to support effective prevention and management of invasive alien species.

Objective MIS2a: To conduct a legislative review and gap analysis for invasive alien species.

Action Plan:

MIS2.1 To conduct a legislative review and gap analysis, including review of Fiji's compliance with the International Maritime Organisation Ballast Water Management Convention.

MIS2.2 Update national policy and legislation on invasive alien species, if identified by the gap analysis.

Objective MIS2b: To develop a National Invasive Alien Species Strategy and Action Plan (NISSAP).

Action Plan:

MIS2.3 Conduct an assessment of the severity and distribution of invasive alien species threats to Fiji's biodiversity and prioritise species for management.

MIS2.4 Identify and recognise potential for commercial and other utilisation interests of invasive alien species and develop appropriate safeguards.

MIS2.5 Prioritise invasive alien species threats and sites for management action in Fiji (e.g. biosecurity, eradication, containment and control).

MIS2.6 Adopt relevant biosecurity regulations, standards and tools to ensure biodiversity considerations in the decision making processes involved in importation and local movement of invasive alien species.

Objective MIS2c: To strengthen the role and function of the Fiji Invasive Species Taskforce (FIST) as the multi-stakeholder coordination mechanism to provide policy and technical advice on Invasive Alien Species and biosecurity to the National Environment Council, Biosecurity Authority of Fiji, Department of Environment and other relevant bodies.

Action Plan:

MIS2.7 Develop a Terms of Reference for the Fiji Invasive Species Taskforce (FIST) and its scope of work to recognise different levels of management.

MS2.8 Provide needed resources and policy mandate to ensure that the FIST is mandated and appropriately linked to related advisory bodies such as the Species Working Group and others with clear reporting arrangements.

MIS2.9 Facilitate FIST developing MOUs with other agencies under NEC such as the Department of Environment to facilitate effective management by Biosecurity.

Objective MIS2d: To actively participate in international and regional fora such as the Convention on Biological Diversity, Pacific Invasive Partnership (PIP) and regional discussions in areas such as Genetically Modified Organisms, debates on risk of pests and diseases, as well as lessons learning for improved practice and policy lessons in invasive alien species and biosecurity.

Action Plan:

MIS2.10 Appoint focal points within the Fiji Invasive Species Taskforce to coordinate and provide advice to government on biosafety issues and ensure Fiji's participation in the current regional and international biosafety lessons learning, sharing best practices and planning.

MIS2.11 Develop clear TOR for roles and responsibilities of the FIST focal point and Memorandum of Agreement between FIST and the focal point to operationalize and implement the TOR.

Objective MIS2e: To ensure effective implementation and monitoring of national Invasive Alien Species policies, strategies, programmes and initiatives.

Action Plan:

MIS2.12 Establish administrative responsibilities for national invasive alien species management and biosecurity within Department of Environment and Biosecurity Authority of Fiji.

MIS2.13 Include in MOU with Fiji Invasive Species Taskforce provision for the establishment, as needed, of technical working groups that are responsible to the National Environment Council.

MIS2.14 Secure resources and increase capacity within the Department of Environment and Biosecurity Authority of Fiji through government resources and external funding for invasive alien species and biosecurity programmes.

MIS2.14 Integrate invasive alien species and biosecurity management at provincial, district and community management levels to improve local management and participation.

Strategic Area MIS3: Improve monitoring and surveillance of invasive alien species in Fiji

Objective MIS3a: To maintain international standards of national quarantine and biosecurity surveillance programme.

Action Plans:

MIS3.1 Implement the national quarantine monitoring and surveillance programme with citizen participation.

MIS3.2 Improve regional collaboration between quarantine services and relevant regional institutions/organisations to develop regional action plans and strategies for the prevention of introduction and spread of invasive alien species.

MIS3.3 Develop an invasive alien species alert system for Fiji.

MIS3.4 Secure sustainable funding mechanisms for surveillance, monitoring and enforcement.

Objective MIS3b: To review and strengthen control and response programmes for priority invasive alien species, e.g. Biosecurity Authority of Fiji -National Framework to termite response.

Action Plan:

MIS3.5 Assess and review existing national response framework.

MIS3.6 Develop control programmes for priority invasive alien species.

MIS3.7 Secure adequate financial and technical resources for management of invasive alien species.

MIS3.8 Develop protocols which require an Environmental Impact Assessment by an Independent body before the introduction of any exotic species, in line with the Environment Management Act 2005 or total ban of introduction of exotic species.

Strategic Area MIS4: Raise awareness in Fiji, including with visitors, to reduce the introduction of invasive alien species

Objective MIS4: To put in place an invasive alien species public awareness programme, including at all ports of entry into Fiji, as well as at major inter-island transport locations.

Action Plan:

MIS4.1 Develop an invasive species communications strategy for Fiji that also targets visitors and highlights the risks and penalties associated with import of IAS to Fiji.

MIS4.2 Develop awareness materials for visitors and local communities on invasive alien species and strategies to prevent their introduction and spread.

MIS4.3 Develop public, especially community, awareness on the threat posed by inter-island traffic in the spread of invasive alien species, giving priority to Taveuni and islands in the Province of Lau, Lomaiviti and Kadavu.

MIS4.4 Carry out awareness and education on priority species to gain public support and vigilance to reduce the spread of IAS.

Focus Area 5: Enabling Environment and Mainstreaming (EEM)

CBD Strategic Goal A. Addressing the underlying causes of biodiversity loss

Aichi Target 4: By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.

Fiji Target

Agencies have put in place relevant legislations and policies, including Access and Benefit Sharing protocols that support NBSAP implementation;

businesses and production sectors are adopting Fiji's Green Growth Framework; and stakeholders at all levels have taken steps to develop and implement plans for sustainable production and consumption.

Indicators:

- Increased initiatives by the different sectors to minimise their impact on Fiji's biodiversity.
- Increased political awareness and support for biodiversity policies.
- Increased communication programmes focused around biodiversity to promote actions and social corporate responsibility with the private sector.
- Increased engagement and partnerships to raise awareness, evoke active responses, information sharing and cross-sector coordination and communication. Bringing the use of natural resources within safe ecological limits will be an integral part of Fiji's NBSAP. Reducing total demand and increasing resource and energy efficiency contribute to the target which can be pursued through government regulations and/ or incentives, education and research, and social and corporate responsibility.

Mainstreaming will be achieved through dialogue among sectors and stakeholders, supported by planning tools such as strategic environmental impact assessment and economic tools, such as incentive measures, that integrate biodiversity issues. Initially, process indicators, such as the establishment of plans with clear and measurable targets and the presence of strategic environmental impact assessment or similar assessment tools, would be the main indicators to monitor progress towards this goal.

A further possible indicator is the number of companies (or their market share) with polices for biodiversity-friendly practices. One relevant outcome indicator is the ecological footprint (and related concepts) for which baseline data is available.

Capacity building for safety in biotechnology, particularly in developing countries, has thus been accorded high priority. It requires concerted and coordinated global efforts by all stakeholders at the national, sub regional, regional and global levels.

Strategic Area EEM1: Appropriate legal, policy and institutional frameworks that support implementation of Fiji's NBSAP are in place.

Objective EEM1: Strengthen relevant law, and policy frameworks that support NBSAP implementation and the protection and wise use of biodiversity.

Action Plan:

EEM1.1 Update status or conduct gap analysis of relevant laws, policy and institutional frameworks required to support NBSAP implementation in the various thematic areas.

EEM1.2 Strengthen the implementation of effective and efficient enforcement systems for Environment Laws at national, provincial and local levels.

EEM1.3 Strengthen enforcement and identify gaps for effective implementation of EIA guidelines and strengthen national capacities of EIA practitioners and enforcement officers.

EEM1.4 Increase public awareness on environment and related laws and policies.

EEM1.5 Increase political awareness and motivation to support environmental good governance and implementation.

EEM1.6 Carry out an institutional assessment of the environment sector and implement an institutional development strategy to support NBSAP implementation.

EEM1.7 Strengthen enforcement and identify gaps for effective implementation of EIA guidelines and strengthen national capacities of EIA practitioners and enforcement officers.

EEM1.8 Assess the extent to which climate change impacts on biodiversity and ecosystem services have been assessed by national impact

EEM1.9 Establish a monitoring system to capture observed impacts, with a particular focus on vulnerable ecosystems

EEM1.10 Identify other sources of information on linkages between biodiversity and climate change in the country and make arrangements for information sharing

Strategic Area EEM2: Strengthen application and operationalization of the Nagoya Protocol on Access to Genetic Resources and Benefit Sharing (ABS) in Fiji.

