TECHNOLOGY ACTION PLAN OF ADAPTATION AND MITIGATION TECHNOLOGIES FOR SOLOMON ISLANDS

TNA TECHNOLOGY NEEDS ASSESSMENT

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TECHNOLOGY ACTION PLAN
ADAPTATION AND MITIGATION TECHNOLOGIES FOR SOLOMON ISLANDS

REPORT III

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This document is an output of the Technology Needs Assessment (TNA) project of the Solomon Islands, funded by the Global Environment Facility (GEF) and implemented by the United Nations Environment Program (UNEP) and the UNEP DTU Partnership (UDP) in collaboration with the University of the South Pacific (USP). The present report is the output of a fully country-led process. The views and information contained herein are a product of the TNA team led by the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM), Solomon Islands.

FOREWORD

The Solomon Islands, with its delicate ecological balance and high susceptibility to the impacts of climate change, faces significant challenges from extreme climatic events, rising sea levels, and coastal erosion affecting rural communities. In light of these pressing issues, our country urgently requires innovative technologies to protect lives, safeguard property, preserve natural ecosystems, and sustain our economy.

It is with great optimism that I endorse the Technology Action Plan (TAP), developed through a comprehensive Technology Needs Assessment (TNA) process. This initiative, led by the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) in collaboration with the UNEP Copenhagen Climate Centre (UNEP CCC) and the University of the South Pacific (USP), aims to bolster our resilience against climate change vulnerabilities. The TAP identifies and prioritizes technologies across key sectors, including coastal erosion management, renewable energy, and forest conservation, to both adapt to and mitigate the impacts of climate change.

I am particularly impressed by the transparent and inclusive approach taken in the TNA process. Despite the challenges posed by the COVID-19 pandemic, stakeholders from various sectors—including government, private industry, and non-governmental organizations—demonstrated exceptional enthusiasm and cooperation. Their collective efforts in the first phase of the TNA project have been pivotal in shaping a clear and actionable plan.

The technologies and strategies outlined in the TAP represent a crucial step towards building a more resilient Solomon Islands. Implementing these prioritized technologies will not only address immediate climate challenges but also lay a foundation for sustainable development and environmental stewardship.

I extend my deepest gratitude to the members of the TNA National Team, my dedicated colleagues within the Ministry, and the experts from the Technical Working Groups for their significant contributions to this report. I also wish to acknowledge the vital support provided by national consultants and international experts from USP, UNEP CCC, and the Asian Institute of Technology (AIT), whose guidance has been instrumental in successfully executing the TNA project.

Together, we are forging a path towards a more resilient and sustainable future for the Solomon Islands.

Ms. Susan Sulu

Permanent Secretary, Ministry of Environment, Climate Change, Disaster Management and Meteorology

LIST OF ABBREVIATIONS

ADB	:	Asian Development Bank
CES	:	Coastal Erosion Sector
CSR	:	Corporate Social Responsibility
DTU	:	Technical University of Denmark
EU	:	European Union
EV	:	Electric Vehicle
FAO	:	Food and Agriculture
FRL	:	Forest Reference Level
CBSI	:	Central Bank of Solomon Islands
GCF	:	Green Climate Fund
GEF	:	Global Environment Facility
GEF	:	Global Environment Facility
GHG	:	Green House Gas
GIS	:	Geography Information System
HCC	:	Honiara City Council
ICZM	:	Integrated Coastal Zone Management
IRD	:	Inland Revenue Division
ISFPAM	:	Integrated Sustainable Forestry and Protected Areas Management
JICA	:	Japan International Cooperation Agency
LIDs	:	Low Impact Developments
MCILI	:	Ministry of Commerce, Industry, Labour and Immigration
MDPAC	:	Ministry Development, Planning and Aid Coordination,
MECDM	:	Ministry of Environment, Climate Change, Disaster Management and Meteorology
MID	:	Ministry of Infrastructure Development
M-NFI	:	Multipurpose National Forest Inventory
MoIA	:	Ministry of Information and Aviation
MoFR	:	Ministry of Forestry and Research
MoFT	:	Ministry of Finance and Treasury
MPGIS	:	Ministry of Provincial Government Institutional Strengthening
NAPA	:	National Adaptation Plan of Action
NbS	:	Nature-based Solutions
NCCP	:	National Climate Change Policy

NDC	:	National Determine Contribution
NFI	:	National Forest Inventory
N-TPAs	:	Network of Terrestrial Protected Areas
PIFS	:	Pacific Islands Forum Secretariat
REDD	:	Reducing Emissions from Deforestation and Forest Degradation
SICCI	:	Solomon Islands Chamber of Commerce and Industry
SIG	:	Solomon Islands Government
SINU	:	Solomon Islands National University
TNA	:	Technical Needs Assessment
UNDP	:	United Nations Development Program
UNEP	:	United Nations Environment Program
USAID	:	U.S. Agency for International Development
USP	:	University of the South Pacific
WB	:	World Bank
WWF	:	World Wildlife Fund

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ANNEXES

EXECUTIVE SUMMARY

The Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) undertook a joint multi-country project entitled "Technology Needs Assessment (TNA) - Phase IV" with funding from the Global Environment Facility (GEF). This report is the continuation and second output of the TNA process that builds on the first outcome of the TNA report, which aimed to identify and prioritize mitigation and adaptation technologies for selected sectors. Solomon Islands will submit the Technology Action Plan (TAP) as the third deliverable to complete the TNA process, providing a comprehensive and detailed action plan technology for adaptation and mitigation.

The Technology Action Plan (TAP) for the Solomon Islands is a comprehensive strategy designed to prioritize sectors that effectively address the urgent needs of climate adaptation and mitigation. The plan places significant emphasis on the Coastal Erosion Sector by implementing Nature-based Solutions (NbS) and Integrated Coastal Zone Management (ICZM) to provide protection for at-risk communities against the increasingly severe threats posed by rising sea levels and extreme weather events. Additionally, the plan details initiatives within the Relocation Sector, which are specifically tailored to adapt to climate change by implementing the Development of Climate Change-Induced Relocation Policy and Planned Relocation strategies, with the goal of ensuring the safeguarding of vulnerable communities. Furthermore, the plan outlines detailed mitigation efforts within the Transportation and Forestry sectors, with a focus on the reduction of greenhouse gas emissions and the enhancement of carbon sequestration through the adoption of sustainable practices and advanced technologies. Specifically, the Transportation sector places emphasis on reducing greenhouse gas emissions by deploying Sustainable Roads (Drainage & Landscape) and Electric Out-Board Motors. Meanwhile, the Forestry sector is dedicated to enhancing carbon sequestration through the implementation of the Multipurpose National Forest Inventory (M-NFI) and the establishment of the Network of Terrestrial Protected Areas (N-TPAs).

Coastal Erosion Sector

Coastal erosion and flooding, intensified by rising sea levels, are severe challenges in the Solomon Islands. They impact villages with erosion, sediment loss, and deteriorated water quality. The Solomon Islands Government has prioritized the Coastal Erosion Sector (CES) for technological intervention through the Technology Need Assessment (TNA) process. Addressing these issues involves preventing key drivers such as coastal engineering, beach mining, and degraded reefs to protect natural defences and support economic resilience.

The Action Plan for **Nature-Based Solutions (NbS)** is an adaptation plan considering climate change action specifically targeting coastal erosion in the Solomon Islands by leveraging natural features such as beaches, dunes, mangroves, and reefs. The plan envisions deploying NbS technologies at ten key locations, with a projected investment of USD $6,000,000. It uses green materials and limited grey infrastructure to enhance coastal resilience. The plan includes government subsidies, policy development, and local training initiatives to overcome barriers such as high costs and inadequate support. Specific actions involve subsidizing costs, establishing policies for low-income communities, and increasing awareness and capacity building among local stakeholders. These measures are designed to ensure the technology's affordability and sustainability. Implementation will occur over four years, starting in late 2025,

with coordination from various government ministries and non-government organisations (NGOs). The plan outlines a phased approach for development, monitoring, and evaluation, focusing on continuous engagement and securing both internal and external funding sources.

Integrated Coastal Zone Management (ICZM) is a comprehensive resource management approach designed to tackle complex coastal issues through a holistic, interactive planning process. This dynamic, multidisciplinary method encompasses the entire cycle from information gathering to decision-making, management, and monitoring. The ICZM framework integrates natural and human factors to enhance coastal resilience, similar to NbS. In the Solomon Islands, the Ministry of Environment, Climate Change, Disaster Management, and Meteorology (MECDM), along with the TNA steering committee and coastal erosion technical working group, have endorsed the adoption of ICZM technology to combat coastal erosion and build resilience in vulnerable communities.

This TAP aims to design and implement ICZM technology at selected coastal sites across the country. This involves introducing ICZM principles to local communities and integrating landscape and seascape features to prevent erosion. The plan anticipates assisting over 30 communities in 9 provinces through pilot projects. Key actions include government subsidies, policy development, and stakeholder training to address financial barriers and increase local engagement. Implementation will span from late 2025 to 2030, requiring substantial investment and ongoing coordination.

Several barriers to ICZM implementation include high costs, lack of financial support, institutional ownership, and limited local expertise. The TAP proposes government investment, policy development, and training programs to overcome these. Specific actions include establishing a subsidy scheme, developing ICZM policies, and enhancing technology awareness. The estimated cost for this initiative is approximately USD 6,000,000. Effective implementation will involve rigorous planning, stakeholder engagement, and continuous monitoring. This monitoring is crucial to ensure the long-term sustainability and success of the TAP, as it allows for adjustments and improvements based on real-time data and feedback.

Relocation Sector

The adaptation TAP for the relocation sector in the Solomon Islands addresses the pressing need for a structured response to climate change-induced displacement. This sector is crucial for transitioning vulnerable communities from high-risk areas to safer locations, thereby protecting lives, livelihoods, and infrastructure from rising sea levels, coastal erosion, and flooding. The relocation sector's effectiveness hinges on thorough planning and integrating climate resilience into new settlements. Despite minimal direct greenhouse gas emissions, the sector's activities can contribute to emissions, underscoring the importance of sustainable practices. To enhance long-term success, the sector must adopt sustainable technologies and infrastructure.

The Action Plan for the Development of Climate Change-Induced Relocation Policy outlines the necessity of developing a dedicated Climate-Induced Relocation Policy to complement existing guidelines and the National Climate Change Policy (NCCP) 2023-2033. The current relocation guidelines lack a policy foundation and specific directives, which hampers their effectiveness. The proposed policy aims to guide relocation efforts, ensuring well-coordinated and culturally sensitive transitions. The plan includes addressing barriers such as economic constraints, lack of local expertise, and cultural sensitivities while proposing

strategies for overcoming these obstacles, such as prioritizing funding and engaging stakeholders.

To implement this TAP, the government must secure internal and external funding, develop a comprehensive policy, and engage in public awareness campaigns. Key activities include socializing the technology, developing concept notes, designing project proposals, and conducting ongoing training and awareness programs. Estimated costs for the initiative total approximately USD 250,000, covering various aspects from policy drafting to implementation and monitoring. The successful execution of this plan depends on government commitment, expert involvement, and collaborative engagement with regional and international partners.
Planned relocations have been a global strategy for adapting to climate change, with over 400 cases documented worldwide since 1970. This approach is increasingly relevant in the Solomon Islands, where local communities have independently relocated to safer locations due to rising sea levels and extreme weather events. Successful examples include the Keigold community's move from Modo village and the relocation of Walande village to the mainland. These instances highlight the capability of local groups to manage relocations without significant government support, emphasizing the need for structured national policies to formalize and support these efforts.

The Development of Planned Relocation aims to institutionalize planned relocations by developing policies and strategies to relocate ten vulnerable communities within the next four years. The plan recognizes the need for government leadership to address economic, financial, and policy barriers hindering effective relocation initiatives. It calls for creating a dedicated Climate Change-Induced Relocation Policy, securing financial support from international and bilateral partners, and enhancing institutional capacities to effectively implement and manage relocation projects. To address these challenges, the TAP outlines specific actions, including policy development, securing financial resources, and capacity building. The plan includes a timeline for stakeholder engagement, policy development, and project implementation, with an estimated budget of $6 million. It also identifies risks such as financial constraints and political inertia, proposing strategies for risk mitigation and ongoing high-level engagement to ensure the success of planned relocation efforts.

Transportation Sector

The Solomon Islands' transportation sector is crucial for economic growth and connectivity, but it heavily relies on fossil fuels, leading to increased greenhouse gas emissions. Climate change adds further risks. To address this, the Solomon Islands has implemented policies to promote sustainable practices and reduce environmental impacts, with future goals focusing on low-emission technologies and resilient infrastructure development to reduce greenhouse gas emissions by 2050.

The prioritization of technology in the transportation sector involves focusing on **Sustainable Roads (Drainage & Landscape)** and **Electric Out-Board Motor**. The proposed project idea encompasses two key actions: **The Enhance Sustainability Funding Initiative** for Sustainable Road Technology and **The Financial Initiative for Sustainable Economic Practices** for E-OBM technology. These selected actions are combined to form the principal project concept for the transportation sector, known as **The Integrated Sustainable Transportation and Green Technology Initiative**. This initiative aims to address the development and implementation of sustainable road technology, as well as the promotion of sustainable economic practices associated with E-OBM technology within the transportation sector.

The Sustainable Roads Action Plan for the Solomon Islands addresses critical infrastructure and environmental challenges by incorporating advanced drainage and landscaping technologies. This plan aims to improve road resilience through innovative design elements, such as green stormwater management systems, permeable surfaces, and vegetative buffers to manage stormwater runoff effectively and reduce surface erosion. It also highlights the importance of using indigenous vegetation to enhance aesthetic value, contribute to carbon sequestration, and mitigate urban heat islands, thus promoting cooler urban temperatures and better air quality.

A specific project under this plan is improving Mendana Avenue and Hibiscus Avenue in Honiara. This 15-kilometre initiative focuses on reducing traffic congestion, lowering vehicle emissions, and mitigating flood risks through advanced drainage systems and native landscaping. This project aligns with the National Transport Plan and the country's greenhouse gas reduction commitments under the National Determined Contributions (NDC), supporting national goals and contributing to broader climate and environmental objectives.

The Enhance Sustainability Funding Initiative is a strategic program selected to establish a robust financial framework for supporting sustainable road infrastructure projects. It aims to create a comprehensive funding mechanism to ensure stable financial support for environmentally-focused road development. Key activities include identifying diverse funding sources, such as government grants, private investments, and international aid; developing high-quality funding proposals; and forging public-private partnerships. The initiative also advocates for policy changes to support sustainable funding mechanisms, aiming to secure steady resources and foster effective collaborations for sustainable road infrastructure.

The Electric Out-board Motor (E-OBM) Action Plan aims to revolutionize marine transportation by replacing traditional fossil fuel engines with electric alternatives. The plan seeks to replace 50% of conventional outboard motors with electric ones by 2030, starting with an initial deployment of 10 motors and supporting infrastructure, including electric pole chargers in Honiara. E-OBMs offer significant environmental benefits, such as reduced carbon emissions and noise pollution, and enhance energy security by decreasing reliance on imported fuels. The plan also addresses cost-effectiveness through lower long-term fuel and maintenance expenses and supports local capacity building in renewable energy.

The Financial Initiative for Sustainable Economic Practices encourages businesses and industries in the Solomon Islands to adopt environmentally friendly practices. This initiative offers financial incentives such as grants, tax breaks, low-interest loans, and subsidies to support investments in renewable energy and sustainable technologies. Key actions include providing direct grants, tax incentives, and establishing a long-term Sustainability Fund to support ongoing sustainable practices. The initiative aims to transition 50% of traditional outboard motors to electric ones by 2030, significantly reducing carbon emissions and promoting sustainable economic growth.

The Integrated Sustainable Transportation and Green Technology Initiative seeks to transform the Solomon Islands' transportation sector through sustainable road development and the adoption of electric outboard motors (E-OBMs). With an estimated budget of $18 million over five years, the initiative focuses on securing sustainable funding, developing proposals, establishing public-private partnerships, and integrating green technologies. Expected outcomes include enhanced road infrastructure, increased E-OBM adoption, and improved

local capacity for sustainable practices. The project aligns with national goals for reducing GHG emissions and enhancing climate resilience, addressing challenges through coordinated efforts among government agencies, private sector partners, and community organizations to ensure successful implementation and significant environmental and economic benefits.

Forestry Sector

The Solomon Islands' forestry sector is vital for the economy, with over 89% forest cover contributing to 65% of export earnings and 20% of state revenue. However, logging has led to reducing CO2 sequestration. Initiatives like the Sustainable Logging Policy and REDD+ Program aim to address this issue.

The forestry sector's focus on technology prioritization involves two crucial initiatives: **The Multipurpose National Forest Inventory (M-NFI)** and **The Network of Terrestrial Protected Areas (N-TPAs)**. For the M-NFI, two key actions for each technology were identified by the Forestry Sector Working Group: first, **the development of a forest data management system** to effectively gather, organize, and utilize forestry data, and second**, specialized capacity building** to enhance the skills and knowledge of personnel responsible for forest inventory and monitoring**.** In addition, for the N-TPAs, two actions were selected to **foster sustainable funding and strengthen governance frameworks** to ensure effective management and preservation of these areas. By combining these selected actions, the project aims to establish **The Integrated Sustainable Forestry and Protected Areas Management (ISFPAM)** as a strategic initiative to significantly improve forest management and conservation practices across the Solomon Islands.

The M-NFI aims to gather extensive data on forest extent, quality, species composition, biomass, and carbon stocks to support climate change mitigation and sustainable forest management. The M-NFI will be crucial in maintaining forestry benefits and promoting sustainable development in the Solomon Islands.

To enhance forest management, the Solomon Islands' climate change mitigation strategy includes two key initiatives related to the M-NFI: **developing a Forest Data Management System and undertaking specialized capacity building.** The Forest Data Management System aims to upgrade data collection tools, integrate advanced technologies, and develop a centralized database for improved data accuracy and usability, supporting better monitoring of carbon stocks and deforestation impacts. The Specialized Capacity Building initiative focuses on advancing the skills of forestry professionals through training and internships, promoting innovative practices, and improving workforce capabilities in sustainable forest management.

These initiatives are designed to bolster the Solomon Islands' climate adaptation efforts by improving forest data management and fostering a skilled workforce. The project includes a technology upgrades, training, and system maintenance, with anticipated benefits including better forest management, increased economic value, and strengthened environmental and social outcomes. This investment aims to enhance data accuracy, support REDD+ initiatives, and facilitate effective mitigation of forest conservation and climate change.

The N-TPAs, established under the Protected Area Act 2010, plays a critical role in climate change mitigation by preserving biodiversity, enhancing ecosystem resilience, and sequestering carbon. The NTPAs involve local communities in conservation efforts, offering benefits such as ecosystem services, eco-tourism, and scientific research. Challenges such as

funding and land use conflicts are addressed through the ambition to protect 20% of terrestrial areas and improve forest management. This strategy supports the National Biodiversity Strategic Action Plan and National Forestry Policy by promoting sustainable logging practices and protecting high-elevation forests.

The N-TPAs project focuses on two key actions: **fostering sustainable funding and strengthening governance frameworks.** The sustainable funding initiative aims to secure long-term financial resources by identifying potential funding sources, establishing partnerships, applying for grants, and creating an endowment fund. Strengthening governance frameworks involves assessing current structures, developing management policies, ensuring transparency, and providing training for board members and staff. These efforts aim to improve conservation practices, enhance accountability, and ensure the long-term viability of the N-TPAs, significantly contributing to the Solomon Islands' climate change mitigation and biodiversity conservation goals.

The Integrated Sustainable Forestry and Protected Areas Management (ISFPAM) is a proposed project representing a strategic initiative to enhance forest management and conservation across the Solomon Islands. With a total budget of USD 9.6 million, ISFPAM includes planning, data collection, governance development, training, community engagement, and ongoing monitoring. The project aims to advance sustainable forestry and protected area management by leveraging advanced technologies and improved governance frameworks. It aligns with national priorities for climate change mitigation and biodiversity conservation, aiming to cover at least 20% of the country’s forest area and improve conservation effectiveness. Through these targeted actions, ISFPAM seeks to strengthen forest management, enhance carbon sequestration data, and support sustainable development goals, contributing to the Solomon Islands' long-term environmental and socio-economic resilience.

CHAPTER 1
ADAPTATION TECHNOLOGY ACTION PLAN AND PROJECT IDEAS: COASTAL EROSION SECTOR

In all the nine (9) provinces of the Solomon Islands, including the main five (5) islands, almost all coastal villages suffered from coastal erosion and flooding caused by sea level rise. According to Jupiter et al, (2019)[1] some parts of the country have experienced a record 7-10 mm of sea level rise, which is more than triple the global average sea level rise per year since 1993 in the Solomon Islands. This trend is prevalent at various locations across the country. As highlighted by Pioch et al, (2011)[2] and Lane, (2006)[3] the negative impacts include coastal erosion, washing away of sediments into coastal waters, affecting food production, poor water quality, coastal fisheries/reefs, and tourism, wastewater, leachates and untreated sewage that negatively impact food security, infrastructure, human health, and coastal corals and fisheries; environmental issues linked to solid waste management in general at various locations in the country (National Waste Management and Pollution Strategy 2017-2026)[4].

Figure 1 Picture of Village in Solomon Islands.
(Source: Rising sea levels wipe out five reef islands in the Pacific, 2016)

Existing literature has confirmed the multiple negative impacts that climate change and increasing population pressure on land and ecosystem systems have on current and future island populations (Pelling & Uitto, 2001; Stephenson, et al 2010)[5] [6].

[1] Jupiter, S., McCarter, J., Albert, S., Hughes, A., & Grinham, A. (2019). Solomon Islands: Coastal and marine ecosystems. In World seas: an environmental evaluation (pp. 855-874). Academic Press.
[2] Pioch, S., Kilfoyle, K., Levrel, H., & Spieler, R. (2011). Green marine construction. Journal of Coastal Research, (61), 257-268.
[3] Lane, M. B. (2006). Towards integrated coastal management in Solomon Islands: Identifying strategic issues for governance reform. Ocean & Coastal Management, 49(7-8), 421-441.
[4] National waste Management and Pollution Control Strategy, 2017-2026, MECDM Honiara, Solomon Islands.
[5] Stephenson, J., Newman, K., & Mayhew, S. (2010). Population dynamics and climate change: what are the links. Journal of Public Health, 32(2), 150-156.
[6] Stephenson, J., Newman, K., & Mayhew, S. (2010). Population dynamics and climate change: what are the links. Journal of Public Health, 32(2), 150-156.

With such a backdrop, the Solomon Islands Government (SIG) through the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) has recommended that the Technology Need Assessment (TNA) process focuses on developing technologies under the "Coastal erosion sector (CES) under this project (Solomon Islands NTA Report,2022)[7].

The SIG through MECDM acknowledges that CES as one of the challenges its population has to face at various locations across the country thus, through its TNA process it has nominated coastal erosion as one of the sectors to be prioritized for technology considerations.

1.1 Coastal Erosion Sector Overview

The Solomon Islands' economy is considered "mostly unfree" according to the 2024 Index. Economic dynamism and development remain stifled by deficiencies that include public-sector inefficiency and poor governance. Underdeveloped legal and physical infrastructure discourages the emergence of a vibrant private sector. Having said the above, coupled with sea level rise and other unplanned and unregulated development initiatives at diverse locations in the country may be regarded as key drivers to coastal erosions. According to our interview with the Director Environment and Conservation Department (DECCD), within the MECDM, there are several key drivers to Coastal Erosions in the country. These are:

A. **Coastal Engineering**:

Any development which changes how sand moves to and from or along a beach can cause erosion; these include: seawalls, reclamation, groynes, causeways, boat channels, clearing of coastal vegetation (e.g., mangroves), changing water flow / current patterns (Dugan et al, 2011)[8].

B. **Beach Mining:**

Sand or beach mining is the extraction of sand, mainly through an open pit (or sand pit) but sometimes mined from beaches and inland dunes or dredged from ocean and river beds (Ayyam, et al, 2019)[9]As populations grow, the need for housing and infrastructure means that more material is being mined from our beaches. This upsets the sedimentary budget and can cause widespread, irreversible erosion.

C. **Degraded reef health and productivity:**

Most Solomon Island coastal villages are protected by living barrier reef systems. These reefs produce huge volumes of sand, gravel and rock, which build and maintain

[7] TNA Report (2022), Prioritization of Technologies, Ministry of Environment, Climate Change, Disaster Management & Meteorology, Honiara, Solomon Islands.

[8] Dugan, J. E., Airoldi, L., Chapman, M. G., Walker, S. J., Schlacher, T., Wolanski, E., & McLusky, D. (2011). 8.02-Estuarine and coastal structures: environmental effects, a focus on shore and nearshore structures. Treatise on estuarine and coastal science, 8, 17-41.

[9] Ayyam, V., Palanivel, S., Chandrakasan, S., Ayyam, V., Palanivel, S., & Chandrakasan, S. (2019). Sand mining and strategies for Its management. Coastal ecosystems of the tropics-adaptive management, 201-217.

our beaches[10]. Nearly all the white and brown beaches of the Islands are composed of once-living reef organisms. Any disturbance to the populations, diversity, or function of these reefs can result in changes to the volumes of material moving to the beach and can lead to widespread erosion.

D. **Future sea level and climate uncertainty:**

The IPCC (Intergovernmental Panel on Climate Change, 2007) indicates that whilst exact patterns of climate/ocean system changes are not well understood, a clear trend of increasing atmospheric and ocean temperatures exists, and these are accelerating. In turn, sea levels have risen during the 20th century by approximately 170 mm (about 6 ½ inches) and are currently estimated to rise at a rate of about 3.1 mm/year (about 1/8 inch/year). This was confirmed by a recent study by Jupiter et al. (2019)[11] more than 5 islands in the eastern part of the Solomon Islands have submerged because of sea level rise and coastal erosion.

Our natural systems, such as beaches and living reefs, have a limited ability to absorb and adapt to environmental changes. If we weaken our shorelines through inappropriate coastal development, beach mining, and pollution, it is likely that these weakened shorelines and reefs will be less resilient. In other words, avoiding activities that weaken our coastal reef and beach systems is an excellent way to ensure that we have the best natural coastal defences against climatic stresses and uncertainty. Protecting our reefs and beaches not only contributes to our health and well-being but also maintains important economic activities such as tourism.

1.2 Action Plan for Nature-Based Solution

1.2.1 Introduction

Nature-based solutions (NbS) involve the intentional use of natural and nature-based features (NNBF), like beaches, dunes, islands, marshes and mangroves, coral and oyster reefs, either alone or in combination with traditional grey infrastructure, like cement walls buried inside of sand dunes, to reduce risks to coastal erosion. According to Khaniya et al, (2021)[12] It is the sustainable management and use of natural processes to tackle socio-environmental issues. These issues include, for example, climate change mitigation and adaptation, water security, and disaster risk reduction.

In the Solomon Islands, there is no specific policy that governs the nature-based solution strategy in the country, but there is now some serious conversation about nature-based solutions and their application across the country, both for adaptation and mitigation purposes. Below is an example of using rocks as part of a nature-based solution against

[10] Kereseka, J. (2021). Solomon Islands Ridge to Reef Island Diagnostic Analysis Report.
[11] Jupiter, S., McCarter, J., Albert, S., Hughes, A., & Grinham, A. (2019). Solomon Islands: Coastal and marine ecosystems. In World seas: an environmental evaluation (pp. 855-874). Academic Press.
[12] Khaniya, B., Gunathilake, M. B., & Rathnayake, U. (2021). Ecosystem-based adaptation for the impact of climate change and variation in the water management sector of Sri Lanka. Mathematical problems in engineering, 2021, 1-10.

sea level rise at an urban centre in the country.

Figure 2 Strengthen coastal resilience at Tulagi, Central Islands Province (Source: UNDP, 2023)

1.2.2 Ambition for the TAP

This TAP aims to provide an action plan for pursuing the technology under consideration for implementation. The ambition is to secure funding for 10 locations across the country and participate in Nature-Based Solutions as a mode of community resilience against coastal erosion. The technology is envisioned with a total cost of USD**$6,000,000**. As estimated in our BAEF Report, one site of implementation for a nature-based solution would cost an average of USD$600,000.

According to Scorza, & Santopietro, (2021)[13] an action plan is a document that lays out the tasks you need to complete to accomplish your goal. It also breaks up the process into actionable assignments based on a timeline. A good action plan will outline all the necessary steps to achieve your goal and help you reach your target efficiently by assigning a timeframe with a start and end date to every step in the process. Depending on your needs and preferences, you can use this document to set single or multiple goals. Thus, this TAP will ensure that the government of Solomon Islands successfully implemented about 10 affected communities across the country.

It is intended that the transfer and diffusion of the technology will be done over four (4) years phased into two (2), two-year terms from 2026 (2026-2030). The target population is the communities living mostly along the coastlines and within the vulnerable provinces, as the vulnerability assessment reports indicate. According to the Director of Climate change Division[14].The most vulnerable communities are in Malaita Province, Central Island Province, Temotu Province, Makira Province, and the Western Province. The technology will use primarily green materials, such as native plants and rocks, and some grey materials, including cement or brick, where necessary. Grey materials will only be used when constructing structures such as barriers against sea level rise.

[13] Santopietro, L., & Scorza, F. (2021). The Italian experience of the covenant of mayors: a territorial evaluation. Sustainability, 13(3), 1289.

[14] Thaddeus Siota, Director, Climate Change Division, Ministry of Environment, Climate Change, Disaster Management and Meteorology, Honiara, Solomon Islands

1.2.3 Actions and Activities selected for inclusion in the TAP for Nature Based solution

1.2.3.1 Summary of Barriers and Measures to Overcome Barriers

The fundamental problem this technology provides a solution to is the expensive cost of grey materials which are used mainly in the construction of sea walls and breakwaters as barriers against sea level rise[15]. This will ensure that property and people, including leisure/economic facilities, are protected from coastal flooding and erosion risk. It will also allow coastal communities to build homes and facilities up to the shoreline. Preventing the base of cliffs from being eroded reduces the risk of rock falls and collapse.

The main economic and financial barrier that prevents communities or households in the communities affording this technology of their own is the inadequacy of funds. For example, it would cost approximately USD 600,000 to construct an average size of this technology in the country; see Table 1 below: The costs comprised (i) Community awareness (at 10 selected sites) (ii) Structural -rocks, (iii) earthworks, (iv) planning and vegetation, and (v) logistics. The fundamental root causes are inadequate support from the government and external donor partners, resulting in limited support for individuals and communities to access this technology. Moreover, rising sea levels and coastal erosion are also considered emerging barriers or issues that technology must anticipate going forward.

Table 1 Expenses related to building a single NbS technology

Main costs of Producing NbS technology USD		
Activities	**Detail**	**Costs**
Community awareness	Community awareness at selected sites	10,000
Policy formulation	Development policy & guideline for NbS implementation	100,000
Earth Works-	Depending on the size of the sea wall	290,000
Planning of Vegetation	Introduction native trees if not available	100,000
Logistics	Transport costs	100,000
	Total cost	**600,000**

The institutional barriers to the diffusion of this technology include a lack of government support and affirmative policy direction on NbS (Sea wall) in the country. Limited local capacity to design NbS infrastructure may also hinders the diffusion of the technology (BAEF, 2024)[16].

To overcome the barriers identified above, the government must consider the formulation of

[15] Hunt Jr, I. A. (1959). Design of seawalls and breakwaters. Journal of the waterways and harbors division, 85(3), 123-152.
[16] BAEF (2024). SI Barrier Analysis and Enabling Framework, Ministry of Environment, Climate Change, Disaster Management and Meteorology, Honiara, Solomon Islands.

strategies grounded on its integrated vulnerability assessment (SIIVA) to design an NbS (sea wall) that could be achieved through cost-sharing arrangements, provision of tax exemption, and training of local engineers with NbS skills and know-how.

On the social and cultural barrier perspective, respective community must accept the join ownership and responsibility such as maintenance of such technology into the future. The root cause of this is inadequate community development advocacy and training to enhance ownership to achieve join benefit and improved well-being.

1.2.3.2 Actions Selected for Inclusion in The Tap for The NbS

NbS (sea wall) technology faces several challenges in economic, financial, market condition, social, cultural and the behavioural awareness in the adaptation space. These barriers are obstructive its affordability and perhaps construction at various locations throughout the country. While it may be considered as public good, on the other hand government need to stimulate the sector to attract the required investments, and increase market demand. The lack of sufficient market pulls for NbS technology, due to its high capital costs, creates the need for policy-driven support to bridge this cost disadvantage. Thus, the following actions are tailored into the TAP.

i. Government subsidy – The government is required to meet partially the cost of this technology. This is aimed at leveraging the cost to individuals and communities across the country. The government may consider introducing new tax instrument on businesses/individuals to fund this new initiative.
ii. Government policy- This policy is aimed at provision of the technology to average and low-income earners and meeting obligations to provide protection to individuals and communities at these vulnerable locations.
iii. Training and awareness – these are aimed at increasing awareness around NbS sea wall design and construction by communities and households.
iv. Capacity building – Locals must be trained with the technological skills to maintain and sustain the technology after the project implementation.

1.2.3.3 Activities Identified for Implementation of Selected Actions

i. The MECDM will establish this NbS subsidy scheme and formulate regulations on implementing it to the public.
ii. The government should formulate policy surrounding the design and construction of an NbS solution, including the use of grey materials such as sea breaks for coastal communities, particularly low-income earners.
iii. A training and awareness component must be aligned with the technology. This activity should be ongoing and implemented through workshops or case studies, focus training, and general awareness.
iv. Upskilling of locals to design and provide maintenance to the NbS technology is critical for long-term adaptation and sustainability.

2.3.3.4 Actions to be implemented as Project Ideas

The following ideas are to be implemented as part of the project idea.

i. Subsidize costs – This could be done through removal of tariffs and provision of tax exemptions to households or communities who participate in community led-NbS initiatives in the country.
ii. Enforcement of design standards – This is enforcement by the local government on contractors who construct the NbS (sea wall) in the country.
iii. Focused Training – This training is offered to locals with the relevant skills and capacity to design NbS (sea wall) projects /initiatives.
iv. Effective awareness program – The government through the MECDM and MID will assist with advocacy and awareness of the technology and its importance to the community.

1.2.4 Stakeholders and Timeline for Implementation of TAP for NbS Technology

1.2.4.1 Overview of Stakeholders for the Implementation of the TAP

The technology action plan and program suggested to achieve this TAP mainly relate to NbS (Sea wall) technology. The main stakeholder is the MECDM, which is responsible for all the laws and regulations in the coastal erosion sector, particularly the National Biodiversity Strategy and Action Plans and Environment Act. Other government ministries such as MID, Ministry of Provincial Government and Institutional Strengthening (MPGIS) also have major roles in the TAP since most coastal erosion protection strategies aim to increase resilience and adaptation at the local levels. Through NGOs and other business houses, the private sector also has a major role in establishing projects that will eventually lead to achieving the TAP targets. See **Table 2** for more details.

Table 2 Stakeholders and time for implementation of technology activities – NbS

Actions/Activities	Years – Timeline 2025- 2028			
	1st Half 2025	2nd Half 2025	2nd half 2026	2nd half 2026/2027
	STAKEHOLDERS			
Government Policy	MECDM			
Government Incentives	MoFT			
Awareness & Training	MPGIS			
Concept Development		NDA/AE		
Project Design		NDA/AE		
Project Implementation			IE/AE	
Monitoring &Evaluation				IE/AE

The stakeholders that will be taking part in implementing the TAP include the MECDM, MPGIS, MID, MoFT and Non-government Organizations (NGOs) through the private sector and interested business houses. These stakeholders will perform various roles in the implementation of the TAP. For example, the MECDM performs the overall coordinating role of the TAP implementation through seeking and negotiating funding from both the government and external sources; the MID ensures that the technology design and implementation complies

with relevant environmental policies and regulations, while MPGIS ensures that the technology complies with provincial bye-laws and standards and requirements in the country. The NGOs representing the private sector could partner with households and business houses to install the technology locally.

1.2.4.2 Scheduling and Sequencing of Specific Activities

The technology implementation will begin in the second half of 2025, continue through 2026, and into 2028. Before developing any concepts, TAP understands the importance of formulating policies. These policies need to be established before taking concrete actions towards concept development, project identification, and design. Please refer to **Table 3** for the schedule and sequence of specific activities.

Table 3 Scheduling and sequencing of specific activities – NbS

Actions/Activities	Years – Timeline 2025- 2028			
	1st Half 2025	2nd Half 2025	2nd half 2026	2nd half 2026/2027
	STAKEHOLDERS			
Government Policy	MECDM			
Government Incentives	MoFT			
Awareness & Training	MPGIS			
Concept Development		NDA/AE		
Project Design		NDA/AE		
Project Implementation			IE/AE	
Monitoring &Evaluation				IE/AE

1.2.5 Estimation of resources needed for action and activities

1.2.5.1 Estimation of Capacity Building Needs

The implementation of the NbS (sea wall) technology will certainly require human capacity or expertise for implementation, from planning and design to logistic support and construction. Furthermore, the personnel responsible for implementing the NbS must be equipped to address and understand societal challenges such as landscape scale of intervention, biodiversity gain, economic viability, governance capability, and equitable balance of trade-offs. In terms of leadership, the MECDM in collaboration with MoFT will play key roles in implementation, ensuring that communities and individuals participating in this project understand the standards, including the required design and skills for easy implementation, maintenance, and sustainability.

1.2.5.2 Estimations of Costs of Actions and Activities

The average construction cost of a medium-sized NbS technology would be about USD $600,000. The exact cost could be less or more depending on other variables added into the total costs. This anticipated technology would cost USD 6,000,000 to design and construct 10 NbS sites across the country**.** See **Table 4** below.

Table 4 Estimation of costs (in USD) of actions and activities

Actions/ Activities	Years – Timeline 2025-2026/29 [USD$]				Total
	2ND half 2025	1st half 2026	2nd half 2027	1st half 2028/29	
Concept Development	$10,000				
Government Subsidy	N/A				
Technology Awareness	$50,000				
Policy Development			$10,000		
Project Proposal		$20,000			
Implementation & MEL [10 sites]				**$5,910,000**	
Sub-total Cost	**$60,000**	**$20,000**	**$10,000**	**$5,910,000**	**$6,000,000**
Total cost (USD$)					**$6,000,000**

1.2.6 Management Planning

1.2.6.1 Risks and Contingency Planning

There are potential risks which could prevent the effective implementation of the project which through the TAP process, the report explores various reasons which may have resulted in such outcome and provides potential pathway to overcome such risks should they arise. The identified risks include the followings:

(i) Financial constraints - The continuous inability of households and communities to pool enough capital to finance technology of such cost is always the concern the government and relevant authorities must deal with. The strategy to overcome such risk is for the government and responsible authority to secure both internal and external funding arrangement to invest in such technology. Although it must be acknowledged from the outset that depending on donor partners to finance this technology could also be a risk of its own.

(ii) Government failure to progress and facilitate the technology through- There is likelihood that any ruling government may not link this technology as its priority area. Thus, a critical and useful strategy to adopt is through the process of in-depth consultation with the ruling government and ensure the technology falls within the priority areas of their policy.

(iii)Frustration – Event of natural disaster may result in non-performance of the technology- Natural disasters are unavoidable and when occurs may cause frustration to the project's implementation. To mitigate the potential impact of such catastrophic

event on the project, the parties involved in the technology ensures that it adheres to high level of environment and natural disaster risk compliances.

(iv) **Unavailability of local skills and expertise to implement the project** – As part of the technology design and implementation, the responsible authority is mandated to embed training and upskilling of locals for the long-term implementing of the technology.

1.2.6.2 Next Steps

i) **Finance –** The government will seek both internal and external funding sources to ensure the project implementation. External funding to name a few includes the Green Climate Fund (GCF), Global Environment Facility (GEF), Adaptation Fund (AF) and traditional donor aid partners both bilateral and multi-lateral sources.

ii) **Continuous engagement** – The responsible authorities to participate in consultation and engagement with the MECDM to ensure the technology remains within the government's priority.

iii) Proper planning and strategy are adopted to provide a pathway forward.

iv) Training and upskilling of locals be part of technology implementation.

1.2.7 TAP overview table - Nature Based Solution (NbS) Sea wall construction

Table 5 TAP overview table - Nature Based Solution (NbS) Sea wall Construction

TAP overview table	
Sector	COASTAL EROSION
Sub-sector	Nature Based Solution (Sea wall)
Technology	Nature Based Solution (Sea wall) technology
Ambition	BUILD AND DIFUSE 10 NbS (Sea walls) technology around the country
Benefits	This will benefit more than 60% of the country's provincial governments. There are 10 provinces in the country including Honiara.

Action	**Activities to be implemented**	**Sources of funding**	**Responsible body and focal point**	**Time frame**	**Risks**	**Success criteria**	**Indicators for Monitoring of Implementation**	**Budget per activity**
Action 1	**Activity 1.1:** Concept Development	SIG	MECDM	2025	No finance to suppose such an investment	Policy Developed	Improved policy adopted	USD10,000
	Activity 1.2: Technology Awareness	SIG	MECDM	2025	No finance to support such development	Awareness programs implemented	People and communities knew the importance of NbS (Sea wall)	USD50,000
Action 2	**Activity 2.1:** Policy Development	NDA/ IE	MECDM/ADB	2026	Unavailability of IE No financial support	Concept Note prepared and submitted	Approval of such CN by donor partner	USD10,000
	Activity 2.2:	Project Identification and Design	MID/ UNDP	2027	Unavailability of IE and no financial support	Project Submitted for Approval	Approval of PIFS	USD20,000
Action 3	**Activity 3.1:** Project Implementation	Green Climate Fund	MECDM/ADB	2028/2032	No Prioritization by Ruling Government	Successful design and mobilisation of the technology	Effective implementation	USD 5,910,000

1.3 Action Plan for Integrated Coastal Zone Management Technology

1.3.1 Introduction

Integrated Coastal Zone Management (ICZM) is a resource management system that follows an integrative, holistic approach and an interactive planning process to address complex management issues in coastal areas. According to Alves et al (2013)[17]((Krishnamurthy,2008)[18], Integrated coastal zone management (ICZM) is a dynamic, multidisciplinary and iterative process to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision making, management and monitoring of implementation.

Similar to NbS (Sea wall), ICZM calls for better management of coastal zones areas that may also include some features of NbS initiatives. Both NbS and ICZM are designed to protect the communities, their resources and build coastal resilience at various within the country. The MECDM senior management team together with the TNA steering Committee and coastal erosion technical working group have agreed that this project will consider pursing an ICZM strategy as a technology aimed at building resilience and preventing coastal erosion in the country. **See figure 3** below as the ICZM framework**.**

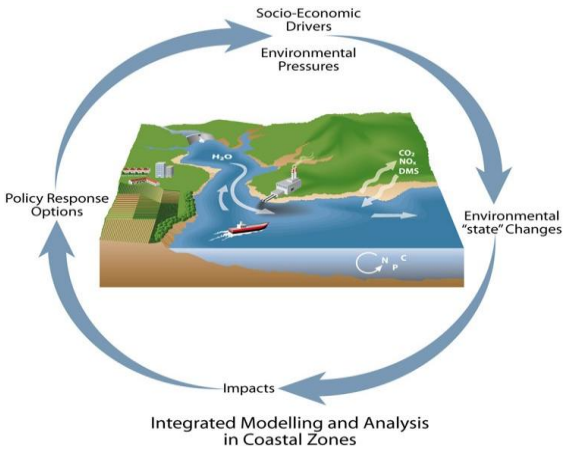

Figure 3 Integrated Coastal Zone Management Strategy framework (Source: Integrated coastal zone management in the Mediterranean: From Vision to Action, 2008)

1.3.2 Ambition for the TAP - ICZM

The ambition of this TAP is to provide an action plan on how to venture into the design and implementation of ICZM technology at selected sites across the country. The objective is to identify various land owing groups in the coastal areas and introduce the principles of ICZM to vulnerable communities. This technology aims to prevent coastal erosion by participating in the design of integrating both landscape and seascape within the coastal boundaries. Since this may be seen as a public good in most cases, the government and

[17] Alves, F. L., Sousa, L. P., Almodovar, M., & Phillips, M. R. (2013). Integrated Coastal Zone Management (ICZM): a review of progress in Portuguese implementation. Regional environmental change, 13, 1031-1042.
[18] Krishnamurthy, R. R. (Ed.). (2008). Integrated coastal zone management. Research Publishing Services.

donor aid partners must engage early in the dialogue to provide funding assistance to concerned communities. It is projected that more than 30 communities will be provided initial assistance as pilot projects throughout the 9 provinces within the country.

1.3.3 Actions and Activities Selected for Inclusion in the TAP for ICZM Technology

1.3.3.1 Summary of barriers and measures to overcome barriers

The fundamental barrier this technology provides solutions for in the country is against the increasing impact of erosion and saltwater inundation into villages at the low-lying zones along the periphery of the island nation. It is evidenced that individuals and communities want to participate in this coastal area technology. However, the barriers and costs of such undertaking are expensive. Thus, only individuals, business houses, and tribal groups with high economic capacity could cooperatively build resilience at the local level against the impact of climate change, coastal erosion.

Figure 4 Coastal Community protected from Sea level rise as part of the ICZM (Source: Agency, 2022)

It is anticipated that an average size of the community will participate in the ICZM technology, which would embrace and incorporate both features of landscape and seascape strategies into managing the coastal area resources. The barriers expected to overcome include:

i) **High capital cost**—The primary economic and financial barriers that prevent the vulnerable coastal communities from affording this technology, similar to earlier adaptation technology discussed in this TAP, are the inadequacy of funds and local populations' access to it. As you can see from Table 5 below, it will cost, on average, roughly USD 600 per site. The project anticipates working with 10 communities with a total budget of **USD 6,000,000**.

Table 6 Cost related to a single average ICZM technology

Main costs of Producing ICZM technology USD		
Activities	**Detail**	**Costs**
Awareness	Community Awareness	12,000
Vegetation re-introduction	Introduction of native trees if not available	100,000
Policy & Guideline	Formulation of Policy and guideline implementation	100,000
Structures - Earth move works	If need to be shifted from other areas - Depending on the scope of the ICZM	300,000
Logistics	Transport costs	88,000
	Total cost	**600,000**

ii) The fundamental root cause of this economic **incapacity** is the inadequate level of financial support by the national government and inability of the land-owning groups to initiate self-financing of long-term investment in such adaptation strategy.

iii) **Institutional ownership**- The institutional barrier to diffusion of this technology includes lack of awareness by community membership on the impact of climate change. This further reflects the poor coordination by appropriate stakeholders' including government ministries, NGOs, land owning groups, potential investors and the public.

iv) In the event whereby a consortium of international donor partners or even one donor partner provides funding for the design and construction of such technology, there is always a cloud of uncertainty over the continuity and long-term success of such investments after project implementation. This calls for institutional ownership by the community or government into the technology to secure long term benefit and sustainability on the community.

v) **The ICZM policy** – There is not any policy to govern and administer ICZM implementation in the country. Although its objective is noble, the government must take substantive action to fulfilling its mandate under this policy framework. This implies that none- implementation of policy is deemed as barrier to implementation of the technology.

vi) **Local expertise to maintain the technology** - This will be a large investment done at national and the community level in this technology. **The** question is whether there is an adequate level of expertise to run such technology effectively in the long term.

vii) **Limited knowledge about the technology-** There is limited information and know- how on how to design an effective ICZM technology and how it operates at the local level. Like nature-based solution technology, there is not **trained** and environmental engineers to design and plan such technology at the community level.

1.3.3.2 Actions Selected for Inclusion in the TAP

The following actions are selected to be included as part of the TAP for ICZM.

i) **Government Investment into the technology** - The government is required to invest or partially meet the cost of the technology. This aimed at reducing the cost of the technology to communities, individuals and users at the local level.
ii) **Dedicated ICZM Policy development** - As part of the technology, the government would consider formulating a policy which is aimed at fulfilling its social responsibility to provide safe and resilient villages to its citizens, average and low-income earners across the country.
iii) **Training and awareness**—As a key component of this technology, the government would further incorporate training and awareness to increase stakeholders' knowledge about WRST across the country.

1.3.3.3 Activities Identified for Implementation of Selected Actions

i) Ministry of Finance and Treasury (MoFT) to establish a subsidy scheme and formulate regulation on attracting funding for this technology.
ii) Through the MECDM, the government will develop a policy to design and implement ICZM.
iii) Awareness by government officials on how to use the technology and training to Ministry of Infrastructure Development (MID) staff to ensure that the country has qualified staff (environment engineers) to maintain such expensive infrastructure on the long term. Thus, this activity should be an ongoing one and be implemented through workshops, focus training and general awareness.

1.3.3.4 Actions to be implemented as Project Ideas

The following ideas are to be implemented as part of the project idea.

i) **Removal of economic barriers** – Providing incentives to potential investors by removal of tariffs and provision of tax exemptions to attract investment in this ICZM technology is a positive contribution by government towards achieving this landmark technology.
ii) **Concept Development** – The Solomon Islands Government (SIG) should consider to sponsor the design and formulation of a concept for this technology.
iii) **Project Design** – Upon approval of the concept note the government would identify reputable Accredit entity (AE) to formally develop the proposal for funding, most probably GEF or GCF.
iv) **Skill based Training** – This training is offered to organizations to acquire the relevant skills and capacity to maintenance and sustain the technology into the future.
v) **Effective awareness program** – The government through the MID/MEDDM will assist with advocacy and awareness of the technology and its importance to the community.

1.3.4 Stakeholders and Timeline for Implementation of TAP

Currently, there is no ICZM-dedicated policy in the country, although there is evidence of some environment-related policies such as NBSAP and Protected Area Regulation Area (2012). As a critical project that has the potential to protect and transform vulnerable communities, proper research and assessment must be conducted on the current design and infrastructure. This includes identifying potential sites, the physical structures, vegetation, wind exposure, and current directions. An environmental impact assessment should also be made to determine the likely environmental damage such ICZM will have on the surrounding ecosystem.

After this activity, then the relevant authority could start designing the concept note, followed by project identification and design. This is when the National Designated Authority through the MECDM and MID could promote the importance of the technology and awareness to the community. Concurrently, the government must come up with a policy for the introduction of ICZM the country, then followed by implementation and Monitoring and evaluation. All these activities are expected to be implemented by Implementing entity (IE) from second part of 2026 to second term of 2030. See **Table 7**.

Table 7 Stakeholders and Time for implementation of Technology activities - ICZM- 2026 to 2030

Actions/Activities	Years – Timeline 2026- 2030			
	2026	2027	2028	2029
	STAKEHOLDERS			
Infrastructure Project Design	MECDM /MID			
Concept Note Development	DNA/MECDM			
Project Identification Design		DNA/MECDM		
Technology Awareness	MECDM	NDA/AE		
Government Policy		NDA/MECDM		
Project Implementation,			IE/AE	
Monitoring &Evaluation				IE/AE

1.3.4.1 Overview of Stakeholders for the implementation of the TAP for ICZM technology

Since the last decade, ICZM has been widely considered as a viable alternative to conventional sectoral management (Thia-Eng ,1993)[19].In the Solomon Islands, some of the vulnerable communities have also adopted different forms of adaptation approaches including integrated coastal zone management technologies, to prevent sea-level rise and coastal erosion at diverse locations across the country. ICZM is a resource management system following an integrative, holistic approach and an interactive planning process to address complex management issues in the coastal area (Garmendia, et al., 2010)[20].

19 Thia-Eng, C. (1993). Essential elements of integrated coastal zone management. Ocean & Coastal Management, 21(1-3), 81-108.

20 Garmendia, E., Gamboa, G., Franco, J., Garmendia, J. M., Liria, P., & Olazabal, M. (2010). Social multi-criteria evaluation as a decision support tool for integrated coastal zone management. Ocean & Coastal Management, 53(7), 385-403.

According to **Figure 5** below, communities and individuals participating in coastal resources management must adopt and incorporate various factors to build resilience against climate change. These factors include natural, social, and economic processes. The conceptual model entails that ICZM is a dynamic, multidisciplinary, and iterative process to promote sustainable management of coastal zones. It covers the full cycle of information collection, planning (in its broadest sense), decision-making, management and monitoring, and building cases for learning and future operations

Figure 5 Integrated Coastal Zone Management Conceptual Model (Source: Morales, J.A. ,2022).

Like nature-based solution concept, integrated coastal zone management is not a new technology among rural communities across these Islands. For many years, coastal communities have been involved in some form of ICZM strategies, particularly when managing their resources, although some of these actions may not have been structurally coordinated. For example, communities have also participated in the 'Ridge to Reef' initiatives. According to Mcleod et al., (2019)[21], the Ridge to reef initiative aims to provide a holistic intervention for protecting the coastal area by targeting environmental degradation in the uplands ("ridge") that impact coastal ecosystems through sedimentation. Communities have planted mangrove forests and coconut trees along the coastline areas as a sort of barrier against sea level rise and as a fortress against strong winds and storms. By rebuilding the shoreline and maintaining marine ecosystems ("reef"), thereby decreasing storm surges. Thus, this technology is not new across the country, nevertheless, like NbS technology, it just needs to be designed properly to yield maximum benefit to the communities.

21 Mcleod, E., Bruton-Adams, M., Förster, J., Franco, C., Gaines, G., Gorong, B., ... & Terk, E. (2019). Lessons from the Pacific Islands–adapting to climate change by supporting social and ecological resilience. Frontiers in Marine Science, 6, 289.

1.3.4.2 Scheduling and sequencing of specific activities

Table 8 Time schedule for implementation of ICZM - 2025 to 2030

Actions/Activities	Years – Timeline 2026- 2030			
	2026	2027	2028	2029
	STAKEHOLDERS			
Infrastructure Project Design	MECDM /MID			
Concept Note Development	DNA/MECDM			
Project Identification Design		DNA/MECDM		
Technology Awareness	MECDM	NDA/AE		
Government Policy		NDA/MECDM		
Project Implementation,			IE/AE	
Monitoring &Evaluation				IE/AE

1.3.5 Estimation of Resources Needed for Action and Activities

1.3.5.1 Estimation of Capacity Building Needs

The implementation of the ICZM will be large-scale once it is implemented in the country. For that reason, it will certainly require human capacity or expertise to implement the project, from infrastructure design to concept note development, proposal development, technology awareness, and government policy to project implementation. Furthermore, there should also be additional capacity for the maintenance and sustainability of the initiative into the future.

1.3.5.2 Estimations of costs of actions and activities

The estimated cost for planning, design and implementation of the ICZM in the country is detailed below. This estimation could be less or more depending on other variables are added or subtracted from the costs as detailed below:

Table 9 Cost (in USD) of Actions and Activities - ICZM - 2025-2029/30

Detail	Years – Timeline 2025-2029/2030					Total
	1st Half 2025	2nd Half 2025	1st Half 2026	2nd Half 2027	1st Half 2029/30	
Infrastructure Project Design	$40,000					
Concept Note Development		$50,000				
Proposal Design			$200,000			
Technology Awareness	$40,000					
Government Policy		$20,000				
MEL				$2,825,000	$2,5825,000	
Sub-total Project	**$80,000**	**$70,000**	**$200,000**	**$2,825,000**	**$2,825,000**	
Grand Total	**USD**					**$6,000,000**

1.3.6 Management Planning

1.3.6.1 Risks and Contingency Planning

There is a potential risk that the technology may not be pursued and implemented, as it not an attractive sector compared to other technologies. Nevertheless, through the TAP process, the report explores various reasons which may have resulted in such an outcome and provides a potential pathway to overcome potential risks should they arise. The identified risks include the following:

i. **Economic and Financial risk**—The continuous inability of the government, through the government budgetary allocation, to have enough capital to finance a technology of such magnitude. The pathway to overcome such risk is for the government and responsible authority to secure both internal and external funding arrangements to finance such technology.

ii. **Government failure to progress and facilitate the technology through** - There is a likelihood that the ruling government may not adopt ICZM or NbS technologies as its priority areas. Thus, a very important strategy adopted is through high-level engagement with the current government to ensure that the technology falls within the priority focus area of their policy.

iii. **Frustration** – Event of natural disasters may result in non-performance of the technology- Natural disasters are unavoidable and when occur may cause frustration to the project implementation. To mitigate costs of this nature, parties involved in the technology must ensures that the technology adheres to high level of compliances to environment and natural disaster risk compliances.

iv. **Unavailability of local skills and expertise in ICZM design** – As part of the technology design and implementation, the responsible authority is mandated to incorporate training and upskilling of locals for the long-term implementing of the technology.

1.3.6.2 Next Steps

1. **Finance** – The government will seek both internal and external funding to ensure the technology is implementing.
2. **High level engagement with ruling government** – The responsible authorities to participate in continuous engagement to ensure the technology is of government priority.
3. **Capacity development** - Training and upskilling of locals be part of technology implementation.

1.3.7 TAP Overview Table

Table 10 TAP overview table - ICZM Technology SOLOMON ISLANDS TAP REPORT

TAP overview table	
Sector	**ADAPTATION**
Sub-sector	**COASTAL EROSION**
Technology	**INTEGRATED COASTAL ZONE MANAGEMENT TECNHOLOGY**
Ambition	To plan and design Integrated Coastal Zone Management Technology to prevent vulnerable coastal communities against sea level rise and impact of climate change.
Benefits	MORE THAN 80% OF THE PROVINCES WILL BENEFIT FROM THE TECHNOLOGY

Action	**Activities to be implemented**	**Sources of funding**	**Responsible body and focal point**	**Time frame**	**Risks**	**Success criteria**	**Indicators for Monitoring of Implementation**	**Budget per activity**
Action 1	**Activity 1.1:** Infrastructure Assessment – Project Design	MECDM/DONOR PARTNERS	MECDM	1st half of 2025	Economic Barriers and Technological skill	The Assessment of current Infrastructure is done	Provide Environment Impact Assessment and Resource Mapping and Valuation	USD40,000
	Activity 1.2: Concept Development	MECDM/ DONOR PARTNERS	MECDM	2nd Half of 2025	Under capacity to develop the CN	Submission of the CN to GCF or AF	Approval of the CN	USD50,000
Action 2	**Activity 2.1:** Technology Awareness	MECDM/ MID/ MPGIS	MECDM	1st half of 2026	No government support	Submission of the PIFS	Approval of the Proposal	USD40,000
	Activity 2.2: Government Policy Development	MECDM/ MID/ MPGIS	MECDM	2nd half of 2026	No government support	Successful implementation	Better coordination of ICZM in country	USD20,000

Action	Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
Action 3	**Activity 3.1:** Project Implementation	GCF	MECDM	1st half of 2028	No approval	Effective implementation	Better Management of coastal resources and communities	USD5,825,000
	Activity 3.2: Monitoring & Evaluation	GCF	MECDM	1st half of 2029	Poor Coordination	Knowledge Management	Better lesson learned for future	Embedded as part of the PI
	Activity 1.1: Infrastructure Assessment – Project Design	MECDM/DONOR PARTNERS	MECDM	1st half of 2025	Economic Barriers and Technological skill	The Assessment of current Infrastructure is done	Provide Environment Impact Assessment and Resource Mapping and Valuation	USD40,000

1.4 Project Idea for Coastal Erosion Sector

1.4.1 Project Ideas for the Coastal Erosion Sector- Nature Based Solution

Summary of the specific project idea

a) Project Goals

To provide coastal villages and communities across the rural Solomon Islands with the option to apply nature-based solutions to build long-term adaptation strategies among vulnerable coastal communities. This strategy encourages communities to use existing resources and materials when considering options to build effective adaptation methodologies at the local levels.

b) Rational

Nature-based solutions to climate change, sometimes called "natural climate solutions," involve conserving, restoring, or better managing ecosystems to remove carbon dioxide (CO_2) from the atmosphere. Implementing NbS in this project will ensure the communities increase their adaptive capacity while contributing to GHG emission reduction at the local and global levels.

c) **Implementation narrative**

1. Identifying target communities through vulnerability assessments-SIIVA
2. Developing criteria and application process for accessing of communities,
3. Developing an approval process for vulnerable coastal communities to apply for the programme
4. Partnering with local engineers, resource owners, government officials, for support in NbS design,
5. Resources, equipment and services to help build the NbS infrastructures.
6. During execution, the project will implement 5 to 10 NbS infrastructure site from 2026-2030
7. Implementing and executing capacity building programmes across provinces
8. Improve technical know-how, inclusive of set-up and efficient and effective use of the coastal resources,
9. Monitoring buy-in and gauge improvement through feedback from communities earlier implemented.

i. Climate Change Impact potential

Adaptation:

The NbS technology implementation will increase the adaptive capacity of vulnerable communities by allowing forests to regrow, restoring coastal wetlands, preventing coastal erosion and saltwater inundation that support healthy soils. These ecosystems reduce climate change by capturing CO_2 from the air and sequestering it in plants, soils, and sediments along the coastlines.

Mitigation:

The NbS avoiding emissions through protecting landscapes to limit deforestation; restoring ecosystems such as drained peatlands so they sequester carbon and improving degraded habitats by bringing ecological diversity into landscapes dominated by singular species; improving management practices. The NbS projects contribute towards reduction of greenhouse gas emissions.

ii. Paradigm Shift problem

Such project can be expanded from 5- 10 initial vulnerable communities to 15-20 communities in the next 10 years. This will further increase the coastal livelihood and adaptative capacities of the vulnerable communities.

Further continuity of this project can be facilitated through:

- Training of local engineers, creation of local knowledge and support services in merits of the technology and sustainability.
- Financing through local entities e.g., rural development fund, provincial capital development fund, credit unions etc.
- Personal investment by villagers after seeing the benefits and increase in their adaptive capacity.
- Promotion of the project successes among provincial and national governments to encourage replication.

iii. Sustainable Development

The project will likely address societal challenges through actions to protect, sustainably manage, and restore natural and modified ecosystems along the coastal areas, benefiting people and nature at the same time. This process helps communities not only to conserve their coastal resources but also ensure that the resources are in-tact for future generations benefits.

iv. Country ownership

The Ministry of Environment, Climate Change, Disaster Management, and Meteorology is the key driver of this project's implementation. The Ministry of Provincial Government and Institutional Strengthening (MPGIS), Ministry of Fisheries and Marine Resources (MFMR), and Ministry of Infrastructure Development (MID) will also support the project through NbS design and implementation.

v. Type of finance

Special grants or subsidies could be provided to fund the expansion of the NbS to other coastal communities in the country. Potential local sources of funding for this technology would be through the MECDM and the MPGIS.

vi. Risk

Many coastal communities may not be assessed through the SIIVA and will therefore not be able to benefit from this intervention.

- Individuals and community dwellers lack proper credentials and collateral for accessing loans. (If this is one way of financing access for this endeavour).
- Coastal communities must properly manage their NbS at coastal sides,

1.4.2 Project Ideas for the Coastal Erosion Sector- Integrated Coastal Zone Summary of the specific project idea

a) Project Goals

To provide coastal villages and communities across the rural Solomon Islands with the option to adopt Integrated coastal zone management solution as a tool to achieving long-term adaptation strategies at the local level. ICZM is a holistic approach used to manage coastal resources. The entire coastal zone is managed, not just the narrow zone where breaking waves cause erosion and flooding. This includes all ecosystems, resources and human activity in the zone.

b) Rational

ICZM strategy is sometimes referred to as a dynamic, multidisciplinary and iterative process to promote sustainable management of coastal zones involve conserving, restoring, or better managing ecosystems to remove carbon dioxide (CO2) from the atmosphere. The implementation of the ICZM in this project will ensure the communities increase their adaptive capacity but also at the same time contribute towards GHG emission reduction at the local and global levels.

Studies have shown that local management of threats to coastal environment can alleviate the impacts of climate change on the coral reefs and coastal resources in general. Thus, supporting and providing capital to communities and individuals for the sustainable use of ocean resources through ICZM strategy can considerably improve the resilience of coastal resources and the communities that depend on them.

c) **Implementation narrative**

1. Identifying target communities through vulnerability assessments-SIIVA,
2. Developing criteria and application process for accessing of communities,
3. Developing an approval process for vulnerable coastal communities to apply for the ICZM programme
4. Partnering with local environment planners, resource owners, government officials, for support in ICZM design and implementation,
5. Resources, equipment and services to help strategize the ICZM infrastructures.
6. During execution, the project will implement 5 to 10 ICZM site from 2026-2030
7. Implementing and executing capacity building programmes across provinces
8. Improve technical know-how, inclusive of set-up and efficient and effective use of the coastal resources,
9. Monitoring buy-in and gauge improvement through feedback from communities earlier implemented.

i. Climate Change Impact potential

Adaptation: This ICZM project implementation will increase the adaptive capacity of vulnerable communities by allowing coastal forests/trees to regrow, restoring coastal wetlands, preventing coastal erosion and saltwater inundation. Nevertheless, allowing the communities or villagers to have access to resources at designated zones for their livelihoods. The healthy ecosystems as a result from ICZM reduce climate change by capturing CO2 from the air and sequestering it in plants, soils, and sediments along the coastlines.

Mitigation:

The ICZM strategy prevents emissions through protecting landscapes to limit deforestation; restoring ecosystems such as drained peatlands so they sequester carbon and improving degraded habitats by bringing ecological diversity into landscapes dominated

by singular species; improving management practices. The effectively managed ICZM strategy will significantly contribute towards reduction of greenhouse gas emissions into the atmosphere.

ii. Paradigm Shift problem

Such project can be expanded from 5- 10 initial sites to double in the next 10 years. This will further increase the coastal livelihood and adaptative capacities of the vulnerable communities.

Further continuity of this project can be facilitated through:

a. Training of local environmental engineers, creation of local knowledge and support services in merits of the technology and sustainability.
b. Financing through local entities e.g., rural development fund, provincial capital development fund, credit unions etc.
c. Personal investment by villagers after seeing the benefits and increase in their adaptive capacity.
d. Promotion of the project successes among provincial and national governments to encourage replication.

iii. Sustainable Development

The project will likely address societal challenges through actions to protect, sustainably manage and restore natural and modified ecosystems along coastal areas, benefiting people and nature at the same time. This process helps communities conserve their coastal resources and ensure that they remain intact for future generations.

iv. Country ownership

The Ministry of Environment, Climate Change, Disaster Management and Meteorology is the key driver to this project implementation. Besides, the Ministry of Provincial Government and Institutional Strengthening (MPGIS), Ministry of Fisheries and Marine Resources (MFMR) and Ministry of Infrastructure Development (MID) will also be supporting through NbS design and implementation.

v. Type of finance

Provision of special grants or subsidy to fund the expansion of the ICZM to other coastal communities in the country. Potential local sources of funding for this technology would be through the MECDM and the MPGIS.

vi. Risk

Many coastal communities may not be assessed through the SIIVA and will therefore not be able to benefit from this intervention.

• Individuals and community dwellers lack proper credentials and collateral for accessing loans. (If this is one way of financing access for this endeavour).

• Coastal communities must properly manage their ICZM implemented sites to attract further funding and local level support to this technology.

CHAPTER 2
ADAPTATION TECHNOLOGY ACTION PLAN AND PROJECT IDEAS RELOCATION SECTOR

2.1 Relocation Sector Overview

The relocation sector in the Solomon Islands is a vital component of the nation's response to climate change. It is dedicated to helping vulnerable communities transition from at-risk areas to safer locations, safeguarding lives, livelihoods, and critical infrastructure from the adverse effects of rising sea levels, coastal erosion, flooding, and other climate-related risks. This sector entails meticulous planning and execution to ensure that relocated communities can access essential resources and uphold their cultural and social identity. While the sector itself has minimal direct greenhouse gas (GHG) emissions, associated activities can still contribute to emissions, emphasizing the need for sustainable practices. The Solomon Islands have implemented various policies to bolster relocation efforts, emphasizing comprehensive planning and the integration of climate resilience in newly established settlements. The incorporation of sustainable technologies and infrastructure stands as a linchpin for the long-term success of these relocation endeavours.

2.2 Action Plan for the Development of Climate Change-Induced Relocation Policy

2.2.1 Introduction

The MECDM through the Climate Change Division (CCD) has recently launched its new National Climate Change policy (NCCP) 2023-2033) in October 2023[22]. The new NCCP supersedes the previous policy effective from 2012-2017. The new NCCP focuses on high-level mitigation and adaptation strategies but does not capture specific policy directives such as this climate-induced relocation policy technology. Furthermore, there is also a current Relocation Guideline (2022)[23] which the national government has adopted in 2022. The guideline provides a standard operating procedure (SOP) for relocation but lacks a clear link to a specific government policy statement to ground its function. Given this perspective, the TNA Relocation Sector Technical Working Group and TNA participants have resolved that it is imperative to develop and adopt a dedicated "Climate-Induced Relocation Policy" by the national government to ensure that the relocation guideline is firmly anchored in such a focused policy. Ultimately, this policy will provide the guiding principle for implementing the relocation guideline and any standard operating procedure mentioned earlier. This will provide clarity to villages and communities who intend to relocate from their vulnerable to much safer communities.

[22] National Climate Change Policy (2023). MECDM, Honiara, Solomon Islands
[23] Solomon Islands Relocation Guideline, MECDM, Honiara, Solomon Islands

Figure 6 Walande Re-settlement community
(Source: Discover Malaita Solomon Islands, 2022)

2.2.2 Ambition for the TAP

The current relocation guideline is a comprehensive document outlining the strategic planning of relocation exercises in the country, drawing on best practices from various locations. However, it falls short in articulating an overarching policy position and neglects to address the sensitive nature of relocation as a subject matter. The Relocation Sector Technical Working Group's analysis concludes that a dedicated Climate Change-Induced Relocation policy is critical for the government to effectively address the long-term impacts of climate change. Although this concept is not entirely new to the country, there is a need for a more focused approach to ensure that vulnerable communities are relocated under a clearly defined policy.

Therefore, the ambition for the Climate Change Induced Relocation Policy TAP is to map out activities that are aimed to develop that dedicated relocation policy which would provide guidance to communities and individuals who participate in re-settlement or relocation as result of coastal erosion and sea level rise across the country.

2.2.3 Actions and Activities selected for inclusion in the TAP

2.2.3.1 Summary of barriers and measures to overcome barriers

The fundamental barrier this technology provides a solution for is to ensure that relocation initiatives are well coordinated and implemented as part of the adaptation strategy against the impact of climate change in the country. It is evidenced that individuals and communities want to participate in self-initiated relocation programs but often not well coordinated and government roles are not well defined. Usually, there are no well-defined processes in this space because of some barriers which this TAP is aimed at addressing.

i. ***Economic and financial barrier*** - The main economic and financial barriers that prevent coastal communities venturing into this technology like the earlier adaptation related technologies as discussed in chapter 1 are inadequacy of funds and access to by local population. For example, it will cost more than **USD$250,000** to meet associated costs such as legal fees, logistics, workshop venues and etc. in the country.

ii. ***No local capacity to engage expert in the relocation/resettlement area***

It is expected that the government will need to incur legal costs to experts to draft such a policy document for the country. While there is limited capacity available nationwide in this space, the government must provide budgetary support for such engagements.

iii. ***No prioritized funding from the state -***

It is noted that there is no prioritized funding available for relocation related activities in the country at the moment. Although there are numerous calls and examples of communities, faith-based groups and NGOs leading the way in this space.

iv. ***No direct economic benefit***

There is perception that land and resources are privately owned. Therefore, developing a national climate change-induced policy which will affect the tribal groups and people may require extensive national wide consultations. However, this process is not expected to yield direct benefits for individual families or communities. In this context, communities feel that the government must lead the way in this process.

v. ***Cultural insensitivity***

Relocation is a sensitive topic at both the national and local levels across the country. In light of this sensitivity, relevant authorities need to engage in extensive sectoral consultations at the national, provincial, and local levels.

vi. ***Implementation issues***

A national policy on relocation will bear corresponding responsibility to the national government with its implementation. This will incur capital costs (related to land and infrastructures) and the cost of resources to communities and people involved in the process.

vii. ***Inadequate information on the societal benefit of technology***

Relocating to a less desirable location may result in relocation stress, leading to depression and anxiety within communities. Relocation stress should be recognized as a risk factor for depression in long-term care residents, regardless of cognitive status, in the first year after relocation. There needs to be awareness and education on the positive aspects of relocation to reduce anxiety.

Strategies to overcome the barriers above:

To overcome the barriers identified above, the government may consider providing leadership and incentives to support appropriate actions designed to address respective barriers. These actions include:

i) ***Policy development***—The government must develop a policy and regulation guiding the implementation of climate change-induced relocation programs in the country. This will ensure that both the national and provincial governments know their respective roles in the whole process and that the relocated communities understand their requirements in such an exercise.

ii) ***Legal cost*** - The national government will have to engage a legal and climate change relocation expert to lead in the consultation and drafting of such policy. The MECDM as the leading agency will have to secure funding from national government budgetary support or donor aid partners to fund this critical policy. In absence of such a policy, there will be no proper national relocation program implemented in the country. There will be

some initiated but at the local level as the current experience.

iii) ***Prioritization of relocation activities/costs***- The national government should also consider prioritizing of relocation policy related costs in its budgetary support to the leading agency - MECDM. This may now change the current narratives of most of the previous governments that "we do not have any policy on climate change relocation" so its always of low priority. As way to supplement the likely anticipated costs of the technology the government may seek alternate external funding sources from both bilateral and multilateral partners.

iv*)* ***Cultural insensitivity surrounding relocation*** **-** As part of the policy intend, there must be wider consultation and awareness surrounding importance and the necessity to develop a national policy dedicated for Climate Change induced relocation policy in the country. By understanding the need for such policy development in the country by relevant stakeholders and general public, it will rally support for this noble objective.

v) ***Implementing issues*** **-** When the national government supports this initiative, they will adopt and prioritize this policy development as one of their low hanging fruits to deliver on. Thus, awareness, dialogue, ownership and continuous engagement with the government of the day is important for this policy formulation and development.

2.2.3.2 Actions selected for inclusion in the TAP

Besides the NCCP (2023) and RG (2022) it is clear that formulation of Climate Change Induced Relocation Policy is critical to ensure effective implementation of internal climate induced relocation initiatives in the country.

i. **Government donor funding** – The government is required to meet partially the cost of the technology or secure funding from external sources to meet formulation of this important technology to the community. This is to enable vulnerable communities to participate in the relocation program knowing clearly their roles in this exercise.
ii. **Climate change Induced Relocation policy**- This is the heart of this technology, to develop a policy dedicated to effectively facilitate climate induced relocation initiatives in the country. There will be no confusing of responsibilities in this whole arrangement under the policy directive.
iii. **Public awareness**—Civic education through public awareness and consultations are key activities to increasing the education of stakeholders on the essence of participating in and adopting the new climate-induced relocation policy that is under formulation. Only with an adequate level of awareness and engagement will the public and the government rally support in favor of the new policy.

2.2.3.3 Activities identified for implementation of selected actions

i. **Funding sources** - It is recommended that the government to secure funding from external sources to finance the costs related to the technology under formulation and development. Government source of funding could be channelled through the budgetary support or externally directed to the leading ministry- MECDM for operations.
ii. **Government formulation of policy - The** government through the MECDM/MID/MPGIS in partnership with donor partners would assist to formulate and develop the Climate Change Induced relocation policy.
iii. **Training and awareness** – this training and awareness component is critical to

acceptance of the technology by villagers, governments at both national and provincial levels. Thus, this activity should be an on-going one and be implemented through workshops, focus trainings and general awareness.

2.2.3.4 Actions to be Implemented as Project Ideas

i. **Increased awareness -** There is a need to increase civic education and awareness with the national government through relevant ministries and stakeholders of the need to formulate and develop the Climate change-induced relation policy in the country. The awareness process should identify the gaps and limitations of the NCCP and relocation strategy. This policy should link the NCCP and Relocation guideline as one whole package to address issues surrounding relocation process in nationwide.
ii. **Policy and relocation guideline**. After identification of the gaps as explained above, the legal expert then drafts the policy to accommodate those deficiencies and provide guidance on issues emanating from climate induced relocation strategies in the country.
iii. **Effective awareness program** – The government through the MECDM will provide leadership in advocacy and awareness of the technology and its importance to the community and nation as a whole.

2.2.4 Stakeholders and Timeline for Implementation of TAP

Table 11 Stakeholder and Timeline for Climate Change Induced Relocation Policy implementation: 2024 to 2027

Actions/Activities	Years – Timeline 2024-2026/2026/2027			
	1st Half 2024	2nd Half 2025	1st Half 2026	2nd Half 2026/2027
	STAKEHOLDERS			
Socialization of the Technology	MECDM			
Concept Note Development	MECDM			
Project Proposal Design		DNA/IOM		
Technology Awareness	MECDM			
Government Policy		MECDM/CCD/AGC		
Project Implementation				
Monitoring & Evaluation				MECD/AGC

2.2.4.1 Overview of Stakeholders for the Implementation of the TAP

Currently, there is no dedicated Climate Change-Induced Relocation Policy in place in the country, only a guideline for relocation initiatives and high level NCCP. The existing guideline is ineffective because it lacks the foundation of an overarching policy specifically tailored for climate change-induced relocation. To address planned relocation seriously, the government should develop a dedicated policy, supported by adequate resources for effective implementation. The current stakeholders in this technology formulation would include the followings: MECDM, MPGIS, MID, Ministry of Home Affairs (MoHA), NGOs and relevant regional and international Partners such as World Bank, ADB, UNDP and International Organization for Migration (IOM).

2.2.4.2 Scheduling and sequencing of specific activities

Table 12 shows the schedule and sequencing of the activities that are needed for the implementation of this technology. It is expected to begin in the second quarter of 2024, with the technology preparatory work until full implementation in 2027.

Table 12 Scheduling and sequencing of specific activities: 2024 to 2027 for Induced Relocation Policy

Actions/Activities	Years – Timeline 2024-2026/2026/2027			
	1st Half 2024	2nd Half 2025	1st Half 2026	2nd Half 2026/2027
Socialization of the Technology	MECDM			
Concept Note Development	NDA/IE			
Project Proposal Design		NDA/IE		
Technology Awareness	MECDM			
Government Policy		CCD/AGC		
Project Implementation			MECD/AGC	
Monitoring & Evaluation				NDA/IE

2.2.5 Estimation of Resources Needed for Action and Activities

2.2.5.1 Estimation of Capacity Building Needs

Implementing the Climate Change Induced Relocation Policy technology will require human capacity or expertise to implement the project effectively. This includes performing gap analysis, socialization and awareness, drafting, consultations, monitoring and evaluation, and learning from implementations. Consultations will be made at the national, provincial, and local community levels to ensure that everyone is on the same page throughout the process.

2.2.5.2 Estimations of costs of actions and activities

The cost for formulation of Climate Change Induced Relocation technology is detailed below. This could be less or more depending on whether other variables are added or subtracted from the costs as detailed below:

Table 13 Estimation of costs (in USD) of actions and activities for Induced Relocation Policy

Detail	Years – Timeline 2025-2029/2030				Total
	1st Half 2025	2nd Half 2025	1st Half 2026	2nd Half 2027	
Socialization, Consultation and GAP analysis	50,000				
Concept Note Development	10,000				
Project Proposal Design		10,000			
Technology Awareness			40,000		
Government Policy - Drafting fee		100,000			
Project Implementation; M & E				50,000	
Sub-total Project	**60,000**	**110,000**	**40,000**	**50,000**	
Grand Total	**USD**				**$250,000**

2.2.6 Management Planning

2.2.6.1 Risks and Contingency Planning

As indicated with other earlier technologies throughout the report, there is a potential risk that the project may not be implemented as planned in the TAP. Thus, it is critical that the report explores various reasons which may have resulted in such outcome and provides potential pathway to overcome such risk should they arise. The identified risks include the followings:

i) **Government Will to support such policy** - It is important to collaborate with the national government to ensure that this policy intend remains a priority area of the government of the day. The only solution to this is continuous consultation with the ruling government of the day to support the technology development and implementation process.

ii) **Unavailability of expertise to draft the technology** – As part of the technology design, there needs to be a gap analysis and identification of issues that are not adequately captured in both the NCCP and relocation guideline, thus engaging an expert which has intensive wealth of experience in the area within the region is of paramount importance to ensuring that the project is well designed and implemented as planned.

2.2.6.2 Next Steps

i) **Finance –** The government will seek both internal and external funding to ensure the technology is implementing.

ii) **Ongoing high -level engagement** – The responsible authorities to participate in continuous consultation and high-level consultation with government to ensure the technology is of government priority.

iii) **Proper planning and collaborative engagement regional partners**- The government must admit that we lack the capacity to design this strategy as way forward, government must continue to be engaged with our regional partners as we progress this technology forward for implementation.

2.2.7 TAP Overview Table

Table 14 TAP overview table - Climate Change Induced Relocation Policy (2024-2027)

TAP overview table	
Sector	RELOCATION
Sub-sector	VULNERABLE COASTAL COMMUNTIES
Technology	CLIMATE CHANGE INDUCED RELOCATION POLICY
Ambition	• TO FORMULATE AND DEVELOP A DEDICATED CLIMATE CHANGE INDUCED RELOACTION POLICY TECHNOLOGIES IN THE COUNTRY
Benefits	• MORE THAN 80% OF VILLAGES ACROSS THE COUNTRY ARE LOCATED WITHIN 1.5KM TO THE COASTLINE. A GOOD NUMEBR OF THESE VILLAGES ARE EXPOSED TO SEA LEVEL RISE AND IMPACTS OF CLIMATE CHANGE.

Action	Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
Action 1	**Activity 1.1:** Socialization, Consultation and GAP analysis	MECDM/ DONORS	MECDM	2nd Half of 2024	No proper Climate Induced relocation policy	Dedicated policy developed	Relocation initiatives are well coordinated	USD50,000
	Activity 1.2: Awareness	MECDM	Attorney General's Chamber (AGC)	2nd half of 2024	No government will support the technology	Stakeholders including the government supports the initiative	Effective implementation of the policy	USD40,000
Action 2	**Activity 2.1:** Concept Note Development	GCF/AE	IOM/MECDM	2nd half of 2025	Capacity to develop CN	A CN well developed for submission	Well Design CN submitted	USD10,000
	Activity 2.2: Project Design	GCF/AE	IOM/MECDM	1st half of 2025	No capacity to develop Project Proposal	A well designed PP developed	Project Proposal Submitted Approved	USD10,000
Action 3	**Activity 3.1:** Project Implementation	MECDM	NFMA/DIE/NDA	1st half of 2026	No government support	Well designed planned	Timely implementation	USD150,000

2.3 Action Plan for the Development of Planned Relocation (Permanent)

2.3.1 Introduction

Planned relocations are already occurring globally. Recent surveys of available literature (Bower and Weerasinghe, 2021[24]; Scott, 2023)[25] have identified over 400 cases of planned relocations globally since 1970. This global finding demonstrates that planned relocation is more geographically widespread than the few cases most often highlighted in the media. While cases were identified on every inhabited continent, some regions are hotspots such as the Pacific.In the Solomon Islands, communities have taken local initiatives to build resilience in the face of climate change and extreme events (Ha'apio, et al, (2018)[26]. These communities have organized themselves and participated in relocation exercises using their own resources, without depending on the national and provincial levels of government for leadership in such exercises. For example, the Keigold community on Ranogha Island in the western province relocated from Modo village, situated in the coastal area, to higher ground due to sea level rise, storm surges, and landslide at the former site. Another case involves communities leading in relocating their homes and properties from their old village to the mainland (Walande village from an island in the Southern region of Malaita to the mainland). What is evident in the success of these two stories is that the villagers themselves, along with land owning groups, take the leading role in the relocation to new sites, without government-owned land involved in such process.

Figure 7 Disappearing Walande Community Infront of the canoe
(Source: https://pacificsecurity.net/climate-change-threat-to-livelihood-is-a-national-concern/)

2.3.2 Ambition for the TAP

Planned relocation is not a new concept in the country. For many years, communities have engaged in such initiatives, as exemplified in the example provide by Ha'apio et al., (2018)

[24] Bower, E., Weerasinghe, S., & Mokhnacheva, D. (2022). Mapping of planned relocation cases: a foundation for evidence-based policy and practice. Forced Migration Review, (69).
[25] Scott, M. (2023). Adapting to Climate-Related Human Mobility into Europe: Between the Protection Agenda and the Deterrence Paradigm, or Beyond?. European Journal of Migration and Law, 25(1), 54-82.
[26] Ha'apio, M., Wairiu, M., Gonzalez, R., & Morrison, K. (2018). Transformation of rural communities: lessons from a local self-initiative for building resilience in the Solomon Islands. Local Environment, 23(3), 352-365.

and Monson & Foukona (2014)[27]. While many of these relocation exercises may not have been structurally coordinated by the state they were still successfully implemented at the local levels. Under this technology, the relocation sectoral technical working group has agreed that the national government must take the lead on developing policies to see its vulnerable communities relocate to safer locations. The government must learn from the past community driven relocation exercises, develop, and implement its own relocation initiatives. As earlier acknowledged, this technology is not new across the country thus government must undertake broad consultations, learn from past community experiences, and design a well-planned relocation initiative under the Climate Change-Induced Relocation Policy before implementation to maximize benefits for the local communities.

The TAP therefore envisions to provide actions for vulnerable communities surrounding the island to participate in the technology. The technology action plan is to develop strategies and relocate 10 identified vulnerable communities across the country within the next 4 years.

2.3.3 Actions and Activities selected for inclusion in the TAP

2.3.3.1 Summary of barriers and measures to overcome barriers

The ultimate problem this technology provides solution to, is the increasing level of sea rise and continuous increase in coastal erosion along the low-lying islands across the country. The intension is to identify vulnerable communities due to sea level rise and develop a strategy which will see 10 of the vulnerable communities' benefit from this technology. Although this technology looks perfectly suitable for some areas, there are also several key barriers preventing the communities and government investing into this initiative. The barriers are outlined below:

i) **Economic and financial barriers** - Like all the technologies identified and covered in detail for adaptation, the economic and financial barriers are identified as one of the main barriers that prevent individual and communities alike from establishing the technology for their own. For example, developing and establishing a technology of this magnitude would cost the community and individual household an approximately **USD$500,000**. The cost related to land acquisition, infrastructure development, building of homes and logistics and other administrative matters.
ii) **Policy, legal, and regulatory** - Currently there is no dedicated Climate Change induced Relocation policy in the country. Although the NCCP and relocation guideline are available but there's a need to develop a dedicated policy that governs that process.
iii) **Institutional barrier -** The barriers to the diffusion of this technology include little political will support this technology, which resulted in poor coordination and implementation of this technology.

To overcome these identified barriers the government must take the leading role to intervene and perhaps seek external financial assistance to meet the capital and operational cost of the technology. The government could assist in the process by offering tax

27 Monson, R., & Foukona, J. D. (2014). 10 Climate-related displacement and options for resettlement in Solomon Islands. Land solutions for climate displacement, 291.

exemptions and tax rebates to communities and individuals who have participated in this process.

2.3.3.2 Actions selected for inclusion in the TAP

Similar to other identified adaptation technologies, Planned Relocation technology faces several challenges in mainly the economic, financial, social, cultural, and behavioural awareness in the coastal erosion sector. The barriers are identified as the key impediments that hinders coastal vulnerable communities and landowning group from participating in some self-imposed relocation initiatives. Government's support together with its coordinating role in this endeavour is important to see the Planned Relocation strategy as one of the positive options for long term adaptation at the local level. Thus, to ensure this technology is well engaged and implemented, the following actions must be addressed effectively.

a. **Government policy** – It is highly recommended for the government to develop a dedicated policy on Climate Change Induced Relocation technology in the country. Currently there is the NCCP and relocation guideline but they are silent on issues specifically to deal with climate change induced relocations. Thus, before the planned relocation technology be implemented this policy must be a grounding policy at the national level.
b. **Budgetary support** - The government, through the Ministry of Environment, Climate Change, Disaster Management and Meteorology, would collaborate with bilateral partners to secure financial assistance for the development of CCIRP and the planned relocation of vulnerable communities to higher grounds.
c. **Financing need** – Given that international funding mechanisms such as GCF, GEF, and AF are unable to fund relocation-related technologies, it is important for bilateral and donor partners to provide the necessary financial resources to support the identified technologies in this sector.

2.3.3.3 Activities identified for implementation of selected actions

i) **Financing Requirement** – High capital cost is evidenced with this technology prioritized. Thus, MECDM as leading ministry must to ensure that some of these project ideas are incorporated into the national planning and programming of the country. The MECDM and MPGIS as leading agencies could also negotiate on behalf of the national government to seek external funding sources on this technology implementation.
ii) **Skills and Institutional Capacity development** – There is also a need to train environmental engineers and planners to incorporate skills into designing and planning of relocation strategies.
iii) **Policy support** – relocation initiatives will only be effective when there is policy and legal framework are established to support such initiative.

2.3.3.4 Actions to be Implemented as Project Ideas

The following ideas are to be implemented as part of the technology implementation.

i**) Remove economic barriers** – The government through relevant authorities such as the MECDM will have to secure funding to support the preliminary activities of the CCIRP technology. It is also acknowledged that the current economic hardship

the communities face every day are preventing their participation in the self-initiated relocation programs.

ii) **Institutional capacity building** - The relevant stakeholders, including key ministries such as MECDM, MPGIS, MID, MoFT and MHA will continue to provide capacity building through civic education and training on the relocation strategy and imitative.

iii) **Continuous training and awareness** - there is a need for the responsible authority to continue provide awareness and information on the planned relocation strategy and why communities support toward the technology is vital for long term sustainability of relocated initiatives. This action must be embedded as part of the project implementation at the local levels.

2.3.4 Stakeholders and Timeline for Implementation of TAP

Table 15 Stakeholders and Timeline for Implementation of Planned Relocation TAP

Actions/Activities	Years – Timeline 2025-2026/2027/2028			
	1st Half 2025	2nd Half 2025	1st Half 2026	2nd Half 2026/2027
	STAKEHOLDERS			
Technology Awareness and Consultation	MECDM/ MPGIM/ MID/MoFT/MHA			
Policy Development	MECDM/ MPGIM/ MID/MoFT/ MHA/AGC			
Concept Development		NDA/DIE		
Project Identification & Design			MECDM/MID/ MPGIS/MHA IE	
Project Implementation				MECDM/MID/ MPGIS/ MHA IE
M & E Knowledge Management				MECDM/MID/ MPGIS/MoFT/ MHA/IE

2.3.4.1 Overview of Stakeholders for the Implementation of the TAP

The stakeholders that will be taking part in the technology implementation include the MECDM, MPGIS, MID, MHA, MoFT, AGC, NGOs, and our regional and international partners. Each ministry or department, as referred to on the island, plays different roles. For example,

i) MECDM is responsible for formulating the policy and guidelines for the country's climate change-driven relocation exercise. They also become the champion of the technology across the country.

ii) MPGIS – Most of the potential communities that will be relocating are largely located within the provinces. Thus, any arrangement to capture the provincial communities must include the MPGIS.

iii) MID- The Ministry of Infrastructure Development would be keen to ensure that infrastructure design and structures meet the basic safety standards.

iv) MHA - Any project or program that covers the movement of people within the country must involve the Ministry of Home Affairs. The Ministry of Home Affairs looks after internal movement of people within the country.

v) Attorney General's chamber – This government department supervises the drafting and vetting of the LMMA policy. As it was earlier stated the NFMA takes the leading role but the AGC will have to vet and approve the policy.

iv) MoFT – Ministry of Finance and Treasury looks after the budgetary support of the national government. To be effective, any associated costs must be allocated for by the MoFT.

vi) Regional and International Partners – this represents the regional and international partners/communities. Most of these are also represented by NGOs such as UNDP, Save the Children, WB, ADB and others in the country.

2.3.4.2 Scheduling and Sequencing of Specific Activities

Table 16 Scheduling and Sequencing of specific activities- Planned Relocation

Actions/Activities	Years – Timeline 2025-2026/2027/2028			
	1st Half 2025	2nd Half 2025	1st Half 2026	2nd Half 2026/2027
	STAKEHOLDERS			
Technology Awareness and Consultation	MECDM/ MPGIM/ MID/MoFT/MHA			
Policy Development	MECDM/ MPGIM/ MID/MoFT/ MHA/AGC			
Concept Development		NDA/DIE		
Project Identification & Design			MECDM/MID/ MPGIS/MHA IE	
Project Implementation				MECDM/MID/ MPGIS/ MHA IE
M & E Knowledge Management				MECDM/MID/ MPGIS/MoFT/ MHA/IE

2.3.5 Estimation of Resources Needed for Action and Activities

2.3.5.1 Estimation of Capacity Building Needs

i) Planned Relocation – the relevant authority to establish a mechanism which vulnerable communities are assessed and proper process are followed to be qualified as potential community ear marked for government planned relocation package or strategy.

ii) Government policy- Under the auspicious leadership of MECDM and MPGIS to develop and the Planned Relocation policy. This governs the management and administration of Planned Relocation implementation in the country.

iii) NDA/MECDM/MPGIS/MHFA – These ministries will lead in both concept and Project development. Thus, project design capacity is needed.

iv) Training and awareness – this training and awareness component is critical to acceptance of the technology. Thus, this activity should be an on-going one and be implemented through workshops, focus trainings and general awareness.

2.3.5.2 Actions to be Implemented as Project Ideas

The following ideas are to be implemented as part of the project idea.

i) **Funding allocations** - The national government must invest in relocating some of the vulnerable communities to higher grounds at selective sites across the Island nation. Furthermore, she must take leadership in providing the financial resources available for this technology implementation prior to seeking donor partners for financial and expert assistance in this space.

ii) **Policy development** – The MECDM and MPGIS are committed to develop a policy that will govern the general adaption and implementation of the technology. The policy should also outline the fringe benefit the land-owning group and communities should get by allowing their land for technology implementation.

iii) **Monitoring and Evaluation & Knowledge management** – This is monitoring and evaluating of the activities of the technology after implementation. The findings of such activities should be used for lesson learned for future operations.

iv) **Effective awareness program** – The government through the MECDM and MPGIS in collaboration with MHA will assist with advocacy and awareness of the technology and its importance to the community.

2.3.5.3 Estimations of costs of actions and activities

Table 17 Costs (in USD) and actions for Planned Relocation timeline: 2025 to 2029

Action/Activity	Years – Timeline 2025-2029/2030				Grand Total
	1st Half 2025	2nd Half 2025	1st Half 2026	2nd Half 2027	
Vulnerable communities' identification and assessments	$ 20,000				
Government Policy	$ 15,000				
Concept Note Development	$ 75,000				
Project Proposal Design		$ 125,000			
Technology Awareness	$ 15,000				
Project Implementation, M & E			$ 2,875,000	$ 2,875,000	
Sub-total Project	**$ 125,000**	**$ 125,000**	$ 2,875,000	$ 2,875,000	
Grand Total					**$ 6,000,000**

2.3.6 Management Planning

2.3.6.1 Risks and Contingency Planning

As a project, there are several possible risks that the whole development scheme may not be effectively implemented. Through the TAP process, the report explores various reasons which may have resulted in such outcome and provides potential pathway to overcome such risk should they arise. The identified risks under this project include the followings:

i) **financial constraints** - The continuous incapacity for households and communities to have adequate finance to self-fund such a project investment. The pathway to overcome such risk is for the government and responsible authorities to secure both internal and external funding arrangement to finance such technology.

ii) **Government's failure to progress the technology through**- There is the likelihood that the ruling government may not regard this technology as its priority area. Thus, an alternate strategy is to continue engagement with the current government to ensure the technology aligns with the priority focus area in their government policy.

iii) **Land dispute at the local levels** - There must be top-down engagement and awareness to villagers, tribal leaders and Church leaders alike, to support such investment to their respective communities. Understanding the intension of the project would see greater support towards such communal investment initiative.

2.3.6.2 Next Steps

a. Finance – The government will seek both internal and external funding through bilateral and multi-lateral relations to ensure the technology has potential funding and is effectively implemented.
b. Ongoing high-level engagement – The responsible authorities especially MECDM/MPGIS to participate in continuous high- level consultation with government to ensure the technology is of government priority. Every new government has its own priority and this government must also prioritize internal planned relocation as their priority.
c. Proper planning and strategy as way forward for this technology implementation- This must be on-going process on the ground within the next 5 to 10 years after implementation

2.2.7 TAP Overview Table

Table 18 TAP overview table - Planned Relocation (Permanent)

TAP overview table	
Sector	**COASTAL**
Sub-sector	COASTAL AREA EROSION
Technology	PLAANED RELOCATION
Ambition	TO UNDERTAKE ABOUT 10 PLANNED RELOCATIONS ACROSS THE COUNTRY
Benefits	MORE THAN 60% OF THE COASTAL AREA WILL BE PROTECTED OR MANAGED

Action	Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
Action 1	**Activity 1.1:** Vulnerable Communities Identification & Assessments	MECDM/MoFT/REGIONAL PARTNERS	MECDM	1st half of 2025	Community Support	The community supports the initiative	Vulnerable Communities identified	USD20,000
	Activity 1.2: Government Policy formulation	MECDM/MPGIS	MECDM/MPGIS	1st half of 2025	Incapacity to develop	Alignment of existing policy	Policy surrounding Planned Relocation accepted	USD15,000
Action 2	**Activity 2.1** Concept Note development	NDA/MECDM	MECDM/NDA	2ND half oF 2025	Incapacity to develop the CN	Well developed CN presented	CN Approved	USD50,000
	Activity 2.2 Project Proposal Design	NDA/BILATERAL	MECDM/MPGIS	1st half of 2026	Poor project Design	Well developed PP	Project Proposal Approved	USD75,000
Action 3	Technology Awareness	MECDM	MECDM	1st half of 2026	Importance of participating in Planned Relocation	Communities well supported the technology	Land owning group support to the technology	USD15,000
	Project Implementation & M and E	BILATERAL/AE	MECDM	1st half of 2027	Effective implementation n			USD5,750,000

2.4 Project Ideas for the Relocation Sector

2.4.1 Project Ideas for the Relocation Sector- Climate Change Induced Relocation Policy (CIRP)

i. Summary of the specific project idea

a) Project Goals

To provide communities, individuals and organisations in the country the fundamental basis upon which the current relocation guideline, relocation standard of operations and national climate change bill will be grounded. Currently, as we know there is a relocation guideline and standard operation of procedures without any climate change induced relocation policy by the government of the day. A government policy although very high-level, its entrails political activities, plans and intentions relating to a particular cause, in this case "Climate Change Indued relocation". With such a policy, it will provide the vulnerable communities a glimpse of hope, on how the national government intends to relocate their communities in the country on face of climate change.

b) Rational

The rational of having climate induced relocation policy is to provide an overarching framework for the government, vulnerable communities and actors to operate and collaborative affectively when trying to implement long term adaptation through relocation initiatives in the country. Relocation could be termed as a means of long-term adaptation. When is done effectively, climate action benefits development, health, and food security, and improves the lives of all citizens, particularly women and girls, children, and indigenous peoples.

c) Implementation narrative

1. Review existing Climate Change Relocation related guideline and policies,
2. Identify existing gaps and address new areas of focus into new policy,
3. Define the purpose of the new policy and align with existing framework,
4. Prepare policy strategy for potential implementation after formulation,
5. Develop awareness strategy and socialization of the new policy,
6. Get feedback and incorporation into the new formulated policy,
7. Implementing and executing capacity building programmes across provinces
8. Review and evaluation for further improvement of the policy.

ii. Climate Change Impact potential

Adaptation: This CCIRP project implementation will increase the cooperation between state, sub-national government, local communities and actors in climate relocation space in the country. The formulation and implementation of such policy will ultimately benefit the vulnerable communities with their relocation initiatives.

iii. Paradigm Shift problem

Such project will have multiplier-impact on other climate change related programs such as renewable energy, food systems, biodiversity, coastal resource management, education and

health services. A 'policy paradigm' constitutes a theoretical tool to specify and understand the guiding principles, or ideas, for creating climate induced relocation policy, why the various actors involved are involved, and why they pursue the strategies they do.

iv. Sustainable Development

The project will likely address societal challenges through actions to implement, long-term and sustainable relocation initiatives in the country. A strategy that not only relocates, resettles, and relieves communities from climate change impact stresses but also enables them to manage and utilize their resources at the village level effectively.

v. Country ownership

The Ministry of Environment, Climate Change, Disaster Management and Meteorology is the key to implementing this project. In addition, the Ministry of Provincial Government and Institutional Strengthening (MPGIS), Ministry of Fisheries and Marine Resources (MFMR) and Ministry of Infrastructure Development (MID) will also be supporting through NbS design and implementation.

vi. Type of finance

The national government through the Ministry of Environment, Climate Change, Disaster Management & Meteorology and the Ministry of Land and Survey should provide budgetary support to this project implementation. This is additional to the bilateral and multilateral funding that will be negotiated by the national government for this project implementation.

vii. Risk

The government's failure to support formulation and implementation of such critical policy development for the country.

- Bilateral and multi-lateral donor partners providing necessary funding and expertise in support of such policy implementation in the country.
- Vulnerable communities must support formulation and implementation of this policy in the country. Without support, the government won't realise the urgency to develop and implement such policy.

2.4.2 Project Ideas for the Relocation Sector- Planned Relocation

i. Summary of the specific project idea

a) Project Goals

To provide vulnerable communities, the option to participate in planned relocation which is seen as a more proactive strategy to long term adaptation to impact of climate change. Planned relocation may be used as a strategy to avoid future displacement: for example, when communities or areas are highly disaster-prone or too dangerous for human habitation, when the impacts of climate change are expected to make life unsustainable in particular areas, or when return to original habitats is not possible, planned relocation would be seen as viable option to such communities.

With such a project, communities who have long settled in climate change prone communities, will now have the opportunity to relocate to other areas which will in turn assist them in the long-term adaptation.

b) Rational

The rational of having a planned relocation initiative is to provide a "case study" whereby the national and sub-national governments, vulnerable communities and actors in this space have the opportunity to collaborative when trying to implement long term adaptation through planned relocation initiatives in the country. As we all know, planned relocation could be termed as a means of long-term adaptation. Furthermore, when it is done effectively the whole communities' benefit, especially the young, children, boys, girls and people living with disabilities.

c) Implementation narrative

1. Review existing Climate Change Relocation related guideline and policies,
2. Identify existing strategy which may assist you in this new planned relocation initiative,
3. Define the scope, extend and the type of panned relocation trying to undergo,
4. Identify the different parties or actors in this planned relocation initiative,
5. Develop awareness strategy and socialization of this planned relocation initiative,
6. Get feedback and incorporation into the planned relocation strategy,
7. Implementation, capacity building programmes for planned relocation across provinces,
8. Review and evaluation for further improvement of the planned relocation initiative.

ii. Climate Change Impact potential

Adaptation: This Planned relocation project implementation will increase the cooperation between state, sub-national government, local communities and actors in climate planned relocation space in the country. The actual implementation of such initiative will ultimately benefit the vulnerable communities (recipients) and the different age and social groups within the area. For example, the various women's group, the church group, the members of communities living with disability, the old and the youth. The planned relocation will increase their adaptive capacity to the impact of climate change.

iii. Paradigm Shift problem

Like the Climate Change Induced Relocation Policy, such project will have multiplier-effect on other climate change related programs such as renewable energy, food systems, biodiversity, coastal resource management, education and health services. This is because at the new site, there could be an opportunity to design and implement these climate related programs as part of the new planned relocation initiative.

Furthermore, it is envisioned that at the about 5 communities will be directly benefited from this planned relocation initiative. This number will be doubled after the first 5 years of implementation.

iv. Sustainable Development

The project envisions to encounter societal challenges through actions to implement, long-term and sustainable planned relocation initiatives in the country. A strategy which builds on the development of climate induced relocation policy and does not only intend to relocate, resettle, and relieve communities from climate change impact stresses but enabled them to manage and utilize their resources at the village level effectively for long term adaptation.

v. Country ownership

The Ministry of Environment, Climate Change, Disaster Management and Meteorology is the key to implementing this project. Moreover, the Ministry of Provincial Government and Institutional Strengthening (MPGIS), Ministry of Fisheries and Marine Resources (MFMR) and Ministry of Infrastructure Development (MID) will also be supporting through design and implementation.

vi. Type of finance

The national government through the Ministry of Environment, Climate Change, Disaster Management & Meteorology and the Ministry of Land and Survey are currently providing leadership in the planned relocation discourse. Furthermore, the national government through the same ministries will forge discussion with the bilateral and multilateral donor partners to negotiate additional funding for the project implementation.

vii. Risk

- The government's failure to support the implementation of planned relocation initiative in the country will have ripple negative impact on climate change related discussion and agenda for the country.
- Bilateral and multi-lateral donor partners providing necessary funding and expertise in support of such planned relocation initiative withheld,
- Vulnerable communities must support formulation and implementation of this policy in the country. Without support, the government won't realise the urgency to develop and implement such policy.

CHAPTER 3
MITIGATION TECHNOLOGY ACTION PLAN AND PROJECT IDEAS FOR THE TRANSPORTATION SECTOR

3.1 Transportation Overview

The transportation sector represents a significant source of GHG emissions in the Solomon Islands, primarily from fossil fuel combustion in vehicles and maritime vessels. These emissions have demonstrated an upward trajectory; in 2021, the Solomon Islands emitted 947,000 metric tonnes of carbon dioxide equivalent (CO2e), reflecting a compound annual growth rate (CAGR) of 3% since 1990[28]. It is driven by the escalating demand for transportation services due to population expansion and economic growth, and proactive measures are underway to address and mitigate these emissions.

It is essential to recognize that the transport sector is highly vulnerable to the impacts of climate change. These impacts include the threat of rising sea levels, increased extreme weather events, and a higher frequency of cyclones. As shown in **Figure 8 and Figure 9**, the high intensity of rain in Honiara[29] has led to frequent flooding and poor road conditions, resulting in slower travel times. These factors can potentially disrupt transport services, increase fuel consumption, damage critical infrastructure, and raise maintenance and operating costs. Additionally, the sector's reliance on imported fossil fuels exposes it to the uncertainties of global price fluctuations and supply chain disruptions, adding complexity to its operations and resilience.

Figure 8 Left: flooded roadway at Kukum Highway, Right: Pothole on Honiara Main Road
(Source: Author (2024); Chris Alex (2024))

[28] www.emission-index.com. (2024). Greenhouse Gas Emissions in Solomon Islands. [online] Available at: https://www.emission-index.com/countries/solomon-islands.
[29] Solomon Islands is on the 4th rank of World Average precipitation in depth (mm per year). TheGlobalEconomy.com. (2020). *Precipitation by country, around the world*. [online] Available at: https://www.theglobaleconomy.com/rankings/precipitation/.


Figure 9 Left: Honiara Main Road Condition[30]; Right: Traffic at Point Cruise[31]
(Source: Iroga (2023); Solomon Islands Chamber of Commerce and Industry (2024))

In light of this context, the Solomon Islands Government (SIG) has recommended that the Technology Needs Assessment (TNA) process should prioritize the development of technologies for the Transportation Sector under the project. This recommendation comes from the Ministry of Environment, Climate Change, Disaster Management, and Meteorology (MECDM) as outlined in the Solomon Islands NTA Report.[32]

The Solomon Islands have established several policies and measures to support the sustainable development of the transportation sector. These initiatives focus on enhancing infrastructure, promoting fuel efficiency, and integrating low-emission technologies.

Table 19 Existing Policies and Measures for Transportation Sector,

Policy Name	Main Contents
Solomon Islands National Transport Plan (NTP) 2017-2036	Comprehensive framework for the development and maintenance of transport infrastructure.
The Sustainable Transport Infrastructure Improvement Program (STIIP) in the Solomon Islands	To enhances transport infrastructure through rehabilitation and maintenance of roads, bridges, and wharves, while promoting gender-responsive, climate-resilient, and inclusive economic growth by strengthening government capacity and improving intermodal connectivity.
Shipping (Marine Pollution) Regulations 2011	Sets safety standards for sea transport, including emission controls for ships.

[30] Opposition Leader Matthew Wale criticizes the deteriorating roads in Honiara, calling for urgent action and the re-establishment of the Public Works Department to address the worsening situation. Iroga, R. (2023). https://sbm.sb/honiara-roads-in-its-worst-state-ever-wale/. [online] 20 Mar. Available at: https://sbm.sb/honiara-roads-in-its-worst-state-ever-wale/ [Accessed 27 Aug. 2024].

[31] The Solomon Islands Chamber of Commerce and Industry (SICCI) is urging the government to improve Honiara's Road conditions, citing significant negative impacts on businesses, traffic flow, and the overall economy. Solomon Islands Chamber of Commerce and Industry. (2024). *Road Conditions Impacts Businesses*. [online] Available at: https://www.solomonchamber.com.sb/news-reports/posts/2024/sicci-welcomes-solomon-airlines-five-year-strategy/road-conditions-impacts-businesses/ [Accessed 28 Aug. 2024].

[32] TNA Report (2022), Prioritization of Technologies, Ministry of Environment, Climate Change, Disaster Management & Meteorology, Honiara, Solomon Islands.

Policy Name	Main Contents
The Solomon Islands Long-term low Emissions development Strategy (LEDs)	To achieve net-zero emissions by 2050, focusing on equitable economic growth and resilience across sectors. The strategy includes measures such as improving land transport efficiency, introducing electric vehicles and charging infrastructure, and enhancing marine transport efficiency and emissions measurement for land and sea transport. It also plans to implement zero-emissions technology and infrastructure for sea transport.

(Source: Ministry of Infrastructure Development (2016); ADB (2016); Solomon Islands Maritime Authority (2011); The Solomon Islands Long-Term Low Emissions Development Strategy (2023))

The transportation sector depends heavily on traditional fossil fuel-powered vehicles and maritime vessels, which have significant environmental impacts. However, there is a noticeable and growing shift towards embracing more sustainable technologies to mitigate these environmental impacts. This shift involves exploring alternative energy sources, such as electric vehicles, biofuels, and renewable energy solutions for sea transportation. This transition aims to reduce carbon emissions, combat air and water pollution, and contribute to environmental sustainability. As a result, this movement will likely drive innovation in the transportation industry and significantly reduce the ecological footprint of transportation-related activities.

The Solomon Islands focuses on integrating innovative technologies and practices across critical sectors to advance sustainable development and enhance climate resilience. Two priority areas for technological adoption are sustainable road infrastructure and electrification of marine transport.

Sustainable Road (including Drainage & Landscaping) [33]

- **Current Level of Uptake**: Sustainable road construction practices are gradually being integrated into new infrastructure projects. These practices focus on enhancing roads' resilience to climate impacts, such as flooding and erosion, and reducing environmental degradation through proper drainage and environmentally friendly landscaping.
- **Future Targets**: By 2030, all new road projects should incorporate sustainable design principles. This includes using permeable materials, effective drainage systems, and sustainable landscaping practices to mitigate flooding and erosion risks, aligning with national resilience and sustainability goals.

Electric Out-board Motor

- **Current Level of Uptake**: The adoption of electric out-board motors is currently low due to high initial costs and limited availability. However, efforts are being made to increase awareness and reduce these barriers, recognizing the technology's potential for reducing fuel consumption and greenhouse gas (GHG) emissions in sea transport.
- **Future Targets**: By 2030, the goal is to replace 50% of conventional out-board motors with electric ones. This transition is expected to significantly cut fuel consumption and

[33] Ministry of Lands, Housing & Survey. (2020). Available at: https://solomons.gov.sb/wp-content/uploads/2023/11/Solomon-Islands-National-Urban-Policy-2020-2035-Shared.pdf.

reduce GHG emissions, contributing to the Solomon Islands' climate mitigation efforts and sustainable development targets[34].

3.2 Action Plan for Sustainable Road (including Drainage & Landscaping)

3.2.1 Introduction

The decision to explore sustainable road technology incorporating drainage and landscaping in the Solomon Islands is driven by its potential to mitigate climate change impacts while addressing critical local infrastructure challenges. Sustainable Roads integrate innovative approaches to road design that focus on enhancing resilience and sustainability through several key elements:

1. **Green Stormwater Management:** This approach utilizes permeable surfaces, vegetative buffers, and engineered drainage systems to manage stormwater runoff effectively. It reduces surface erosion, minimizes debris accumulation, and improves water quality.
2. **Vegetation and Landscaping:** Incorporation of indigenous trees, shrubs, and green traffic islands not only enhances aesthetic value but also contributes to carbon sequestration and mitigates the urban heat island effect. This promotes cooler urban temperatures and improves air quality.
3. **Pedestrian-Friendly Design:** Implement pedestrian-friendly amenities such as interlocked pavements, pervious concrete, and street furniture (e.g. benches and rubbish bins) to enhance pedestrian safety, comfort, and accessibility

By incorporating a landscape buffer, GHG emissions can be absorbed, and the urban heat island effect can be reduced, resulting in a lower local temperature in urban areas. The use of permeable surfaces and a proper drainage system ensures that the road construction is durable and positively impacts travel time, travel cost, and the reduction of fossil fuel consumption by eliminating traffic delays. For instance, planting street trees in cities like Semarang and Surabaya can reduce the urban heat island effect from 29°C to 27°C and lower the CO2 level.[35][36]

[34] Ministry of Environment, Climate Change, Disaster Management and Meteorology. (2021). Solomon Islands Nationally Determined Contribution (NDC). Available at: https://policy.asiapacificenergy.org/sites/default/files/Solomon%20Islands%202021%20Nationally%20Determined%20Contribution%20%28NDC%29.pdf

35 Seprila Putri Darlina, Bandi Sasmito and Bambang Darmo Yuwono (2018). ANALISIS FENOMENA URBAN HEAT ISLAND SERTA MITIGASINYA (STUDI KASUS : KOTA SEMARANG). Jurnal Geodesi Undip, 7(3), pp.77–87.

[36] Pratiwi, A.Y. and Jaelani, L.M. (2021). Analisis Perubahan Distribusi Urban Heat Island (UHI) di Kota Surabaya Menggunakan Citra Satelit Landsat Multitemporal. Jurnal Teknik ITS, 9(2). doi:https://doi.org/10.12962/j23373539.v9i2.53982.

Figure 10 Planting Street trees on the Main Road in Semarang and Surabaya City is intended to reduce urban heat islands and absorb CO2.
(Source: Pemkot Semarang (2017), Surabaya (2023))

Reasons for Selection:

1. **Climate Change Mitigation:** By reducing stormwater runoff and vegetation cover, Sustainable Roads mitigate urban heat islands, decrease local temperatures, and absorb greenhouse gas emissions. This aligns with global climate adaptation strategies and contributes to local environmental resilience.
2. **Economic Efficiency:** Reduced maintenance needs and enhanced road durability achieve long-term cost savings. Improved drainage systems minimize road damage caused by flooding and erosion, leading to fewer disruptions and lower repair costs.
3. **Environmental Benefits:** Enhanced stormwater management and vegetation integration contribute to biodiversity conservation and ecosystem health. This sustainable approach preserves natural habitats and reduces the ecological footprint of road infrastructure development.
4. **Social Impact:** Improved pedestrian infrastructure and urban green spaces foster community well-being by promoting active lifestyles and providing safer and more enjoyable public spaces. This supports social equity and enhances overall quality of life for residents.
5. **Regulatory Compliance and Sustainability:** Adherence to local planning guidelines and environmental standards ensures that Sustainable Roads meet regulatory requirements and contribute positively to sustainable development goals in the Solomon Islands.

Sustainable Roads technology offers a comprehensive solution to the challenges faced by urban infrastructure in the Solomon Islands. These roads enhance environmental resilience and promote economic efficiency and social well-being by integrating advanced drainage systems and green infrastructure. Further analysis will focus on optimizing these benefits through tailored implementation strategies and local community engagement.

3.2.2 Ambition for the TAP Sustainable Road (including Drainage & Landscaping)

Enhancing Mendana Avenue and Hibiscus Avenue in Honiara with sustainable road improvements aims to reduce congestion, lower vehicle emissions, and mitigate flood risks through improved drainage and native landscaping. This project aligns with national goals (National Transport Plan, National Determined Contributions (NDC), and to cut greenhouse gases by 2030 and focuses on a 15-kilometre stretch. This initiative emphasizes:

1. **Traffic and Economic Improvement**:
    - Reducing traffic congestion.
    - Supporting economic activities.
2. **Environmental Benefits**:
    - Enhancing drainage systems to reduce flood risks.
    - Incorporating native vegetation for better landscaping.
    - Reducing carbon emissions from vehicles.
    - Air Quality Improvement
    - Reducing the urban heat island effect

3.2.3 Actions and Activities Selected for Inclusion in the TAP

3.2.3.1 Summary of barriers and measures to overcome barriers

Implementing Sustainable Road technologies in the Solomon Islands faces significant economic and non-financial barriers that must be overcome (see TNA: BAEF Solomon Islands). These are summarised in **Table 20** below:

Table 20 Overview of Barriers and Measures to Overcome Such Barriers for Transportation Sector

Sustainable Road Implementation		
Categories	**Identified Barrier**	**Identified Measures**
Economic and financial barriers	Economic and financial barriers	• High investment, operation and maintenance costs.
Policy, legal, and regulatory	Policy, legal, and regulatory	• Absence of technical guidelines. • Lack of comprehensive land use, transportation, and drainage planning. • Incompatibility of local planning schemes .
Socio-Cultural, Information, and awareness	Socio-Cultural, Information, and awareness	• Lack of community understanding . • Lack of public awareness about green infrastructure.
Organisational	Organisational	• Limited concern from professional institutions about green streets and LIDs.

		• Limited management and enforcement capacity at the ministry and local authority levels.
Technical and Human Skill	Technical and Human Skill	• Inadequate technical expertise for effective project designs. • Lack of knowledge about green infrastructure and LIDs. • Limited capacity to interpret climate data and assess impacts. Lack of research on local materials for replacing conventional concrete. • No available nursery centres to supply vegetation for green streets.

3.2.3.2 Actions selected for inclusion in the TAP

Based on the information provided in **Table 20**, the actions specified in **Table 21** have been chosen to be included in the Technology Sustainable Road TAP.

Table 21 List of Actions for Sustainable Road

Action	Description
Enhance Sustainable Funding Initiatives	**Description:** This action involves developing and implementing strategies to secure long-term, stable funding for sustainable projects. It includes identifying diverse funding sources such as government grants, private sector investments, public-private partnerships, and international aid. **Purpose:** To ensure continuous financial support for sustainable development projects, enabling their effective implementation and long-term success.
Technical Plan for Sustainable Road Optimization Strategy	**Description:** This action focuses on creating a detailed technical plan to optimize road infrastructure for sustainability. It includes designing road layouts that reduce environmental impact, incorporating eco-friendly materials, and implementing technologies to improve efficiency and durability. **Purpose:** To enhance the sustainability of road infrastructure, reducing its environmental footprint while improving its performance and lifespan.
Community Engagement in Sustainable Road	**Description:** This action actively involves community members in the planning, implementing, and monitoring sustainable road projects. It includes organizing public consultations, workshops, and awareness campaigns to gather input and foster community support. **Purpose:** To ensure that sustainable road projects reflect community needs and values, and to build local support and ownership of these initiatives.
Stewardship Initiative for Sustainable Urban Green Infrastructure	**Description:** This action focuses on promoting the care and management of urban green spaces through community stewardship programs. It includes organizing volunteer activities, educational programs, and partnerships with local organizations to maintain and

Action	Description
	enhance urban green infrastructure all under responsibility of special maintenance division in MID and HCC. **Purpose:** To foster a sense of responsibility and active participation in the conservation and enhancement of urban green spaces, improving urban biodiversity and quality of life.
Capacity Building for Integrated Green Infrastructure Development Program	**Description:** This action involves developing training programs and resources to build the skills and knowledge of professionals involved in green infrastructure projects. It includes workshops, certification courses, and collaborative projects to promote best practices in integrated green infrastructure development. **Purpose:** To equip professionals with the expertise needed to design, implement, and manage integrated green infrastructure projects effectively, promoting sustainable urban development.

3.2.3.3 Activities identified for implementation of selected actions

The list below outlines the specific activities related to each action aimed at promoting sustainable road development:

Action 1: Enhance Sustainable Funding Initiatives

Activity 1.1 Identify potential funding sources (e.g. grants, partnerships, or green bonds).

Activity 1.2 Develop proposals and applications for funding opportunities.

Activity 1.3 Establish public-private partnerships for funding sustainable projects.

Activity 1.4 Advocate for policy changes to support sustainable funding initiatives.

Action 2: Technical Plan for Sustainable Road Optimization Strategy

Activity 2.1 Conduct a comprehensive assessment of current road infrastructure.

Activity 2.2 Develop guidelines for integrating sustainable practices into road design and construction.

Activity 2.3 Pilot test new technologies and materials for sustainable road optimization.

Activity 2.4 Establish performance metrics and benchmarks for sustainable road projects.

Action 3: Community Engagement in Sustainable Road

Activity 3.1 Organize public workshops and forums to gather community input on road projects.

Activity 3.2 Develop educational materials on the benefits of sustainable road practices.

Activity 3.3 Establish community advisory groups or committees for road development projects.

Activity 3.4 Implement feedback mechanisms to address community concerns and preferences.

Action 4: Stewardship Initiative for Sustainable Urban Green Infrastructure

Activity 4.1 Establish a new division within MID dedicated to sustainable road maintenance.

Activity 4.2 Plant and maintain trees and vegetation along urban roads.

Activity 4.3 Install green stormwater management systems such as road drainage, bioswales or rain gardens.

Activity 4.4 Monitor and manage green infrastructure for optimal performance and longevity.

Action 5: Capacity Building for Integrated Green Infrastructure Development Program

Activity 5.1 Provide training workshops on green infrastructure planning and design.

Activity 5.2 Develop educational programs for professionals and stakeholders involved in green infrastructure projects.

Activity 5.3 Develop certification or accreditation programs focused on sustainable infrastructure development.

Activity 5.4 Facilitate knowledge-sharing sessions and peer-to-peer learning among practitioners.

3.2.3.4 Actions to be Implemented as Project Ideas

The chosen project idea has been carefully selected based on the priority ranking established by the Transportation sector for mitigation efforts. This decision is detailed in **the Annexe 5,6 and 8,** providing further insight into the selection process.

A. Selected Action:

Enhance Sustainability Funding Initiative

B. Description*:*

The Enhance Sustainability Funding Initiative for Sustainable Road Mitigation for Climate Change program seeks to establish a comprehensive and long-term funding mechanism. This funding aims to support environmentally sustainable road infrastructure projects, specifically focusing on mitigating climate change impacts. This initiative aims to ensure stable and reliable financial support for initiatives centred around sustainable road development that can positively contribute to environmental conservation and climate change mitigation efforts.

C. Activities to Implement*:*

Activity 1.1: Identify Potential Funding Sources

Task 1.1.1: Research and compile a list of government grants at local, state, and federal levels supporting sustainable infrastructure projects.

Task 1.1.2: Identify private sector investment opportunities, including corporations with sustainability programs and venture capital focused on green technologies.

Task 1.1.3: Explore options for issuing green bonds to raise capital for sustainable road projects.

Task 1.1.4: Investigate international aid programs and funding from international organizations dedicated to climate change mitigation and sustainable development.

Task 1.1.5: Maintain a database of potential funding sources with application deadlines, eligibility criteria, and contact information.

Activity 1.2: Develop Proposals and Applications for Funding Opportunities

Task 1.2.1: Assemble a team of experts in grant writing, finance, and sustainability to develop high-quality funding proposals.

Task 1.2.2: Create detailed project plans and budgets that align with the requirements of each funding source.

Task 1.2.3: Develop persuasive narratives highlighting the proposed sustainable road projects' environmental, social, and economic benefits.

Task 1.2.4: Submit proposals and applications within deadlines, ensuring all required documentation is complete and accurate.

Task 1.2.5: Follow up with funding agencies and organizations to track the status of applications and provide additional information as needed.

Activity 1.3: Establish Public-Private Partnerships for Funding Sustainable Projects

Task 1.3.1: Identify potential private sector partners, including construction firms, technology companies, and financial institutions interested in sustainability.

Task 1.3.2: Develop partnership agreements that outline the roles, responsibilities, and contributions of each party.

Task 1.3.3: Organize meetings and workshops to facilitate collaboration and alignment between public and private sector partners.

Task 1.3.4: Create joint funding proposals that leverage the strengths and resources of both public and private partners.

Task 1.3.5: Monitor and evaluate the performance of public-private partnerships to ensure they are meeting their sustainability and financial goals.

Activity 1.4: Advocate for Policy Changes to Support Sustainable Funding Initiatives

Task 1.4.1: Conduct policy analysis to identify existing barriers and opportunities for sustainable funding in road infrastructure.

Task 1.4.2: Engage with policymakers, government officials, and industry leaders to advocate for policy changes that support sustainable funding mechanisms.

Task 1.4.3: Develop policy briefs, white papers, and advocacy materials that highlight the benefits of sustainable road funding initiatives.

Task 1.4.4: Organize and participate in stakeholder meetings, public hearings, and advocacy campaigns to build support for policy changes.

Task 1.4.5: Track and report on the progress of policy advocacy efforts, adjusting strategies as needed to achieve desired policy outcomes.

By implementing these activities, the initiative aims to secure diverse and stable funding sources, establish effective partnerships, and create a supportive policy environment, ultimately advancing the development and maintenance of sustainable road infrastructure.

3.2.4 Stakeholders and Timeline for Implementation of TAP

3.2.4.1 Overview of Stakeholders for the Implementation of the TAP

A diverse group of stakeholders from different fields and areas of expertise will be actively involved in this project. This will include representatives from governmental organizations, dedicated donors, subject matter experts, local universities, non-governmental organizations (NGOs), and private sector entities.

A. Government Agencies

- Ministry of Infrastructure Development (MID): Oversees Road infrastructure planning, construction, and maintenance.
- Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM): Enforces environmental regulations and coordinates climate change mitigation efforts.
- Ministry of Finance and Treasury: Manages public finances, including budgeting and allocating funds for infrastructure projects.
- Interests: Securing and allocating funds for sustainable projects.
- Ministry of Development Planning and Aid Coordination (MDPAC): Coordinates development planning and manages international aid.
- Solomon Islands Roads and Aviation Project (SIRAP): Implements Road and aviation infrastructure projects with a focus on resilience and sustainability.

B. Private Sector Partners

- Solomon Islands Chamber of Commerce and Industry (SICCI): This organization represents the interests of the private sector and facilitates partnerships, including the road contractors and suppliers.

C. Non-Governmental Organizations (NGOs)

- World Wildlife Fund (WWF) Solomon Islands, Live & Learn Environmental Education and Solomon Islands Development Trust (SIDT): Advocates for environmental conservation and sustainable development; provides education and promotes sustainable practices; promotes sustainable development and community engagement.

D. Academic and Research Institutions

- University of the South Pacific (USP) Solomon Islands Campus and Solomon Islands National University (SINU): These institutions conduct research on sustainability and climate change.

E. International Organizations and Aid Agencies

- World Bank, ADB, DFAT, MFAT: Provides financial and technical support for infrastructure projects.

3.2.4.2 Scheduling and sequencing of specific activities

The following timeline, as detailed in **Table 22,** presents a phased approach for the implementation of the chosen action to enhance the Sustainable Funding Initiative for the Sustainable Road Technology Initiative. This plan spans a period of two years, outlining the activities, responsible body or focal point and stakeholders involved in the process.

Table 22 Scheduling and Sequencing Activities for Sustainable Road Technology Action Plan

Timeline	Activity	Responsibility	Stakeholder
Year 1			
Q 1	Identify Potential Funding Sources	MECDM and MID	MoFT, MDPAC, SICCI
Q 2	Identify Potential Funding Sources (Continued)	MoFT, MDPAC, MID	International Organizations and Aid Agencies
Q3	Develop Proposals and Applications for Funding Opportunities	MID, MoFT	MECDM, MDPAC, NGOs, Academic and Research Institute
Q4	Develop Proposals and Applications for Funding Opportunities (Continued)	MID, MDPAC	International Organizations and Aid Agencies
Year 2			
Q1	Establish Public-Private Partnerships for Funding Sustainable Projects	MID, MoFT	Private Sector Partner

Timeline	Activity	Responsibility	Stakeholder
Q2	Establish Public-Private Partnerships for Funding Sustainable Projects (Continued)	MID, MoFT	Private Sector Partner
Q3	Advocate for Policy Changes to Support Sustainable Funding Initiatives	MECDM, MID	All Relevant Stakeholders
Q4	Advocate for Policy Changes to Support Sustainable Funding Initiatives (Continued)	MECDM, MID	All Relevant Stakeholders

3.2.5 Estimation of resources needed for action and activities

3.2.5.1 Estimation of Capacity Building Needs

Implementing Action 1: **Enhance Sustainability Funding Initiatives** will require significant capacity building across various levels of government, the private sector, NGOs, and academic institutions. Below is an estimation of the capacity-building needs:

1. Government Agencies

- **Training and Development Programs**:
    - **Ministry of Infrastructure Development (MID)**: Training on sustainable infrastructure practices, grant writing, and project management.
    - **Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM)**: Training on climate resilience and environmental impact assessments.
    - **Ministry of Finance and Treasury**: Training on financial management, green bonds, and public-private partnerships.
    - **Ministry of Development Planning and Aid Coordination (MDPAC)**: Training on international aid coordination, policy advocacy, and strategic planning.

2. Private Sector Partners

- **Workshops and Seminars**:
    - Conduct workshops on sustainable construction practices, green technologies, and innovation in infrastructure.
    - Seminars on investment opportunities in sustainable projects and corporate social responsibility.

3.2.5.2 Estimations of costs of actions and activities

Table 23 Estimations of Costs for Action: Enhance Sustainable Funding Initiative

Timeline	Activity	Budget (USD)	Funding Source
Year 1			
Q 1	Identify Potential Funding Sources	50,000	• Government Funding • International Aid and Development Organisation
Q 2	Identify Potential Funding Sources (Continued)	40,000	• Government Funding • International Aid and Development Organisation
Q3	Develop Proposals and Applications for Funding Opportunities	50,000	• Government Funding • International Aid and Development Organisation
Q4	Develop Proposals and Applications for Funding Opportunities (Continued)	80,000	• Government Funding • International Aid and Development Organisation
Year 2			
Q1	Establish Public-Private Partnerships for Funding Sustainable Projects	50,000	• Government Funding • International Aid and Development Organisation • Private Sector Contribution
Q2	Establish Public-Private Partnerships for Funding Sustainable Projects (Continued)	50,000	• Government Funding • International Aid and Development Organisation • Private Sector Contribution
Q3	Advocate for Policy Changes to Support Sustainable Funding Initiatives	80,000	• Government Funding • International Aid and Development Organisation
Q4	Advocate for Policy Changes to Support Sustainable Funding Initiatives (Continued)	80,000	• Government Funding • International Aid and Development Organisation
Total For Action 1		**480,000**	

3.2.6 Management Planning

3.2.6.1 Risks and Contingency Planning

Table 24 Risk and Contingency Plan for Enhance Sustainable Funding Initiatives

Risk Item	Description	Mitigation Plan	Contingency Action
Activity 1: Identify Potential Funding Access			
Cost Risk	Underestimating the cost of researching and identifying funding sources.	• Develop a detailed budget that includes all potential expenses such as labour, travel, and resources. Allocate additional contingency funds to cover unexpected costs.	Reallocate resources from less critical activities if cost overruns occur. Seek additional funding from internal or external sources if necessary.
Scheduling Risk	Delays in identifying and securing diverse funding sources	Set clear timelines and milestones for each task. Regularly monitor progress and adjust schedules as needed.	Prioritize high-potential funding sources if delays occur. Extend deadlines for low-priority tasks to ensure critical deadlines are met.
Performance Risk	Inability to identify sufficient or suitable funding sources.	• Engage experienced professionals with expertise in funding identification. Utilize existing networks and databases to streamline the process.	Expand the search criteria to include more diverse funding opportunities. Partner with external consultants or organizations to enhance the search efforts.
Activity 2: Develop Proposals and Applications for Funding Opportunities			
Cost Risk	• Higher than expected costs for developing high-quality proposals.	• Budget for proposal development including professional writing services, data collection, and technical support.	• Use in-house resources and seek pro bono support from experts to reduce costs. Prioritize the most promising funding opportunities.
Scheduling Risk	• Tight deadlines and time constraints affecting proposal quality and submission.	• Develop a project plan with clear deadlines and assign dedicated team members for proposal development. Regularly review progress.	• Negotiate extensions with funding agencies if possible. Focus on completing high-priority proposals first.
Performance Risk	• Proposals failing to meet the criteria of funding agencies.	• Ensure thorough understanding of funding requirements. Conduct internal reviews and seek feedback from experienced stakeholders before submission.	• Revise and resubmit proposals with improved alignment to funding criteria. Develop a pipeline of proposals to increase the chances of success

Risk Item	Description	Mitigation Plan	Contingency Action
Activity 3: Establish Public-Private Partnerships for Funding Sustainable Projects			
Cost Risk	• Unexpected costs in establishing and maintaining partnerships.	• Conduct a detailed cost analysis for partnership activities. Budget for potential legal and consultancy fees.	• Negotiate cost-sharing arrangements with partners. Tap into reserved contingency funds if necessary.
Scheduling Risk	• Delays in partnership agreements and collaboration setup	• Set realistic timelines and milestones for partnership development. Engage partners early and maintain regular communication.	• Establish interim agreements to initiate collaboration while final details are being negotiated. Adjust timelines for less critical partnership activities.
Performance Risk	• Partnerships failing to deliver the expected outcomes.	• Select partners with proven track records and align goals clearly. Establish performance metrics and regular review meetings.	• Reassess and realign partnership goals if needed. Terminate underperforming partnerships and seek new partners if necessary.
Activity 4: Advocate for Policy Changes to Support Sustainable Funding Initiatives			
Cost Risk	• Advocacy efforts exceeding budgeted costs	• Develop a detailed advocacy budget, including costs for policy analysis, materials, and events. Seek in-kind contributions from stakeholders.	• Scale down advocacy activities and prioritize high-impact actions. Reallocate funds from other activities if necessary.
Scheduling Risk	• Delays in achieving policy changes due to political or bureaucratic hurdles.	• Develop a comprehensive advocacy plan with realistic timelines. Build strong relationships with policymakers and stakeholders early on.	• Extend advocacy timelines and adjust strategies based on feedback and progress. Focus on incremental policy changes as interim steps.
Performance Risk	• Advocacy efforts not leading to desired policy changes.	• Conduct thorough research and build a compelling case for policy changes. Engage influential stakeholders and champions for the cause.	• Reassess and refine advocacy strategies based on feedback. Build broader coalitions to increase influence and support.

3.2.6.2 Next Steps

To achieve a sharpened focus and commit appropriate resources for the implementation of Action 1, the following immediate and critical steps should be undertaken:

1. **Establish a Coordinating Task Force**
   - **Objective**: To oversee and coordinate all activities under Action 1.
   - **Immediate Steps**:
     - Identify key personnel from relevant government ministries, private sector, NGOs, and academic institutions.
     - Form the task force with clear roles and responsibilities.
     - Schedule regular meetings to monitor progress and address challenges.
2. **Develop a Detailed Implementation Plan**
   - **Objective**: To create a roadmap with specific tasks, timelines, and resource requirements.
   - **Immediate Steps**:
     - Break down each activity into detailed tasks and subtasks.
     - Assign responsibilities for each task to appropriate members of the task force.
     - Develop a timeline with milestones and deadlines.
     - Identify and allocate necessary resources (financial, human, technical).
3. **Conduct a Stakeholder Engagement Workshop**
   - **Objective**: To engage all relevant stakeholders, gather input, and build support for the initiative.
   - **Immediate Steps**:
     - Organize a workshop involving government agencies, private sector partners, NGOs, academic institutions, and international organizations.
     - Present the implementation plan and seek feedback.
     - Identify potential collaborators and establish communication channels.
4. **Initiate Activity 1.1: Identify Potential Funding Sources**
   - **Objective**: To secure diverse and stable funding sources for sustainable projects.
   - **Immediate Steps**:
     - Begin researching and compiling a list of government grants, private sector investments, green bonds, and international aid programs.
     - Set up a database to track potential funding sources, including deadlines and eligibility criteria.
     - Engage with financial experts to explore innovative funding mechanisms such as green bonds.
5. **Launch Training and Capacity Building Programs**
   - **Objective**: To equip stakeholders with the necessary skills and knowledge for successful implementation.
   - **Immediate Steps**:
     - Identify training needs for government officials, private sector representatives, and NGO staff.
     - Organize training sessions on grant writing, financial management, sustainable construction practices, and public-private partnerships.
     - Partner with academic institutions for ongoing capacity building and knowledge sharing.
6. **Start Developing Proposals and Applications (Activity 1.2)**
   - **Objective**: To prepare and submit high-quality funding proposals.
   - **Immediate Steps**:

    - Assemble a grant writing team with expertise in proposal development and project management.
    - Begin drafting proposals for identified funding opportunities.
    - Set up a review process to ensure proposals meet the criteria of funding agencies.
    - Prioritize high-potential funding opportunities and ensure timely submission of proposals.
7. **Engage in Preliminary Advocacy Efforts (Activity 1.4)**
    - **Objective**: To start building support for policy changes that facilitate sustainable funding initiatives.
    - **Immediate Steps**:
        - Conduct an initial policy analysis to identify barriers and opportunities.
        - Develop a preliminary advocacy strategy and key messages.
        - Engage with key policymakers and stakeholders to start building relationships and support.
        - Plan for more extensive advocacy efforts based on initial feedback and progress.
8. **Monitor and Adjust the Implementation Plan**
    - **Objective**: To ensure the initiative stays on track and adapts to challenges.
    - **Immediate Steps**:
        - Set up a monitoring and evaluation framework to track progress against milestones and goals.
        - Schedule regular check-ins and progress reports from the task force.
        - Be prepared to adjust the implementation plan based on feedback, new information, and evolving circumstances.

By focusing on these immediate and critical requirements, the Solomon Islands can ensure a sharpened focus and commit the necessary resources to successfully implement Action 1: Enhance Sustainable Funding Initiatives. This approach will lay a solid foundation for sustainable road infrastructure projects aimed at mitigating climate change and promoting environmental sustainability.

3.2.7 TAP Overview Table for Enhance Sustainable Funding Initiatives for Sustainable Road Technology

Table 25 TAP Table for Enhance Sustainable Funding Initiatives for Sustainable Road Technology

TAP overview table	
Sector	TRANSPORTATION SECTOR
Sub-sector	Land Transportation
Technology	Sustainable Road (including Drainage & Landscaping) -
Action	Enhance Sustainable Funding Initiatives
Ambition	The target is to ensure that all new road projects incorporate sustainable design principles by 2030. This includes the use of permeable materials, effective drainage systems, and environmentally friendly landscaping to mitigate flooding and erosion.
Benefits	enhance socio-economic resilience and environmental sustainability by upgrading 15 kilometres of critical urban arteries, addressing traffic congestion and inadequate drainage

Activities to be implemented	**Sources of funding**	**Responsible body and focal point**	**Time frame**	**Risks**	**Success criteria**	**Indicators for Monitoring of Implementation**	**Budget per activity**
Identify Potential Funding Sources	• Government Funding • International Aid and Development Organisation	MECDM and MID	**Y1/ Q 1**	Incomplete or outdated information; difficulty in accessing reliable data	Comprehensive and up-to-date list of relevant grants compiled.	Number of grants identified, frequency of database updates, and verification of data accuracy.	50,000
Identify Potential Funding Sources (Continued)	• Government Funding International Aid and Development Organisation	MoFT, MDPAC, MID	**Y1/ Q 2**	Regulatory hurdles; low investor interest in green bonds	Successful identification of relevant international aid programs and funding opportunities.	Number of international funding sources identified, and successful preliminary engagements.	40,000

Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
Develop Proposals and Applications for Funding Opportunities	• Government Funding International Aid and Development Organisation	MID, MoFT	**Y1/ Q3**	Inability to effectively communicate benefits; poor proposal quality.	Well-aligned and realistic project plans and budgets.	Quality ratings of narratives, feedback from reviewers, and success rate of proposals.	50,000
Develop Proposals and Applications for Funding Opportunities (Continued)	• Government Funding International Aid and Development Organisation	MID, MDPAC	**Y1/ Q4**	Poor communication with funding agencies; missed follow-up opportunities.	Effective follow-up and communication with funding agencies.	Number of follow-ups conducted, feedback from funding agencies, and status updates on applications.	80,000
Establish Public-Private Partnerships for Funding Sustainable Projects	• Government Funding • International Aid and Development Organisation • Private Sector Contribution	MID, MoFT	**Y2/ Q1**	Difficulty in finding interested partners; misalignment of goals.	Well-defined and mutually agreeable partnership agreements.	Number of agreements developed, feedback from partners, and time taken to finalize agreements.	50,000
Establish Public-Private Partnerships for Funding Sustainable Projects (Continued)	• Government Funding • International Aid and Development Organisation • Private Sector Contribution	MID, MoFT	**Y2/ Q2**	Difficulty in coordinating joint proposals; misalignment of interests.	High-quality joint funding proposals	Performance metrics tracked, number of evaluations conducted, and goal achievement rates.	50,000
Advocate for Policy Changes to Support	• Government Funding	MECDM, MID	**Y2/ Q3**	Lack of engagement; resistance from policymakers.	High-quality and impactful advocacy materials.	Number of engagements, policy changes initiated, and	80,000

Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
Sustainable Funding Initiatives	• International Aid and Development Organisation					stakeholder support levels.	
Advocate for Policy Changes to Support Sustainable Funding Initiatives (Continued)	• Government Funding • International Aid and Development Organisation	MECDM, MID	**Y2/ Q4**	Low turnout; ineffective advocacy campaigns.	successful and well-attended meetings/campaigns.	Number of progress reports, strategy adjustments made, and achievement of policy outcomes.	80,000

3.3 Action Plan for Electric Out-board Motor

3.3.1 Introduction

Electric Out-board motors (E-OBM) represent a promising alternative to traditional fossil fuel-powered engines for sea transportation in the Solomon Islands. These motors use electricity stored in batteries to propel boats and small vessels, offering several advantages over conventional combustion engines. E-OBM are typically quieter, emit no exhaust gases, and require less maintenance compared to their gasoline or diesel counterparts. They contribute significantly to reducing local air pollution and noise pollution in marine environments, which is crucial for preserving coastal ecosystems and marine biodiversity.

Electric Out-board motors have been selected for further analysis in the Solomon Islands for several compelling reasons:

i. Environmental Benefits: E-OBM contribute to reducing carbon emissions and local air pollution, aligning with global and national goals to mitigate climate change and improve air quality. In island nations like the Solomon Islands, where marine ecosystems are particularly vulnerable, reducing emissions from marine transport is critical for environmental conservation.

ii. Cost Effectiveness: While initial costs of electric Out-board motors can be higher than those of conventional engines, they offer long-term cost savings due to lower fuel and maintenance expenses. This cost-effectiveness is increasingly appealing as technological advancements continue to improve battery efficiency and decrease manufacturing costs.

iii. Energy Security: The Solomon Islands heavily relies on imported fossil fuels for energy, including transportation. Shifting towards electric propulsion reduces dependency on imported fuels, enhancing energy security and resilience against global fuel price fluctuations.

iv. Social Benefits: E-OBM operate more quietly than traditional engines, reducing noise pollution in coastal communities and benefiting marine wildlife and recreational activities. This quieter operation also improves the comfort of passengers and crew on boats, enhancing the overall boating experience.

v. Technological Advancement: Investing in electric Out-board motors promotes technological innovation and local capacity building in renewable energy technologies. It supports the growth of a sustainable transportation sector that aligns with global trends towards decarbonization and clean energy transitions.

vi. Policy Support: The Solomon Islands government has shown commitment to sustainable development and climate action through various policies and initiatives. Promoting electric Out-board motors aligns with these policies, fostering a supportive regulatory environment for their adoption and integration into national transport strategies.

3.3.2 Ambition for the TAP E-OBM

The plan to introduce Electric Out-board Motors (E-OBM) in the Solomon Islands aims to bring significant socio-economic and environmental benefits, especially in the marine transport sector. The Technology Action Plan (TAP) sets a goal to replace 50% of traditional Out-board

motors with electric ones by 2030. This shift will result in a significant reduction in fuel consumption and greenhouse gas emissions from sea transport. The initial phase involves providing 10 electric Out-board motors with a 40 HP capacity in the Central Province, with plans to gradually expand deployment to other provinces.

Additionally, the TAP includes the installation of two electric pole chargers in Honiara and the improvement of infrastructure to support the operation and maintenance of E-OBM, ensuring continuous availability and reliability. This initiative showcases the feasibility of transitioning from conventional fossil fuel engines to electric propulsion systems, leading to a decrease in carbon emissions and local air pollution while also enhancing energy security by reducing reliance on imported fuels. In line with national sustainable development and climate resilience goals, this endeavour promotes economic opportunities through local capacity building and job creation in the renewable energy and maritime sectors, with the aim of fostering a sustainable and resilient transportation network for the benefit of both communities and the environment.

3.3.3 Actions and Activities Selected for Inclusion in the TAP

3.3.3.1 Summary of barriers and measures to overcome barriers

Deploying Electric Out-board Motors (E-OBM) in the Solomon Islands faces significant economic and financial barriers, primarily due to high initial costs and prices compared to conventional Out-board motors. These challenges stem from limited technology availability and the high prices associated with advanced battery components. Addressing these barriers requires strategic investments in technology development and raw materials to stabilize supply chains and reduce manufacturing costs over time. Additionally, implementing financial incentives and subsidies can mitigate the higher upfront expenses of E-OBM, making them more accessible and attractive to consumers despite their initial price premium.

Non-financial barriers include policy, legal, and regulatory challenges, such as the need to strengthen the renewable energy ecosystem to support reliable electricity supply for charging E-OBM. Effective tax and subsidy policies targeting distributors can also incentivize adoption. Infrastructure limitations, including electricity shortages and a lack of maintenance and vendor support, pose further obstacles that must be overcome through expanded charging networks, training programs for technicians, and initiatives to enhance consumer awareness and confidence in E-OBM technology. By addressing these multifaceted barriers comprehensively, the Solomon Islands can pave the way for widespread adoption of E-OBM, advancing towards a cleaner, more sustainable marine transport sector aligned with national development goals.

Table 26 Overview of Barriers and Measures to Overcome Such Barriers for E-OBM

Categories	Identified Barrier	Identified Measure
Economic and financial barriers	• High initial cost • High capital cost	• Government subsidies • Tax exemptions • Operator and customer incentives
Policy and Regulation	• Absence of regulation	• Regulatory development
Infrastructure	• Electricity supply shortage • Maintenance shop shortage • Vendor limit:	• Renewable electricity sources • Maintenance workshops and vendors
Technology	• Long charging duration • Battery capacity and lifespan • Inadequate charging facilities	• Extra batteries at charging stations • Efficient charging ports.
Customer Behavior	• Customer awareness: • Range anxiety	• Awareness campaigns • Educate on pros and cons
Technical and Human Skill	• Inadequate technical expertise • Lack of knowledge about quality equipment • Insufficient training on electric outboard motor maintenance • All parts for electric outboard motors are imported.	• Technical workshops for E-OBM Maintenance • R&D collaboration

3.3.3.2 Actions selected for inclusion in the TAP

The actions delineated in **Table 27** have been specifically chosen based on the details provided in **Table 26**, with particular emphasis on the identified measure that is slated to be incorporated as an integral part of the TAP for E-OBM.

Table 27 List of Actions for E-OBM

Action	Description
Financial Initiative for Sustainable Economic Practices	**Description:** This initiative provides financial incentives, subsidies, or funding opportunities to businesses and industries adopting sustainable economic practices. These practices may include investments in renewable energy, eco-friendly technologies, and sustainable production methods. **Purpose:** To stimulate the adoption of sustainable practices in business operations, promoting environmental stewardship and long-term economic resilience.

Action	Description
Enhancing Regulatory for E-OBM Adoption	**Description:** This action focuses on improving and implementing regulations that facilitate the adoption of Electric Outboard Motors (E-OBMs) in marine and boating industries. It includes developing supportive policies, standards, and incentives to accelerate the transition from traditional combustion engines to cleaner electric alternatives. **Purpose:** To reduce marine pollution, carbon emissions, and noise pollution associated with traditional boat engines, promoting environmental sustainability in water-based transportation.
Maintenance Workshops and Vendor Networks	**Description:** This action involves establishing and supporting maintenance shops and networks of vendors that specialize in eco-friendly maintenance practices and sustainable products. It aims to enhance access to reliable maintenance services and sustainable materials. **Purpose:** To promote adopting sustainable maintenance practices across various sectors, improving operational efficiency while minimizing environmental impact.
Optimized Charging Infrastructure: Enhanced Efficiency Ports	**Description:** This initiative focuses on upgrading and optimizing charging infrastructure at ports to support electric vehicles (EVs) and vessels. It includes installing efficient charging stations, integrating renewable energy sources, and improving grid connectivity to enhance charging efficiency. **Purpose:** To facilitate the widespread adoption of electric transportation in maritime and port operations, reducing air pollution and dependence on fossil fuels.
Green Wave E-OBM Awareness Drive	**Description:** This action aims to raise awareness and promote the benefits of Electric Outboard Motors (E-OBMs) among stakeholders in the boating and marine industries. It includes educational campaigns, demonstrations, and outreach activities to highlight the advantages of cleaner and quieter propulsion technologies. **Purpose:** To increase demand for E-OBMs, encourage their adoption in boating communities, and support sustainable practices in marine transportation.
Innovative E-OBM Maintenance Training and Research Synergy	**Description:** This action involves developing innovative training programs and fostering research collaborations focused on maintaining and improving Electric Outboard Motors (E-OBMs). It includes conducting research projects, organizing training workshops, and promoting partnerships between industry experts and researchers. **Purpose:** To enhance the performance, reliability, and sustainability of E-OBMs through advanced maintenance techniques and research-driven innovations, facilitating their broader adoption and environmental benefits.

3.3.3.3 Activities identified for implementation of selected actions

The list below outlines the specific activities related to each action aimed at promoting electric outboard Motors

Action 1: Financial Initiative for Sustainable Economic Practices

Activity 1.1 Offering direct grants to businesses for sustainable projects.

Activity 1.2 Providing tax incentives for eco-friendly investments.

Activity 1.3 Issuing low-interest loans for renewable energy installations.

Activity 1.4 Subsidizing costs for adopting sustainable technologies.

Activity 1.5 Establishing a sustainability fund for long-term support.

Action 2: Enhancing Regulatory for E-OBM Adoption

Activity 2.1 Developing policies to mandate E-OBM adoption.

Activity 2.2 Conducting stakeholder consultations for policy input.

Activity 2.3 Drafting and implementing E-OBM supportive regulations.

Activity 2.4 Monitoring and enforcing compliance with new regulations.

Activity 2.5 Offering incentives for early adopters of E-OBM technologies.

Action 3: Maintenance Workshops and Vendor Networks

Activity 3.1 Establishing Maintenance Shops

Activity 3.2 Creating a network of vendors specializing in green technologies.

Activity 3.3 Providing training on energy-efficient maintenance techniques.

Activity 3.4 Facilitating collaboration between vendors and infrastructure managers.

Activity 3.5 Developing resources and guides for sustainable maintenance.

Action 4: Optimized Charging Infrastructure: Enhanced Efficiency Ports

Activity 4.1 Conducting feasibility studies for charging infrastructure.

Activity 4.2 Designing and installing efficient charging stations at ports.

Activity 4.3 Integrating charging infrastructure with local grids.

Activity 4.4 Offering incentives for ports to adopt electric charging facilities.

Activity 4.5 Monitoring and optimizing the performance of charging stations.

Action 5: Green Wave E-OBM Awareness Drive

Activity 5.1 Launching marketing campaigns to promote E-OBMs.

Activity 5.2 Hosting educational workshops and demonstrations.

Activity 5.3 Collaborating with media to raise awareness about E-OBMs.

Activity 5.4 Distributing informational materials on sustainable boating.

Activity 5.5 Engaging with boating communities through events and outreach.

Action 6: Innovative E-OBM Maintenance Training and Research Synergy

Action 6.1 Develop specialized training programs for E-OBM maintenance.

Action 6.2 Conducting research on E-OBM efficiency improvements.

Action 6.3 Organizing hands-on workshops for E-OBM technicians.

Action 6.4 Fostering collaborations between industry experts and researchers.

Action 6.5 Publishing findings and best practices for E-OBM maintenance.

3.3.3.4 Actions to be Implemented as Project Ideas

The selected project idea has been meticulously chosen based on the priority ranking set by the Transportation sector to address climate change mitigation efforts. This decision has been elaborately outlined in **Annexes 5,, 6, and 9,** offering detailed insight into the selection process.

A. Selected Action:

Financial Initiative for Sustainable Economic Practice

B. Project Overview:

This initiative provides financial incentives, subsidies, or funding opportunities to businesses and industries adopting sustainable economic practices. These practices may include investments in renewable energy, eco-friendly technologies, and sustainable production methods

C. Activities to Implement:

Activity 1.1: Offering Direct Grants to Businesses for Sustainable Projects

Task 1.1.1 Identify eligible businesses by defining criteria for businesses eligible to receive grants and develop an application process and guidelines.

Task 1.1.2 Grant application and review: Create a comprehensive grant application form, establish a review committee to evaluate applications, and set up a system for tracking applications and decisions.

Task 1.1.3 Promotion and outreach by developing marketing materials to promote the grant program and conducting outreach to inform businesses about the available grants.

Task 1.1.4 Grant award and distribution, including notifying successful applicants, disbursing funds, and providing guidance on using and reporting the grant money.

Task 1.1.5 Monitoring and evaluation by implementing a system to monitor the progress and impact of funded projects and conduct periodic evaluations to assess the effectiveness of the grants.

Activity 1.2: Providing Tax Incentives for Eco-Friendly Investments

Task 1.2.1 Legislation and policy development by working with policymakers to draft legislation for tax incentives and define the types of eco-friendly investments eligible for tax breaks.

Task 1.2.2 Public awareness campaign by creating informational materials explaining the tax incentives and launching a campaign to educate businesses and individuals about the benefits and application process.

Task 1.2.3 Implementation and administration: Establish administrative processes to handle tax incentive applications and develop a system for verifying and approving eligible investments.

Task 1.2.4 Compliance and verification by establishing protocols to ensure compliance with tax incentive requirements and conducting audits and verifications of claimed incentives.

Task 1.2.5 Impact assessment by tracking the uptake of tax incentives, assessing their impact on eco-friendly investments, and reporting findings and recommending improvements to the program.

Activity 1.3: Issuing Low-Interest Loans for Renewable Energy Installations

Task 1.3.1 Partner with financial institutions: Identify and partner with banks and financial institutions to offer low-interest loans and negotiate terms and conditions favourable for renewable energy projects.

Task 1.3.2 Loan program development: develop criteria for loan eligibility and create application and approval processes.

Task 1.3.3 Promotion and outreach: promote the availability of low-interest loans through marketing and outreach and provide information sessions and workshops to educate potential borrowers.

Task 1.3.4 Loan disbursement: Process loan applications, disburse funds to approved projects, and offer support and guidance to borrowers throughout the loan term.

Task 1.3.5 Monitoring and repayment: monitor the progress of funded projects and ensure proper use of funds, track loan repayments and manage defaults if they occur.

Activity 1.4: Subsidizing Costs for Adopting Sustainable Technologies

Task 1.4.1 Identify subsidy targets, determine which sustainable technologies will be eligible for subsidies, and establish criteria and guidelines for subsidy applications.

Task 1.4.2 Application and approval process: develop an easy-to-navigate subsidy application process. set up a review committee to evaluate and approve applications.

Task 1.4.3 Marketing and outreach: create promotional materials to inform businesses and individuals about available subsidies. conduct outreach campaigns to increase awareness and participation.

Task 1.4.4 Subsidy distribution: disburse subsidy funds to approved applicants. provide instructions on proper fund utilization and reporting.

Task 1.4.5 Impact monitoring: implement a system to track the adoption of sustainable technologies. evaluate the effectiveness and impact of the subsidies on sustainability goals.

Activity 1.5: Establishing a Sustainability Fund for Long-Term Support

Task 1.5.1 Fund development and structure: Define the structure and purpose of the sustainability fund and develop guidelines and criteria for fund allocation.

Task 1.5.2 Fundraising and Capitalization: Identify potential donors and funding sources. Launch fundraising campaigns to capitalize on the fund.

Task 1.5.3 Governance and management: Establish a governance framework for fund management and appoint a board or committee to oversee fund operations.

Task 1.5.4 Application and allocation process: create a transparent application process for fund access. set up a system for reviewing and approving funding requests.

Task 1.5.5 Long-term monitoring and reporting: Monitor the fund's use and impact over time and provide regular reports on fund performance and sustainability outcomes.

3.3.4 Stakeholders and timeline for implementation of TAP

3.2.4.1 Overview of Stakeholders for the Implementation of the TAP

Stakeholders are crucial in successfully implementing the **Financial Initiative for Sustainable Economic Practices**, which focuses on electric outboard motors (E-OBMs) in the Solomon Islands. Below is an overview of the key stakeholders involved:

1. **Ministries and Government Agencies:**
    - **Ministry of Finance and Treasury**: Provide funding, oversee grant distribution, and ensure compliance with financial regulations**.**
    - **Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM):** Develop policies for sustainable projects, ensure environmental compliance, and monitor and evaluate project impact.
    - **Inland Revenue Division (IRD):** Implement and manage the tax incentive program and ensure compliance and verification of eligible investments.
    - **Ministry of Commerce, Industry, Labour and Immigration (MCILI)**: Develop and enact legislation to establish tax incentives and review and adjust policies as needed.
    - **Ministry of Mines, Energy and Rural Electrification (MME&RE)**: Provide funding for subsidies, develop and manage the subsidy program, ensure compliance.
2. **Provincial and Local Government:** Support promoting and implementing renewable energy projects within their jurisdictions**.**
3. **Private Sector**
    - **Solomon Islands Chamber of Commerce and Industry (SICCI)**: Assist with outreach to businesses and provide support and guidance for grant applications.
    - **Local Business:** Apply for grants, implement sustainable projects, report on project progress and outcomes. Make eco-friendly investments, apply for tax incentives, comply with reporting requirements.
    - **Local bank and Financial Institution** Provide low-interest loans, manage application and approval processes, disburse funds.
4. **Non-Governmental Organizations (NGOs)**
    - **World Wildlife Fund (WWF) Solomon Islands, Live & Learn Environmental Education and Solomon Islands Development Trust (SIDT):** Advocates for environmental conservation and sustainable development; provides education and promotes sustainable practices; promotes sustainable development and community engagement.
5. **Academic and Research Institutions**
    - **University of the South Pacific (USP) Solomon Islands Campus and Solomon Islands National University (SINU):** Conduct research on the effectiveness of subsidized technologies, provide data for impact assessments
6. **International Organizations and Aid Agencies**

- **World Bank, ADB, DFAT, MFAT:** Provides project financial and technical support.

3.2.5.2 Scheduling and sequencing of specific activities

Financial Initiative for Sustainable Economic Practices focusing on Electric Out-board Motors (E-OBMs) in the Solomon Islands requires careful scheduling and sequencing of activities over four years.

Table28 Scheduling and Sequencing Activities for Financial Initiative for Sustainable Economic Practices Technology Action Plan

Time Frame	Activity	Responsibility	Stakeholder
Year 1			
Q1	Offering Direct Grants to Businesses for Sustainable Projects (Grand application & Review)	MCILI	SICCI, Local business, MECDM
Q2	Offering Direct Grants to Businesses for Sustainable Projects (Promotion, Grand Award & distribution)	• MECDM • MCA	• NGOs • Media organisation • MoFT
Q3	Offering Direct Grants to Businesses for Sustainable Projects (M&E)	• MECDM	• NGOs • MoFT
Q4	Providing Tax Incentives for Eco-Friendly Investments (Policy Development)	MoFT	IRD, MID, Local Business, Tax Expert
Year 2			
Q1	Providing Tax Incentives for Eco-Friendly Investments (Public Awareness & Implementation)	• MECDM MCA	• NGOs • Media organisation • MoFT
Q2	Providing Tax Incentives for Eco-Friendly Investments (Impact Assessment)	• MoFT	• IRD, MID, Local Business
Q3	Issuing Low-Interest Loans for Renewable Energy Installations (Loan program)	• CBSI	• Local Bank • MoFT • MID
Q4	Issuing Low-Interest Loans for Renewable Energy Installations (Promotion & outreach)	• MECDM • MCA	• Community • MoFT • Financial Institution
Year 3			
Q1	Issuing Low-Interest Loans for Renewable Energy Installations (Monitoring)	• CBSI	• Local Bank • MoFT • MID
Q2	Subsidizing Costs for Adopting Sustainable Technologies (Application and Approval Process)	• MCILI	• Local Business • MECDM
Q3	• Subsidizing Costs for Adopting Sustainable Technologies (Outreach and Distribution	• MECDM • MCA	• Community • MoFT • Financial Institution

Time Frame	Activity	Responsibility	Stakeholder
Q4	• Subsidizing Costs for Adopting Sustainable Technologies (Impact Monitoring	• MECDM	• NGOs • Local Business • Community • MoFT
Year 4			
Q1	• Establishing a Sustainability Fund for Long-Term Support (Fund development and structure)	• MoFT	• International donor agencies • MoFAT • NGOs
Q2	• Establishing a Sustainability Fund for Long-Term Support (Governance and management)	• MoFT	• International donor agencies • Related Government Ministry • University
Q3	• Establishing a Sustainability Fund for Long-Term Support (Application and allocation process)	• MoFT	• NGOs • International donor agencies • Related Government Ministry
Q4	• Establishing a Sustainability Fund for Long-Term Support (Monitoring)	• MoFT	• NGOs • International donor agencies • Related Government Ministry

3.3.5 Estimation of resources needed for action and activities

3.3.5.1 Estimation of Capacity Building Needs

To successfully implement the Financial Initiative for Sustainable Economic Practices for Electric Outboard Motors and Sea Transport Climate Change Mitigation, it is crucial to enhance the capacity of various stakeholders. Here is an outline of the capacity building required:

1. **Government Agency:**
    - **MCILI:** Training on grant application processes, evaluation criteria, and management of grant funds.
    - **MCA: T**raining in communication strategies, development of promotional materials, and effective outreach methods
    - **MECDM :** Workshops on grant writing, project proposal development, and understanding eligibility criteria. Training in M&E frameworks, data collection and analysis, and impact assessment.

- **MoFT:** Training in policy analysis, legislative drafting, and economic modeling for tax incentives, Training in fund development, financial structuring, and donor engagement. Training in governance frameworks, management practices, and accountability measures

2. **Private Sector and NGOs:**
    - **SICCI, Local Business and NGOs :** Workshops on grant writing, project proposal development, and understanding eligibility criteria.
    - **SICCI, Local Business and NGOs :** Workshops on tax policy, eco-friendly investment benefits, and compliance requirements.
    - **Local Business, Community :** Workshops on sustainable technology benefits, application procedures, and compliance requirements

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3.3.5.2 Estimations of costs of actions and activities

Table 29 Estimations of costs of actions and activities for Financial Initiatives for Sustainable Economic Practice for E-OBM

Time Frame	Activity	Cost in USD	Funding Source
Year 1			
Q1	Offering Direct Grants to Businesses for Sustainable Projects (Grand application & Review)	35,000	UNDP, World Bank and other international Donor
Q2	Offering Direct Grants to Businesses for Sustainable Projects (Promotion, Grand Award & distribution)	20,000	JICA, USAID and International Donor
Q3	Offering Direct Grants to Businesses for Sustainable Projects (M&E)	25,000	Government budget, ADB and international donor
Q4	Providing Tax Incentives for Eco-Friendly Investments (Policy Development)	55,000	GEF, USAID and other international Donor
Year 2			
Q1	Providing Tax Incentives for Eco-Friendly Investments (Public Awareness & Implementation)	20,000	Government budget and international donor
Q2	Providing Tax Incentives for Eco-Friendly Investments (Impact Assessment)	25,000	World Bank, ADB and international donor
Q3	Issuing Low-Interest Loans for Renewable Energy Installations (Loan program)	60,000	World Bank, ADB and international donor
Q4	Issuing Low-Interest Loans for Renewable Energy Installations (Promotion & outreach)	20,000	Government budget and international donor
Year 3			
Q1	Issuing Low-Interest Loans for Renewable Energy Installations (Monitoring)	30,000	international donor
Q2	Subsidizing Costs for Adopting Sustainable Technologies (Application and Approval Process)	25,000	ADB and international donor
Q3	• Subsidizing Costs for Adopting Sustainable Technologies (Outreach and Distribution	20,000	GEF, WWF, Government Budget

Time Frame	Activity	Cost in USD	Funding Source
Q4	• Subsidizing Costs for Adopting Sustainable Technologies (Impact Monitoring	25,000	World Bank and International Donor
Year 4			
Q1	• Establishing a Sustainability Fund for Long-Term Support (Fund development and structure)	35,000	World Bank and International Donor
Q2	• Establishing a Sustainability Fund for Long-Term Support (Governance and management)	40,000	AUSAID and International Donor
Q3	• Establishing a Sustainability Fund for Long-Term Support (Application and allocation process)	25,000	World Bank and International Donor
Q4	• Establishing a Sustainability Fund for Long-Term Support (Monitoring)	25,000	ADB, AUSAID and International Donor
	Total	**485,000**	

3.3.6 Management Planning

3.3.6.1 Risks and Contingency Planning

Table 30 Risk and Contingency Plan Sustainable Marine Transport Initiative (SMTI) for Transportation Sector Technology Action Plan

Risk Item	Description	Mitigation Plan	Contingency Action
Activity 1: Offering Direct Grants to Businesses for Sustainable Projects			
Cost Risk	Higher-than-expected costs for criteria development, application process setup, marketing materials, and M&E systems	• Conduct thorough initial cost estimation, regularly review budget vs. actual expenses, and secure contingency funds.	Seek additional funding or reallocate budget from other activities if necessary.
Scheduling Risk	Delays in developing criteria, reviewing applications, conducting outreach, and setting up M&E systems.	Develop a detailed project timeline with clear milestones and responsibilities.	Adjust timelines and reassign resources to ensure critical deadlines are met.
Performance Risk	Criteria may not identify the best candidates, inconsistent application evaluations, and ineffective outreach.	• Engage experts for criteria development, provide training for review committee, and use targeted outreach strategies.	Revise criteria, conduct additional reviews, and adjust outreach strategies based on feedback
Activity 2: Providing Tax Incentives for Eco-Friendly Investments			
Cost Risk	• Unexpected costs in policy development, public awareness campaigns, administrative processes, and compliance protocols.	• Include contingency funds in the budget and regularly review financial reports.	• Reallocate funds or seek additional funding if needed.
Scheduling Risk	• Delays in policy drafting, launching awareness campaigns, implementing administrative processes, and compliance checks.	• Establish a detailed project plan with timelines and responsible parties.	• Adjust schedules and reassign resources to critical tasks.
Performance Risk	• Ineffective policies, low public awareness, administrative bottlenecks, and compliance issues.	• Engage stakeholders in policy development, use effective communication strategies, streamline processes, and establish robust compliance protocols.	• Revise policies, enhance communication efforts, improve processes, and conduct additional compliance checks.
Action 3: Issuing Low-Interest Loans for Renewable Energy Installations			

Risk Item	Description	Mitigation Plan	Contingency Action
Cost Risk	• Higher costs in partnerships, loan program development, marketing, and monitoring.	• Conduct thorough cost analysis and negotiate favorable terms with partners.	• Adjust budget allocations or seek additional funding.
Scheduling Risk	• Delays in establishing partnerships, developing loan programs, conducting outreach, and monitoring loans.	• Develop a comprehensive timeline with clear milestones	• Reallocate resources to address delays and maintain overall project timeline.
Performance Risk	Ineffective partnerships, low loan uptake, and repayment issues.	• Carefully select partners, use targeted outreach strategies, and provide borrower support.	Reevaluate partnerships, enhance marketing efforts, and offer additional borrower assistance.
Activity 4: Subsidizing Costs for Adopting Sustainable Technologies			
Cost Risk	• Higher costs in subsidy target identification, application processes, marketing, and impact monitoring.	• Include a buffer in the budget and conduct regular financial reviews	• Adjust budget allocations or seek additional funding if necessary.
Scheduling Risk	• Delays in identifying targets, processing applications, conducting outreach, and monitoring impact.	• Develop a detailed project timeline with specific milestones.	• Reassign resources to critical tasks to address delays.
Performance Risk	• Ineffective target identification, low participation, and insufficient impact.	• Engage stakeholders in target identification, use effective outreach strategies, and establish robust monitoring systems.	• Revise targets, enhance outreach efforts, and conduct additional impact evaluations.
Activity 5: Establishing a Sustainability Fund for Long-Term Support			
Cost Risk	• Higher costs in fund development, fundraising, governance, and monitoring.	• Conduct detailed cost analysis and include contingency funds in the budget.	• Adjust budget allocations or seek additional funding.
Scheduling Risk	• Delays in developing the fund, launching fundraising campaigns, establishing governance, and monitoring..	• Develop a comprehensive timeline with clear milestones and responsibilities.	• Reallocate resources to address delays and maintain overall project timeline.
Performance Risk	• Insufficient fundraising, poor governance, and ineffective monitoring.	• Engage experienced fundraisers, establish a strong governance framework, and implement robust monitoring systems.	• Enhance fundraising efforts, strengthen governance, and conduct additional monitoring and evaluations.

3.3.6.2 Next Steps

To achieve sustainable economic practices for electric outboard motors and sea transport climate change mitigation, follow these steps to identify and address immediate and critical requirements:

1. **Assessment and Planning**
   - **A. Stakeholder Engagement**
     - **Identify Key Stakeholders:** Engage with relevant ministries, organizations, and private sector entities in the Solomon Islands.
       - **Key Stakeholders:** Ministry of Environment, Climate Change, Disaster Management and Meteorology; Ministry of Finance and Treasury; Ministry of Infrastructure Development; Solomon Islands Ports Authority; and local NGOs.
     - **Hold Consultative Meetings:** Conduct meetings to understand stakeholder needs and gather input on priorities.
   - **B. Baseline Assessment**
     - **Conduct a Baseline Study:** Assess the current status of sea transport, usage of outboard motors, and environmental impacts.
     - **Data Collection:** Gather data on fuel usage, emissions, economic activities related to sea transport, and existing infrastructure.

2. **Policy and Regulatory Framework**
   - **A. Develop Policies**
     - **Draft Policies for Electric Outboard Motors:** Develop policies that incentivize the adoption of electric outboard motors.
     - **Regulations for Emission Standards:** Establish emission standards for sea transport to reduce environmental impact.
   - **B. Collaborate with Policymakers**
     - **Engage with Policymakers:** Work with the Ministry of Environment and other relevant bodies to draft and implement supportive legislation.
     - **Public Consultation:** Involve the public in the policy-making process to ensure broad support and awareness.

3. **Financial Incentives and Funding**
   - **A. Funding Requirements**
     - **Estimate Costs:** Identify the costs associated with adopting electric outboard motors and implementing sustainable practices.
     - **Cost Categories:** Equipment purchase, infrastructure development, training programs, and public awareness campaigns.
   - **B. Identify Funding Sources**
     - **International Funding:** Seek support from international organizations (e.g., UNDP, World Bank, GEF).
     - **Government Budget:** Allocate national funds for sustainable sea transport initiatives.
     - **Private Sector Investment:** Encourage investments from private companies in the renewable energy sector.

4. **Capacity Building and Training**
   A. **Training Programs**
      - **Technical Training:** Provide training for technicians and operators on using and maintaining electric outboard motors.
      - **Awareness Programs:** Educate stakeholders about electric outboard motors' benefits and operational aspects.
   B. **Institutional Capacity Building**
      - **Strengthen Institutions:** Enhance the capacity of government bodies to manage and monitor sustainable sea transport initiatives.
      - **Develop Partnerships:** Partner with educational institutions to incorporate relevant training modules into their curricula.

5. **Implementation of Pilot Projects**
   A. **Select Pilot Sites**
      - **Identify Suitable Locations:** Based on transportation needs and environmental impact, choose pilot sites for implementing electric outboard motors.
      - **Pilot Project Planning:** Develop detailed plans for pilot projects, including timelines, budgets, and expected outcomes.
   B. **Monitor and Evaluate Pilot Projects**
      - **Track Progress:** Monitor pilot project implementation and collect performance and impact data.
      - **Evaluate Outcomes:** Assess the success of pilot projects and identify lessons learned for scaling up.

6. **Public Awareness and Outreach**
   A. **Develop Outreach Campaigns**
      - **Information Dissemination:** Create informational materials explaining the benefits of electric outboard motors and sustainable sea transport.
      - **Engage Media:** Use various media channels to reach a wide audience.
   B. **Community Involvement**
      - **Community Workshops:** Conduct workshops to inform and involve local communities in the initiatives.
      - **Feedback Mechanisms:** Establish channels for receiving and addressing community feedback.

7. **Monitoring and Evaluation**
   A. **Continuous Monitoring**
      - **Establish Monitoring Systems:** Develop systems to continuously monitor the progress of sustainable sea transport initiatives.
      - **Data Analysis:** Regularly analyze data to track performance and identify areas for improvement.
   B. **Impact Assessment**
      - **Conduct Periodic Evaluations:** Assess the initiatives' environmental, economic, and social impacts.
      - **Report Findings:** Share findings with stakeholders and use the insights to refine and improve strategies.

8. **Scaling Up and Sustainability**
   A. **Develop Scale-Up Plans**
      - **Expand Successful Pilots:** Plan to scale successful initiatives to a broader region based on pilot project results.
      - **Secure Long-Term Funding:** Ensure sustainable financing through government budgets, international support, and private sector investments.
   B. **Institutionalize Practices**
      - **Incorporate into Policy:** Integrate successful practices into national policies and regulations.
      - **Ensure Long-Term Commitment:** Foster long-term commitment from stakeholders for sustained impact.

Summary

By following these steps, the Solomon Islands can achieve a sharpened focus on sustainable economic practices for electric outboard motors and sea transport climate change mitigation. This approach will help allocate appropriate resources, ensure stakeholder engagement, and achieve significant environmental and economic benefits.

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3.3.7 TAP Overview Table for Financial Initiative for Sustainable Economic Practices for Electric Outboard Motors

Table 31 TAP Overview Table for Enhance Sustainable Funding Initiatives for Sustainable Road Technology

TAP overview table	
Sector	TRANSPORTATION SECTOR
Sub-sector	Marine Transportation
Technology	Electric Out-Board Motor (OBM) -
Action	Financial Initiative for Sustainable Economic Practices
Ambition	transition 50% of traditional outboard motors to Electric Out-board Motors (E-OBMs) by 2030 in the Solomon Islands, significantly reducing carbon emissions and fostering sustainable economic growth.
Benefits	The reduction of fuel consumption and greenhouse gas emissions is achieved through the widespread adoption of electric out-board motors (E-OBMs) in the Solomon Islands' marine transport sector.

Activities to be implemented	**Sources of funding**	**Responsible body and focal point**	**Time frame**	**Risks**	**Success criteria**	**Indicators for Monitoring of Implementation**	**Budget per activity**
Offering Direct Grants to Businesses for Sustainable Projects (Grand application & Review)	UNDP, World Bank and other international Donor	MCILI	**Y1/Q1**	Incomplete or non-compliant grant applications Delays in processing applications	All applications are reviewed within the stipulated timeframe	Number of successful applications versus total applications reviewed	35,000
Offering Direct Grants to Businesses for Sustainable Projects (Promotion, Grand Award & distribution)	JICA, USAID and International Donor	MECDM MCA	**Y1/Q2**	Insufficient promotion leading to low application rates	Effective promotion resulting in a high number of applications	Percentage of grants distributed as planned	20,000
Offering Direct Grants to Businesses for Sustainable Projects (M&E)	Government budget, ADB and international donor	MECDM	**Y1/Q3**	Inadequate monitoring leading to misuse of funds Lack of clear metrics for evaluation	Comprehensive monitoring reports	Frequency and quality of monitoring reports	25,000
Providing Tax Incentives for Eco-Friendly Investments (Policy Development)	GEF, USAID and other	MoFT	**Y1/Q4**	Ineffective policy framework	Well-defined and actionable policy	Number of policy drafts reviewed and approved	55,000

Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
	international Donor						
Providing Tax Incentives for Eco-Friendly Investments (Public Awareness & Implementation)	Government budget and international donor	MECDM MCA	**Y2/Q1**	Resistance from stakeholders	Broad stakeholder support and consultation	Stakeholder feedback and engagement levels	20,000
Providing Tax Incentives for Eco-Friendly Investments (Impact Assessment)	World Bank, ADB and international donor	MoFT	**Y2/Q2**	Policy not aligning with actual needs	Alignment with environmental goals	Percentage of policy objectives met	25,000
Issuing Low-Interest Loans for Renewable Energy Installations (Loan program)	World Bank, ADB and international donor	CBSI	**Y2/Q3**	Loan default or non-repayment Administrative challenges in loan processing	High loan approval and repayment rates Efficient loan processing and administration	Loan default rate Time taken for loan processing	60,000
Issuing Low-Interest Loans for Renewable Energy Installations (Promotion & outreach)	Government budget and international donor	MECDM MCA	**Y2/Q4**	Ineffective promotion leading to low loan applications	Effective promotion resulting in a high number of applications	Number of promotional activities conducted	20,000
Issuing Low-Interest Loans for Renewable Energy Installations (Monitoring)	international donor	CBSI	**Y3/Q1**	Inadequate monitoring of loan utilization	Effective monitoring of loan usage and outcomes	Frequency and quality of monitoring reports	30,000
Subsidizing Costs for Adopting Sustainable Technologies (Application and Approval Process)	ADB and international donor	MCILI	**Y3/Q2**	Incomplete or non-compliant applications	High percentage of compliant applications	Number of compliant applications	25,000
Subsidizing Costs for Adopting Sustainable Technologies (Outreach and Distribution	GEF, WWF, Government Budget	MECDM MCA	**Y3/Q3**	Delays or errors in distributing subsidies	Timely and accurate distribution of subsidie	Time taken for subsidy distribution	20,000
Subsidizing Costs for Adopting Sustainable Technologies (Impact Monitoring	World Bank and International Donor	MECDM	**Y3/Q4**	Difficulty in measuring the impact of subsidies	Comprehensive and accurate impact assessments	Measurable improvements in technology adoption	25,000

Activities to be implemented	Sources of funding	Responsible body and focal point	Time frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget per activity
Establishing a Sustainability Fund for Long-Term Support (Fund development and structure)	World Bank and International Donor	MoFT	**Y4/Q1**	Ineffective fund structure or management	Well-structured and adequately capitalized fund	Amount of capital raised	35,000
Establishing a Sustainability Fund for Long-Term Support (Governance and management)	AUSAID and International Donor	MoFT	**Y4/Q2**	Lack of transparency and accountability	Regular audits and accountability measures	Transparency in fund management	40,000
Establishing a Sustainability Fund for Long-Term Support (Application and allocation process)	World Bank and International Donor	MoFT	**Y4/Q3**	Lack of clear criteria for allocation	Clear and transparent allocation criteria	Satisfaction of fund recipients	25,000
Establishing a Sustainability Fund for Long-Term Support (Monitoring)	ADB, AUSAID and International Donor	MoFT	**Y4/Q4**	Lack of impact assessment	Effective impact assessments	Evidence of fund impact and effectiveness	25,000

3.4 Project Ideas for the Transportation Sector

3.4.1 Brief summary of the project ideas for the Transportation Sector

A. Main Project Idea: Integrated Sustainable Transportation and Green Technology Initiative

B. Description: Develop an integrated project that simultaneously addresses sustainable road development and the adoption of electric outboard motors (E-OBMs) to reduce greenhouse gas emissions and enhance resilience in the Solomon Islands' transportation sector. This comprehensive initiative will focus on securing sustainable funding, promoting green technologies, and fostering public-private partnerships to achieve long-term environmental and economic benefits.

C. Key Components:

1. **Sustainable Funding Initiatives:**
    - **Identify Potential Funding Sources:** Research government grants, private sector investments, green bonds, and international aid programs for road infrastructure and E-OBM projects.
    - **Develop Proposals and Applications:** Assemble a multidisciplinary team to create high-quality funding proposals addressing sustainable roads and E-OBM adoption.
    - **Establish Public-Private Partnerships:** Identify and engage private sector partners, including construction firms, technology companies, and financial institutions interested in sustainability, to support integrated projects.
    - **Advocate for Policy Changes:** Conduct policy analysis to identify barriers and opportunities for sustainable funding and advocate for supportive policies that facilitate sustainable road infrastructure and E-OBM adoption.
2. **Green Technology Integration:**
    - **Promote Sustainable Road Development:** Enhance Mendana Avenue and Hibiscus Avenue in Honiara with improved drainage, native landscaping, and sustainable road designs to reduce congestion and vehicle emissions.
    - **Adopt Electric Outboard Motors (E-OBMs):** Replace traditional outboard motors with electric ones, starting with a pilot program in the Central Province and expanding to other regions. This includes installing charging infrastructure and promoting energy-efficient maintenance practices.
3. **Capacity Building and Community Engagement:**
    - **Training and Education Programs:** Provide workshops and training sessions on green infrastructure planning, E-OBM maintenance, and sustainable transportation practices for professionals, stakeholders, and community members.
    - **Community Engagement Initiatives:** Organize public workshops and forums to gather input on integrated transportation projects, develop educational materials on the benefits of sustainable practices, and establish community advisory groups to ensure ongoing feedback and support.

4. **Monitoring and Evaluation:**
    - **Establish Performance Metrics:** Develop benchmarks and performance metrics to assess the success of integrated sustainable road and E-OBM projects, including reductions in GHG emissions, improved infrastructure resilience, and community satisfaction.
    - **Continuous Improvement:** Implement feedback mechanisms to regularly evaluate project outcomes and make necessary adjustments to enhance effectiveness and sustainability.

D. Expected Outcomes:

- **Enhanced Sustainable Infrastructure:** Improved road conditions and reduced congestion in Honiara, leading to lower vehicle emissions and better flood management.
- **Increased Adoption of E-OBMs:** Widespread use of electric outboard motors, reducing carbon emissions and reliance on fossil fuels in marine transportation.
- **Financial and Policy Support:** Secured funding from diverse sources, established public-private partnerships, and supportive policy environment for sustainable transportation initiatives.
- **Capacity Building:** Increased local capacity for planning, implementing, and maintaining sustainable transportation solutions.
- **Community Involvement:** Active community participation and support for sustainable transportation projects, leading to higher project success rates and community benefits.

3.4.2 Specific Project Ideas

A. Introduction/Background

The transportation sector in the Solomon Islands is a vital part of the nation's economy, covering land, sea, and air transport. However, it is a significant contributor to greenhouse gas (GHG) emissions, mainly from the combustion of fossil fuels. The sector is also susceptible to the impacts of climate change such as higher sea levels and extreme weather events. This comprehensive project combines sustainable road development with the adoption of electric outboard motors (E-OBMs) to reduce emissions and improve resilience. It builds upon existing policies and initiatives aimed at promoting sustainable transportation and the adoption of green technology.

B. Objectives

1. Reduce GHG emissions from the transportation sector.
2. Improve road infrastructure to reduce congestion and enhance flood management.
3. Promote the adoption of E-OBMs to decrease reliance on fossil fuels in marine transport.
4. Secure diverse and stable funding sources for sustainable transportation projects.
5. Increase local capacity for implementing and maintaining green technologies.

C. Outputs and Measurability

- Enhanced road infrastructure with improved drainage and landscaping.
- Reduced vehicle and marine transport emissions.
- Established public-private partnerships for sustainable transportation funding.
- Trained professionals and community members in sustainable practices.
- Measurable reductions in GHG emissions and improved infrastructure resilience.

D. Relationship to the Country's Sustainable Development Priorities

This project aligns with the Solomon Islands' mission to promote sustainable development and climate resilience. It supports national goals to reduce GHG emissions by 2030, enhances energy security, and fosters economic development through green technology adoption. This initiative complements sustainable development strategies and introduces innovative solutions for integrated transportation improvements.

E. Project Deliverables

- **Value/Benefits:** Reduced emissions, improved infrastructure resilience, enhanced energy security, and increased local capacity.
- **Messages:** Sustainable transportation is achievable and beneficial; combining road and marine transport improvements can lead to significant environmental and economic gains.

F. Project Scope and Possible Implementation

The project will involve renovating and expanding road infrastructure in Honiara to improve traffic flow and accessibility. Additionally, the initiative will introduce Electronic On-Board Diagnostics (E-OBMs) across the Solomon Islands. This will commence with a pilot program in the Central Province, allowing for a comprehensive assessment of its effectiveness and impact. The project is aligned with ongoing sustainability and climate resilience initiatives, aiming to minimize environmental impact and enhance long-term infrastructure sustainability. Leveraging secured funding and strong public-private partnerships will be crucial in ensuring the successful implementation of the project and achieving its objectives.

G. Project Activities

1. **Sustainable Funding Initiatives**
    - Identify potential funding sources.
    - Develop proposals and applications.
    - Establish public-private partnerships.
    - Advocate for policy changes.
2. **Green Technology Integration**
    - Enhance Mendana Avenue and Hibiscus Avenue.

    - Adopt E-OBMs with charging infrastructure.
3. **Capacity Building and Community Engagement**
    - Provide training and education programs.
    - Organize community engagement initiatives.
4. **Monitoring and Evaluation**
    - Establish performance metrics.
    - Implement feedback mechanisms.

H. Timelines

- **Year 1:** Planning, securing funding, and initiating road improvements.
- **Year 2-3:** Implementing the E-OBM pilot program and expanding training programs.
- **Year 4-5:** Full-scale implementation, monitoring, and evaluation.

I. Budget/Resource Requirements

- **Estimated Budget:** $18 million (USD)
- **Funding Sources:** Government grants, private sector investments, green bonds, international aid programs.
- **Resources:** Staff, consultants, public-private partnerships.

J. Measurement/Evaluation

- **Tangible Evaluation:** Regular progress reports, emission reduction data, and infrastructure resilience assessments.
- **Success Measurement:** Achievement of emission reduction targets, improved road conditions, increased adoption of E-OBMs.

K. Possible Complications/Challenges

- **Challenges:** Securing funding, policy changes, technological adoption, community engagement.
- **Complications:** Supply chain disruptions, resistance to change, coordination among stakeholders.

L. Responsibilities and Coordination

- **Government Agencies:** MECDM, MID,
- **Private Sector Partners:** Funding contributions, technology provision, implementation support.
- **Community Organizations:** Community engagement, feedback mechanisms.
- **Project Team:** Planning, execution, monitoring, and evaluation.

CHAPTER 4
MITIGATION TECHNOLOGY ACTION PLAN AND PROJECT IDEAS FOR THE FORESTRY SECTOR

4.1 Sector Overview

Solomon Islands' forestry sector was chosen for its central economic and environmental significance. With an impressive forest cover exceeding 89%, the country has the highest forest cover in the Pacific and is recognized as a High Forest Cover Low Deforestation (HFLD) nation. This designation highlights the Solomon Islands' dedication to preserving its forest resources while fostering sustainable practices.

The forestry sector's importance is further underscored by its substantial contribution to export earnings, which comprised around 65% of total exports in 2016-2017 and 20% of state revenue. This sector also generates considerable employment and economic benefits for rural communities through logging activities. However, the rise in forest emissions due to expanded logging operations, which account for 76% of all forest-related emissions as reported in the 2019 Forest Reference Level (FRL) Report, emphasizes the urgent need for targeted mitigation strategies.

The Solomon Islands have established several policies and measures to manage and conserve forest resources, aiming to reduce emissions and enhance carbon sequestration.

Table 32 Existing Policies and Measures for Forestry Sector

Policy Name	Main Contents
Sustainable Logging Policy 2018	Promotes sustainable logging practices, including measures to quantify forest carbon sequestration.
National Biodiversity Strategic Action Plan 2016-2020	It aims to protect at least 20% of terrestrial and inland water areas and 15% of coastal and marine areas.
National Forestry Policy 2020	It focuses on forest conservation, biodiversity protection, and the promotion of ecosystem services for sustainable livelihoods.
Code of Logging Practice	Provides guidelines and standards for sustainable logging operations. It aims to minimise environmental impacts and protect local communities. Ensures that logging companies follow best practices in forestry management
National Adaptation Program Actions (NAPA) 2008	Addresses long-term adaptation needs and disaster risk reduction strategies related to climate change impacts.
REDD+ Program	Focuses on reducing emissions from deforestation and forest degradation.

Policy Name	Main Contents
	Includes historical forest cover change assessments to quantify emissions and removals. Establishes a Forest Reference Level (FRL) to benchmark and monitor forest emissions
Nationally Determined Contributions (NDCs)	Includes strategies for enhancing carbon sequestration through forest conservation. Plans to protect forest areas above the 400-meter contour and establish protected areas covering at least 20% of terrestrial and inland water areas and 15% of coastal and marine area

(Source: Ministry of Forestry and Research, 2016; National Biodiversity Strategic Action Plan Ministry of Environment Conservation And Meteorology Solomon Islands, 2009; Ministry of Forestry and Research 2020; Ministry of Environment, Climate Change, Disaster Management and Meteorology, 2008; Solomon Islands Initial National REDD+ Programme, 2014)

The Multipurpose National Forest Inventory (M-NFI) in the Solomon Islands aims to gather comprehensive data on forest resources, including composition, health, and carbon stocks. The NFI is currently in the early stages of using satellite imagery, remote sensing, GIS, and on-ground surveys. The focus is on refining data collection methodologies and conducting pilot studies. Future goals include completing the inventory, integrating with REDD+ initiatives, and using the data for informed forest management and policy decisions.

Establishing **a Network of Terrestrial Protected Areas (N-TPA)** focuses on conserving biodiversity and enhancing ecosystem resilience by designating and managing areas of high ecological value. Several areas have been identified using GIS, remote sensing, and conservation planning tools, with ongoing efforts to secure legal status and develop management plans. Future goals include expanding protected areas, formalizing legal protections, and involving local communities in sustainable management practices.

The Solomon Islands aim to complete their first comprehensive National Forest Inventory (NFI) within the next few years, followed by regular updates to monitor forest changes and trends. The NFI data will support REDD+ initiatives, facilitating results-based payments for reducing emissions from deforestation and forest degradation. The government plans to implement sustainable logging policies, quantify forest carbon sequestration, and protect forests above the 400-meter contour to enhance carbon storage. Additionally, the Solomon Islands target securing legal status for all identified protected areas within five years, developing and implementing management plans, and expanding the network to cover at least 20% of terrestrial and inland water areas by 2025[37]. Strengthening community-based management, protecting endangered species, and enhancing ecosystem services like water regulation and soil protection are also key goals to ensure effective forest conservation and climate change mitigation.

[37] (Ministry of Environment, Climate Change, Disaster Management and Meteorology Honiara, Solomon Islands SOLOMON ISLANDS 2021 NATIONALLY DETERMINED CONTRIBUTION (NDC), 2021.)

4.2 Action Plan for Multipurpose National Forest Inventory (M-NFI)

4.2.1 Introduction

The Multipurpose National Forest Inventory (M-NFI) is a comprehensive and systematic process designed to gather extensive data on various aspects of forests. This includes quantifying the extent and quality of forests, as well as their specific characteristics. The inventory involves the meticulous measurement and detailed analysis of forest cover, the composition of tree species, the amount of forest biomass, and the stocks of carbon within the forests. To accomplish this, the M-NFI utilizes a combination of advanced remote sensing techniques, such as satellite imagery, and ground-based surveys. These methods are chosen for their ability to provide a thorough and precise understanding of forest resources.

The reason for selecting this technology in climate change mitigation in forestry sectors area:

1. **Cost-Effectiveness**: Implementing an NFI is cost-effective in the long term as it provides essential data needed for informed decision-making and sustainable forest management. The initial investment in technology and training can lead to significant savings by optimizing forest resource use and minimizing losses from deforestation and degradation.
2. **Mitigation Potential**: The NFI plays a crucial role in climate change mitigation by providing accurate data on forest carbon stocks and emissions. This information is vital for developing strategies to reduce greenhouse gas (GHG) emissions from deforestation and forest degradation. The NFI supports establishing a robust monitoring, reporting, and verification (MRV) system, which is essential for participating in international carbon markets and initiatives such as REDD+ (Reducing Emissions from Deforestation and Forest Degradation).
3. **Environmental Benefits**: By accurately assessing forest resources, the NFI helps conserve biodiversity and maintain ecosystem services. It supports sustainable forest management practices that protect watersheds, prevent soil erosion, and maintain habitats for various species.
4. **Economic Benefits**: The data collected through the NFI can enhance the economic value of forests by optimizing timber production, promoting non-timber forest products, and supporting eco-tourism. Reliable forest data can attract investment and funding for sustainable forest management projects.
5. **Social Benefits**: The NFI can contribute to the well-being of local communities by ensuring sustainable use of forest resources, which supports livelihoods and preserves cultural heritage. Involving local communities in NFI activities can also build capacity and foster stewardship of forest resources.

4.2.2 Ambition for the TAP Multipurpose National Forest Inventory (M-NFI)

The Solomon Islands Multipurpose National Forest Inventory (M-NFI) aims to establish a comprehensive system for monitoring and managing all types of forests across the country. This initiative aims to certify 20 Ministry of Forestry officers as National Forest Data Collectors and develop detailed forest thematic maps and databases, starting with Choiseul Province.

The Multipurpose National Forestry Authority (M-NFI) will be crucial in the Solomon Islands' climate change adaptation strategy. It aims to support initiatives like REDD+ and facilitate access to conservation financial incentives. The M-NFI will help maintain the economic benefits of forestry, which accounted for 65% of export earnings and 20% of state revenue in 2016 and 2017. At the same time, it will promote sustainable practices to reduce environmental and social impacts. Overall, the M-NFI aims to deliver significant socio-economic and environmental benefits, supporting sustainable development, climate change mitigation, and biodiversity conservation across the country.

4.2.3 Actions and Activities Selected for Inclusion in the TAP

4.2.3.1 Summary of barriers and measures to overcome barriers

Implementing the Multipurpose National Forest Inventory (M-NFI) faces significant economic and financial challenges, including high costs for updated satellite imagery and field data collection and operational expenses. To overcome these barriers, it is crucial to secure increased financial resources by actively seeking donor funding, especially from international climate funds. Additionally, allocating dedicated funds for M-NFI implementation is essential, given its pivotal role in conducting forest resource assessments and shaping policies related to production forests and logging areas.

Non-financial measures are equally vital. Clear and accessible technical guidelines should be developed by field officers and volunteer groups to facilitate M-NFI implementation. Collaboration with the private sector can enhance infrastructure support in transportation and telecommunications, while partnerships with academic and research institutions can advance technology for efficient data processing and management. Strengthening technical skills through workshops for forestry officers and fostering research and development partnerships with local government and universities will further bolster implementation efforts. Lastly, promoting community awareness and engagement by providing transparent information on land access fees and consultation requirements with landowners will help build local support and compliance with M-NFI objectives.

Table 33 Overview of Barriers and Measures to Overcome Such Barriers for Multipurpose National Forest Inventory

Categories	Identified Barrier	Identified Measure
Economic and Financial	• High cost in field data collection • High cost of preparing updated satellite images • High cost for operational and management data and information system	• Seek International Climate Mitigation Funding through Donor Partnerships for M-NFI Projects
Policy, legal, and regulatory	• NO technical guidelines for M-NFI implementation	• Provide M-NFI technical guideline

Categories	Identified Barrier	Identified Measure
Infrastructure and Technology	• Lack of transportation infrastructure to access the site • Lack of communication infrastructure to update and transfer data • Data gaps because of lack of DATIM	• Increase transportation and telecommunication infrastructure to support NFI • Update forest data management system
Technical and Human Skills	• Inadequate technical expertise in forest inventory workflow • Limited number of technical experts and forest inventory volunteers	• Conduct Specialized Training for Forestry Officers and Establish Internship Programs; • Foster R&D Collaborations with Local Educational Institutions
Social and Cultural	• Lack of land right to access inventory plot sites	• Engage in Transparent Stakeholder Communication on Land Access Protocols and Permissions

4.2.3.2 Actions selected for inclusion in the TAP

The specific actions highlighted in **Table 34** have been selected from the identified measures in **Table 33** as integral components of the Technology M-NFI TAP.

Table 34 List of Action for M-NFI Technology

Action	Description
Global Partnerships for Climate-Resilient M-NFI Initiatives Funding	**Description:** This action involves establishing international collaborations to secure funding for climate-resilient Multipurpose National Forest Inventory (M-NFI) initiatives. These partnerships aim to pool resources, share expertise, and support projects that enhance forests' resilience to climate change. **Purpose:** To ensure sustainable funding and global cooperation for forest conservation and resilience projects.
Comprehensive M-NFI Technical Roadmap	**Description:** This action focuses on developing a detailed technical roadmap for Multipurpose National Forest Inventory (M-NFI) projects. The roadmap outlines methodologies, technologies, and best practices for conducting comprehensive forest assessments and monitoring. **Purpose:** To provide clear guidance and standard procedures for implementing effective and consistent M-NFI projects.
Develop Forest Data Management Systems	**Description:** This action aims to improve the systems used for managing forest data. It involves upgrading data collection tools, integrating advanced analytics, and ensuring the interoperability of data systems to support informed decision-making and policy development.

Action	Description
	Purpose: To improve the accuracy, accessibility, and usability of forest data for better forest management and conservation efforts.
Undertake Specialized Capacity Building for Forestry Innovation and Internship Program	**Description:** This action focuses on enhancing the skills and knowledge of forestry professionals through advanced training programs and internships for volunteers. It aims to foster innovation in forestry practices by providing hands-on experience and exposure to cutting-edge technologies and methodologies. **Purpose:** To build a skilled workforce capable of implementing innovative and effective forestry practices.
Conduct Transparent Stakeholder Engagement on Land Access Protocols and Permissions	**Description:** This action involves engaging stakeholders in a transparent process to develop and implement land access protocols and permissions. It ensures that the rights and concerns of all stakeholders, including local communities and indigenous groups, are considered and respected. **Purpose:** To establish fair and inclusive land access policies that balance conservation goals with the needs and rights of local communities.

4.2.3.3 Activities identified for implementation of selected actions

The list below outlines the specific activities related to each action aimed at promoting Multipurpose National Forest Inventory (M-NFI):

Action 1: Access to Global Partnerships for Climate-Resilient M-NFI Initiatives Funding

Activity 1.1 Identifying potential international partners and funding sources.

Activity 1.2 Establishing agreements and MOUs with international organizations.

Activity 1.3 Organizing joint workshops and conferences to share knowledge and strategies.

Activity 1.4 Coordinating collaborative research projects and pilot initiatives.

Activity 1.5 Securing grants and financial support from global climate funds.

Activity 1.6 Monitoring and reporting on the progress of funded initiatives.

Action 2: Comprehensive M-NFI Technical Roadmap

Activity 2.1 Conducting a needs assessment for M-NFI projects.

Activity 2.2 Developing detailed methodologies for forest inventory and assessment.

Activity 2.3 Identifying and integrating advanced technologies for data collection.

Activity 2.4 Creating standardized protocols for data analysis and reporting.

Activity 2.5 Publishing and disseminating the technical roadmap to relevant stakeholders.

Activity 2.6 Providing training sessions on the use and implementation of the roadmap.

Action3: Develop Forest Data Management Systems

Activity 3.1 Upgrading existing data collection tools and software.

Activity 3.2 Integrating GIS and remote sensing technologies for better data accuracy.

Activity 3.3 Developing a centralized database for forest data storage and retrieval.

Activity 3.4 Implementing data interoperability standards for seamless data exchange.

Activity 3.5 Conducting training for staff on new data management systems.

Activity 3.6 Regularly updating and maintaining the data management systems.

Action 4: Undertake Specialized Capacity Building for Forestry Innovation and Internship Program

Activity 4.1 Designing and launching advanced training programs for forestry professionals.

Activity 4.2 Establishing internship programs with leading forestry organizations and research institutions.

Activity 4.3 Organizing workshops and seminars on innovative forestry practices.

Activity 4.4 Providing hands-on training in the use of cutting-edge technologies.

Activity 4.5 Facilitating mentorship opportunities between experienced professionals and interns.

Activity 4.6 Evaluating and adapting training programs based on participant feedback and industry advancements.

Action 5: Conduct Transparent Stakeholder Engagement on Land Access Protocols and Permissions

Activity 5.1 Mapping and identifying all relevant stakeholders, including local communities and indigenous groups.

Activity 5.2 Organizing public consultations and meetings to gather input and feedback.

Activity 5.3 Developing clear and fair land access protocols in collaboration with stakeholders.

Activity 5.4 Creating communication materials to explain land access protocols and permissions.

Activity 5.5 Ensuring transparency in the decision-making process and documenting all agreements.

Activity 5.6 Monitoring the implementation of land access protocols and addressing any issues that arise.

4.2.3.4 Actions to be Implemented as Project Ideas

The selected project idea has undergone a rigorous evaluation process aligned with the priority ranking framework established by the Forestry Sector Working Group to tackle climate change mitigation effectively. The decision-making process has been comprehensively elucidated in **Annexes 5, 6, and 11, which present** an in-depth analysis of the selection procedure, including the criteria and considerations involved in the decision.

A. Selected Action:

1. Develop Forest Data Management System
2. Undertake Specialized Capacity Building for Forestry Innovation and Internship Program

B. Project Overview*:*

The project aims to enhance climate change mitigation efforts in the Solomon Islands through two key initiatives: Developing a Forest Data Management System and Undertaking Specialized Capacity Building for Forestry Innovation and Internship Programs.

1. **Develop Forest Data Management System**

   This initiative focuses on improving the systems used for managing forest data. It involves upgrading data collection tools, integrating advanced analytics, and ensuring the interoperability of data systems. The objective is to enhance the accuracy, accessibility, and usability of forest data, which supports informed decision-making and policy development for better forest management and conservation efforts. Accurate and comprehensive data are essential for monitoring carbon stocks, tracking deforestation, and assessing the impacts of climate change on forest ecosystems.

2. **Undertake Specialized Capacity Building for Forestry Innovation and Internship Program**

   This initiative aims to enhance the skills and knowledge of forestry professionals through advanced training programs and internships. By providing hands-on experience and exposure to cutting-edge technologies and methodologies, the program fosters innovation in forestry practices. The goal is to build a skilled workforce capable of implementing innovative and effective forestry practices. Such capacity building is critical for promoting sustainable forest management, improving carbon sequestration, and reducing emissions from deforestation and forest degradation.

C. Purpose

Together, these initiatives strengthen the Solomon Islands' ability to utilize their Multipurpose National Forest Inventory effectively. By improving forest data management and building a skilled workforce, the project contributes significantly to climate change mitigation efforts. Enhanced data accuracy and innovative practices support better forest management, conservation, and resilience, ultimately contributing to global efforts to combat climate change.

D. Activities to Be Implemented

Action 3: Develop Forest Data Management Systems

Activity 3.1 Upgrading existing data collection tools and software.

Activity 3.2 Integrating GIS and remote sensing technologies for better data accuracy.

Activity 3.3 Developing a centralized database for forest data storage and retrieval.

Activity 3.4 Implementing data interoperability standards for seamless data exchange.

Activity 3.5 Conducting training for staff on new data management systems.

Activity 3.6 Regularly updating and maintaining the data management systems.

Action 4: Undertake Specialized Capacity Building for Forestry Innovation and Internship Program

Activity 4.1 Designing and launching advanced training programs for forestry professionals.

Activity 4.2 Establishing internship programs with leading forestry organizations and research institutions.

Activity 4.3 Organizing workshops and seminars on innovative forestry practices.

Activity 4.4 Providing hands-on training in the use of cutting-edge technologies.

Activity 4.5 Facilitating mentorship opportunities between experienced professionals and interns.

Activity 4.6 Evaluating and adapting training programs based on participant feedback and industry advancements.

4.2.4 Stakeholders and Timeline for Implementation of TAP

4.2.4.1 Overview of Stakeholders for the Implementation of the TAP

Implementing the Forest Data Management Systems and Specialized Capacity Building for Forestry Innovation and Internship Program as part of the Multipurpose National Forest Inventory in the Solomon Islands involves various stakeholders. Here is an overview of the key stakeholders and their roles:

1. **Government Agencies:**
   - **Ministry of Forestry and Research:** Leads the project and provides oversight, policy guidance, and resources.
   - **Ministry of Environment, Climate Change, Disaster Management and Meteorology:** Collaborates on climate change data and mitigation strategies.
   - **National Statistical Office:** Assists with data standardization, integration, and analysis.

2. **International Organizations and Donors:**
   - **Pacific Community (SPC) and** South Pacific Regional Environment Programme (SPREP): **:** Provides technical assistance, and data management.
   - **Pacific Islands Forum Secretariat (PIFS):** Provides assistant for policy development and advocacy, coordination and networking, and funding resource.

- **United Nations Food and Agriculture Organization (FAO):** Provides technical assistance and funding and shares global best practices.
- **World Bank:** Offers financial support and investment in infrastructure.
- **Global Environment Facility (GEF):** Provides funding for environmental projects, including forest management and climate change mitigation.
- **International Union for Conservation of Nature (IUCN):** Supports conservation efforts and provides expertise on sustainable forestry practices.

3. Academic and Research Institutions:

- **University of the South Pacific (USP):** Conducts research, provides expertise, and develops training curricula.
- **Solomon Islands National University (SINU):** Involved in research and offers educational programs related to forestry and environmental management.

4. Local Communities and Indigenous Groups:

- **Forest-Dependent Communities:** Participate in data collection, monitoring, and sustainable forest management practices.
- **Traditional Leaders and Indigenous Representatives:** Ensure the inclusion of indigenous knowledge and practices in forest management and capacity-building programs.

5. Private Sector:

- **Solomon Forestry Association:** Collaborates on sustainable practices and data sharing.
- **Technology Providers (e.g., GIS and remote sensing companies):** