

TABLE OF CONTENTS

Table of Contents.....	i
Project Brief.....	ii
List of Abbreviations and Acronyms	iv
Map of Project Area.....	v
PART 1. CONTEXT	1
1.1. ORIGIN	1
1.2. RELEVANCE	2
1.2.1. Conformity with ITTO’s objectives and priorities	2
1.2.2. Relevance to the submitting country’s policies	3
1.3. TARGET AREA	3
1.3.1. Geographical Location	3
1.3.2. Social, Economic, Cultural and Environmental aspects	4
1.4. Expected Outcomes at Project Completion	5
PART 2. PROJECT RATIONALE AND OBJECTIVE	7
2.1 RATIONALE	7
2.1.1. Institutional set up and organisational issues	7
2.1.2. Stakeholder analysis	8
2.1.3. Problem Analysis	10
2.1.4. Logical Framework matrix	14
2.2 OBJECTIVES	17
2.2.1. Development objective and impact indicators	17
2.2.2. Specific objective and outcome indicators	17
PART 3. DESCRIPTION OF PROJECT INTERVENTIONS	18
3.1 OUTPUTS AND ACTIVITIES	18
3.1.1. Outputs.....	18
3.1.2. Activities.....	22
3.2 IMPLEMENTATION APPROACHES AND METHODS.....	23
3.2.1 Project Strategy	23
3.2.2 Target Beneficiaries	24
3.3 WORK PLAN.....	25
3.4 BUDGET	28
3.4.1 Master Budget	28
3.4.2 Consolidated Budget by component (in US\$).....	36
3.4.3 ITTO Budget by component (in US\$)	38
3.4.4 Executing Agency Budget by component (in US\$)	40
3.5 ASSUMPTIONS, RISKS, SUSTAINABILITY	41
3.5.1 Assumptions and Risks	41
3.5.2 Risk and Mitigation Measures	41
3.5.3 Sustainability	42
PART 4. IMPLEMENTATION ARRANGEMENTS	43
4.1 ORGANIZATION STRUCTURE AND STAKEHOLDER INVOLVEMENT MECHANISMS	43
4.1.1 EXECUTING AGENCY AND PARTNERS	43
4.1.2 Project management team	43
4.1.3 Project steering committee	44
4.1.4 Stakeholder involvement mechanisms	44
4.2 REPORTING, REVIEW, MONITORING AND EVALUATION	44
4.3 DISSEMINATION AND MAINSTREAMING OF PROJECT LEARNING	45
4.3.1 Dissemination of project results	45
4.3.2 Mainstreaming project learning	45
ANNEX 1. PROFILES OF THE EXECUTING AND COLLABORATING AGENCIES	48
ANNEX 2. TERMS OF REFERENCE OF PERSONNEL & CONSULTANTS & SUB-CONTRACTS FUNDED BY ITTO	50
ANNEX 3. TERMS OF REFERENCE OF PROJECT STAFF	52
ANNEX 4. DETAILED MASTER BUDGET (IN US\$)	55

PROJECT BRIEF

Fiji is an archipelagic small island developing state situated in the South Pacific. The total geographical area is 18,274 square kilometres encompassing over 332 islands, (110 permanently inhabited). Even though Fiji is a high island setting, it does have significant human settlements and ecosystems in vulnerable coastal areas where shorelines and mangroves are threatened. Fiji has the third largest mangrove area in the Pacific and the Ministry of Fisheries and Forestry (MoFF) estimates the total area of Fiji's mangroves at 46,600 ha with the majority of coverage evenly dispersed around the coastlines of the two largest islands of Viti Levu and Vanua Levu. In its Strategic Plan, MoFF includes mangrove plantations and coastal flora as forests. The significance of the mangrove forest ecosystem, management of coastal areas and mitigation of coastal erosion are considered in the strategic plan since Fiji is highly vulnerable to floods and tropical cyclones, that are already have significant impacts on the economy and society.

The site of this project is the Rewa Delta located in the southeast of Viti Levu Island. The Rewa Delta (35,238 ha) comprises two Provinces in Fiji being the Tailevu Province and Rewa Province. The Rewa Delta is an invaluable source of livelihood for communities in the area in terms of forest and marine products. However, critical habitat loss, increased frequency of tree cutting for domestic consumption and siltation in the river system have resulted in the degradation and loss of forest and non-timber resources in the Rewa Delta. The underlying factors of these threats are varied and include society's lack of perception or awareness of the ecological functions and socio-cultural values of mangrove wetlands and riparian zones.

The development objective of this project is to promote the conservation, restoration and sustainable management of mangroves through increased community participation that will contribute to the resilience of coastal communities and mangrove ecosystems to natural disasters as well as to the reduction of carbon emissions from deforestation and forest degradation. The specific objective of the project is to promote community-based restoration of cyclone-affected vulnerable mangrove forests through the empowerment of coastal communities and women; provide alternative livelihoods to improve human wellbeing and support communities to adopt integrated approaches to coastal adaptation that will contribute to the protection of coastal populations from natural hazards.

The project's primary beneficiaries are the local communities in the province of Rewa and Tailevu including Natilia, Waicoka, Naivakacau, Nasilai, Narocake and Muanaira which collectively comprise an estimated population of 2,500 who make up an estimated 400 households. Other beneficiaries are traditional authorities in the project areas such as the Provincial Office of Tailevu and the Provincial Office of Rewa who customarily are responsible for the development and wellbeing of all iTaukei (indigenous communities) as well as government agencies and institutions who are legally mandated to be responsible for all coastal and mangrove wetlands resources. In the implementation of the project the Executing Agency, the Ministry of Fisheries and Forestry (MoFF) will work closely with its partners and all stakeholders in a participatory and collaborative manner.

To achieve the specific objectives, four outputs that are planned to be delivered are: (i) local communities are trained to adopt the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* to strengthen the governance of mangroves, (ii) degraded coastal and mangrove wetland rehabilitated to mitigate climate change through increased carbon sequestration, (iii) empowering women to implement a suite of viable alternative livelihood options, reducing over-dependence on coastal and mangrove wetland resources for sustenance and (iv) strengthen coordination of policy guidelines and framework to effectively address climate change and disaster risks at the national and sub-national levels.

The key assumptions made in relation to achieving the specific objective include: (1) local authorities (Provincial and District Officers) as well as local communities will show interest in the project and appreciate the need to restore degraded wetland ecosystems, (2) extreme weather events and other disturbances such as drought, flood, fire and pest will not destroy planted seedlings and established stands and (3) seeds and vegetative materials of species that will be used in the restoration process will be readily available. These assumptions have the potential to negatively impact the successful implementation of the project.

To minimise the risk associated with the above-mentioned assumptions efforts will be made to ensure that community, and district authorities and in particular local communities identify and effectively participate in the project. This will be through an outreach programme to sensitize local communities on the essence of the project as well as its relevance to their livelihoods. Moreover, policy implementers at the provincial and district levels will be part of the consultative workshop to ensure their full backing for the project. Attempts will also be made to minimize the impacts of disturbances and extreme weather events on planted seedlings and established stands. Integrated fire and pest management strategies will be adopted when necessary. Mangrove propagules will be collected from mangrove forests adjacent to each village in the project sites. Moreover, the MoFF will also provide access to seeds of various species. When efforts in these directions are not enough, seeds will be purchased from private sources.

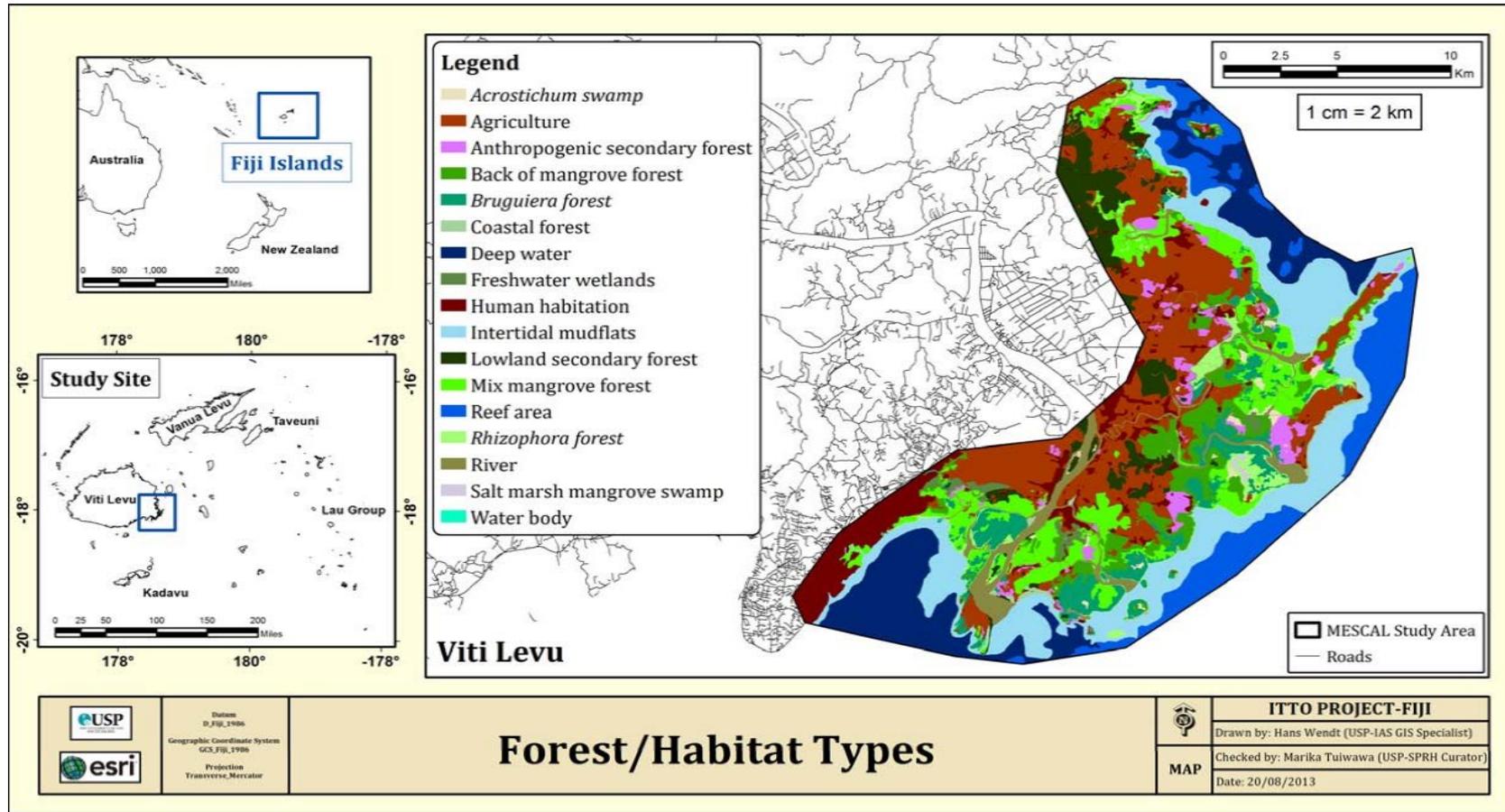
The total budget for this project will be US\$410,000. ITTO is envisaged to contribute US\$350,000.00 and the Government of Fiji will contribute US\$60,000 in kind.

LIST OF ABBREVIATIONS AND ACRONYMS

CCA	: Climate Change Act
CF	: Conservator of Forests
CI	: Conservation International
CIFOR	: Center for International Forestry Research
CSA	: Climate Smart Agriculture
DOCE	: Director Operation Central Eastern
DRR	: Disaster Risk Reduction
EA	: Executing Agency
EbA	: Ecosystem Based Adaptation
EDRD	: Executive Director Research Division
FGD	: Focused Group Discussion
GHG	: Greenhouse Gases
GoF	: Government of Fiji
INDC	: Intended Nationally Determined Contribution
ICS	: Improved Cook Stove
ITTO	: International Tropical Timber Organization
ITTC	: International Tropical Timber Council
ITTA	: International Tropical Timber Agreement
LEDS	: Low Emission Development Strategy
MoAW	: Ministry of Agriculture and Waterways
MoETCS	: Ministry of External Trade and Cooperatives, and SME's
MoFF	: Ministry of Fisheries and Forestry
MoiACHA	: Ministry of i-Taukei Affairs, Culture, Heritage and Arts
MoFCECIP	: Ministry of Foreign Affairs, Climate Change & Environment, Civil Service, Information, and Public Enterprise
MoLMR	: Ministry of Lands and Mineral Resources
MoRMDM	: Ministry of Rural, Maritime Development and Disaster Management
MoWCPA	: Ministry of Women, Children and Poverty Alleviation
NCSMED	: National Centre for Small and Micro Enterprise Development
NbS	: Nature Based Solution
NDMO	: National Disaster Management Office
NGO	: Non-Governmental Organization
PD	: Project Document
PLA	: Participatory Learning Appraisal
PMU	: Project Management Unit
PC	: Project Coordinator
PS	: Permanent Secretary
PSC	: Project Steering Committee
ICRC	: International Red Cross and Red Crescent Movement
SDG	: Sustainable Development Goals
SFM	: Sustainable Forest Management
SPC	: Secretariat of Pacific Community
SMEs	: Small and Medium Sized Business Enterprises
TC	: Tropical Cyclone
UNFF	: United Nations Forum on Forests
UNFCCC	: United Nations Framework Convention on Climate Change
USP-IAS	: University of the South Pacific Institute of Applied Science

MAP OF PROJECT AREA

1. The Rewa Delta Proposed Project Site complementing MESCAL Project in the Rewa and Tailevu provinces.



Source: Wendt, H. (2013). [Forest/Habitat Types]. Institute of Applied Science, University of the South Pacific.

2. Map of Project Sites

The project selected sites are the villages of Muanaira (Vutia) and Narocake of the Rewa Province and Natila, Waicoka, Naivakacau and Nasilai of the Tailevu Province.



PART 1. PROJECT CONTEXT

1.1 Origin

This project builds on the successful completion of the first phase of the ITTO mangrove project PD 696/13 Rev.2 (F) entitled "Community Based Restoration and Sustainable Management of Vulnerable Forests of the Rewa Delta, Viti Levu, Fiji", was proposed by the Ministry of Fisheries and Forestry on behalf of the Government of the Republic of Fiji submitted to ITTO in 2014 and approved by the International Tropical Timber Council (ITTC) in 2015; was conducted in the Rewa Delta under the guidance of the Fiji's Ministry of Fisheries and Forestry, in particular the Conservator of Forests. Key outcomes of the project include: (1) degraded coastal and mangrove wetlands restored through rehabilitation and enrichment planting; (2) coastal communities have clear policies and community-based guidelines in place to provide a framework for utilization, management and monitoring of the rehabilitated areas; (3) existing governance systems have been strengthened through improved coordination and monitoring of wetland conservation and management; and (4) communities in the Rewa Delta are in a better position to protect against storm surges through improved management of degraded mangrove wetlands.

Forest loss in coastal and mangrove wetlands in Fiji has been estimated as high as 30%. Mangrove loss over the period 2001–2018 was estimated at 1,135 hectares, a decrease of 1.7% in cover since 2001 with an average annual rate of loss of 0.11%. 77% of loss can be directly attributed to the successive impacts of Tropical Cyclones (TCs). After TCs, the next most significant drivers of coverage loss were the conversion of mangroves for tourism development and coastal reclamation followed by the disposal of dredging spoil in the Ba and Rewa Deltas. The remaining loss was attributable to conversion for industrial estates, squatter housing, agriculture and construction of sugarcane tram lines, as well as harvesting of fuelwood and construction materials. (MoE, 2018)

The Rewa Delta is Fiji's largest contiguous area of mangroves and is, therefore, a recognized primary site for conservation by the Fijian government. Mangrove forest degradation is a real issue that is receiving much public attention and there is a higher commitment of all stakeholders to manage their multiple uses. In recent years, the Fijian Government has undertaken actions to slow the rate of degradation of the country's mangroves and to improve their management. These degradations are mainly due to weak law enforcement, lack of stakeholder involvement and interinstitutional coordination, and lack of management planning at the national and community level.

All coastal communities across Fiji are at the forefront of climate change especially continuous sea surges and coastal erosion due to storm surges during tropical cyclones. Even, the low-lying flat land of the Rewa Delta is always flooded whenever it rains heavily so communities living in and adjacent to these areas have regularly experienced these challenges and are always dependent on their mangrove forests to cushion the negative impacts of natural disasters. To reduce the vulnerability of coastal dwellers the Fiji Forestry policy has been shifting to a more participatory approach in empowering the community with knowledge and skills of sustainable forest management (SFM) as a mitigation measure to address climate change with mangroves acting as carbon sinks.

Excessive felling of mangrove forests not only reduces water infiltration area, increases abrasion and natural disasters such as erosion and floods but also causes the loss of circulation hub and production of carbon dioxide (CO₂) and oxygen (O₂) gasses needed by human beings for the perpetuity of their lives. Mangrove has an important role in absorbing free carbon since mangrove forests contain largely organic materials which do not rot. Because of it, the mangrove forest functions more as a carbon absorber rather than a carbon source. As an ecosystem, mangroves are one of the top three carbon-capturing biomes on Earth, sequestering many times more CO₂ than most comparable systems, including sea grass meadows and dry jungles. Even more, degraded and destroyed mangroves can be regenerated and restored to full capacity in a markedly short period of time.

These attributes mean they could very well play a major role in combating climate change if it is sustainably managed.

A recent study by CIFOR's Research (2022), stated that mangrove forests could store 800-1,200 tons of carbon per hectare and release emissions smaller than emissions from the terrestrial forest. That is why mangrove forest is very important in maintaining the micro climate. Evapotranspiration of mangrove forests is able to maintain humidity and precipitation of the area, as such it keeps the micro-climate in balance.

Deforestation and forest degradation caused by improper forest management are the main contributors to carbon emissions entailing climate change which has unfavorably impacted the lives of everyone in Fiji. However, in recent years the collaboration between ITTO and the Ministry of Fisheries and Forestry has greatly assisted in the reduction in CO₂ emissions, decrease in poverty and improved livelihoods and avoided vulnerability to natural disasters.

After the successful implementation of the mangrove rehabilitation in the Rewa Delta, ITTO PD 696/13 Rev.2 (F), the Fijian Government through the Ministry of Fisheries and Forestry is welcoming new financial initiatives that will support accomplishing its goal of reducing net emissions by 2050 and at the same time enhance its programme to plant "30 Million Trees in 15 Years" through community participation and empowerment.

Auspiciously, to Fiji's benefit, the Ministry of Foreign Affairs of Japan is planning to fund the second phase of the project to expand the current work of the ITTO mangrove rehabilitation under the Japan Emergency Supplemental Budget. This financial assistance by the Government of Japan will indeed strengthen the resilience of the Rewa Delta against natural disasters and the socio-economic impact of the COVID-19 pandemic by empowering coastal communities and women in the community-based restoration of degraded mangrove forests.

1.2 Relevance

1.2.1 Conformity with ITTO's objectives and priorities

The technical implementation of this project will be facilitated in accordance with the internationally recognized restoration principles specified in the ITTO Guidelines on Forest Landscape Restoration in the Tropics. The project supports the International Tropical Timber Agreement (ITTA 2006) by addressing Article 1 sub-elements (c), (j), (m), (n), (q) and (r). In particular, the project will promote a "better understanding of the contribution of non-timber forest products and environmental services to the sustainable management of tropical forest..."

In addition, the project will support the Strategic Priority 3 of ITTO Strategic Action Plan 2022 – 2026, to reduce tropical deforestation and forest degradation, enhance forest landscape restoration and the resilience of forest ecosystems to climate change, and conserve forest biodiversity and ecosystem services. Moreover, this project directly supports the ITTO Strategic Action Plan 2022 – 20226; Strategic Priority 3; Activity (13) and (14) at the national scale, likewise the project supports the key objectives and outputs outlined under the joint initiative of CBD and ITTO in 2010 to enhance biodiversity conservation in tropical forests with the direct participation of local stakeholders, addressing the main drivers of biodiversity loss in tropical forests, deforestation and forest degradation.

The project is also consistent with the ITTO Programme Lines #2 (Conservation of biodiversity and ecosystem services) and #3 (Forest landscape restoration and resilient livelihoods). In addition, the project will support the application of ITTO's policy guidelines such as "*Guidelines on Gender Equality and Empowering Women*", "*Environmental and Social Management Guidelines*" and "*Guidelines for Forest Landscape Restoration in the Tropics*"

1.2.2 Relevance to the submitting country's policies

Fiji is a nation that is very committed to positively contributing to the environment at not only local levels, but also internationally. As an island nation, Fiji is well aware of climate change and its effects such as global warming and rising oceans. Fiji's Intended Nationally Determined Contributions (INDC) and commitment to the Sustainable Development Goals (SDG), Convention on Biological Diversity (CBD), the United Nations Forum on Forests (UNFF), and the United Nations Framework Convention on Climate Change (UNFCCC) are just a few examples of how Fiji sees itself contributing to the environmental and climate change initiatives globally. These are further augmented by the Green Growth Framework and Low Emission Development Strategy 2018-2050 (LEDS) which outlines procedures to achieve low-emission development. Additionally, the Climate Change Act (CCA) 2021 provides a legal framework for a carbon-neutral and climate-resilient Fiji by committing to the 100% sustainable management of Fiji's ocean and climate mitigation and adaptation through nature-based solutions. The Act creates a legal basis to support our sustainable development objectives, long-term climate ambition, net-zero emissions target, and commitment to protecting Fiji's environment.

Fiji became a member of RAMSAR in 2006. The Convention on Wetlands, signed in Ramsar, Iran, in 1971, provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. In line with RAMSAR, the Fiji Forest Policy Statement (2007) clearly articulates and commits the Department of Forest to "introduce an effective mangrove regulatory management framework" through wide stakeholder consultation to (1) actively review mangrove management and (2) permanently advocate the "... conservation of mangroves to provide for sustainable customary uses, the sustenance of coastal fisheries, the protection of shorelines, and as an adaptation measure against climate change impacts".

1.3 Target Area

1.3.1 Geographical Location

The project location is the Rewa Delta (35,238 ha); which comprises the Provinces of Rewa and Tailevu located in the southeast of Viti Levu Island and is less than 2m above high tide level and particularly vulnerable to coastal flooding. Like many coastal ecosystems and communities, it is prone to rising sea levels, eroding coastlines, and inundated agricultural and freshwater lands. The target area for the project implementation is the coastal and mangrove wetlands of the Rewa Delta in the Tikina of Bau, Province of Tailevu, and Tikina of Noco and Vutia, Province of Rewa. The project-selected sites are the villages of Muanaira and Narocake of the Rewa Province and Natila, Waicoka, Naivakacau and Nasilai of the Tailevu.

1.3.2 Social, Economic, Environmental and Cultural aspects

1.3.2.1 Social and Economic aspects

Mangroves are important to the people of the Rewa Delta because they are a critical source of natural resources. They offer a broad range of social benefits to communities that lie close to the mangrove forest as well as those located beyond its peripherals. They provide a source of livelihood and food security for significantly many coastal households. A recent study, across the Ba and Rewa delta, showed that 20-45% of community members

visit the mangrove forest daily to source food resources as part of their daily routine (Avtar et al. 2021). Local communities depend on these resources to supplement and sustain their subsistence lifestyle.

Apart from the aquatic fauna, there are also associated plant species that share similar socio-economic values. These include coconuts (*Cocos nucifera*), ivi nut (*Inocarpus fagifer*), mangoes (*Mangifera indica*), lemons (*Citrus lemon*), pawpaw (*Carica papaya*) and many others (Tuiwawa et al. 2013). Further, the aesthetic effects of mangroves have led to life changing perceptions of existing resources that have contributed to changing lifestyles and dependency on mangrove resources over the years. The shift in perception and practices includes increasing opportunities for livelihood, basic amenity provisions and establishing an improved health and education infrastructure. With the added economic benefits of development especially in the tourism industry, there is now interest in local businesses venturing into the eco-tourism markets and other similar schemes whereby there is a lot of opportunity to economize mangrove resources.

The project will support resources and practical application of alternative livelihood and strengthen the conservation of coastal and mangrove habitats under threat from deforestation and over utilization through awareness raising, rehabilitation and enrichment of existing ecosystems. Sustainable management and maintenance of such natural systems will lead to sustainable incomes in the long term that will benefit local communities participating in the project.

1.3.2.2 Environmental aspects

Mangroves serve as “nurseries” for numerous species, sheltering them from predators and currents. Site-specific study by Lal (1984) along Wairiki creek showed they are the breeding ground for a diversity of fish such as the goatfish, mullets, pony fish, slipmouths, mangrove jack, trevallies, butterfly fish and barracudas, as well as crustaceans such as mangrove crab. A recent study by Rasalato et al. (2010) showed specific species of the Hammerhead sharks (*Sphyrna* spp.) and that other larger sharks, breed and feed in river mouths on Viti Levu and Vanua Levu; Marie et al. (2017) uncovered critical habitats for the young, scalloped hammerhead sharks (*Sphyrna lewini*) in the Rewa Delta.

Mangroves occur as the nesting and feeding grounds, possible refuge, for the different fauna that occupy the aquatic space. This consequently means, the sustainability of mangrove habitats and nurseries is critical to the long-term efforts of protecting and conserving the diversity of marine life.

Blue carbon is an added value to the existing role and function of mangroves. It is a recently founded concept that was introduced for the purpose of mitigating the effects of climate change particularly along the coastlines. The initiative shares the common interests amongst stakeholders in reducing carbon emissions through investments in the carbon trading market. The platform is also an opportunity to raise awareness and become educated about the value of mangroves and the means of going about restoring and keeping them viable for as long as possible. Mangroves store up to 10 times more carbon than terrestrial forests. They store a significant amount of carbon in both the above and below ground carbon pools. They are estimated to cover 13.7-15.2 million hectares worldwide and are able to sequester up to 31.2-34.4 million tonnes of carbon per year (Conservation International, 2020).

The removal and or destruction of these carbon pools puts the risk of losing a significant amount of carbon having to be released into the atmosphere where the land areas of concern are lost or used for other purposes. The blue carbon project currently underway by Conservation International (2018 to date) introduces an economically sound intervention of conserving and restoring mangrove loss across principal mangrove locations in Fiji. A recent study by Cameron et al. (2021) in the Ba and Rewa Delta showed the soil carbon pool stores the highest amount of carbon in a mangrove forest. The potential to implement a blue carbon restoration intervention project to restore and conserve mangroves has an estimated project cost of USD 2.5

million, or an average of USD 57.3 per ha per year, with emission reductions and removals (ERR) projected at 553,013.4 Mg CO₂ e over 30 years (or 4.2 Mg CO₂ e ha per year) (Conservation International, 2020).

To ensure that the wetland environment is sustainable as a major carbon absorber, the project will provide an impetus for communities to retain traditional knowledge and apply such skills to sustainably manage natural resources and improve food preservation technologies to address food security. The project will also strengthen the existing governance framework by ensuring that the ITTO funded ‘‘Community based Mangrove Management Guideline’’ which was developed from the ITTO project PD 696/13 Rev. 3 (F) is implemented effectively.

1.3.2.3 Traditional and Cultural aspects

The connection between the history of people and the environment often lies evident with existing archeological sites that lie buried within mangroves (Nakoro et al. 2013). Across the Rewa delta, typical archeological sites are common in all types of mangrove forests (Nakoro et al. 2013). These are identified by remnants of house mounds (yavu), a sacred site for carrying out traditional chants, ancestral burial grounds, old village sites, ring ditch fortification and installation sites (Nakoro et al. 2013). In some of the communities, the sites of occurrence become ‘taboo’ areas that are revered and left unscathed because of the historical footprints they hold and that have passed down from one generation to the next (Pillai, 1985; Lal, 1984, 1990). Unfortunately, these legacies are being destroyed as the result of the many years of ongoing anthropogenic activities and destruction incurred by changing social and economic situations. Activities specifically in the forms of large scale development and urbanization, unmonitored agriculture and forestry activities, including nature, are well established threats that places a lot of mangrove forest and habitats at high risk of significant and irreplaceable loss (Nakoro et al. 2013). Through successful rehabilitation and restoration efforts, those affected areas of significant loss and or damages now have a chance of being reinvigorated for many more generations and the long term. It is also one way of ensuring that tradition and cultural associations and practices continue well into the future.

1.4 Expected Outcomes at Project Completion

At project completion, degraded coastal and mangrove wetlands will be restored through rehabilitation and enrichment planting. In addition, it is envisaged that communities would have the required knowledge and skills on mangrove utilization, management and monitoring of the rehabilitated areas through the use and practical application of the recently published ‘‘Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji.’’

Women will be empowered to be at the forefront in implementing sustainable management of mangroves by advocating mangrove-based community development activities and will play an important role in mangrove restoration, protection and management. They will be trained to grow mangrove seedlings and other tree species in nurseries for the project’s planting programme and also be involved in planting seedlings on the foreshore to successfully restore mangrove forests that will protect their homes and farms from flooding and saline intrusion. As seedlings from the nursery will be sold to the Ministry of Fisheries and Forestry for its ‘‘30 Million Trees in 15 Years Planting Initiative’’, means that women will be further empowered to become entrepreneurs by combining environmental management and conservation with business.

As the project ends, it is expected that through improving coordination and monitoring of wetland management and conservation, mangrove forests will receive higher public attention and there is a higher commitment of the Government and other stakeholders to sustainably manage their multiple uses. Even the coastal communities will fully play their stewardship role in the protection and conservation of the existing and

rehabilitated mangroves by working closely in collaboration with the MoFF and the Police Department to monitor and track illegal timber trade from mangrove resources.

It is anticipated that the participation of local communities in mangrove management and conservation processes is strengthened, and the base for their livelihoods is secured as coastal and mangrove wetlands will support enhanced production of fish and other marine species, facilitate the sustainable supply of fuel wood, house poles and other non-wood products that improve income levels. Furthermore, community members will have technical skills in sustainable mangrove management and should be able to make sound decisions on protecting and managing their critical ecosystems that will reduce net emissions of greenhouse gases.

It is expected that after the project is completed, communities in the Rewa Delta will be protected against coastal erosion, storm surges and other natural hazards through a significant improvement in coastal and mangrove wetland cover. The Delta communities will become stronger and more resilient where efficiencies are achieved by pursuing a more integrated approach to climate change adaptation and disaster risk reduction. Disaster preparedness, response and recovery initiatives prevent undue human losses and suffering and minimise adverse consequences for local and community economic, social and environmental systems.

PART 2. PROJECT RATIONALE AND OBJECTIVE

2.1 Rationale

2.1.1 Institutional set-up and organizational issues

The Executing Agency together with collaborating partners will provide technical and logistical support for the execution of the project. The Executing Agency will be the Ministry of Fisheries and Forestry. The Partner organisations from the previous project, PD 696/13 Rev.2 (F), will be formally requested to be part of this new project and they are; the Secretariat of the Pacific Community, the Institute of Applied Science/University of the South Pacific and Conservation International.

All above organisations have specific field expertise from policy making at national and regional scales, research and policy advisory services to direct linkages and proven records for community-based project implementation. All organisations have long associations in the field of practical and applied (forestry based) community development in Fiji.

The collaborating partners in the public sectors include the Ministry of Lands and Mineral Resources (MoLMR), Ministry of Agriculture and Waterways (MoWA), Ministry of Environment (MoFCECIP), Ministry of iTaukei Affairs, Culture, Heritage and Arts (MoiACHA) and Ministry of Rural, Maritime Development and Disaster Management (MoRMDM). These agencies will be responsible for guiding project activities to align to Government policy focal areas as well as providing technical inputs that will form the basis of information that facilitates community discussion and awareness.

Regional research organisation and non-government will be heavily involved in all stages of the project by facilitating and supporting the Executing Agency in carrying out project activities. Several project components will be contracted to such institutions to supplement the expertise of the Executing Agency as well as to secure quality project outputs and outcomes.

Mangrove ecosystem management needs political commitment and strong support from the Central Government, Divisional and Provincial Offices and related stakeholders. Coordination and cooperation among institutions, vertical and horizontal, and with other stakeholders is very important to guarantee the implementation of mangrove ecosystem management policies.

The Ministry of Fisheries and Forestry through this project will effectively utilise the "*Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji*" for rehabilitation and conservation purposes and contribute to the achievement of the government goal of mitigating the impacts climate change. The management guideline is aligned with the 2007 National Forest Policy, which aims at introducing an effective mangrove management framework for the Rewa Delta with the specific objective of establishing demonstration sites that will showcase community-based management activities for biodiversity conservation and provide alternative livelihoods to ensure improved human wellbeing.

2.1.2 Stakeholder analysis

Stakeholder Group	Characteristics	Interests	Potentials	Involvement in project
Primary stakeholders				
Local users of wetland resources not living with the targeted communities	Livelihoods depend on coastal and mangrove wetland resources (commercial basis)	Sustainability of resource base	Knowledge and readiness to actively participate in project activities	Beneficiaries of products from timber tree and non-timber species/ products
Women of the communities in Target communities, Province of Rewa and Tailevu	Live subsistence dependence on coastal and mangrove wetland resources	Sustainability of resource base	Available indigenous knowledge and their readiness to actively participate in community development projects	Beneficiaries of products from timber tree and non-timber species/ products
Men and Youths of the communities in Target communities, Province of Rewa and Tailevu	Livelihoods depend on coastal and mangrove wetland resources (Semi commercial basis)	Sustainability of resource base	Available indigenous knowledge and their readiness to actively participate in community development projects	Beneficiaries of products from timber tree and non-timber species/ products
Ministry of Fisheries and Forestry	Mandated by Policy to ensure conservation of forest and biological resources	Ensuring restoration of degraded areas institution	Institutional capacity to embark on reforestation projects	Executing Agency
Ministry of Lands and Mineral Resources	Legally mandated to manage State Land (foreshore area below the high tide water line are State Lands)	Economic development and sustainable use of resources	Institutional capacity to enforce endorse developments and maintain law and order	Collaborators
Ministry of Agriculture and Waterways	Legally mandated to direct and assist development of agro products	Sustainable resource use	Institutional capacity to influence farmers practices	Collaborator
Traditional authorities (Chiefs, clan heads, opinion leaders)	Custodians of traditional values and norms	Sustainable flow of benefits	Has the authority to enforce by-laws and traditional rules and regulations, and can influence communities perception of project	Collaborators
Secondary stakeholders				
Ministry of Foreign Affairs, Climate Change & Environment, Civil Service, Information, and Public Enterprises	Mandated by law to protect and improve Fiji's environmental conditions	Environmental consequences of wetland degradation	Capacity to ensure compliance of environmental standards	Collaborators
Ministry of Rural, Maritime Development and Disaster Management	Mandated to manage and coordinate government development efforts	Economic development and sustainable use of resources	Economic and social well-being of rural and maritime communities.	Collaborators

	in rural and maritime communities.			
Secretariat of the Pacific Community	Broad-based advocacy and skills development to regional countries	Sustainability of resource base and improvement in local communities well-being	Have strong collaboration with national and local governments with the capacity to mobilise local communities	Major partner institution in project planning, design and implement
Conservation International Fiji	Provide advocacy and community based conservation, terrestrial rehabilitation and restoration of degraded landscapes implementation	Sustainability of resource base and improvement in local communities well-being	Have strong collaboration with national and local governments with the capacity to mobilise local communities, design and	Major partner institution in project planning and implementation
Institute of Applied Science /University of the South Pacific	Has the mandate to research and assist wetlands management and resources use	Conservation and sustainable utilisation of natural resources	Has technical capacity to mainstream project results	Major partner institution in project planning, design and implementation
Tertiary stakeholders				
Provincial Office	Mandated by law to ensure good governance and welfare of the iTaukei partners	Portal of engagement with iTaukei (indigenous) communities	Have an influence on administration, & development strategy in Provincial governance	Main partners
Ministry of i-Taukei Affairs, Culture, Heritage and Arts	Mandated to protect the indigenous culture and the economic and social development of indigenous Fijians	Economic and social well-being of the indigenous community	Have an influence on administration & development strategy in Provincial governance	Collaborator
iTaukei Lands Trust Board	Secure, protect and manage land ownership rights assigned to the indigenous landowners and to facilitate the commercial transactions that revolve around its use.	Economic and social well-being of the indigenous community	Mandated to determine and approve appropriate landuse for indigenous land	Collaborator

2.1.3 Problem Analysis

The project aims to address the key problem of unsustainable management of coastal mangrove forests that increases the vulnerability of coastal communities to natural disasters. The key problem consists of four causes that are linked to climate change such as associated socio-economic aspects of community reliance and unsustainable management practices; the loss of ecosystem services and habitat for biodiversity; inadequate awareness of impacts of deforestation and forest degradation resulting in “green-house gas” (GHG) emissions and lack of coordination between key governing agencies to implement strategies and policies by incorporating traditional knowledge into ecosystem-based adaptation (EbA) and nature-based solution (NbS) that will strengthen community resilience to climate-induced disasters.

The project also responds to the urgent needs of the Fiji Ministry of Fisheries and Forestry, as the country has been badly affected by recent natural disasters such as Tropical Cyclone Cody, the tsunami and airborne ash generated by the volcanic eruption in Tonga earlier this year, as well as the current challenges of the COVID-19 pandemic. It will significantly help build the resilience of the Rewa Delta, Fiji against natural disasters and the socio-economic impact of the COVID-19 pandemic by empowering coastal communities and women in the community-based restoration of degraded mangrove forests.

Category 1 Tropical Cyclone Cody in January 2022 caused widespread damage in Fiji and the South Pacific where over 4,500 people were evacuated to safety. The tsunami that was caused by the eruption of Hunga Tonga–Hunga Ha'apai on January 15 was amplified in New Zealand as a result of the storm surge created by Cyclone Cody (https://en.wikipedia.org/wiki/Cyclone_Cody). Tropical Cyclone Cody brought significant rain affecting the whole of Fiji. The high level of precipitation over the Fiji group between 8-15 January was significant and caused most of the Western and Central Divisions to be inundated and highly susceptible to flooding.

Fiji is highly vulnerable to climate change due to its position as a Small Island Developing State (SIDS), which leaves the country exposed to sea-level rise, cyclones of increasing intensity, and intense flooding, among other potential consequences. It is therefore imperative to take rapid action to address climate change challenges through GHG emission reductions. (<https://www.greengrowthknowledge.org/national-documents/fiji-low-emission-development-strategy-2018-2050>).

Globally, carbon-rich mangrove forests are a nature-based solution that will help with the impact of climate change challenges. The development objective of this project is aligned with the “Low Emission Development Strategy 2018-2050 (LEDS) of Fiji” which defines pathways to achieve low emission development until 2050.

This project will complement the realization of Japan's commitment to the initiatives entitled, “Strengthening the Foundation for Sustainable and Resilient Economic Development” and “Climate Change and Disaster Resilience”, in line with the Japan-Pacific Bond Policy, announced by the previous Japanese Prime Minister, SUGA Yoshihide, at the 9th Pacific Islands Leaders Meeting (PALM9) in July 2021.

The project will provide a means for ITTO to showcase relevant tangible results and inputs to discussions at international forums such as the United Nations Forum on Forests (UNFF-18) in 2023, justifying the case for emergency funding and rapid implementation. Presenting project results at related international events such as the UNFCCC COPs would internationally highlight the importance of ITTO’s mandate and role, the support from the Government of Japan as well as the implementation of both Article 15 and Article 28 of the ITTA, 2006.

To address the causes of the key problem associated with climate change the project is designed to:

- 1) Reduce deforestation and forest degradation triggered by improper and unsustainable forest management which are the main contributors to GHG emissions. As such, the project will build capacity for community mangrove rehabilitation support through the provision of viable alternative livelihood options that would alleviate current pressures from excessive resource utilization. The community will be empowered especially women to undertake sustainable management at the community level with the adoption of the principles of community-based mangrove management as outlined in the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* which is essential to the success of reduced emissions from deforestation and forest degradation.
- 2) In alignment with 1) above, the project will also focus on the rehabilitation of degraded systems to address biodiversity loss in line with the National Forest Policy 2007.
- 3) The project will also revive traditional knowledge and skills through integration with ecosystem-based adaptation policies for the conservation and sustainable use of natural resources to address problems associated with climate change and GHG emissions.
- 4) The project will endeavour to bring stakeholders together (key governing agencies and NGOs) to implement strategies and policies that will strengthen community resilience to climate-induced disasters and seeks to reinforce critical economic infrastructure for sustained human development protected from climate-induced natural hazards (soil erosion, flooding, tropical cyclone) through better policies and strengthened local disaster risk management (DRM) institutions.

(A problem tree is outlined in Figure 1 and an objective tree is in Figure 2)

Figure 1. Problem Analysis Tree

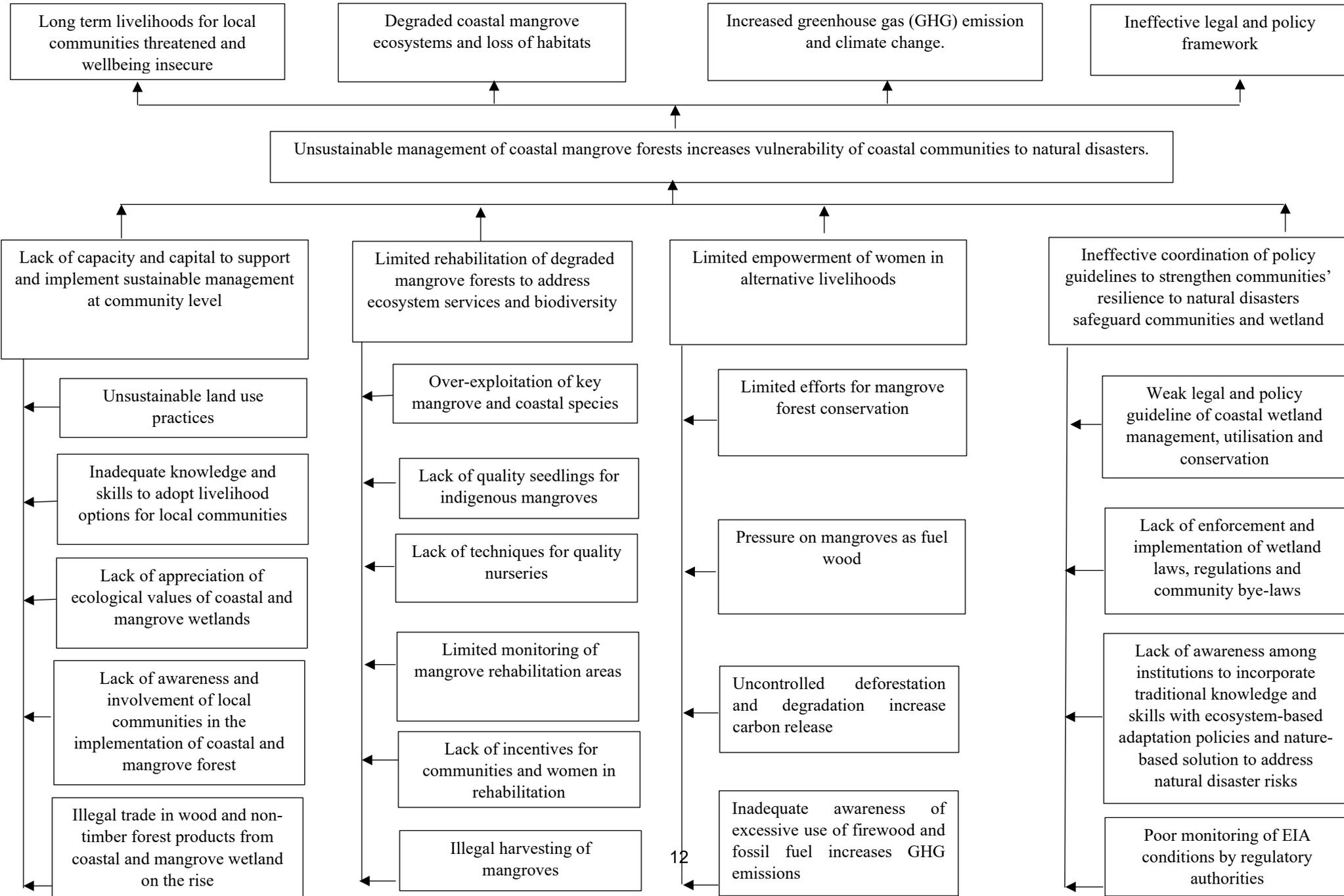
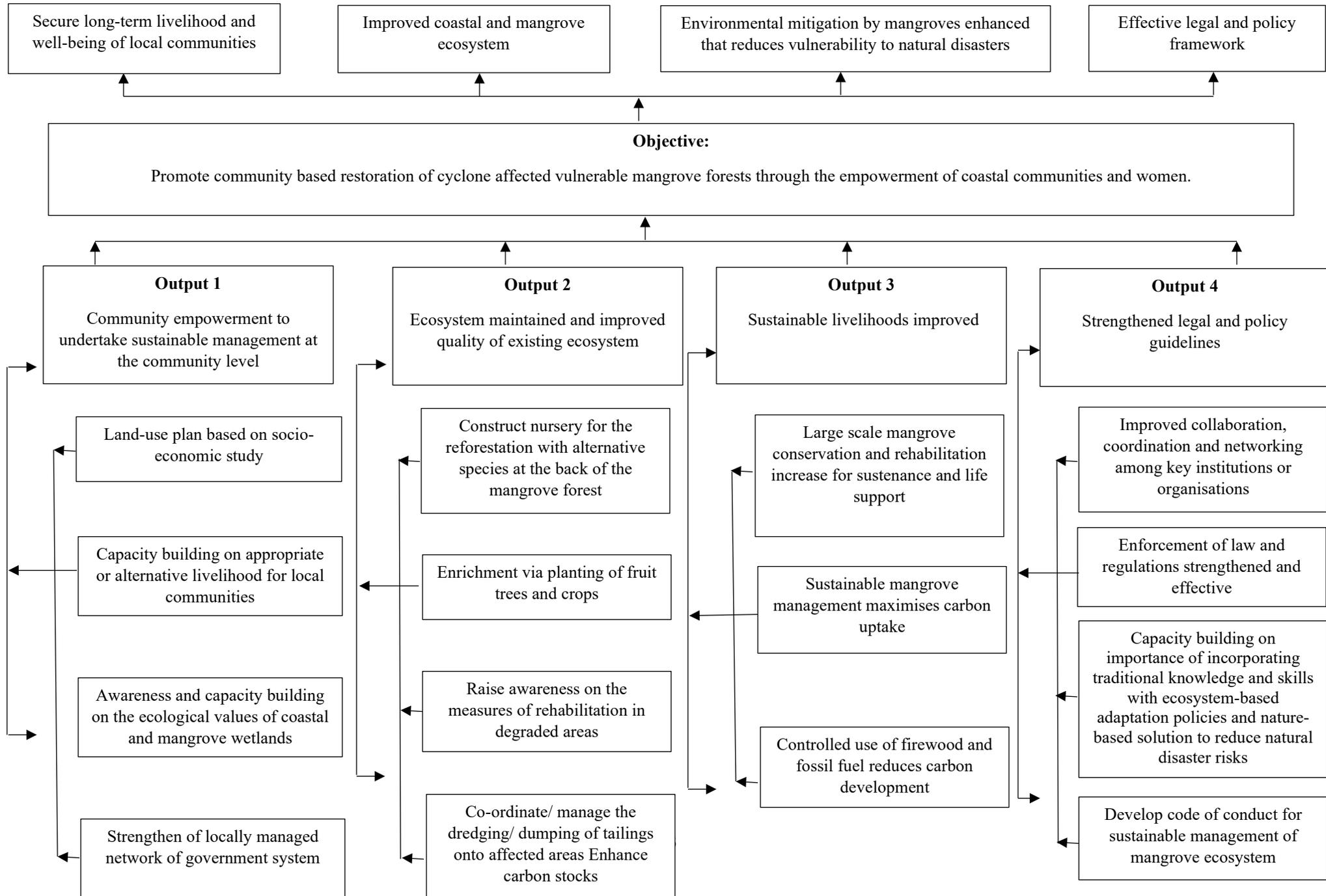


Figure 2. Objective tree



2.1.4 Logical Framework matrix

STRATEGY OF IMPLEMENTATION	MEASURABLE INDICATORS	MEANS OF VERIFICATION	KEY ASSUMPTION
<p>Development objective:</p> <p>To promote the conservation, restoration and sustainable management of mangrove forests to contribute to the resilience of coastal communities and mangrove ecosystems to natural disasters in Fiji</p>	<ol style="list-style-type: none"> 1) Effective regulatory framework is put in place at National level. 2) Community based management framework successfully implemented aligned to national policies and regulation on coastal and mangrove wetland. 	<ol style="list-style-type: none"> 1) Government Policy Statements and commitments 2) Community buy-in and successful field demonstration 3) Amplification to other coastal and mangrove wetlands in Fiji 	<ol style="list-style-type: none"> 1) Government Agencies recognize the need for coordination and alignment of resources 2) Buy-in by Community leaders and members to support demonstration sites
<p>Specific objective:</p> <p>To promote community-based restoration of cyclone-affected vulnerable mangrove forests through empowerment of coastal communities and women.</p>	<ol style="list-style-type: none"> 1) By the end of the 11th month 50 hectares (12 ha inside the project site and 38 ha outside project site) of degraded wetlands reforested and at least 60,000 mangrove propagules potted in established mangrove nurseries and 60,000 native, fruit and fuel wood seedlings in the village nursery. 2) Identified livelihood options for communities are adopted and implemented by the end of 11th month. 	<ol style="list-style-type: none"> 1) Field visits 2) Project progress reports 3) Project evaluation reports and monitoring reports 	<ol style="list-style-type: none"> 1) Local communities are ready to collaborate on reforestation initiatives 2) Acceptance of identified livelihood options by coastal communities
<p>Output 1:</p> <p>Local communities are trained to adopt the “<i>Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji</i>” to strengthen governance of mangroves and women are empowered to participate in the decision-making process for improvement of existing alternative livelihoods.</p>	<ol style="list-style-type: none"> 1) By the end of the 4th month the communities become better informed of the importance of coastal and mangrove wetlands through the CBMMG. 2) By the end of the 4th month existing alternative livelihood options upgraded. 3) By the end of the 5th month, communities have identified other viable alternative livelihood options for women. 	<ol style="list-style-type: none"> 1) Community interviews 2) Project progress report and certificate of participation 3) Field visits 4) Individual Interviews 	<ol style="list-style-type: none"> 1) Effective communications strategies adopted 2) Resource persons and training materials available 3) Communities are willing to adopt identified livelihood option

<p>Output 2:</p> <p>Degraded coastal and mangrove wetland rehabilitated to mitigate climate change through increased carbon sequestration.</p>	<ol style="list-style-type: none"> 1) By the end of the 6th month 6 community mangrove nurseries established 2) By the end of the 12th month 12 ha of deforested wetlands rehabilitated. 	<ol style="list-style-type: none"> 1) Field visits 2) Progress project reports 	<ol style="list-style-type: none"> 1) Seeds/Saplings for mangrove and fuel wood tree species are available 2) That wildfires are kept under control 3) Harvesting of mangrove wetlands is greatly reduced
<p>Output 3:</p> <p>Empowering women to implement a suite of viable alternative livelihood options, reducing over dependence on coastal and mangrove wetland resources for sustenance and life support.</p>	<ol style="list-style-type: none"> 1) By the end of the 6th month women trained and assisted with improved cook stove and home biogas digester. 2) By the end of the 11 month 6 hectares of fast-growing wood fuel seedlings replanted in degraded areas. 3) By the end of the 10th month local women trained in identified livelihood options. 4) By the end of the 10th month local women have adopted and implement alternative livelihood options. 	<ol style="list-style-type: none"> 1) Field visits 2) Interviews and Monitoring Report 3) Training and Awareness Reports 	<ol style="list-style-type: none"> 1) Effective communications strategies adopted 2) Resource persons and training materials available 3) Communities are willing to adopt identified livelihood option

<p>Output 4:</p> <p>Strengthen coordination of policy guidelines to improve communities' resilience in the face of natural disasters.</p>	<ol style="list-style-type: none"> 1) By the end of the 5th month, communities trained in natural disaster preparedness and disaster risk management. 2) Development of Community Disaster Action Plan completed by the end of the 3rd month. 3) By the end of the 5th month communities become better equipped on farming techniques and climate smart agriculture by integrating traditional knowledge and skills. 4) By the end of the 6th month, communities have implemented the construction of protective infrastructure (fortification of village hall, Installation of water tanks) to reduce disaster risk. 	<ol style="list-style-type: none"> 1) Field visits 2) Project progress and workshop report 3) Dissemination of Community Disaster Action Plan 	<ol style="list-style-type: none"> 1) Key Stakeholders policy implementers at the national and divisional level involved in coastal and mangrove wetland management and conservation and DRR activities are willing to collaborate 2) Representatives of key stakeholders at national and at Divisional level attend workshop 3) Communities in coastal and mangrove wetlands attend workshop 4) Access and availability of traditional knowledge and skills 5) Communities welcome, appreciate and willing to participate in the revival of traditional knowledge and skills
--	--	--	--

2.2 OBJECTIVES

2.2.1 Development objective and impact indicators

The development objective of this project is to promote the conservation, restoration and sustainable management of mangrove forests to contribute to the resilience of coastal communities and mangrove ecosystems to natural disasters in Fiji. It will also contribute to the reduction of carbon emissions from deforestation and forest degradation and equally enhance forest carbon stocks through increased community participation in reforestation, conservation and management of mangrove wetland areas.

The project, therefore, aims to support the government objectives in mainstreaming sustainable biomass energy in policy formulation and consequently help in reducing greenhouse gas (GHG) emissions by 2030 and net-zero carbon emissions by 2050 across all economic sectors. At the same time, implement a workable framework and practical solutions to the adoption of sustainable forest management systems and conservation of coastal forests in Fiji at the community level.

Indicators of the impact of the above development objective may be through the degree of mainstreaming project activities into the target communities; the physical evidence and extent of rehabilitation of degraded coastal and mangrove wetland areas; and the formulation of a policy framework for climate change adaptation and mitigation to reduce community natural disaster risk as the delta is less than 2m above high tide level and particularly vulnerable to cyclones, coastal flooding, rising sea level, eroding coastlines and inundated agricultural and freshwater lands.

2.2.2 Specific objective and outcome indicators

The specific objective aims to promote community-based restoration of cyclone-affected vulnerable mangrove forests through empowerment of coastal communities and women. This specific objective includes the need: (i) to improve the livelihoods of local communities living inside and in the surrounding area of the Rewa Delta through participation in avoiding deforestation, degradation and biodiversity loss (ii) to promote community-based mangrove restoration to compensate for the degraded and lost resource and secure the future of ecosystem services they provide and (iii) to adopt integrated approaches to coastal adaptation that contribute to the protection of coastal populations from natural hazards, increase climate change resilience and reduce vulnerability to natural disasters.

By the end of the project, one of the key indicators will be the total area rehabilitated under the project as well as the number of alternative livelihood interventions that are mainstreamed into participating communities. A less quantitative outcome indicator will involve the publication of relevant succinct reports that outline appropriate policy measures that will ensure the sustainable management of coastal and mangrove wetlands. The project development and specific objectives support ITTO Strategic Action Plan 2022 – 2026, in the field of reducing deforestation and forest degradation and enhancing environmental services in Tropical Forests.

PART 3. DESCRIPTION OF PROJECT INTERVENTIONS

3.1 OUTPUTS AND ACTIVITIES

3.1.1 OUTPUTS

Output 1:

Local communities are trained to adopt the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* to strengthen the governance of mangroves and women are empowered to participate in the decision-making process for the improvement of existing alternative livelihoods.

Project Intervention:

(1) Communities will be trained to adopt and apply the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* in the implementation of the project. Training to be conducted by the collaborating partners and relevant government ministries with material delivered in i-Taukei language.

(2) Women will be empowered as a key target group in the project implementation and livelihood development. This is in line with SDG 5 (Gender equality and empowerment of women) which states that rural women need to be empowered to reach their full development potential. Facilitating the inclusion of women in community decision-making processes will enable them to lead and advocate for environmental issues that affect their lives.

(3) A participatory progress assessment on the efficiency of existing alternative livelihood established from the previous project will be conducted to identify potential areas for upgrading to improve productivity and revenue.

(4) Identification of other viable alternative livelihoods for women will be conducted through Participatory Learning Appraisal (PLA). It is imperative that for the project to be successful, communities will be offered the right incentives (alternative livelihood and construction of DRR infrastructure) from the beginning to gain their full support and participation throughout the project. Rewarding communities for their participation in the project is a success factor to achieve the interest of different community groups.

Indicators

(1) By the end of the 3rd month at least **6** communities and at least **120** individuals are trained and guided on how to use the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* for their benefits concerning the importance of mangroves in climate change mitigation, its rehabilitation, conservation and the roles of communities as managers and stewards for its long-term sustainability.

(2) By the end of the 3rd month, at least **6** communities are involved in participatory progress assessment on the efficiency and productivity of existing alternative livelihood through questionnaires, personal interviews and focus group discussion (FGD) with views of participating women are taken into account.

(3) By the end of the 4th month at least **2** existing alternative livelihood assessment results analysed, evaluated and implemented to further improve existing alternative livelihood in terms of output and revenue.

(4) By the end of the 4th month, through Participatory Learning Appraisal (PLA) at least **6** communities have identified other viable alternative livelihood options such as the use of improved cooking stove, contemporary jewelry making, fabric painting and screen printing, caregiving and women cooperative to reduce community pressure and dependence on mangrove resources.

Output 2:

Degraded coastal and mangrove wetlands rehabilitated to mitigate climate change through increased carbon sequestration.

Project Intervention:

- (1) The project will work with partners, collaborators, and Provincial officers from Rewa and Tailevu to provide training on climate change mitigation through increased carbon sequestration.
- (2) Training on the collection of quality seedlings for indigenous mangroves and other species, nursery techniques and establishment of mangrove nurseries will be conducted in collaboration with the Ministry of Fisheries and Forestry's Silviculture Research and Extension Division.
- (3) Mangrove nurseries, one in each of the six selected communities will be established to raise seedlings of different common indigenous mangrove species and at least 1 ha (10, 000 potted seedlings) to be planted in each of the demonstration villages. Part of the nursery-raised seedlings will serve as seedlings stock reserve to rehabilitate other areas in the Central Division as required by the MOFF for its 30 million trees in 15-year initiative.
- (4) To ensure that mangrove restoration will not fail, the Project team will apply the rehabilitation method stipulated in the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* to assure a high survival rate. (5) Incentives will be provided to community members especially women to monitor the progress of planted mangrove seedlings. The survival assessment will be conducted by the project coordinator with the assistance of officers from Nausori Forestry office.

Indicators

- (1) By the end of the 3rd month **60** individuals are trained on mangrove species identification, indigenous mangrove seed collection and nursery techniques for raising native species.
- (2) By the end of the 3rd month **6** Mangrove nurseries are established (8m x6m) and **60,000** mangrove seedlings potted, serving as a source of reliable seedling materials for continuous mangrove rehabilitation and reforestation in the Central Eastern Division.
- (3) By the end of the 12th month **6 ha** of deforested wetlands are rehabilitated.
- (4) By the end of the 12th month at least 90% of potted mangrove seedlings planted survive and thrive.

Output 3:

Empowering women to adopt a suite of viable alternative livelihood options, reducing over dependence on coastal and mangrove wetland resources for sustenance and life support.

Project Intervention:

- (1) To enhance mangrove forest conservation efforts, the women group will be empowered with the provision of alternative livelihoods that will reduce over dependence on coastal and mangrove wetland resources for sustenance and life support.
- (2) Community consultations will be conducted to select an alternative livelihood (or suite of livelihoods) that is most appropriate to women and sustainable as a means of income generation. For instance, in Fiji, the

practice of open fire cooking by women is widespread in rural villages and settlements. The burning increases greenhouse gas emissions in addition to creating challenges associated with land erosion and deforestation. To replace open fire cooking, women will be trained on the use of a new improved clean cooking stove which is energy efficient and cost effective as it reduces fuel expenses for fossil fuels such as kerosene and gas. The clean stove uses less firewood and produces less smoke that helps in mitigating climate change. It contributes significantly to women's lives by reducing the risk of being exposed to respiratory diseases compared to open fire cook stoves.

- (3) To reduce pressure on mangroves as fuel wood for this clean stove the project will promote the planting of fast-growing fuelwood trees. Communities will raise fast growing fuel wood seedlings and have them replanted in the villages' outskirts.
- (4) Women will be trained on the use of home biogas digesters that will help reduce greenhouse gas emissions as waste generated from leftover food, and agricultural and animal waste are converted into energy. The Home Biogas Digester will not only be used to convert waste to generate gas but also as a by-product of the biogas digester, a liquid fertilizer will also be released which can be collected and used in the village gardens. Training on Clean stove and Home Biogas Digester will be conducted by the Ministry of Women, Children and Poverty Alleviation, SPC, Kasabia Limited and Pacific Grow.
- (5) For further empowerment, women will be given opportunities to acquire technical and business skills in other alternative livelihood options such as contemporary jewelry making, fabric painting and screen printing, caregiving and women cooperatives to generate employment, improve life quality, reduce poverty and to enhance adaptation and recovery from natural disasters. The training will be conducted in collaboration with the Ministry of Women, Children and Poverty Alleviation (MoWCPEC), Ministry of External Trade, Cooperatives (MoETC), and SMEs, NCSMED and Fiji Arts Council.

Indicators

- 1) By the end of the 6th month at least **6** communities are trained on the use of improved cook stoves and home biogas digesters, **30** women assisted with improved cook stoves while **6** communities assisted with home biogas digesters.
- 2) By the end of the 12th month at least **6** hectares of fast-growing wood fuel seedlings (60,000 fruit, native and fuelwood seedlings) replanted in degraded areas and in the villages' outskirts.
- 3) By the end of the 3rd month at least **3** viable alternative livelihoods selected to be implemented.
- 4) By the end of the 7th month at least **6** communities have adopted and implemented alternative livelihood options.

Output 4:

Strengthen coordination of policy guidelines and framework to effectively address climate change and disaster risks at the national and subnational levels.

Project Intervention:

To prepare the local communities in advance to reduce their vulnerability to natural disasters, the project will work closely with relevant stakeholders in providing training on climate change adaptation.

- (1) National Disaster Management Office (NDMO) and International Red Cross and Red Crescent Movement (ICRC) will be invited to provide training on disaster preparation and disaster risk management. They will

assist the communities to develop their disaster action plans to prepare for, during and recovery from natural disasters.

- (2) The project will contribute to the communities' preparedness and response capacity by strengthening the village hall as a category five-cyclone proof evacuation center that will provide villagers with a safe and secure facility to take refuge in the event of any natural disaster. This effort supports the Ministry of Rural and Maritime Development and Disaster Management policy to foster inclusivity, safety and protection of rural communities in constructing village halls align with building codes that are cyclone-compliant and resilient.
- (3) The Ministry of Agriculture and Waterways under its blue economy policy builds nature-based seawalls which combine mangroves, boulders and vetiver grass to prevent coastal erosion and protects coastal Fijian villages against sea level rise, storm surges and other climate-related impacts. Nature-based solutions are increasingly being recognized as an effective and cost-efficient way of reducing disaster risks, helping people adapt to climate change and building community resilience. The project will invite the Ministry of Agriculture and Waterways to provide consultations and workshop training that helps community members to enhance their knowledge of nature-based seawalls and ways to maintain them.
- (4) The Land Resources Division of the SPC and the Ministry of Agriculture and Waterways will be invited to provide training on ecosystem-based adaptation (EbA) and climate smart agriculture (CSA) that are more sustainable and resilient to climate change impacts. Ecosystem-based adaptation is a strategy that harnesses biodiversity and ecosystem services to build the resilience of human communities and societies to the impacts of climate change. Training on CSA will incorporate traditional knowledge and skills on the conservation and sustainable use of natural resources. The Water Authority of Fiji (WAF) assists in providing water tanks to areas that are usually affected by intermittent water supply so they will be invited to promote awareness of water saving and related practices as Delta communities are always affected during natural disasters. The project will collaborate with Water Authority to assist the six communities in providing tanks for water storage.
- (5) The DO Central Eastern and the Police Department will be invited to generate awareness among local people and stakeholders to protect the mangrove ecosystem so that the existence and preservation of mangrove forests as protected areas are maintained sustainably. The collective action of the six communities for mangrove protection will strengthen the role of mangroves in the fight against climate change as mangroves store up to 10 times more carbon than terrestrial forests.

Indicators

- (1) By the end of the 3rd month, at least **120** individuals are trained in natural disaster preparedness and disaster risk management.
- (2) By the end of the 3rd month, a Community Disaster Action Plan is developed.
- (3) By the end of the 3rd month at least **6** communities are trained on farming techniques and climate smart agriculture by integrating traditional knowledge and skills to combat climate change.
- (4) By the end of the 12th month, at least **6** communities have implemented the construction of protective infrastructure (strengthening of village hall, Installation of water tanks) to reduce disaster risk.

3.1.2 ACTIVITIES

Output 1:

Activity 1.1: Conduct 6 community workshops based on the *Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji* on the importance of mangroves in climate change mitigation and the roles of communities as managers and stewards for its long-term sustainability.

Activity 1.2: Conduct 6 Participatory Progress Assessments on the efficiency and productivity of existing alternative livelihoods to identify potential areas for upgrading to improve output and revenue.

Activity 1.3: Upgrade 2 existing alternative livelihoods to improve output and revenue.

Activity 1.4: Conduct 6 Participatory Learning Appraisals in representative communities to assist women to assess their situation and identify the best and most appropriate viable alternative source of livelihood to adopt.

Output 2:

Activity 2.1: Conduct 6 training workshops to build the capacity of communities to collect quality mangrove seedlings and nursery techniques and procedures. (Soil mix and related aspects).

Activity 2.2: Conduct 6 training workshops to build the capacity of communities in the establishment of a mangrove nursery and potting of mangrove seedlings.

Activity 2.3: Conduct 6 training for the planting of mangrove seedlings and rehabilitation of degraded and deforested coastal and mangrove wetlands.

Activity 2.4: Conduct 6 training workshops to assist communities in monitoring planted areas to ensure their sustainability in the long term.

Output 3:

Activity 3.1: Conduct 6 training workshops to build the capacity of women in the usage of the improved cook stove and home biogas digesters and their benefit in reducing GHG emissions.

Activity 3.2: Establish 6 ha of fast-growing fuel wood trees to reduce pressure on mangroves as an alternative source of wood fuel.

Activity 3.3: Conduct a feasibility study to select 3 of the most viable alternative livelihood options to be adopted in the 6 communities.

Activity 3.4: Conduct 3 training programmes for women to acquire knowledge and technical skills related to the selected alternative livelihood options from Activity 3.3.

Output 4:

Activity 4.1: Conduct 6 training workshops on natural disaster preparedness, disaster risk management and emergency response to climate change related disasters.

Activity 4.2: Develop the Community Disaster Action Plan through relevant Government Agencies and NGOs to safeguard the lives of coastal communities.

Activity 4.3: Conduct 6 training workshops on ecosystem-based adaptation by integrating traditional knowledge and skills for the conservation and sustainable use of natural resources to increase resilience and reduce vulnerability to natural hazards.

Activity 4.4: Conduct 6 training workshops on nature-based solutions to build the resilience of the six communities to the physical impacts of climate change.

3.2 IMPLEMENTATION APPROACHES AND METHODS

3.2.1 Project strategy

The key principle guiding the strategy of this project is the integrated sustainable management of the mangrove forests of the Rewa Delta. This requires developing partnerships and collaboration with all stakeholders, directly and indirectly, interested in mangroves so that they can join the efforts of coordinating mangrove management and use activities. These stakeholders include research and educational institutions, social, economic, and environmental organizations, local communities and the private sector.

In the implementation, the project will bring together government ministries, NGOs, universities, consultants, and other stakeholders to carry out training workshops to improve the community and institutional capacity, community awareness and coordination to enable effective management of delta wetlands and in addressing climate change issues.

The project will use the participatory approach in conducting stakeholder consultations and discussions with local communities and other relevant stakeholders to develop a consensus-based vision for the policy framework, community-based livelihood options and rehabilitation work. Additionally, it will facilitate community involvement in the management of mangroves and provide necessary alternative livelihood equipment and skill to enhance community ability and to gain more income.

The economics of wetlands conservation and sustainable utilisation will be studied with an emphasis on fuel wood. The traditional use of coastal and mangrove wetlands is mainly in the extraction of non-wood products. Therefore, a baseline assessment of the market demand and supply situation as well as harvesting, monitoring and surveillance issues related to production will be conducted to assess options for improving management.

Degraded coastal and mangrove wetlands will be rehabilitated with specific wetland species such as *Calophyllum inophyllum*, *Myristica casteinofolia*, *Inocarpus fagiferus*, *Terminaliacattapa*, *Barringtonia asiatica*, *Heritiera littoralis*, *Xylocarpus moluccensis*, *Rhizophorasamoensis*, *R. stylosa*, *R. x selala*, *Bruguiera gymnorrhiza*. The above-mentioned coastal tree species will be planted by the application of techniques developed by the Ministry of Fisheries and Forestry and Conservation International as prescribed in the “*Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji*”. In the selected sites, mixed species planting will be the mode of rehabilitation to closely follow natural habitat distribution and dispersal. Also, particular consideration is taken to match species to suitable sites to enhance survival and development. All rehabilitation conducted will take into consideration the need to conserve and protect the natural resources in the Rewa Delta and to safeguard the livelihood, rights and social well-being of the forest fringe communities of the project sites.

3.2.2 Main Stakeholders and Beneficiaries

Local Communities in the province of Rewa and Tailevu living within the Rewa Delta and around the degraded mangrove forest areas where the project activities are implemented are the main beneficiaries of the project. Through socio-economic surveys, local communities will have an opportunity of expressing their expectations from the project. Their views will be an important input in management planning. Capacity building on the “Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji”, will assist mangrove users in Tailevu and Rewa Province to be aware of their mangrove forests as their assets and that they need to upkeep these mangrove ecosystems for higher productivity. Training conducted for villagers will equip communities with the skill needed for mangrove forest management, sustaining harvesting and value-added on utilization of alternative livelihood projects. The six communities will be provided with alternative livelihood projects to support them and reduce their dependence on mangrove resources.

The Ministry of Fisheries and Forestry will enhance its capacity to provide support to community-based mangrove management and will contribute to the implementation of the Ministry of Fisheries and Forestry “30 Million Trees in 15 Years Planting Initiative” which includes mangroves.

Ministry of Environment (MoFCECIP) policy requiring 6 times replanting offset of the area of mangrove lost due to approved conversions for tourism, industry and residential estates is supported.

Government institutions, partners and collaborators will improve their framework for supporting mangrove rehabilitation through workshops, meetings and forum group discussions (FGDs) conducted by the project. They will gain experience in community-based mangrove management planning and implementation. In addition, the project will allow them to interact with other agencies with a stake in mangroves for the exchange of information and experience.

Provincial offices of Rewa and Tailevu will have reliable data on the status of mangroves in the Rewa Delta and this will assist their conservation officers to develop policies and regulations on sustainable mangrove rehabilitation and conservation.

3.3 WORK PLAN

WORKPLAN_ITTO MARCH 2023 - MARCH 2024													
PROJECT TITLE: Community-Based Restoration of Cyclone-Affected Vulnerable Mangrove Forests through Empowerment of Coastal Communities and Women In the Rewa Delta, Fiji													
OUTPUTS/ACTIVITY	Responsible Parties	MONTH											
		Q1			Q2			Q3			Q4		
		1	2	3	4	5	6	7	8	9	10	11	12
Output 1.0 Local communities are trained to adopt the “ <i>Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji</i> ” to strengthen the governance of mangroves and women are empowered to participate in the decision-making process for the improvement of existing alternative livelihoods.													
Activities													
Activity 1.1 Training workshop on “ <i>Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji</i> ” relative to the importance of mangroves; their rehabilitation, conservation and the roles of communities as managers for their long-term sustainability.	PC, NC, NE NGO												
Activity 1.2 Participatory progress assessment on the efficiency and productivity of existing alternative livelihoods through questionnaires, personal interviews, and focus group discussion with views and opinions of participating women are considered.	PC, NE,												
Activity 1.3 Results of participatory progress assessment analysed, evaluated and implemented to further improve existing alternative livelihoods in terms of efficiency and productivity.	PC, NE,EI												
Activity 1.4. Identification of other viable alternative livelihood options for women groups to reduce community pressure and dependence on mangrove resources.	PC, EI, NC, NE												

<u>Output 2.0</u>												
Degraded coastal and mangrove wetlands rehabilitated to mitigate climate change through increased carbon sequestration.												
<u>Activity 2.1</u> Community training on the collection of quality seedlings for indigenous mangrove species and nursery techniques for raising native mangrove species.	PC, EI, NC, NE											
<u>Activity 2.2</u> Construction of mangrove nursery and potting of mangrove seedlings.	PC, NE											
<u>Activity 2.3</u> Field mangrove planting to restore identified degraded areas for coastal stabilisation and moderate coastal flooding.	PC, NE											
<u>Activity 2.4</u> Monitoring of restored areas to ensure the survival of planted mangrove seedlings and fast-growing fuel wood trees.	PC, NE											
<u>Output 3.0</u>												
Empowering women to adopt a suite of viable alternative livelihood options, reducing over dependence on coastal and mangrove wetland resources for sustenance and life support.												
<u>Activity 3.1</u> Community training on the use of improved cook stoves and home biogas digesters to reduce GHG emissions.	PC, EI, NC, NE, NGO											
<u>Activity 3.2</u> Planting fast-growing fuel wood trees to reduce pressure on mangroves as an alternative source of wood fuel.	PC, NE,											
<u>Activity 3.3</u> Conduct a feasibility study to select the most viable alternative livelihood options such as contemporary jewelry made from local resources, fabric painting and screen printing, caregiving and women's cooperatives. (Entrepreneurship skills)	PC, EI, NC, NGO											
<u>Activity 3.4</u> Implement training programmes to assist women to acquire knowledge and technical skills related to the selected alternative livelihood options in Act. 3.3.	PC, EI, NGO											
<u>Output 4.0</u>												
Strengthen coordination of policy guidelines and framework to effectively address climate change and disaster risks at the national and subnational levels.												
<u>Activity 4.1</u> Community training on natural disaster preparedness, disaster risk management and emergency response to climate change related disasters.	PC, EI, NGO,											

<p>Activity 4.2 Community Disaster Action Plan is established through relevant Government Agencies and NGOs to safeguard the lives of coastal communities.</p>	PC, EI, NGO,												
<p>Activity 4.3 Training on ecosystem-based adaptation relating to forestry, water and agriculture by integrating traditional knowledge and skills on the conservation and sustainable use of natural resources to increase resilience and reduce vulnerability to natural hazards.</p>	PC, EI, NGO, NE												
<p>Activity 4.4 Community training to assist local communities to adopt and implement nature-based adaptation to build their resilience to the physical impacts of natural disasters.</p>	PC, NC, EI, NGO, NE												

Notes:

PC : Project Coordinator

NC : National Consultant

NE : National Expert (In House Forest Administration Staff)

NGO : Non-governmental Organization

EI : Experienced Institution

3.4 BUDGET

3.4.1 MASTER BUDGET

Output/Activity	Qtr.	Budget Component	Inputs	Unit	Qty	Unit Cost	ITTO Total	GoF Total	Grand Total
1	2	3	4	5	6	7	8	9	10
Output 1: Local communities are trained to adopt the Community based Mangrove Management Guideline to strengthen the governance of mangroves and women are empowered to participate in the decision making process for the improvement of existing alternative livelihoods.									
Activity 1.1: Training workshop on “Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji” relative to the importance of mangroves; their rehabilitation, conservation and the roles of communities as managers for their long term sustainability.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		16	National Consultant- 1	PD	1	250	250		250
		31.1	National Consultant (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		32	Local Transport	Trip	1	25	25		25
		62.2	Lunch and refreshment	Participant	90	6	540		540
		61	Mangrove Guideline	Copy	120	10	1,200		1,200
							2,425	45	2,470
Activity 1.2: Participatory progress assessment on the efficiency and productivity of existing alternative livelihoods through questionnaires, personal interviews, and focus group discussions with views and opinions of participating women taken into account.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
							410	30	440
Activity 1.3: Results of participatory progress assessment analysed, evaluated and implemented to further improve existing alternative livelihoods in terms of efficiency and productivity to reduce dependent on mangrove resources	Q2	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		51	Improvement. of Prawn ponds	Unit	4	1,000	4,000		4,000
		51	Improvement of Piggery	Unit	1	1,000	1,000		1,000
		20	One local firm to repair the Rewa Nursery Distribution Center damaged by flood and Cyclone.	Contract	1	2,500	2,500		2,500
							7,500	30	7,530

Activity 1.4.: Identification of other viable alternative livelihood options for women groups to reduce community pressure and dependence on mangrove resources.	Q2	16	National Consultant	PD	1	250	250		250
		31.1	National Consultant(DSA)	PD	1	15		15	15
		31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		32	Local Transport	Trip	1	25	25		25
								685	45
							11,020	150	11,170
Output 2.0									
Degraded coastal and mangrove wetlands rehabilitated to mitigate climate change through increased carbon sequestration.									
Activity 2.1: Community training on the collection of quality seedlings for indigenous mangrove species and nursery techniques for raising native mangrove species.	Q1	16	National Consultant	PD	1	250	250		250
		31.1	National Consultant (DSA)	PD	1	15		15	15
		31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		32	Local Transport	Trip	1	25	25		25
		62.2	Lunch and refreshments	Participant	90	6	540		540
		15	Nursery attendants 6 Per.	PM	3	90	1,620		1,620
						2,845	45	2,890	
Activity 2.2: Construction of mangrove nursery and potting of mangrove seedlings.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		52	Nursery preparation tools						
		52	Timber	Package	6	3,025.02	18,150.12		18,150.12
		52	Nails	Kg	12	100	1,200		1,200
		52	Strappings	Coil	6	10	60		60
		52	Cement	Bags	6	17	102		102
		52	Salient Shade	Roll	6	318	1,908		1,908
		52	Staple Gun/Pin	Unit	6	15	90		90

		15	Nursery attendants 6 Per.	PM	3	90	1,620		1,620
		51	Safety shoes	Pair	3	87	261		261
		32	Local Transport	Trip	1	25	25		25
							23,826.12	30	23,856.12
Activity 2.3: Field mangrove planting to restore identified degraded areas for coastal stabilisation and moderate coastal flooding.	Q2-Q4	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		54	Planting materials and tool:						
		54	Wheel barrow	Unit	6	81	486		486
		54	S & J Digging Spade	Unit	6	40	240		240
		54	Anchor pro steel fork	Unit	6	12	72		72
		54	Cane knife	Unit	6	7	42		42
		54	Safety Gumboot	Pairs	6	16	96		96
		54	S & J Post Hole Spade	Unit	6	51	306		306
		54	S & J Digging Fork	Unit	6	48	288		288
		54	Tramoth. PVC Garden Tool	Unit	6	4	24		24
		15	Nursery attendants 6 Per.	PM	3	90	1,620		1,620
		51	Mangrove planting shoes	Pair	2	55	110		110
						3,694	30	3,724	
Activity 2.4: Monitoring of restored areas to ensure the survival of planted mangrove seedlings and fast growing fuel wood trees.	Q2-Q4	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		54	Seedling Production Tools:						
		54	Manure-Hydrocomplex	Unit	20	32	640		640
		54	Plastic Bag (large)	Unit	60	4.36	2,616		2,616
		54	Seed Germination Tray	Unit	12	10	120		120
		54	Fan Rake	Unit	6	2	12		12
		54	Baba Soil Trowel	Unit	6	1.38	8.28		8.28
		54	Garden Hose	Unit	6	30	180		180

		54	Watering can (5L)	Unit	6	12	72		72
		54	Hills Premium Spray Gun	Unit	6	16.10	96.60		96.60
		54	Seedling Crate	Unit	12	10	120		120
		54	Digging Spade(small)	Unit	6	4	24		24
		54	Digging fork(small)	Unit	6	4	24		24
		15	Nursery attendants 6 Per.	PM	3	90	1,620		1,620
							5,942.88	30	5,972.88
							36,308	135	36,443
Output 3.0									
Empowering women to adopt a suite of viable alternative livelihood options, reducing over dependence on coastal and mangrove wetland resources for sustenance and life support.									
Activity 3.1: Community training on the use of improved cook stoves (ICS) and home biogas digesters to reduce GHG emissions.	Q2	32	Local Transport	Trip	1	25	25		25
		31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		16	National Consultant	PD	6	250	1500		1500
		31.1	National Consultant (DSA)	PD	6	15		90	90
		62.2	Lunch and refreshments	Participant	90	6	540		540
		47	ICS & Biogas Digester to reduce GHG emissions.	Unit	6	2,492	14,952		14,952
							17,427	120	17,547
Activity 3.2: Planting fast-growing fuel wood trees to reduce pressure on mangroves as an alternative source of wood fuel.	Q2-Q4	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
							410	30	440
Activity 3.3: Conduct a feasibility study to select the most viable alternative livelihood options such as contemporary jewelry made from local resources, fabric painting, caregiving and women's cooperatives.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410

(Entrepreneurship skills)									
							410	30	440
Activity 3.4: Implement training programmes to assist women to acquire knowledge and technical skills related to the selected alternative livelihood options in Activity 3.3.	Q1-Q2	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		33	Local Transport	Trip	1	25	25		25
		51	Cooperative Business for women group in the 6 sites	Package	6	9,224	55,344		55,344
		62.1	Training on Caregiving at FNU for 30 women	PD	10	15	4,500		4,500
		62.1	Training on contemp. jewelry making, fabric & screen printing for 60 women	Participant	60	60	3,600		3,600
		16	National Consultant	PD	1	250	250		250
		31.1	National Consultant (DSA)	PD	1	15		15	15
		62.2	Lunch and refreshments	Participant	90	6	540		540
							64,669	45	64,714
							82,916	225	83,141
Output 4.0: Strengthen coordination of policy guidelines and framework to effectively address climate change and disaster risks at the national and subnational levels.									
Activity 4.1 Community training on natural disaster preparedness, disaster risk management and emergency response to climate change related disasters.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		56	Vehicle Fuel	Month	1	410	410		410
		32	Local Transport	Trip	1	25	25		25
		62.2	Lunch and refreshments	Participant	90	6	540		540
							975	30	1,005
Activity 4.2: Community Disaster Action Plan is established through relevant Government Agencies and NGOs to safeguard the lives of coastal communities.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		32	Local Transport	Trip	1	25	25		25

							25	30	55
Activity 4.3: Training on ecosystem-based adaptation relating to forestry, water and agriculture by integrating traditional knowledge and skills on the conservation and sustainable use of natural resources to increase resilience and reduce vulnerability to natural hazards.	Q1	31.2	National Experts (DSA)	PD	1	15		15	15
		31.3	Supporting Staff (DSA)	PD	1	15		15	15
		62.3	Training materials	Package	60	15	900		900
		32	Local Transport	Trip	1	25	25		25
							925	30	955
Activity 4.4: Community training to assist local communities to adopt and implement nature-based adaptation to build their resilience to the physical impacts of natural disasters.	Q2-Q4	31.2	National Experts (DSA)	PD	15	15		225	225
		31.3	Supporting Staff (DSA)	PD	15	15		225	225
		32	Local Transport	Trip	1	25	25		25
		44	Strengthen village hall for disaster evacuation center.	Package	5	9,000	45,000		45,000
		45	Construction of foot path as a health risk reduction measure after a flood.	Package	1	9,000	9,000		9,000
		46	Construct foundation for Water tanks to harvest rainwater. (5,300L)	Unit	6	368	2,208		2,208
							56,233	450	56,683
							58,158	540	58,698
							188,402	1,050	189,452
Non-Activity based expenses	Q1-Q4		Project Personnel						
		11	National Experts	PM	12	2,000		24,000	24,000
		12	Project Coordinator	PF	26	602	15,652		15,652
		13	Technical Assistant	PF	26	354	9,206		9,206
		14	Project Driver	PF	26	221	5,746		5,746
		17	Finance and Administration	Month	10	1,395		13,950	13,950
			Capital Items						
		41	Premises	Month	12	500		6,000	6,000
		42	4WD vehicle	Unit	1	42,700	42,700		42,700
43	Computer and accessories:								

NOTES ON BUDGETING:

1. **Abbreviations:**

- PM : Person Month
- PD : Person Day
- PF : Person Fortnight
- DSA : Daily Subsistence Allowance
- GoF : Government of Fiji

2. **National experts/Consultants**

National Experts (NE): In-house Forest Administration Staff assigned to execute particular activities without honorarium, only entitled for DSA.

National Consultants (NC): Outsider professionals temporarily hired to implement particular activities, entitled for professional fee and DSA.

3. **PM : Person Month**

E.g.: Six Nursery Attendants, each receiving US\$90 per month for 12 months. The total payment per annum will be US\$6,480. (6 persons x 12 months x US\$90)

4. **PD : Person Day**

E.g.: One National Consultant receives \$250 per day for 10 days. The total payment for 10 days will be US\$2,500. (1 person x 10 days x US\$250)

5. **PF : Person Fortnight**

E.g.: One Project Coordinator receives US\$602 per fortnight for 26 fortnights. The total payment per annum will be US\$15,652. (1 person x 26 fortnights x US\$652)

3.4.2 CONSOLIDATED BUDGET BY COMPONENT (IN US\$)

CATEGORY	DESCRIPTION	TOTAL COST	YEAR 1
10	PROJECT PERSONNEL		
11	National Experts	24,000	24,000
12	Project Coordinator	15,652	15,652
13	Project Technical Assistant	9,206	9,206
14	Project Driver	5,746	5,746
15	Local labour (Nursery attendants)	6,480	6,480
16	National Consultants	2,500	2,500
17	Finance and Administration	13,950	13,950
19	Component Total	77,534	77,534
20	SUB-CONTRACTS	2,500	2,500
29	Component Total	2,500	2,500
30	TRAVEL		
31	Daily Subsistence Allowance		
31.1	Duty Travel National Consultant (DSA)	150	150
31.2	Duty Travel National Experts (DSA)	450	450
31.3	Duty Travel Supporting Staff (DSA)	450	450
32	Local Transport Costs (Boat Hire)	250	250
39	Component Total	1,300	1,300
40	CAPITAL ITEMS		
41	Premises	6,000	6,000
42	4WD vehicle	42,700	42,700
43	Computer and accessories	8,394	8,394
44	Village Hall- Improvement	45,000	45,000
45	Foot path	9,000	9,000
46	Water Tanks	2,208	2,208
47	Home Biogas Digester	14,952	14,952
49	Component Total	128,254	128,254
50	CONSUMABLE ITEMS		
51	Livelihood tools and materials	60,715	60,715
52	Nursery preparation tools and materials	21,510.12	21,510.12
53	Seedling production tools and materials	3,912.88	3,912.88
54	Planting materials and tools	1,554	1,554
55	Spares (Vehicle maintenance)	2,400	2,400
56	Vehicle Fuel	4,920	4,920
57	Office supplies	1,500	1,500
59	Component Total	96,512	96,512
60	MISCELLANEOUS		
61	Printing of guidelines	1,200	1,200
62	Training costs		
62.1	Training	8,100	8,100

62.2	Lunch and refreshment	2,700	2,700
62.3	Training materials	900	900
63	Auditing	8,000	8,000
64	Steering Committee meetings	1,000	1,000
69	Component Total	21,900	21,900
70	NATIONAL MANAGEMENT COSTS		
71	Executing Agency Management Costs	10,000	10,000
72	Focal Point Monitoring	5,000	5,000
79	Component Total	15,000	15,000
80	PROJECT MONITORING AND ADMINISTRATION		
81	ITTO Monitoring and Review	22,500	22,500
82	ITTO mid-term, final, ex-post evaluation costs	7,000	7,000
83	ITTO Programme Support Costs	37,500	37,500
89	Component Total	67,000	67,000
90	Refund of Pre-project costs		
100	GRAND TOTAL	410,000	410,000

3.4.3 ITTO BUDGET BY COMPONENT (IN US\$)

CATEGORY	DESCRIPTION	TOTAL COST US (\$)	YEAR 1 US (\$)
10	PROJECT PERSONNEL		
11	National Experts		
12	Project Coordinator	15,652	15,652
13	Project Technical Assistant	9,206	9,206
14	Project Driver	5,746	5,746
15	Local labour (Nursery attendants)	6,480	6,480
16	National Consultants	2,500	2,500
17	Finance and Administration		
19	Component Total	39,584	39,584
20	SUB-CONTRACTS	2,500	2,500
29	Component Total	2,500	2,500
30	TRAVEL		
31	Daily Subsistence Allowance		
31.1	Duty Travel National Consultant(DSA)		
31.2	Duty Travel National Experts (DSA)		
31.2	Duty Travel Supporting Staff (DSA)		
32	Local Transport Costs (Boat Hire)	250	250
39	Component Total	250	250
40	CAPITAL ITEMS		
41	Premises		
42	4WD vehicle	42,700	42,700
43	Computer and accessories	8,394	8,394
44	Village Hall- Improvement	45,000	45,000
45	Foot path	9,000	9,000
46	Water Tanks	2,208	2,208
47	Home Biogas Digester	14,952	14,952
49	Component Total	122,254	122,254
50	CONSUMABLE ITEMS		
51	Livelihood tools and materials	60,715	60,715
52	Nursery preparation tools and materials	21,510.12	21,510.12
53	Seedling production tools and materials	3,912.88	3,912.88
54	Planting materials and tools	1,554	1,554
55	Spares (Vehicle maintenance)	2,400	2,400
56	Vehicle Fuel	4,920	4,920
57	Office supplies	1,500	1,500
59	Component Total	96,512	96,512
60	MISCELLANEOUS		
61	Printing of guidelines	1,200	1,200

62	Training costs		
62.1	Training	8,100	8,100
62.2	Lunch and refreshment	2,700	2,700
62.3	Training materials	900	900
63	Auditing	8,000	8,000
64	Steering Committee meeting	1,000	1,000
69	Component Total	21,900	21,900
70	NATIONAL MANAGEMENT COSTS		
71	Executing Agency Management Costs		
72	Focal Point Monitoring		
79	Component Total		
80	PROJECT MONITORING AND ADMINISTRATION		
81	ITTO Monitoring and Review	22,500	22,500
82	ITTO ex-post evaluation costs	7,000	7,000
83	ITTO Programme Support Costs	37,500	37,500
89	Component Total	67,000	67,000
90	Refund of Pre-project costs		
100	GRAND TOTAL	350,000	350,000

3.4.4 EXECUTING AGENCY BUDGET BY COMPONENT (IN US\$)

CATEGORY	DESCRIPTION	TOTAL COST US (\$)	YEAR 1 US (\$)
10	PROJECT PERSONNEL		
11	National Experts	24,000	24,000
17	Finance and Administration	13,950	13,950
19	Component Total	37,950	37,950
20	SUB-CONTRACTS		
29	Component Total		
30	TRAVEL		
31.1	Duty Travel National Consultant (DSA)	150	150
31.2	Duty Travel National Experts (DSA)	450	450
31.3	Duty Travel Supporting Staff (DSA)	450	450
39	Component Total	1,050	1,050
40	CAPITAL ITEMS		
41	Premises	6,000	6,000
49	Component Total	6,000	6,000
50	CONSUMABLE ITEMS		
59	Component Total		
60	MISCELLANEOUS		
69	Component Total		
70	NATIONAL MANAGEMENT COSTS		
71	Executing Agency Management Costs	10,000	10,000
72	Focal Point Monitoring	5,000	5,000
79	Component Total	15,000	15,000
	GRAND TOTAL	60,000	60,000

3.5 ASSUMPTIONS, RISKS, SUSTAINABILITY

3.5.1 Assumptions

In developing the project certain assumptions have been made. These include;

- i. the need to restore degraded wetland ecosystems will be supported by the target communities, the population of the greater Rewa Delta, partner Government agencies, and Provincial Administration in the Province of Rewa and Tailevu;
- ii. the Government and Provincial Offices will provide technical assistance to ensure the timely and effective implementation of project activities;
- iii. Seeds and vegetative materials for timber propagation are locally available;
- iv. Community and Provincial Offices are aware of sustainable mangrove management and will support the use of the *“Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji”*.

3.5.2 Risks and mitigation measures

Risks	Mitigation Measures
Bush fires and illegal extraction by community members not directly involved with the project.	<ul style="list-style-type: none"> • Widespread awareness of the project by the general public, not only the target group of the project but neighbouring communities and municipalities. • Community members will be encouraged to police the planted sites and follow existing village by-laws to prosecute offenders. Community awareness will be through posters that will be put up in the area, media releases and awareness workshops.
Lack of buy-in by relevant Government agencies such as the Department of Lands and Provincial Office resulting from non-alignment of project goals to the strategic development goals of such agencies.	<ul style="list-style-type: none"> • The Executing Agency will undertake awareness among Government agencies to ensure that strategic development goals are aligned with the project goals. • With the successful completion of phase 1 of the project, the Executing Agency currently has the leverage to build up support from other Government agencies on the urgency of addressing the key problems identified in this project.
Lack of seeds and propagating material for reforestation and rehabilitation.	<ul style="list-style-type: none"> • The Executing Agency will provide access to seeds of various species that are considered important by the communities but not readily available in the local vicinity. • The Department of Agriculture will provide support services on the supply of relevant crops that are naturally found in coastal and mangrove wetland areas.
The reluctance of local communities to attend scheduled training sessions and meetings	<ul style="list-style-type: none"> • Communities will be offered the right incentives from the beginning to gain their full support and participation throughout the project.

	<ul style="list-style-type: none"> Rewarding communities for their participation in the project is a success factor to achieve the interest of different community groups.
Ineffective coordination among the various MOF divisions, results in policies and plans which inadvertently impact the mangrove rehabilitation targets.	<ul style="list-style-type: none"> The project will organize an In-House workshop to introduce the second phase of the ITTO Project to the respective divisions of the Ministry of Fisheries and Forestry and identify areas where divisions will be involved.
Mangrove protection and re-afforestation efforts result in low survival rates.	<ul style="list-style-type: none"> The project will fully utilise the '<i>Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji</i>' for protection and reforestation best practices, with community engagement to reduce related pressures on mangrove forests.
Communities are reluctant to adopt new land use practices and mangrove-supportive livelihood options due to, perceived risks to their income stability, and uncertainties over the market demand, and continue with activities that degrade mangrove areas.	<ul style="list-style-type: none"> Community consultations and robust economic analysis will precede introduction of alternative livelihood options. Training will be provided to communities to make the link between the protection of ecosystems and economic/social value.
Rehabilitated mangrove areas are eventually degraded after the project close.	The ' <i>Community-based Management Guideline for Mangrove Rehabilitation and Restoration in Fiji</i> ' will be used to inform appropriate species selection and technique.

3.5.3 Sustainability

To ensure the sustainability of project outcomes under the project, local communities will be involved at different stages of project implementation. This will ensure that there is a sense of ownership which will help guarantee that the project is sustained.

The project will also support the Fiji National Forest Policy by advocating for the permanent conservation of mangroves to provide for sustainable customary use and sustenance of coastal fisheries. In addition, the project will contribute to the restoration of degraded wetlands and improve the livelihoods of communities as important concerns for government and community leaders.

It is imperative for long-term sustainability that the project has the support of the government, NGOs, traditional chiefs and emerging leaders of the communities. Therefore, the implementation of the project activities will be carried out in collaboration with particular stakeholders. This becomes an important factor in building the foundation for an exit strategy after project completion.

Implementing the policy and framework of the Community Mangrove Guideline for the sustainability of mangrove areas, communities will be engaged in planting, maintenance and monitoring of rehabilitation sites. This will include training on specific tasks, as well as sensitization regarding the important role of mangroves in coastal protection. Where community livelihood activities are putting pressure on mangrove areas, viable mangrove-supportive livelihood alternatives will be introduced. By sensitizing communities to these values and introducing livelihood alternatives, the risk of communities returning to practices that degrade mangrove forests will be mitigated to a considerable extent.

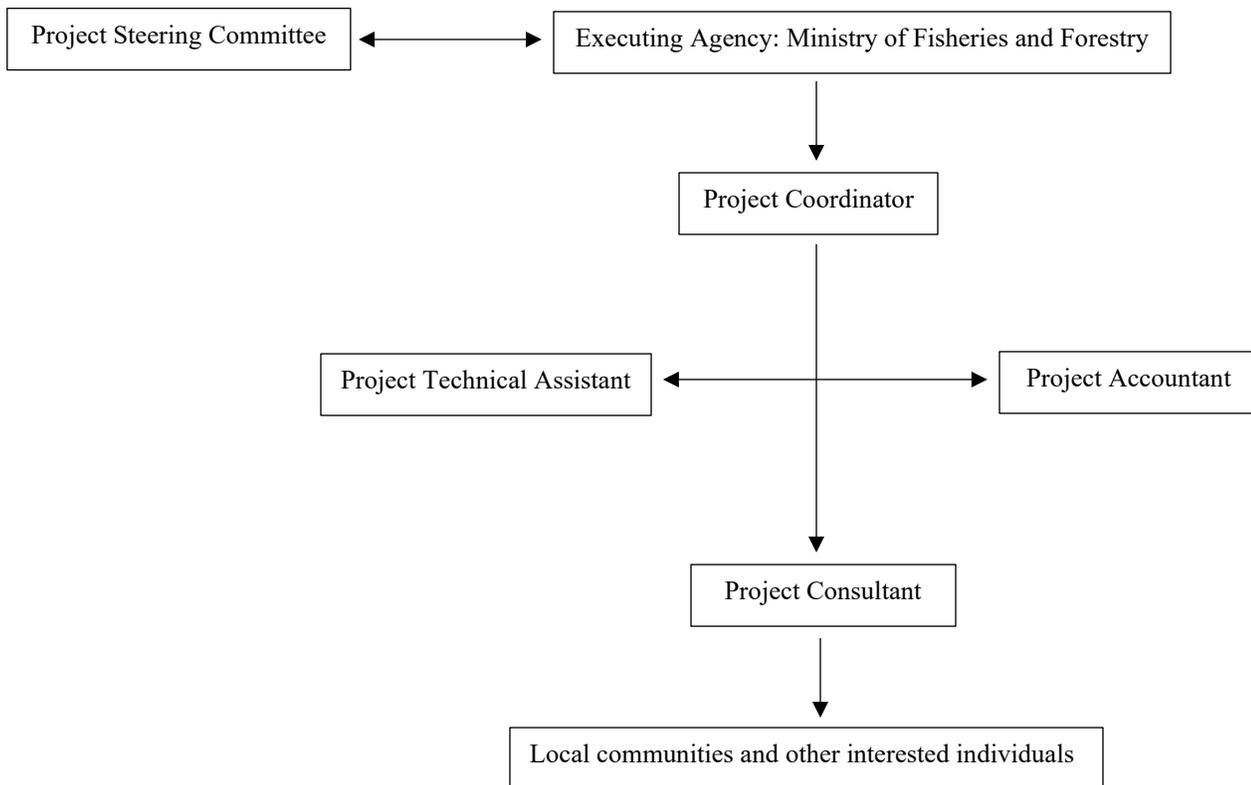
Shoreline stabilization efforts through mangrove afforestation, rehabilitation and other nature-based solutions will greatly contribute to the integrity of the coastal ecosystem and improve the long-term adaptive capacity of the coastal population. The community adaptation plan and resilient strategy for infrastructure planning will put in place the necessary frameworks as a way forward for villagers to be prepared for climate change risks and vulnerabilities.

PART 4. IMPLEMENTATION ARRANGEMENTS

4.1 Organization structure and stakeholder involvement mechanisms

The project will be executed by the Ministry of Fisheries and Forestry and supported by collaborating partners who will be part of the Steering Committee. The Steering Committee is responsible for ensuring the Executive Agency aligns its activities and deliverables to the project proposal. The project organisation structure is outlined in Figure 4.

Figure 3. Organisation Structure



4.1.1 Executing agency and partners

The Ministry of Fisheries and Forestry, Fiji is responsible for research, development, and coordination of the forest sector stakeholders from industry players, community members and resource owners. The Ministry of Fisheries and Forestry is responsible for monitoring stakeholder activities as well as implementing forestry development programs, promoting training and skills development, the conservation and protection of forest resources and the sustainable development of the forest sector to become a major contributor to the national economy. Details of key partners are outlined in Annex I.

4.1.2 Project management team

The Project Management team within the Ministry of Fisheries and Forestry consists of the Conservator of Forest (CF) and the Executive Director Research Division (EDRD). While the Executing Agency (EA) head will be the Conservator of Forest, the EDRD will be the focal point. The Director Operation Central Eastern (DOCE) will be

responsible for the Project Coordinator who is therefore responsible for the day-to-day operation of the project. The Executing Agency's Project Management Team will work closely with the Project Steering Committee.

4.1.3 Project steering committee

The steering committee will comprise of: -

1. Executing Agency – Ministry of Fisheries and Forestry.
2. Representative of International Tropical Timber Organization (ITTO)
3. Representative of Donor Country
4. Representative of the Ministry of Lands and Mineral Resources, Fiji
5. Representative of Ministry of Agriculture and Waterways, Fiji
6. Representative of the Ministry of Foreign Affairs, Climate Change & Environment, Civil Service, Information, and Public Enterprise, Fiji
7. Representative of the Secretariat of the Pacific Community
8. Representative of Provincial Councils of Rewa and Tailevu
9. Representative of the iTaukei Lands Trust Board
10. Representative of local communities
11. Representative of the University of the South Pacific
12. Representative of Conservation International

The mandate of the Steering Committee includes;

- Direct the Executing Agency on site selection and project implementation;
- Review and monitor project work plan and related activities;
- Ensure alignment of the project activities to support Government Policies and Strategic Development;
- Ensure that community interests are addressed as well as the full participation of local communities.

4.1.4 Stakeholder involvement mechanisms

Stakeholder involvement will be through the steering committee level, project initiation workshop and local community levels. Representatives from various organisations with interests in wetland management and mangrove conservation are listed as part of the steering committee. The project Steering Committee (PSC) will offer important interventions during project implementation. At the start of the project, there will be a project initiation workshop which will bring together relevant organisations and other stakeholders at different levels of governance to offer the platform for further deliberations which will shape the project. Stakeholders at the local community level will be involved during the implementation since they will take an active part in most of the field activities.

4.2 Reporting, review, monitoring and evaluation

i) Reporting

a) **Project progress reports:** The Executing Agency will prepare and submit progress reports in accordance with ITTO guidelines every six months from the date of project commencement. Each report will be reviewed by the Executing Agency and approved by the Steering Committee before submission to ITTO.

b) **Project completion report:** The Executing Agency will prepare and submit a project completion report to ITTO three months after the completion of the project. This report will be compiled by the project coordinator and reviewed by the Executive Agency and the Steering Committee before submission.

c) **Project technical report:** Project technical reports will be prepared by project staff responsible for the technical aspects of the project. These will be compiled by the project coordinator and submitted to the

Executing Agency for review. The report will go through an additional review and approval by the Steering Committee before being submitted by the Executing Agency to ITTO.

ii) Review and monitoring

The project will be subject to periodic technical review and monitoring in accordance with the policies and the procedures of ITTO. The Steering Committee will take the lead role in review and monitoring the project ensuring that it is a continuous process, inexpensive and with minimum interference to project implementation. The Steering Committee will continuously review and monitor project implementation by reviewing reports prepared by the Executing Agency for submission to ITTO.

iii) Evaluation

The project will be evaluated regularly by the Project Steering Committee. The main purpose of the evaluation is to assess the efficiency, effectiveness and impact of the project to target communities. Specific areas that the Steering Committee will evaluate include project purpose and program effectiveness, project staff, financial administration, and responsiveness of the target group. In particular, the Steering Committee will evaluate project objective on its relevance to the problem and sustainability of the impact of the project on target communities. It will evaluate the project inputs and operations to assess the effectiveness of the project as well as evaluating project outputs and results to assess the efficiency of the project. The Steering Committee will be undertaking regular reviews of the project throughout the project cycle with the overall evaluation on amplification of the project activities to other coastal and mangrove wetlands in Fiji and the Pacific Island Region.

4.3 Dissemination and mainstreaming of project learning

4.3.1 Dissemination of project results

The results and lessons learnt in the project will be disseminated through the following means;

- 1) Media programs: as part of major activities for the project programs will be launched on both community-based and national radio stations to create awareness of the importance of wetlands and the threats they face. Subsequently, the lessons learnt will also be shared on these same platforms.
- 2) Final workshop will be organised at the end of the project to disseminate the results to stakeholders
- 3) Policy briefs: recommendations from the project will be developed into policy briefs for relevant policymakers and implementers.
- 4) Scientific publications will be made in journals.

4.3.2 Mainstreaming project learning

The Executing Agency will ensure that policymakers and implementers will have access to guidelines and policy briefs prepared from lessons learnt through the project implementation that are envisioned to mainstream project results into the national strategy.

The representatives of the steering committees will facilitate mainstreaming project outcomes into short- and medium-term plans at the national level aimed at sustainable wetland resource management.

Lessons learnt from the project will also be mainstreamed into climate change mitigation and adaptation policies at the national level. The project would provide support for such policy programs through the establishment of demonstration sites. The demonstration site will also provide the platform for wider amplification processes at the national scale.

Documents Consulted

Avtar, R., Navia, M., Sassen, J. and Fuji, M. (2021). *Impacts of changes in mangrove ecosystems in the Ba and Rewa deltas, Fiji using multi-temporal Landsat data and social survey*. Coastal Engineering Journal 63.

Cameron, C., Maharaj, A., Kennedy, B., Tuiwawa, S., Goldwater, N., Soapi, K., & Lovelocke, C. E. (2021). *Landcover change in mangroves of Fiji: Implications for climate change mitigation and adaptation in the Pacific*. Environmental Challenge.

Conservation International (2020). *Selecting Blue Carbon Project Sites in Fiji*. Conservation International (Fiji program), Suva, Fiji.

Center for International Forestry Research (CIFOR) (2022). *Study on above-ground and below-ground biomass in mangrove ecosystems, part of Sustainable Wetlands Adaptation and Mitigation Program (SWAMP)*. Center for International Forestry Research. Kubu Raya, West Kalimantan, Indonesia.

Ellison, J. C., & Fiu, M. (2010). *Vulnerability of Fiji's Mangroves and associated coral reefs to climate change: A review*. Suva: WCW South Pacific Programme.

Lal, P. (1984). *Coastal Fisheries and the Management of Mangrove Resources in Fiji*. SPC Fisheries Newsletter No. 31. Environment and Policy Institute, East-West Centre. Occasional Paper, Honolulu, Hawaii

Lal, P. (1990). *Conservation or conversion of mangroves in Fiji: An ecological economic analysis*. Environment and Policy Institute, East-West Centre. Occasional Paper No. 11. Honolulu, Hawaii

Marquardt, J., & Trevena, M. (2009). *Protecting Mangroves - Benefits for people and the environment, reforestation efforts and experience from San Agustin (An education Kit)*. Quezon City: Centre For Education, Research And Volunteerism In the Philippines.

Marie, A., Miller, C., Cawich, C., Piovano, S. and Rico, C. (2017). *Fisheries-independent surveys identify critical habitats for young, scalloped hammerhead sharks (*Sphyrna lewini*) in the Rewa Delta, Fiji*. Scientific Reports 7.

Ministry of Disaster Management and Meteorological Services. (2018). *The Republic of Fiji National Disaster Risk Reduction Policy*. Suva: Ministry of Disaster Management and Meteorological Services.

Ministry of Economy. (2016). *Fiji's Intended nationally determined contribution*. Suva: Fiji Ministry Of Economy.

Ministry of Economy. (2017). *5-Year & 20-Year National Development Plan*. Suva: Fiji Ministry of Economy.

Ministry of Economy. (2017). *Fijis National Adaptation Plan Framework*. Suva: Fiji Ministry of Economy.

Ministry of Economy. (2018). *Fiji low emission development strategy (2018 - 2050)*. Suva: Fiji Ministry Of Economy.

Ministry of Economy. (2018). *National Adaptation Plan. A pathway towards Climate Resilience*. Suva: Fiji Ministry Of Economy.

Ministry of Forestry (Government of Fiji). (2013). *ITTO PD 696/13 Rev. 2 (F): Community based restoration and sustainable management of vulnerable forests of the Rewa Delta, Viti Levu (Project document-MESCAL)*. Suva.

Ministry of Forestry. (2017). *Strategic Development Plan (2017 - 2030)*. Suva: Fiji Ministry of Forestry.

Ministry of Strategic Planning & Statistics. (2014). *Green Growth Framework for Fiji - Restoring the balance in development that is sustainable for our future*. Suva: Fiji Ministry Of Strategic Planning, National Development And Statistics.

Nakoro, E., Kataiwai, S. and Gaunavou, U. (2013). Archeological Survey In Tuiwawa, M., Pene, S. and Tuiwawa, S. *A Rapid Biodiversity Assessment, Socio-Economic Study and Archeological Survey of the Rewa River Mangroves, Viti Levu, Fiji*. IUCN Oceania, Suva, Fiji.

Pillai, G. (1985). *Mangrove of Fiji their uses and management*. In Field C. D., and Dartnall, A. J., eds., *Mangrove Ecosystems of Asia and the Pacific*. Australian Institute of Marine Science, Townsville

Rasalato, E., Maginnity, V. and Brunnschweiler, J. (2010). *Using local ecological knowledge to identify shark river habitats in Fiji (South Pacific)*. Environmental Conservation.

The Republic of Fiji. (2021) *Climate Change Act 2021(Act No.43 of 2821) Government of Fiji Gazette Volume 22 No 114*. Suva, Republic of Fiji.

Tuiwawa, M., Pene, S. and Tuiwawa, S. (Eds.). (2013). *A Rapid Biodiversity Assessment, Socio-Economic Study and Archeological Survey of the Rewa River Mangroves, Viti Levu, Fiji*. IUCN Oceania, Suva, Fiji.

Watling, D. (2013). *Mangrove Management Plan for Fiji*. Suva, Fiji: Mangrove Management Committee.

ANNEX 1.

PROFILES OF THE EXECUTING AND COLLABORATING AGENCIES

EXECUTING AGENCY

MINISTRY OF FISHERIES AND FORESTRY

Goals: To increase Forest sectors' contribution to GDP by 1.2% through small micro and medium enterprise and downstream processing.

Objective: to formulate and implement policy initiatives and administration of the regulatory framework to facilitate Sustainable Forest Management in all types of forest, including coastal and mangrove wetlands.

Expertise: Research and development, facilitating the development of infrastructure, coordinating the activities of stakeholders and stakeholders' agencies, monitoring and the implementation of forestry development programs, promoting training and skill development, promoting the conservation and protection of forest resources, and encouraging local participation and entrepreneurship in value adding and down streaming process for local and export markets.

COLLABORATING AGENCIES

1. CONSERVATION INTERNATIONAL (CI - Fiji)

Goals: To enable significant and equitable improvements in human wellbeing, by helping society adopt the conservation of natural capital as the center piece of development.

Objectives: CI's strategy is to serve as a trusted advisor to decision makers at all levels to help societies establish healthy, sustainable economies (HSEs) that secure nature's ability to provide enduring human wellbeing, as described by our six "securities." (The six securities are climate, freshwater, food and health security; cultural services; and species contributions.)

Expertise: In Fiji, CI team has field experience in engaging communities to consider and commit to putting aside a portion of their land (both forested or degraded) for protection and rehabilitation. CI Fiji team is made up of Foresters, Plant Ecologists, Agricultural Scientist and a Marine Specialist. The team work well together and have successfully secured the first 99-year conservation lease for the Sovi Basin Protected Area, the last remnant low land forest in Fiji and declared a Key Biodiversity Area as well as an Important Bird Area. CI Fiji has been planting degraded grasslands in the north-east end of Viti Levu with native timber tree species under a carbon offset project. At the same time, CI Fiji will commence work towards engaging community consensus for the expansion of the Wabu/Tomaniivi Nature and Forest Reserve in the North-east of Viti Levu.

Externally funded projects:

- a. Ridge to reef to ocean Project
- b. Management of the Lau Seascape
- c. Sovi Basin Protected Area, Naitasiri, Viti Levu
- d. Yaqara Conservation Area, Ra, Viti Levu
- e. Greater Tomaniivi, Viti Levu

2. INSTITUTE OF APPLIED SCIENCE, UNIVERSITY OF THE SOUTH PACIFIC (USP)

Goals: To contribute to the development of the member countries of USP in the scientific, technical and resource areas. USP is a regional University owned by 12 Pacific Island countries. Objectives: To make the expertise of the USP more widely available in the region.

Expertise: The institute's South Pacific Regional Herbarium is a member of the Australasia (Australia and New Zealand) Network of Herbaria. Recently (2003) it acquired the whole Solomon Island Herbarium collection (30K specimens) into its holding. The Herbarium and Environment unit of the institute will continue to work with major international conservation organizations and funders (e.g. the consortium of Herbaria worldwide (Index Herbarium. Holmgren, P.K. et al. (1990)); American Natural History Museum, Conservation International, WWF, Wetland International, AUSAid, NZAid, Catherine and John Macarthur Foundation, Moore Foundation etc.), to achieve protection status of unique species and biodiversity rich areas in Fiji and the Pacific.

Externally funded projects:

- a. International Cooperative Biodiversity Group (ICBG)
- b. Pacific Community Water Management
- c. FAO Tomani'ivi BioRap
- d. Fiji Ridge to Reef (R2R) Project
- e. Governance Enhancement Project
- f. Coral Triangle Initiative

3. SECRETARIAT OF THE PACIFIC COMMUNITY (SPC)

Vision: SPC's vision for the region is a secure and prosperous Pacific Community, whose people are educated and healthy and manage their resources in an economically, environmentally and socially sustainable way.

Mission: To help Pacific Island people position themselves to respond effectively to the challenges they face and make informed decisions about their future and the future they will leave for the generations that follow.

Expertise: SPC is the Pacific Island region's principal technical and scientific organization. It delivers technical, scientific, research, policy and training support to Pacific Island countries and territories in public health, geoscience, agriculture, forestry, water resources, disaster management, fisheries, education (community, TVET, standards and assessment), statistics, transport, energy, ICT, media, human rights, gender, youth and culture. SPC was established in 1947 as an international organization in 1947 and its working languages are English and French. Additional information is available at www.spc.int.

ANNEX 2.

TERMS OF REFERENCE OF PERSONNEL AND CONSULTANTS AND SUB-CONTRACTS FUNDED BY ITTO

TERMS OF REFERENCE DEVELOP POLICY FRAMEWORK

Duties:

- 1) Undertake desk-top analysis of existing policies and legislations relating to resources within coastal and mangrove wetlands to identify and conclude;
 - 1) Key challenges for sustainable management
 - 2) key stakeholders and linkages, coordination or existing management framework
 - 3) licensing, monitoring and surveillance of non-timber products such as fuel wood
 - 4) the cost benefit of management options to improve fuel wood chain of custody and supply chain management
- 2) Conduct community and wide based stakeholder workshops to collate key issues as perceived by stakeholders on coastal and mangrove wetlands.
- 3) Collate findings and present appropriate recommendations on the policy framework to develop coastal and mangrove wetland policies and legislation with special and separate section on the improving the management of fuel wood Responsibilities: Collaborate with the Executing Agency to coordinate implementation of project activities and provide necessary information and reporting to the Steering Committee Competencies: Understand local conditions pertaining to issues surrounding coastal and mangrove wetlands, as well as the mechanisms of local and provincial administration to be able to effectively coordinate community workshops at community level in Viti Levu and Vanua Levu.

TERMS OF REFERENCE COMMUNITY AWARENESS AND LIVELIHOOD

Duties:

Undertake community awareness workshops using PRA tools to meaningfully engage with community members on a journey of self-discovery by the communities. Key deliverables will include:

- 1) Design and document appropriate awareness package suitable to the target community
- 2) Field Test the package in one community, review and amplify awareness raising among all target communities
- 3) Design, document and implement community driven training on most suitable and appropriate livelihood option selected by community. Livelihood option may range from planting of root crops, fuel wood (to replace current mangrove fuel wood sources), establishment of brackish water aquaculture (mud crabs, milk fish etc.).

- 4) Design and implement training package on establishment of community nursery from seed collection, treatment, nursery germination and propagation to out planting.
- 5) Publish awareness package and livelihood training material for future use by interested communities around Fiji and the Pacific Island Region.

Responsibilities:

Collaborate with the Executing Agency to coordinate the implementation of project activities and provide the necessary information and reporting to the Steering Committee.

Competencies:

Ability to successfully communicate in the iTaukei language, proven record of working with communities in the past, a good understanding of the ecology of coastal and mangrove wetlands and traditional uses of resources found in these areas.

TERMS OF REFERENCE REHABILITATION AND RESTORATION OF DEGRADED COASTAL AND MANGROVE WETLANDS

Duties:

Undertake desk-top analysis of existing ecological diversity, threats, risk and potential replacement plant species in coastal and mangrove wetlands to identify and conclude;

- 1) Zoning of coastal and mangrove wetlands for each of the 4 communities in Target communities
- 2) Identification of species mix in each zone
- 3) Representative Field survey of existing species and relevant species that communities can select to rehabilitate and restore degraded landscapes
- 4) Design and implement training on community planting to rehabilitate and restore degraded areas in coastal and mangrove wetlands
- 5) Publish training material for future use by interested communities around Fiji and the Pacific Island Region.

Responsibilities:

Collaborate with the Executing Agency to coordinate the implementation of project activities and provide the necessary information and reporting to the Steering Committee

Competencies:

Knowledge on local species diversity and ability to translate to iTaukei language, knowledge on soil types and GIS land-use planning to ensure zoning is complementing national interest aligning to plans by all relevant Government agencies.

ANNEX 3:

TERMS OF REFERENCE OF PROJECT STAFF

PROJECT COORDINATOR

The Project Coordinator will be under the direct authority of the Director Operations Central/Eastern and liaises with Divisional staff, Steering Committee members, other Government agencies, stakeholders, communities, ITTO and development partners.

Key Responsibilities:

1. Coordinate and manage the project including the development of a detailed plan of activities and the implementation of activities in line with these plans.
2. Technical and administrative orientation and oversight of all project activities.
3. Provide support to the Project Technical Assistant, particularly during the critical start-up and initial implementation of the project.
4. Prepare minutes related to the Project, attached all the relevant documents, signed by the Director Forestry Operation Central Eastern, screened by the Executive Director Operation Service and Conservator of Forest before the Permanent Secretary for Forest approves for the release of funds for the purchase of materials from vendors or for the approval of any ITTO Project proposals.
5. Elaboration and implementation of annual project operations plans.
6. Prepare and submit project progress reports, yearly work plans, technical report(s) and other project documents and ensure timely reporting to the ITTO Secretariat and the Ministry.
7. Properly manage and supervise the use of project funds and ensure optimal flow of funds to activities according to the Project Agreement and related rules and regulations of ITTO and the Ministry;
8. Prepare the minutes with supported documents related to the Financial Audit of the Project with the Headquarters (Conservator of Forests and Permanent Secretary) and work closely with the Auditor and Solicitor General's Office.
9. Prepare financial statements, cash flow statements and Statement of Financial position of the project for the audit process to be conducted.
10. Check the annual/final financial audit report for verification and submit to the ITTO Secretariat within the scheduled dates.
11. Provide effective supervision and development for reporting staff and ensure that assets are properly maintained and health and safety requirements are met.
12. Put in place the necessary administration set-up to guarantee that the project's resources are well documented, closely monitored and efficiently utilized.
13. Prepare and implement a monitoring and evaluation program to ensure adequate and timely assessment of project activities.
14. Selection and supervision of the work of the project's consultants, guiding them for their work, supervising them and controlling the quality of their results.
15. Monitoring progress toward achieving project objectives, and elaboration of all reports required by ITTO and by the project objectives.
16. Day-to-day coordination of the Project's Team and technical and administrative orientation and coordination of all project activities, liaising closely with the Director Operations Central/Eastern.
17. Closely communicate and coordinate with all stakeholders involved in the project including local communities, NGOs, local and national government, ITTO and donors to ensure the successful implementation of the activities.
18. Coordinate the elaboration of the Rewa Delta mangrove management plans.
19. Organize and coordinate viable alternative livelihood projects to reduce pressure on mangrove resources.

20. Provide support for the Project Steering Committee (PSC) including secretariat and logistics support ensuring that meetings are properly organised and documented and minutes of meetings and agendas are circulated well in advance.
21. Assists the DO Central Eastern to provide timely information and advice to the Conservator of Forests and the Permanent Secretary of Forestry, concerning Project reports, parliamentary responses and speeches.
22. Request for the release of Official Development Assistance (ODA) funds from the Ministry of Economy.
23. Write articles for the project, highlighting the outcomes and challenges of the mangrove project in the Rewa Delta to be published on the ITTO Newsletter - Tropical Forest Update in the ITTO website.
24. Actively contribute to all corporate requirements of the Ministry, including planning, budgeting and selection activities where required.
25. Development of a detailed Proposed Project Work Plan, Work Plan Timeline and Modified Budget Proposal for the “No cost project extension” if the project goes beyond the actual time duration of the project.

PROJECT TECHNICAL ASSISTANT

The Project Technical assistant will be under the direct authority of the Project coordinator and liaises with ITTO Project Team, Central/Eastern Division staff, stakeholders, communities and development partners.

Key Responsibilities:

1. Assist in the planning of field activities in communities.
2. Organise and conduct consultation and awareness training in project communities.
3. Assist communities in establishing nurseries including organizing seeds, seedlings and planting sites.
4. Assist with administrative and logistical support for travel, conferences, workshops, surveys, training, awareness and consultations.
5. Produce monthly and quarterly reports on work progress.
6. Implement the Rewa Delta mangrove management plans in mangrove rehabilitation
7. Implement viable alternative livelihood projects to reduce pressure on mangrove resources.
8. Carry out related tasks that may be assigned by the Project Coordinator.

PROJECT DRIVER

The Project driver will be under the direct authority of the ITTO Project Coordinator and liaises with ITTO Project Team and Divisional Forestry Officer Central/Eastern.

Key Responsibilities

1. Safe and efficient transportation services to the ITTO staff, including loading and unloading luggage and equipment.
2. Check the driving schedules and liaise regularly with ITTO Project Coordinator regarding transportation requirements.
3. Adhere to the Ministry Transport Policy and comply with all road and traffic laws and regulations.
4. Complete daily maintenance checks and cleaning of the vehicle and report any faults or accidents.
5. Log official trips, daily mileage, fuel consumption, oil changes, etc. in the running sheet and submit to the Transport Officer.
6. Comply with and support Ministry administrative policies and activities including workplace health and safety, service improvement programs/activities.
7. Ensure at all times that the vehicle is well maintained, safe, clean and comfortable.

PROJECT ACCOUNTANT (ACCOUNTS SECTION OF THE MINISTRY OF FISHERIES AND FORESTRY)

The Accounts Section of the Ministry of Fisheries and Forestry will work closely with the Project Coordinator.

Key Responsibilities:

1. Assist the Project Coordinator in the financial management of the project resources and respect the rules and procedures of ITTO.
2. Ensure that the project's accounts are kept in full respect of the relevant national laws and rules, as well as ITTO's rules and procedures.
3. Ensure proper keeping of project accounts and financial documents both in the Project Management Office (Headquarters) and in Project Field Coordination Office (Nausori Office).
4. Input financial data in a computerized accounting system.
5. Assist in the preparation of financial reports.
6. Assist in the process of the timely calling of funds.
7. Execute in a timely and rigorous manner the disbursements to the Project Field Coordination for various planned payments;
8. Assist in all other administrative and finance related matters as requested by the Project Coordinator.
9. Ensure an adequate supply for project needs.

ANNEX 4.
DETAIL MASTER BUDGET (IN US\$)
(As per Quotations Received from Suppliers)

Category	Description	Unit	Quantity	Unit Cost	Total Cost
10	PROJECT PERSONNEL				
11	National Experts -1 person	PM	12	2,000	24,000
12	Project Coordinator - 1 person	PF	26	602	15,652
13	Project Technical Assistant -1 person	PF	26	354	9,206
14	Project Driver -1 person	PF	26	221	5,746
15	Local labour (Nursery attendants) - 6 persons	PM	9	120	6,480
16	National Consultant - 1 person	PD	10	250	2,500
17	Finance and Administration	Month	10	1,395	13,950
19	Component Total				77,534
20	SUB-CONTRACTS One local firm to repair Rewa Nursery Distribution Center damaged by flood and Cyclone.	Contract	1	2,500	2,500
29	Component Total				2,500
30	TRAVEL				
31	Daily Subsistence Allowance				
31.1	Duty Travel National Consultant (DSA)	PD	10	15	150
31.2	Duty Travel National Experts (DSA)	PD	30	15	450
31.3	Duty Travel Supporting Staff (DSA)	PD	30	15	450
32	Local Transport Costs- Boat Hire	Trip	10	25	250
39	Component Total				1,300
40	CAPITAL ITEMS				
41	Premises	Month	12	500	6,000
42	4WD vehicle	Unit	1	42,700	42,700
					48,700
43	Computer and accessories:				
	HP PROBOOK Laptop	Unit	2	1,666	3,332
	Mobile Phone-Ao45	Unit	1	184	184
	Mobile Phone-A535G	Unit	1	506	506
	Samsung S22 Ultra (High Resolution Camera)	Unit	1	1,426	1,426
	Huawei 4G+ Pocket WIFI	Unit	1	69	69
	Western Digital Portable Hard drive	Unit	1	100	100
	Brother colour laser Printer	Unit	1	736	800
	Acme Lavand Office Table	Unit	1	253	253
	Euro High Chair	Unit	1	299	299

	JBL Sound System (Speaker/mic)	Unit	1	625	625
	BenQ SVGA Business Projector	Unit	1	515	800
					8,394
44	Strengthen village hall for disaster evacuation center.	Package	5 villages	9,000	45,000
45	Construction of Foot path as a health risk reduction measure during & after a flood. (To prevent leptosiris and other disease)	Package	1 village	9,000	9,000
46	Water Tanks for harvesting rainwater and Storage purposes. (5,300L)	Unit	6	368	2,208
					56,208
49	Component Total				113,302
50	CONSUMABLE ITEMS				
51	Livelihood tools and materials:				
	H/Biogas Digester to be used during Natural Disasters & for Emergency Purposes.	Unit	6	2,492	14,952
	Cooperative Business for women group in the six project sites	Package	6	9,224	55,344
	Improvement of Prawn - pond	Unit	4	1,000	4,000
	Improvement of Piggery	Unit	1	1,000	1,000
	Safety shoes (Driver, Coordinator, Tech. Assistant)	Pair	3	87	261
	Shoes for mangrove planting (Coordinator, T. Ass.)	Pair	2	55	110
					75,667
52	Nursery preparation tools and materials:				
	Timber	Package	6	3,025.02	18,150.12
	Nails	Kg	12	100	1,200
	Strappings	Coil	6	10	60
	Cement	Bags	6	17	102
	Salient Shade (Shade cloth)	Roll	6	318	1,908
	Staple Gun/Pin	Unit	6	15	90
					21,510.12
53	Seedling production tools and materials:				
	Manure-Hydro complex	Unit	20	32	640
	Plastic Bag (large)	Unit	600	4.36	2,616
	Seed Germination Tray	Unit	12	10	120
	Fan Rake	Unit	6	2	12
	Baba Soil Trowel	Unit	6	1.38	8.28
	Garden Hose	Unit	6	30	180
	Watering can (5L)	Unit	6	12	72
	Hills Premium Spray Gun	Unit	6	16.10	96.60
	Seedling Crate	Unit	12	10	120
	Digging Spade(small)	Unit	6	4	24
	Digging fork(small)	Unit	6	4	24
					3,912.88

54	Planting materials and tools:				
	Wheel barrow	Unit	6	81	486
	Spear & Jackson Digging Spade	Unit	6	40	240
	Anchor pro steel fork	Unit	6	12	72
	Cane knife	Unit	6	7	42
	Safety Gumboot	Pairs	6	16	96
	Spear & Jackson Post Hole Spade	Unit	6	51	306
	Spear & Jackson Digging Fork	Unit	6	48	288
	Tramothina PVC Garden Tool	Unit	6	4	24
					1,554
55	Spares (Vehicle maintenance)	Month	12	200	2,400
56	Vehicle (Fuel for 246 working days)	Day	246	20	4,920
57	Office supplies	Package	6	250	1,500
					8,820
59	Component Total				111,464
60	MISCELLANEOUS				
61	Printing of guidelines (120 MMG printed)	Copy	120	10	1,200
62	Training costs				
62.1	Training on Caregiving at FNU - 10 days	Participants	30	15	4,500
	Training on contemporary jewelry making, fabric painting and screen printing.	Participants	60	60	3,600
62.2	Lunch and refreshment (5 days)	Participants	90	6	2,700
62.3	Training materials	Package	60	15	900
63	Auditing	Annual	1	8,000	8,000
64	Steering Committee meetings	Meeting	1	1,000	1,000
69	Component Total				21,900
70	NATIONAL MANAGEMENT COSTS				
71	Executing Agency Management Costs				10,000
72	Focal Point Monitoring				5,000
79	Component Total				15,000
80	PROJECT MONITORING AND ADMINISTRATION				
81	ITTO Monitoring and Review				22,500
82	ITTO mid-term, final, ex-post evaluation costs				7,000
83	ITTO Programme Support Costs (12% of funds)				37,500
89	Component Total				67,000
90	Refund of Pre-project costs				
100	GRAND TOTAL				410,000.00