Objective EEM2: Develop and implement relevant Access and Benefit Sharing policy and legislation in Fiji.

Action Plan:

EEM2.1 Define the overall ABS strategy and approach for Fiji.

EEM2.2 The Department of Environment to review and develop appropriate laws, policy for ABS implementation.

EEM2.3 Establish institutional arrangements and assignment of role and responsibilities within the national institutional landscape to implement ABS.

EEM2.4 Define procedures and rules for access to

traditional knowledge, to protect the rights of indigenous and local communities and to ensure equitable sharing of benefits.

EEM2.5 Define common ABS arrangements with countries at the regional level.

Strategic Area EEM3: Improve involvement of the Taukei institutions such as Ministry of iTaukei Affairs, iTaukei Lands Trust Board, and Provincial Offices in implementation of NBSAPs

Objective EEM3: Ensure biodiversity value of traditionally owned land is enhanced.

Action Plan:

EEM3.1 Work with provincial offices to incorporate relevant NBSAP components into provincial development plan.

EEM3.2 Liaise with community to understand government policies, legislation, strategies and protocols.

EEM3.3 Develop protocols with TLTB to ensure biodiversity value of leased lands are maintained

Strategic Area EEM4: Mainstreaming Climate Change into Biodiversity Conservation

Objective EEM4: Ensure climate change adaptation is mainstreamed into biodiversity conservation.

EEM4.1 Integrate disaster risk reduction and climate change adaptation strategies and actions into NBSAP focal areas.

EEM4.2 Include vulnerability assessments and climate change impact projections into resource management planning, such as integrated coastal, watershed, land-use, forest and marine management plans

EEM4.3 Incorporate climate change impact projections into biodiversity conservation plans

EEM4.4 Implement best practice adaptation measures, based on sound scientific research, and lessons learnt from local, regional and international experiences.

EEM4.5Undertake research to identify effective adaptation measures to support biodiversity and natural resource sectors such as fisheries, forest and land-use adaptation and disaster risk reduction responses.

Focus Area 6: Sustainable Use and Development (SUD)

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use.

Target 5: By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.

Target 6: By 2020, all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.

Target 7: By 2020, areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.

Target 8: By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.

Fiji Target:
The NBSAP strategies and action plans are fully incorporated into 5 & 20 Year National Development Plan, the Green Growth Framework and other sectoral plans (e.g. Renewable Energy, Agriculture, Forestry, Mining, Tourism, etc.)

Indicators:
Declines and extinction of utilised species including traded species are eliminated or significantly reduced.

Degree to which biodiversity and ecosystem service values are incorporated into organisational accounting reporting Extinction risk trends of habitat-dependent species is halted or reversed.

Population of habitat dependent species are maintained at healthy levels. The economic survival of various production sectors, and of the people depending on those sectors for their livelihoods, is intricately connected to the conservation and sustainable use of biodiversity. The word “mainstreaming” can be used synonymously with "inclusion". Mainstreaming means integrating or including actions related to conservation and sustainable use of biodiversity in strategies relating to production sectors, such as agriculture, fisheries, forestry, tourism and mining. Mainstreaming might also refer to including

biodiversity considerations in poverty reduction plans and national sustainable development plans. By mainstreaming biodiversity into sectoral strategies, plans and programmes, we recognise the crucial role that biodiversity has for human well-being.

The sustainable development focal area is the widest coverage of the NBSAP in terms of implementation as this is where a lot of the direct threats to biodiversity are addressed, such as unsustainable coastal development, forest conversion, addressing threats to inland waters and inshore fisheries. These have direct links to Fiji's NBSAP Implementation Framework thematic areas such as: Coastal Development, Inland waters, Inshore Fisheries and Forest Conversion. It also addresses the increasing engagement and participation of all sectors of society and Fijian Communities including iTaukei and non-iTaukei institutions and communities.

This focus area also strategically links the NBSAP to the Fijian Green Growth Framework guiding principles:

- Reducing carbon footprints at all levels;
- Improving resource productivity (doing more with less);
- Developing a new integrated approach, with all stakeholders collectively working together for common good. The cross-cutting nature of issues relating to sustainable development requires harmony and synergy in development strategies;
- Strengthen socio-cultural education of responsible environmental stewardship and civic responsibility;
- Strengthening the economic valuation of ecosystem goods and services provision by biodiversity to foster ecologically appropriate sustainable development.
- Increasing the adoption of comprehensive risk assessment
- Increasing the adoption of environment auditing on past and planned developments in order to support initiatives that not only provide economic benefits but also improve the environment situation;
- Enhancing structural reforms for fair competition and efficiency; and
- Incentivising investment in efficient use of natural resources.

Strategic Area SUD1: Mainstreaming biodiversity into production and service sectors

Objective SUD1: Integrating biodiversity conservation and sustainable use and management into the production and manufacturing downstream processing and value adding for agriculture, fisheries, forestry, tourism, mining, other land-uses and transport industries.

Action Plan:

SUD1.1 Review current sectoral strategies and plans to ensure biodiversity conservation is adequately addressed.

SUD 1.2 Explore ways to ensure regulations reflect or contribute to biodiversity objectives.

SUD 1.3 Ensure industry standards, codes of conduct, guidelines and good practices support biodiversity conservation.

SUD 1.4 Develop pilot projects to showcase clean industries.

SUD 1.5 Carry out awareness programmes on sustainable production and consumption.

Strategic Area SUD2: Mainstreaming biodiversity into national sustainable development and poverty reduction strategies.

Objective SUD2: Integrate biodiversity-relevant issues into Fiji's National Development Plan, Green Growth Framework and poverty reduction strategies.

Action Plan:

SUD2.1 Incorporate biodiversity protection and wise use into Fiji's National Development Plan.

SUD2.2 Implement biodiversity strategies and actions under the National Green Growth Framework.

SUD2.3 Incorporate biodiversity protection and wise use into Fiji's strategies on poverty, particularly poverty reduction and sustainable livelihoods.

Strategic Area SUD3: Reducing major threats to forest and freshwater ecosystems from unsustainable logging, agriculture, fisheries, mining and human settlements.

Objective SUD3: Improve coordination of Government policies, legislations and management guidelines to ensure protection of Fiji's forest and water-catchment ecosystems.

Action Plans:

SUD3.1 Strengthen cross-sectoral forums to facilitate forest ecosystem conservation work such as the green growth thematic group, and strengthen information dissemination.

SUD3.2 Integrate response to climate change such as REDD++, building resilience e.g. community forest protected areas and biodiversity conservation into planning and review process of Government policies and plans.

SUD3.3 Capture best practice and lessons learned to improve management of forest ecosystems and manage logging activities through EIA process under the Environment Management Act 2005.

SUD3.4 Support the National Forest Policy and the prohibition on the harvesting of forest where average slopes exceed 25^{o} over a distance of 100 metres or more (FFHCOP, Section 11).

SUD3.5 Avoid clear cutting and land use changes through designating protected areas or restrictions on use to decrease emissions from deforestation by 20%.

SUD3.6 Reduce impact of logging through training of logging operators, machine operators and logging planners in the field of resource-saving and (tree selection, directional felling and skidding) techniques by providing advanced skidding equipment to reduce emission from logging in natural forest by 10%.

SUD3.7 To increase survival rates after planting and enhance site productivity under afforestation and reforestation that result in higher numbers of seedling survival, planting should be carried out during wet season and thinning should be applied for stand maintenance to increase productivity in forest plantations by 20%.

Strategic Area SUD4: Reducing major threats to inland waters (watershed, streams, rivers and lakes) such as dredging, floods, gravel extraction, mining, agriculture, deforestation, tourism, sugar, manufacturing, waste management.

Objective SUD4: Establish locally managed areas, protected areas and/or Ramsar sites, at priority catchments, wetlands and key biodiversity areas and strengthen EIAs for all forms of development activity in inland waters.

Action Plan:

SUD4.1 Improve and update information on status of inland waters and their biodiversity.

SUD4.2 Conduct gap analysis to identify gaps in protection and management of inland waters and services and implement strategies and action plans to address those gaps.

SUD4.3 Integrate inland waters strategic areas into national frameworks such as national land-use plans, permanent forest estates, integrated coastal management.
plans, agriculture sector plans and other development sector plans.

SUD4.4 Conduct valuation of wetland services so that they are properly accounted for in decision making

SUD4.5 Improve public awareness of the threats to wetland species and ecosystems and options for management.

SUD4.6 Promote Sustainable water management where river basins, aquifers, flood plains and their associated vegetation provide water storage and flood regulation;

SUD4.7 Strengthen disaster risk reduction through restoration of coastal habitats such as protection of existing mangroves areas, or the flood mitigation services provided by wetlands.

SUD4.8 Establish diverse agricultural systems, using indigenous knowledge of specific crop and livestock varieties, maintaining genetic diversity of crops and livestock, and conserving diverse agricultural landscapes to secure food provision in changing local climatic conditions.

Strategic Area SUD5: Reduce major threats to Fiji's coastal ecosystems such as reclamation, unsustainable tourism development, river dredging and pollution.

Objective SUD5: Improve coordination of national policies, legislations and management guidelines to ensure protection of Fiji's coastal and marine ecosystems.

Action Plan:

SUD5.1 Strengthen cross-sectoral forums that facilitate integrated coastal management (ICM) and inshore fisheries plans and guidelines.

SUD5.2 Develop and promote partnership between government and stakeholders towards sustainable tourism, infrastructure, agriculture, forestry, mining and fisheries.

SUD5.3 Finalise, gazette and implement the national mangrove management plan.

SUD5.4 Seabed mining: Understanding the impact and inter-connected food-web to identify critical management gaps, review the mining Act to capture seabed mining, ensure EIA process and monitoring (as required by the Environment Management Act 2005), ensure clear EEZ boundaries, establish Offshore-International waters partnerships, document deep sea mining threats. Ensure EIAs are carried out for exploration work.

SUD5.5 Monitor and evaluate the impacts of coastal developments at different scales/levels for different industries in Fiji.

SUD5.6 Carry out carbon sequestration studies for the blue carbon including seagrass meadows and mangrove habitats in Fiji.

SUD5.7 Replicate above-ground and below ground biomass studies for mangroves and soil carbon content and all major locales nationally.

SUD5.8 Develop a Blue Carbon Policy and Action Plan for Fiji.

SUD5.9 Establish a database for all management activities in blue carbon habitats such as mangroves and seagrass beds.

Strategic Area SUD6: Strengthen ecosystem based approaches to coastal fisheries management to reduce overharvesting and destructive fishing methods to maintain and improve coastal and coral reef ecosystems.

Objective 6a: Scale up successes in sustainable fisheries management in inshore traditional fishing grounds (iQoliqoli) using a range of traditional and modern fisheries management tools and put in place supportive enabling mechanisms.

Action Plan:

SUD6.1 Support the development of inshore fisheries management plans at national, provincial and inshore traditional fishing ground levels.

SUD6.2 Promote tools such as the 'Community Based

Adaptive Management' (CBAM) in developing management plans and managing locally managed marine areas within inshore traditional fishing grounds in Fiji.

SUD6.3 Utilise a range of traditional and modern fisheries management tools such as locally managed marine areas, tabu areas, gear restrictions, species prohibitions, size limits and seasonal closures, to ensure the sustainability of specific fisheries.

SUD 6.4 Coordinate with Ministry of Fisheries to improve access for food security among local communities while supporting sustainable fishing practices adopted at community level.

SUD6.5 Capture traditional knowledge and strengthen science and research in inshore fisheries to support management objectives.

SUD6.6 Support capacity building at community level to ensure adequate monitoring and maintenance of databases (e.g. fisheries, export, licences) to support fisheries management decisions, and adaptive management.

SUD6.7 Support the effective establishment of provincial and district level environment committees or Environment (Yaubula) Committees to support inshore fisheries management at provincial and traditional iQoliqoli level.

SUD6.8 Implement communication strategy to improve compliance of national-scale fisheries laws and regulations.

Objective SUD6b: Improve coordination and partnership of Government, NGOs, academic institutions, local government, communities and fisheries sectors to support policies, legislations, management guidelines and sustainable financing to ensure protection of Fiji's coastal fisheries and ecosystems.

Action Plan:

SUD6.9 Strengthen and better utilise networks such the Fiji Locally Managed Marine Areas Network and Women in Fisheries Network-Fiji to support sustainable management of inshore fisheries in Fiji.

SUD6.10 Establish and support information hubs at all levels to ensure policies, legislations and best management approaches are disseminated to all levels (e.g. province, district, village).

SUD6.11 Establishment of sustainable financing mechanisms at national and other appropriate level to provide long-term support to sustainable fisheries management in Fiji.

SUD6.12 Increased collaboration between the Department of Environment, Ministry of Fisheries, law enforcement agencies and the judiciary system to address illegal, unregulated and unreported fisheries and enforce fisheries laws, regulations and policies. The Department of Environment to enforce the Environment Management Act 2005 to ensure all natural resources (land and sea based) are protected and managed sustainably.

STRATEGY FOR RESOURCE MOBILIZATION

By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan 2011-2020 from all sources and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.

Strategic Area RM1: Stakeholder engagement, awareness, ecosystem valuation, assessments and mapping

Objective RM1a: Develop specific implementation plans for each Focus Area.

Actions:

RM1.1 Increase stakeholder engagement to consider biodiversity and ecosystem services under each Focal Area (section 5 above).

RM1.2 Carry out ecosystem assessments, mapping, indicators and valuation for each focal areas.

RM1.3 Carry out capacity building activities to equip actors with necessary skills to carry out value-based actions e.g. tools to gather information on biodiversity and ecosystem advising them on how to incorporate biodiversity and ecosystem service values into their business plans that make economic and financial sense.

RM1.4 Engage funders strategically and identify key sectors benefitting from biodiversity and ecosystem service values who are primary users, and how they will benefit from investing in biodiversity ecosystem services and what ongoing financial mechanism are available to secure sustained funding

RM1.5: Assess financial flows associated with drivers of biodiversity loss such as harmful incentives, and how they can be influenced to reduce their impact.

Strategic Area RM2: Development of Fiji NBSAP Resource Mobilisation Plan.

Objective RM2: Develop Resource Mobilisation Plan using best available data and scenario development.

Actions:

RM2.1 Conduct an ecosystem service mapping to assess state and trend in ecosystem service provision and human well-being, to provide spatial quantification of ecosystem services and their values.

RM2.2 Conduct economic valuation of ecosystems and biodiversity using variety of economic valuation methods to determine monetary value of biodiversity i.e. direct market valuation approaches, revealed preferences and stated preference approaches.

RM2.3 Assess the cost of NBSAP strategies and action, identify financial gaps and identify and scale up finance mechanism.

RM2.4 Integrate values of biodiversity and ecosystems into national accounting frameworks using the Biodiversity Finance conceptual framework of public expenditure review, pressure-state-response, scenario development and comparison and root cause analysis and existing recommendations and studies.

RM2.5 Formulate a Fiji Resource Mobilisation plan to include policy and institutional analysis, expenditure review, strategies, actions and costs, projected future states with investments, opportunities for mobilisation of resources, making a case of for biodiversity investments and consolidate resource mobilisation plan with finance mechanism, actors and timelines.

RM2.6 Integrate the Resource Mobilisation Plan into national plans and identify national synergies and entry points.

6.0 STRATEGY AND ACTION PLAN S IMPLEMENTATION FRAMEWORK

6.1 The Implementation Framework

Fiji's NBSAP will be implemented through the NBSAP Implementation Framework (IF). The Department of Environment is mandated to carry out biodiversity conservation work through the Environment Management Act 2005, the National Environment Council and the Endangered and Protected Species Act 2002. The Department of Environment has established the NBSAP Steering Committee which consists of Chairs of the thematic areas working groups and guides, monitors and provides updates and reports on implementation and progress.

As part of this review process, stakeholders have identified seven thematic areas to guide the implementation of Fiji's NBSAP and these are:

1. Forest Conversion Management
2. Invasive Alien Species
3. Inshore Fisheries
4. Protected Areas
5. Coastal Development
6. Species Conservation: Threatened and endangered species (trade and domestic consumption)
7. Inland Waters

The six priority focus areas identified under the 2020–2025 NBSAP:

Focus 1: Improving our knowledge (IK)
Focus 2: Developing Protected Areas (PA)
Focus 3: Species Management (SM)
Focus 4: Management of Invasive Species (IS)
Focus 5: Enabling Environment and Mainstreaming (EEM)
Focus 6: Sustainable Use and Development (SUD).

Strategic areas and objectives have been identified for each focus area and the framework provides an outline of the proposed actions towards implementing these objectives.

The Implementation Framework is currently under revision in parallel to the updating of the NBSAP. The IF will be revised every 5 years to guide implementation with the leadership of the Department of Environment. The key elements of this implementation framework are to ensure that:

(i) Thematic area working groups are established with representatives from implementing government and non-government organisations.
(ii) A chair is appointed to ensure the thematic areas meet once every quarter to report on progress.
(iii) Identify new activities; and produce and submit timely reports to the Department of Environment.
(iv) There is bi-annual reporting to the Department of Environment from each thematic area with updates and progress against indicators.

6.2 Implementation Framework and Indicators Guideline

The table below provides a suggested framework to reflect specific thematic areas and actions in the revised IF to ensure successful implementation of the NBSAP focal areas. The suggested indicators would be further developed in the IF to help track progress.

NBSAP INDICATORS	FRAMEWORK THEMATIC	IMPLEMENTATION AREAS
1. Improving our Knowledge	• Trends in public engagements with biodiversity • Trends in awareness and attitudes to biodiversity • Trends in communication programmes in actions promoting social corporate responsibility	This focal area is recognised as cross sectoral and as such reflected in all 7 Thematic areas of the IF
2. Developing Protected Areas	• Trends in representative coverage of protected areas including sites of particular importance for biodiversity • Trends in protected area conditions and management effectiveness • Trends in delivery of ecosystem services and equitable benefits from PAs • Trend in connectivity of PAs and other area based approaches integrated into landscapes and seascapes	Thematic Area 6: Protected Areas
3. Species Management (SM)	• Trend in extinction risks of species • Trends in abundance of selected species • Trends in distribution of selected species	Thematic Area 5: Species Conservation
4. Management of Invasive Species (IS)	• Trends in the impact of invasive alien species on extinction and risk trends • Trends in policy responses, legislation and management plans to control and prevent spread of invasive and alien species	Thematic Area 2: Invasive Alien Species
5. Enabling Environment (EEM)	• Trends in implementation of national biodiversity strategies and action plans including their comprehensiveness • Aggregated financial flows in the amount of biodiversity related funding, per annum, for achieving NBSAP objectives	This focal area is recognised as cross sectoral and as such reflected in all 7 thematic areas of the IF
6. Sustainable-Use and Development (SUD)	• Trends in population increase of utilised species including traded ones • Trend to which biodiversity and ecosystem service values are incorporated into organisational accounting reporting • Extinction risk trends of habitat-dependent species • Population of habitat dependent species • Trends in extinction of by-catch • Trends in contamination of wildlife	This focal area is recognised as cross sectoral and as such reflected in all 7 thematic areas of the IF.

6.3 Implementation Coordination

The implementation of the Fiji NBSAP is coordinated by the Department of Environment through a Steering Committee comprising of chairs of the Thematic working groups outlined in the reporting structure below. The Steering Committee also reports upward to the National Environment Council through the Director of Environment. The implementation structure and reporting is a guide to ensure clear communication exists between different thematic areas and that coordination are decentralised under specific thematic areas. The lead agency of the NBSAP process in Fiji is the Department of Environment which is the CBD and NBSAP focal point.

Members of the National Environment Council as outlined in the Environment Management Act (Section 7) include:

(a) Chief Executive Officer responsible for the Ministry of Environment as the Chairperson;
(b) Chief Executive Officers for the Ministries responsible for Lands, Mineral Resources, Agriculture, Fisheries or Forests;
(c) Chief Executive Officer for the Ministry responsible for Fijian Affairs;
(d) General Manager of the iTaukei Land Trust Board;
(e) Chief Executive Officer of the Ministry responsible for Health;
(f) Chief Executive Officer of the Ministry responsible for Tourism;
(g) President of the Local Government Association;
(h) A member to represent the interests of non-governmental organisations;
(i) 2 members, one to represent the interests of the general business community and one to represent the manufacturing industries; and
(j) A member to represent the interests of the academic community.

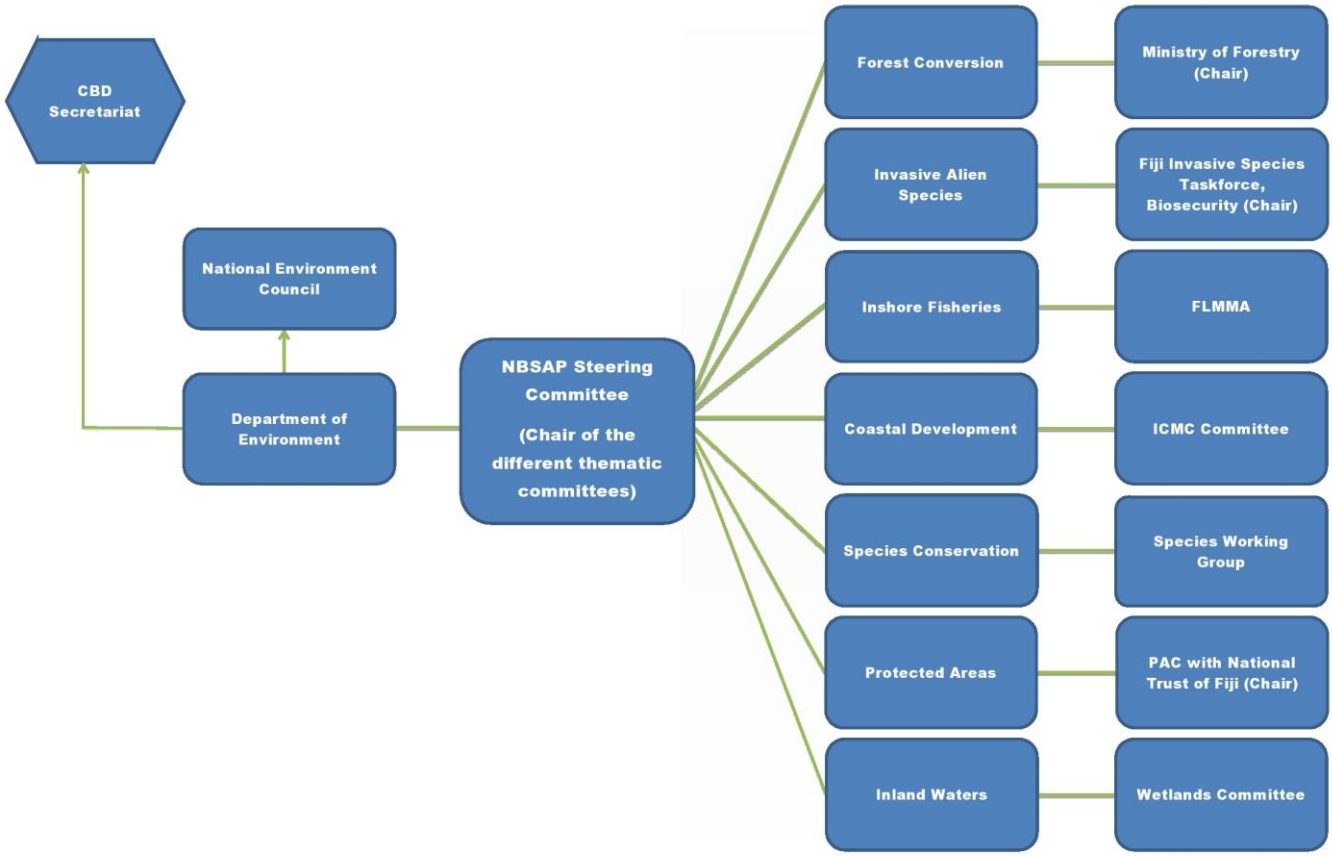
The Director of Environment shall act as the Secretary of the National Council and the Minister responsible for Environment has the power to appoint persons mentioned in paragraphs (h), (i) and (j) under subsection (3) and such persons must not be public officers.

In the absence of the Chairperson, the Chairperson may, in writing, designate another member, who is a Chief Executive Officer of a Ministry, to act as Chairperson.

**** Note the Chief Executive Officers are the Permanent Secretaries of the respective Ministries**

6.4 Implementation and Reporting Structure

The implementation and reporting structure will provide a guide in ensuring that each group has clear communication and reporting lines either vertically or horizontally. This will also provide accountability in ensuring actions are implemented and that the groups are aware of the progress and can provide input at different stages of implementation. The NBSAP Steering Committee should at least be convened once every quarter to review thematic areas progress reports before they are submitted to the National Environment Council through the Department of Environment and relevant stakeholders.



6.4.1 The NBSAP Steering Committee

The main function of the Steering Committee is to monitor Fiji's obligations under the CBD Convention. A Terms of Reference (TOR) will be developed to ensure that the implementation of this Action Strategy is carried out accordingly. They will review reports from Thematic Areas Chairs, monitor progress and report appropriately to NEC.

Existing Government Departments, NGOs and other agencies should take ownership of their strategic areas where their focus of work lies, such as Biosecurity Authority of Fiji taking the lead on Invasive Species.

Box 5.1 RECOMMENDED MEMBERSHIP OF THE NATIONAL BIODIVERSITY STEERING COMMITTEE

1. Ministry of Environment/Department of Environment (Chair)
2. Ministry of Forests
3. Ministry of Fisheries
4. Ministry of iTaukei Affairs
5. Ministry of Agriculture
6. Ministry of Lands and Mineral Resources
7. Ministry of Rural and Maritime Development
8. National Trust of Fiji
9. Biosecurity Authority of Fiji
10. Chairs of NBSAP Thematic Areas of Implementation Framework
11. 2 representatives from NGOS
12. 2 representatives from Academic Institutions
13. Co-opted Members

6.4.2 NBSAP Implementation and Monitoring

Monitoring the implementation of the NBSAP will be the responsibility of the Department of Environment through the Biodiversity Steering Committee.

6.4.3 Amending the Fiji National Biodiversity Strategy and Action Plan

Submissions to amend the Fiji National Biodiversity Strategy and Action Plan will be made, as necessary, by the Minister for Environment on advice from with the Permanent Secretary for the Ministry of and Environment.

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ANNEX 1: LIST OF PEOPLE/ORGANIZATIONS CONSULTED

1. Jese Gade - Ministry of Agriculture
2. Elizabeth Erasito – National Trust of Fiji
3. Sangeeta Mangubhai - Wildlife Conservation Society (WCS)
4. Raijeli Taga - Department of Mineral Resources
5. Margaret Tabunakawai – Fiji Locally Managed Marine Area Network
6. Alfereti Tawake – Fiji Locally Managed Marine Area Network
7. Pranisha Kumar - Ministry of Fisheries
8. Simione Tauvoli - Ministry of Fisheries
9. Kolinio Saukuru - Ministry of Youth
10. Seema Deo - Consultant
11. Philipp Gassne - GIZ/ MACBIO
12. Binesh Dayal - Ministry of Forests
13. Razik Sharoof Khan - LTA/ Standards & Engineering
14. Epeli Maisema - Department of Lands
15. Shivika Bhandhana - Ministry of Health
16. Filimoni Raiyawa - Ministry of Agriculture
17. Tina Cavubati - Maritime Safety Authority of Fiji (MSAF)
18. Meli Tokalauvere - Maritime Safety Authority of Fiji (MSAF)
19. Semisi Siga - Ministry of Women, Children and Poverty Alleviation
20. Tonga Karutake- Department of Lands
21. Filomena Serenia - Secretariat of the Pacific Regional Environment Programme (SPREP)
22. Sikeli Naucunivanua - Ministry of Environment: CB2
23. Makitalena Drova – Land Transport Authority of Fiji
24. Etika Qica Rupeni - International Union for Conservation of Nature (IUCN)
25. Noa Vakacegu - Department of Forestry
26. Sahar Kirmani - IUCN
27. Herman Timmermans - SPREP
28. Kashnil Swamy - Ministry of Economy
29. Joeli Koroikata - United Nations Development Programme (UNDP)
30. Josefa Ravuso - National Trust of Fiji
31. Chinnamma Reddy - World Wildlife Fund for Nature (WWF)
32. Dip Chand - Ministry of Health & Medical Services
33. Marika Tuiwawa - Institute of Applied Science (IAS)/ University of the South Pacific (USP)
34. Nunia Moko - NatureFiji-MareqetiViti
35. Elisapeci Tamanisau - Ministry of iTaukei Affairs
36. Asenaca Wotta - Ministry of iTaukei Affairs
37. Kiji Vukikomoala - Fiji Environmental Law Association
38. Dorene Dakuna - Ministry of Women, Children & Poverty Alleviation
39. Epeli Waqavonovono - Ministry of Economy
40. Mark O'Brien - Birdlife International
41. Philip Heneriko - Ministry of Youth & Sports
42. Susanana Tuisese – Conservation International
43. Naushad Yakub - International Union for Conservation of Nature (IUCN)
44. Gilbert Veisamasama - The Biodiversity Finance Initiative (BIOFIN)

ANNEX 2: DEFINITION OF TERMS USED

Biodiversity: the variety of life forms, the different plants, animals and microorganisms, the genes they contain and ecosystems they form.

Biotechnology: the industrial use of living micro-organisms to perform chemical processing.

Critically Endangered: a category on the IUCN RedList of Threatened Species. A Critically Endangered (CR) species is one that has been assessed as being at the highest level of risk to extinction in the wild. Threat levels in order of increasing risk to extinction, are Vulnerable (VU), Endangered (EN) and Critically Endangered (CR).

Ecologically Sustainable Development: development that seeks to meet the needs of present generations while ensuring that ecological processes are maintained and the quality of life, both now and in the future, is improved. The core objectives of ESD are:

- To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations;
- To provide for equity within and between generations; and
- To protect biological diversity and maintain essential ecological processes and life-support system

Ecosystem: communities of organisms and their physical environment interacting as a unit.

Ecosystem-based management: based on scientific knowledge of ecological relationships, ecosystem-based management is a process of decision-making operating within the social and economic framework of communities to achieve ecologically sustainable development.

Endangered: category level on the IUCN RedList (see "Critically Endangered")

Endemic (Fijian): originating in Fiji and confined to Fiji.

Estuarine: belonging to, or associated with, a partially enclosed river mouth or coastal area, characterised by a mix of fresh and saline waters.

Ex-situ: outside of the natural location.

Extinct: species no longer in existence or not located in the wild during the past 50 years.

Endangered: category level on the IUCN RedList (see "Critically Endangered")

Extirpated: species is locally extinct ie. it is no longer in existence within a particular geographical location.

Fauna: the total animal population that inhabits an area.

Flora: the vegetation assemblage that inhabits an area.

Genus: a taxonomical rank or category that sits below Family and above Species. A genus can have several species but is part of one family.

Habitat: the living space of a species or community, providing a particular set of environmental conditions.

Invasive: an exotic plant or animal establishing itself in native habitats, often abundantly and to the detriment of existing native species.

In-situ: within the natural location.

Inter-generational equity: the need to ensure that future generations have an equal opportunity to use and enjoy Fiji's biodiversity. This need underpins sustainable use by the current generation.

Invertebrate: animal lacking a backbone (ea. Insects and worms)

Macroinvertebrate: larger invertebrates are generally visible to the naked eye. This includes arthropods (insects, mites, scuds and crayfish), molluscs (snails, limpets, mussels and clams), annelids (segmented worms), nematodes (roundworms), and platyhelminthes (flatworms).

Population: a group of organisms, all of the same species, occupying a particular area.

Protected area: a geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

Qoliqoli/iQoliqoli: traditional fishing ground/fishing grounds

Species: a group of organisms which are biologically capable of breeding and producing fertile offspring with each other but not with members of other species.

iTaukei: the indigenous Fijian people.

Taxon (plural – taxa): The named classification unit to which individual organisms or sets of individuals are assigned, such as species, genus and order.

Taxonomy: the classification, identification and description of organisms based on similarities of biology, biochemistry, genetic composition and evolutionary history.

Terrestrial: belonging to or living on the land.

Threatened: (species, populations and ecological communities): species considered on the best available evidence and analysis as either endangered, vulnerable or presumed extinct.

Vertebrate: animal with a backbone.

Vulnerable: category level on the IUCN RedList (see "Critically Endangered")

Wildfire: uncontrolled fire.

Wildlife: native fauna and flora.

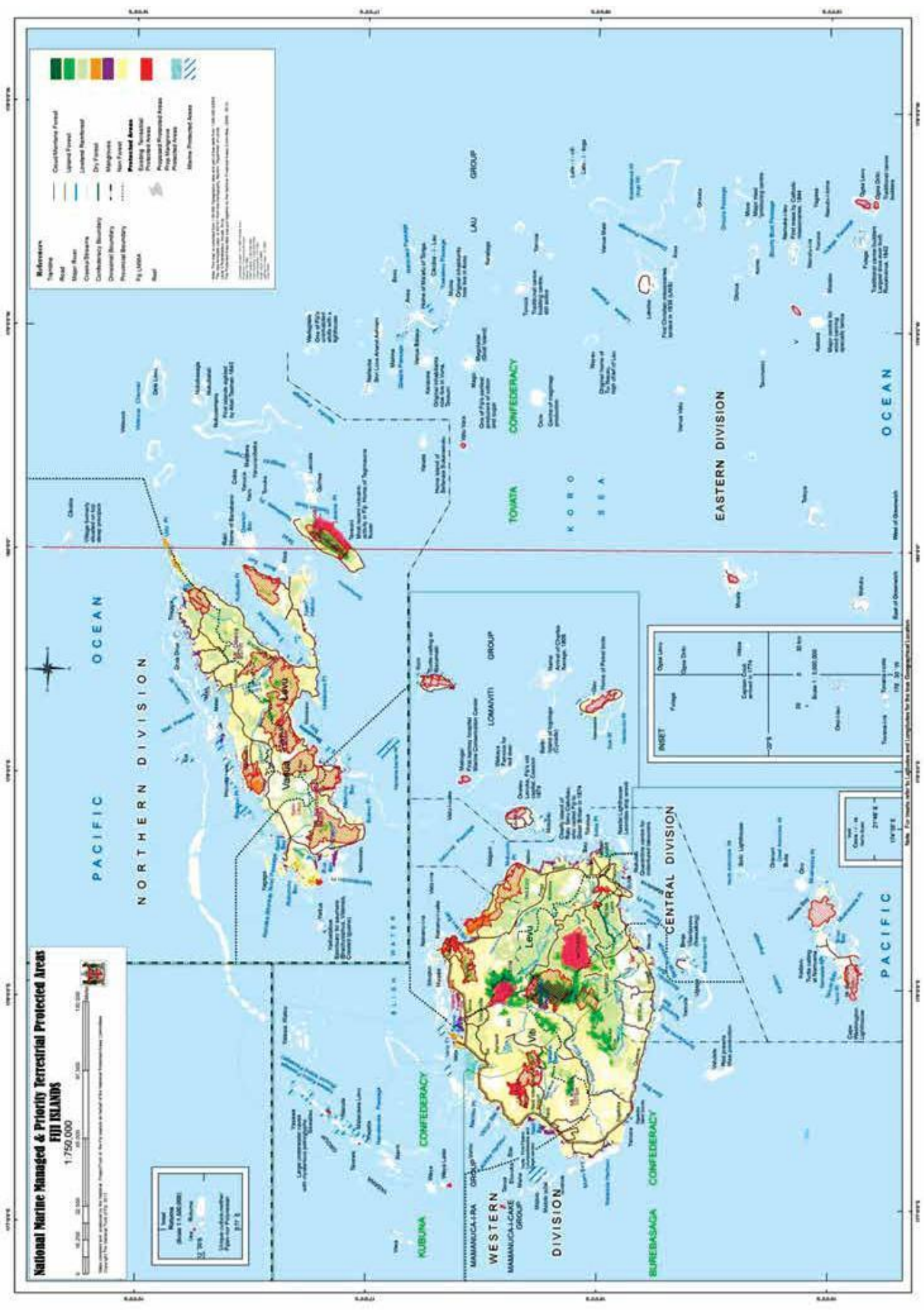
ANNEX 3: PROTECTED MARINE AND TERRESTRIAL AREAS IN FIJI

Map #	Name	Designation	IUCN Category		Marine	Total area (km2)	Status	Status date
1	Upper Navua Conservation Area	Ramsar Site, Wetland of International Importance	Not Applicable			6.2	Designated	2006
2	Korotari	Reserved Forest	Ia			10.9	Designated	
3	Ravilevu	Nature Reserve	Ia	1		40.2	Designated	1959
4	Tomaniivi	Nature Reserve	Ia			13.2	Designated	1958
5	Draunibota and Labiko Island	Nature Reserve	Ia	1	0.86	0.9	Designated	1959
6	Vunimoli	Nature Reserve	Ia			0.2	Designated	1966
7	Nadarivatu	Nature Reserve	Ia			0.9	Designated	1956
8	Naqarabuluti	Nature Reserve	Ia			2.8	Designated	1958
9	Buretolu	Reserved Forest	Ia			12.0	Designated	
10	Taveuni	Reserved Forest	Ia			113.0	Designated	
11	Vuo Island	Nature Reserve	Ia	1	0.5	0.5	Designated	1960
12	Sigatoka Sand Dunes	National Park	II			6.5	Designated	1988
13	Colo-I-Suva	Forest Park	II			0.9	Designated	1952
14	Garrick Memorial	Nature Reserve	IV			4.3	Designated	1984
15	Makogai Island	Marine Protected Area	IV	1	8.4	8.4	Designated	1987
16	Yadua Taba Island Crested Iguana Reserve	Wildlife Sanctuary	IV	1	0.77	0.8	Designated	1980
17	Lavena Coastal Walk	Recreational Reserve	V	1			Not Reported	
18	Turtle Island MPA	Recreation Reserve	V	1			Not Reported	
19	Wakaya Island	Recreational Reserve	V	1		8.0	Not Reported	
20	Saweni Beach Amenity Reserve	Recreational Reserve	V			0.0	Designated	
21	Yanuca (Malolo (Mamanuca Group)-Solevu/Yaro)	Locally Managed Marine Area	VI	1	68	68.0	Designated	2003
22	Cuvu Tikina	Marine Project	VI	1	1.7	1.7	Designated	2000
23	Wailevu/Galoa/Soso Villages	Locally Managed Marine Area	VI	1	44.82	44.8	Designated	2004
24	Namenalala Island Resort	Nature Reserve and Marine Reserve	VI	1	0.42	0.4	Designated	1987
25	Sawaieke district-Vadravadra/Somosomo/	Locally Managed	VI	1	149.72	149.7	Designated	2002

	Sawaieke/Nukuloa	Marine Area						
27	Manava Island	Marine Protected Area	VI	1		0.0	Designated	1992
28	Bukatatanoa Barrier Reef	Marine Protected Area	VI	1		35.0	Not Reported	
29	Moturiki-Daku/Niubasaga/ Uluibau	Locally Managed Marine Area	VI	1	82.7	82.7	Designated	2000
30	Mositi Vanuaso-Lamiti-Malawai/Lekanai/ Nacavanadi/Naovuka/ Vanuaso	Locally Managed Marine Area	VI	1	15.01	15.0	Designated	2001
31	Susui	Not Reported	VI	1		6.5	Designated	
32	Tavarua Island	Marine Protected Area	VI	1			Not Reported	
33	Vuna (Waitabu)	Marine Protected Area	VI	1			Designated	
34	Koroyanitu National	Heritage Park	VI			35.0	Designated	1996
35	Ulunikoro Marine Reserve/ Narikoso Village/Vabea Village	Locally Managed Marine Area	VI	1	272.96	273.0	Designated	1985
36	Vuata Ono	Marine Protected Area	VI	1	7.9	7.9	Designated	1985
37	Fulaga	Marine Protected Area	VI	1			Designated	
40	Bouma National Park	Heritage Park	Not Reported			150.0	Designated	1988
41	Snake island (Labuco)	Not Reported	Not Reported	1			Not Reported	
42	Namenalala Resort Marine Reserve	Marine Protected Area	Not Reported	1		0.4	Designated	1987
43	Nukutolu Islets	Faunal Reserve	Not Reported	1			Designated	
44	Ogea Levu	Faunal Reserve	Not Reported	1			Designated	
45	Nanuku Islet	Faunal Reserve	Not Reported	1			Designated	
26	Great Astrolobe Lagoon	Marine Protected Area	VI	1			Proposed	1998
38	Mount Tomanivi	National Park	Not Reported			33.0	Proposed	
39	Mount Evans Forest Park	Forest Park	Not Reported				Proposed	

(Source: Department of Environment)

ANNEX 4: MAP OF PRIORITY TERRESTRIAL PROTECTED AREAS IN FIJI



ANNEX 5: WETLAND SITES OF NATIONAL SIGNIFICANCE

List of Fiji's wetlands of national significance, as updated from Scott (1993).

Site ID	Wetland Name	Site ID	Wetland Name
BM.679.10	Bilo / Muaivusa Mangrove	MF.679.15	Muanikau Foreshore
BR.679.20	Ba River Delta & Mangroves	MK.679.6	Mount Koroyanitu Range
BS.679.24	Bonatoa Swamp	MM.679.44	Muanicula Marsh
BS.679.39	Balawa Swamp	MS.679.30	Moturiki Swamp
BV.679.19	Bai ni Vualiku	MS.679.5	Melimeli Swamp
DL.679.45	Delaimoala Lake	NB.679.25	Mangroves of Nadi Bay
DR.679.32	Dranoubaba River	NLL.679.41	Navesiwaka Lake
DS.679.1	Drano Sinu Salt Lake	NM.679.4	Nasoata mangrove islet
DS.679.35	Doidoi Swamp	NS.679.26	Nadrau Swamp
DT.679.34	Drano Tagane & Drano Yalewa	NS.679.33	Nairirileka Swamp
FB.679.17	Fulaga Bay of Islands	PD.679.38	Ponds along Dreketi River
FI.679.13	Floating Island of Nubu	RD.679.3	Rewa Delta Mangroves
FW.679.43	Freshwater pond Nadivakarua	RR.679.16	Rewa River Watershed
GA.679.9	The Great Astrolabe Reef	SM.679.21	Saweni Mangroves
GS.679.40	Gasauva Salt Lagoon	TL.679.46	Tuvuca Lakes
KF.679.2	Kuta Freshwater Lakes (Vanua Levu)	TP.679.46	Taketakelo Pond
LD.679.27	Labasa Delta Mangroves	UD.679.36	Upper Dreketi River Swamp
LD.679.47	Lake Drano	UN.679.7	Upper Navua Conservation Area
LN.679.18	Lokia-Naulu Swamp	VC.679.12	Vunivia Catchment Area
LR.679.31	Lake Rovurovu	VD.679.11	Vaturu Dam
LS.679.42	Lake on Sogatiri River	VP.679.29	Vatulele Pools
LT.679.8	Lake Taginoucia and swamp	VS.679.14	Vuaguava Salt Lake (Kabara, Lau)
MD.679.22	Monasavu Dam	VS.679.23	Vunimoli Swamp
		WP.679.28	Waidradra Palms

Source: Jupiter et al., 2011

ANNEX 6: SPECIAL UNIQUE MARINE AREAS OF FIJI

The sites listed below have been identified as Special, Unique Marine Areas (SUMA) of Fiji through a national expert workshop held on the 19-20 July 2016 and with the inputs from previous assessments. The workshop was co-hosted by the Departments of Environment and Department of Fisheries with technical support from MACBIO Project and WCS. These sites require particular consideration in planning and management decisions, for example, when conducting Environmental Impact Assessments, giving permits and planning for marine protected areas or other effective area-based conservation measures.

The report was launched by the Permanent Secretary for the Department of Environment and Waterways in 2018. More information about these sites is provided in - Fiji's Special, Unique Marine Areas - A report to the Fiji Government. MACBIO Project. GIZ, IUCN, SPREP: Suva. This report is available from the Government of Fiji (Department of Environment), IUCN, GIZ, SPREP or from http://macbio-pacific.info/.The report code in the tables below can be used to cross reference to more details about the same site in the report.

Shallow water special, unique sites			
No.	**Report code**	**Name**	**Province**
1	Y1	Yasawa Island	Ba
2	Y2	Naviti and smaller islands	Ba
3	Y3	Viwa Island and barrier reef	Ba
4	Y4	White rock	Ba
5	M1	Kadomo Island	Nadroga/Navosa
6	M2	Yavuriba Island	Nadroga/Navosa
7	M3	Monoriki Island	Nadroga/Navosa
8	M4	Supermarket reef Mana Island	Nadroga/Navosa
9	M5	Malamala Island	Ba
10	M6	East Malolo Levu Island	Nadroga/Navosa
11	M7	Tavarua and Namotu Islands and barrier reef	Nadroga/Navosa
12	NVT1	Nananu-i-Ra Island and reefs	Ra
13	NVT2	Tavua Peninsula	Ba
14	NVT3	Ba delta	Ba
15	NVT4	Dreketi and Saweni mangroves and mudflats	Ba
16	NVT5	Sabeto delta	Ba
17	NVT6	Nadi Bay reefs	Ba
18	NVT7	South Denarau mangroves	Ba
19	WVT1	Momi Bay and passage	Nadroga/Navosa
20	WVT2	Natadola Bay	Nadroga/Navosa
21	WVT3	Yanuca Island, Cuvu	Nadroga/Navosa
22	WVT4	Sigatoka Catchment	Nadroga/Navosa
23	WVT5	Sovi Bay	Nadroga/Navosa
24	WVT6	Serua mangroves and passages	Serua
25	WVT7	Wainiyabia and Galoa shark corridor	Serua
26	OSV1	Beqa barrier reef and lagoon	Serua
27	OSV1.1	Nanuku Island (Storm Island)	Rewa
28	OSV1.2	Ugaga Island (Royal Davui)	Rewa
29	OSV2	Vatulele Island	Nadroga/Navosa
30	OSV3	Great and North Astrolabe Reef	Kadavu
31	OSV4	South Kadavu reefs	Kadavu
32	OSV5	South Kadavu mangrove Bays	Kadavu
33	VIR1	Vatu-i-Ra Island and reef	Ra
34	VIR2	Vatu-i-Ra passage	Tailevu
35	VIR3	Moon Reef	Tailevu
36	VIR3	Cakau Davui	Tailevu
37	EVT1	Davetalevu passage and Islands	Tailevu
38	EVT1.1	Leleuvia Island	Tailevu
39	EVT1.1	Caqalai sandbank	Tailevu
40	EVT1.2	Caqalai Island	Tailevu
41	EVT2	Toberua Island	Tailevu
42	EVT2	Mabualau Island	Tailevu
43	EVT3	Tailevu mangroves and Mudflats	Tailevu
44	EVT3.1	Vatulami Island	Tailevu
45	EVT4	Rewa delta	Naitasiri/Rewa/ Tailevu
46	EVT4.1	Nasoata Island	Rewa
47	EVT5	Nukulau and Makuluva Islands	Rewa
48	EVT6	Suva mudflats	Rewa
49	EVT7	Suva barrier reef	Rewa
50	EVT8	Namuka Bay	Rewa
51	LV1	Koro East corner	Lomaiviti
52	LV2	Makogai Island and barrier Reef	Lomaiviti
53	LV3	Wakaya Island and barrier Reef	Lomaiviti
54	LV4	Ovalau East Reefs	Lomaiviti
55	LV5	Cakau Momo	Lomaiviti
56	LV6	Batiki Island	Lomaiviti
57	LV7	Nairai Island	Lomaiviti
58	LV8	Gau Island and barrier reef	Lomaiviti

Shallow water special, unique sites			
No.	**Report code**	**Name**	**Province**
59	LV8.1	Naigali passage	Lomaiviti
60	L1	Wailagilala atoll	Lau
61	L2	North Lau reefs	Lau
62	L2.1	Cakau Galu	Lau
63	L2.2	Namotu reef	Lau
64	L2.3	Kobo reef	Lau
65	L2.4	Kibobo Island reef	Lau
66	L2.5	Vavaniose - Bell reef	Lau
67	L2.6	Cakau Dromu	Lau
68	L 2.7	Cakau Qalitu (Alacrity reef)	Lau
69	L2.8	Cakau Qalitu (Jeffreys reef)	Lau
70	L3	Nukutolu	Cakaudrove
71	L4	Vanuabalavu Island and reefs	Lau
72	L4.1	Qilaqila bay of islands	Lau
73	L4.2	Masomo bay	Lau
74	L5	Bukatatanoa reefs	Lau
75	L5.1	Late Reefs	Lau
76	L5.2	Vanua Masi	Lau
77	L5.3	Bukatatanoa reef	Lau
78	L5.4	Aiwa reef	Lau
79	L6	Oneata Island and reefs	Lau
80	L6.1	Oneata Island and barrier reef	Lau
81	L6.2	Cakaulekaleka reef	Lau
82	L6.3	Cakaumotu reef	Lau

Shallow water special, unique sites			
No.	**Report code**	**Name**	**Province**
83	L6.4	Cakauvau reef	Lau
84	L7	Fulaga passage	Lau
85	L7.1	Kabara Island	Lau
86	L7.2	Vuaqava Island Inland Lake	Lau
87	L7.3	Marabo Island	Lau
88	L7.4	Namuka-i-Lau Island	Lau
89	L7.5	Islets in Yagasa Cluster	Lau
90	L7.6	Naevo (Naiabo) Island in Yagasa cluster	Lau
91	L8	Fulaga and Ogea	Lau
92	L8.1	Fulaga lagoon	Lau
93	L8.2	Ogea lagoon	Lau
94	T1	Ringgold and Cikobia islands and reefs	Cakaudrove/ Macuata
95	T2	Somosomo straits	Cakaudrove
96	T3	Bouma Heritage Park	Cakaudrove
97	NVN1	Cakaulevu and Kia Island_ Macuata	Macuata
98	NVN2	Cakaulevu_ Bua	Bua/Macuata
99	NVN3	Yadua Island	Bua
100	SVN1	Natewa bay	Cakaudrove
101	SVN2	Qaloqalo Salt Lake_Naweni	Cakaudrove
102	SVN3	Yanuyanu Island_Naweni	Cakaudrove
103	SVN4	Kubulau and Namena	Bua
104	RO1	Rotuma Island	Rotuma
105	RO2	Conway reef _ Ceva -i -ra Island	

Deepwater special, unique areas			
No.	**Report code**	**Name**	**General location/ Province**
1	OE1	Gau-Moala	Lomaiviti/Cakadrove/ Lau
2	OE2	NE Canyons	Cakaudrove
3	OE3	Eastern boundary	Cakaudrove
4	OE4	Ogea	Lau
5	OE5	Duff Reef (near Lau)	Lau
6	OE6	East of Vatoa Island	Lau
7	OE7	Minerva reef	Far South East of Lau/ Far South West of Tonga
8	ON1	Trench, Canyons, etc	North west of Rotuma
9	ON2	Canyons rich environments	North of Rotuma
10	ON3	Seamounts	West of Rotuma

Deepwater special, unique areas			
No.	**Report code**	**Name**	**General location/ Province**
12	OS1	SW unique seamount	South West of Kadavu
13	OS2	South Kadavu	Kadavu
14	OS3	SW Ridges	West of Ceva-i-Ra
15	OS4	SW Deep sea	South of Ceva-i-ra
16	OS5	Ceva-i-Ra island	Ceva-i-Ra island
17	OW1	Rift Valley system	Far West of Yasawa
18	OW2	West of Yasawa	West of Yasawa
19	OW3	Western Hydrothemal vents	Far West of Yasawa
20	OW4	NW of Yasawa	North of Yasawa

ANNEX 7: IMPORTANT BIRD AREAS IN FIJI AND STATUS

Site Name	IBA Status	Terrestrial	Marine	Criteria	% of area Protected
Rotuma1	Confirmed	Yes	No	A1, A2	0.0%
Natewa/Tunuloa Peninsula1	Confirmed	Yes	No	A1, A2	0.1%
Wailevu/Dreketi Highlands1	Confirmed	Yes	No	A1, A2	0.1%
Taveuni Highlands1,2	Confirmed	Yes	No	A1, A2	52.3%
Vatu-i-Ra1,2	Confirmed	Yes	Yes	A4i, A4iii	–
Greater Tomaniivi1	Confirmed	Yes	No	A1, A2	13.8%
Koroyanitu/Vaturu1	Confirmed	Yes	No	A1, A2	20.5%
Rairaimatuku Highlands1	Confirmed	Yes	No	A1, A2	0.0%
Sovi Basin1	Confirmed	Yes	No	A1, A2	48.2%
Gau Highlands1, 2	Confirmed	Yes	No	A1, A2, A4ii	0.0%
Viti Levu Southern Highlands1	Confirmed	Yes	No	A1, A2	1.4%
Nabukelevu1,2	Confirmed	Yes	No	A1, A2	0.8%
Ogea1	Confirmed	Yes	No	A1, A2	0.0%
East Kadavu1	Confirmed	Yes	No	A1, A2	0.0%
Vetauua2	Proposed	Yes	Yes	A4i	–
Ringgold Islands Marine2	Proposed	No	Yes	A4i, A4ii, A4iii	–
Qelelevu Islands2	Proposed	Yes	Yes	A4ii	–
Nukubasaga and Nukupureti2	Proposed	Yes	Yes	A4i, A4ii	–
Taveuni Marine2	Proposed	No	Yes	A1, A4ii	–
Kibobo Islet2	Proposed	Yes	Yes	A4ii	–
Northern Lau Marine2	Proposed	No	Yes	A4ii	–
Namenelala2	Proposed	Yes	Yes	A1, A4ii	–
Namenelala Marine2	Proposed	No	Yes	A4ii	–
Vatu-i-Ra Marine2	Proposed	No	Yes	A4i, A4iii	–
Vatuvara2	Proposed	Yes	Yes	A1	–
Mabualau and Saqata Rocks Marine2	Proposed	No	Yes	A4i, A4iii	–
Mabualau and Saqata Rocks2	Proposed	Yes	Yes	A4i	–
Gau Marine2	Proposed	No	Yes	A1, A4ii	–
Vanua Masi Islet2	Proposed	Yes	Yes	A4ii	–
Vanua Masi Marine2	Proposed	No	Yes	A4ii	–
East Kadavu Passage2	Proposed	No	Yes	A1, A4ii	–
West Kadavu Marine2	Proposed	No	Yes	A1, A4ii	–

1 Masibalavu, VT and Dutson, G (2006). Important Bird Areas in Fiji: Conserving Fiji's natural heritage. Suva, Fiji: BirdLife International Pacific Partnership Secretariat. Most recent information available http://maps.birdlife.org/marineIBAs/default.html

2. Source: Integrated Biodiversity Assessment Tool (IBAT), 2013.

ANNEX 8: AREA of ZERO EXTINCTION SITES IN FIJI AND PERCENTAGE OF AREA PROTECTED

Site	Taxa	Scientific Name	Local and English name	% of area protected
Gau Highlands	Bird	Pseudobulweria macgillivrayi	Kacau ni Gau, Fiji Petrel	0%
Mount Evans Range – Koroyanitu	Conifer	Acmopyle sahniana	Drautabua	0.60%
Nausori Highlands	Conifer	Dacrydium nausoriense	Yaka	0%
Taveuni Forest Reserve	Mammal	Mirimiri acrodonta	Fijian Monkey-faced Bat	68.30%
Yadua Taba Island	Reptile	Brachylophus vitiensis	Vokai, Fiji Crested Iguana	38.50%

Source: Integrated Biodiversity Assessment Tool (IBAT), 2013

ANNEX 9: KEY BIODIVERSITY AREAS IN FIJI

Island	Site Name	Birds	Reptiles	Conifers	Other Plants	Bats	Turtles
Gau	Gau Highlands	1	1		1		
Kadavu	Gasele (East Kadavu)	1			1		
Kadavu	Nabukalevu/Mt. Washington	1			1		
Laucala	Laucala Island	1				1	
Mamanucas	Monuriki Island		1				
Ovalau	Ovalau Highlands	1	1		1		
Rotuma	Hatana Island	1			1		
Southern Lau	Kabara - Fulaga coastal vesi forest	1			1		
Southern Lau	Ogea	1			1		
Southern Lau	Vuaqava Island	1					1
Vanua Levu	Mt Sorolevu				1		
Vanua Levu	Naicobocobo dry forests	1			1		
Vanua Levu	Nasigasiga				1		
Vanua Levu	Taveuni Forest Reserve	1	1		1		
Vanua Levu	Udu Point		1		1		
Vanua Levu	Vunivia Catchment	1	1		1		
Vanua Levu	Waisali Dakua National Trust Forest Reserve	1	1				
Vanua Levu	Yadua Taba Island	1	1				
Viti Levu	Colo-i-Suva Reserve				1		
Viti Levu	Monasavu-Nadrau plateau	1	1			1	
Viti Levu	Mt Korobaba and Waimanu Watershed	1			1		
Viti Levu	Mt. Evans Range - Koroyanitu	1		1	1		
Viti Levu	Nakauvadra Range	1	1				
Viti Levu	Nakorotubu Forest	1	1				
Viti Levu	Namosi Highlands	1	1	1	1		
Viti Levu	Natewa Peninsula	1	1		1		
Viti Levu	Nausori Highlands	1	1	1	1		
Viti Levu	Navua Gorge	1	1		1		
Viti Levu	Serua forest wilderness	1	1	1	1		
Viti Levu	Sovi Basin Reserve	1	1	1	1		
Viti Levu	Tomaniivi- Wabu Nature and Forest Reserve complex	1	1	1	1		
Viti Levu	Vatia Peninsula	1					

List of sites extracted in October 2013 from
http://www.cepf.net/where_we_work/regions/asia_pacific/polynesia_micronesia/ecosystem_profile/Pages/default.aspx

ANNEX 10: ECOLOGICALLY OR BIOLOGICALLY SIGNIFICANT AREAS (EBSAS) IN FIJI

Name of areas meeting EBSA criteria	Country	Area (km²)
Kadavu and the Southern Lau Region (#5)	Fiji	212,182
Vatu-i-Ra/Lomaiviti, Fiji (#14)	Fiji	24,828
Taveuni and Ringgold Islands (#22)	Fiji	18,410
South of Tuvalu/Wallis and Fortuna/North of Fiji Plateau (#13)	Tuvalu/Fiji/Wallis Fortuna	325,000
Yadua Taba Island	Reptile	Brachylophus vitiensis

A production of the
MINISTRY OF ENVIRONMENT, FIJI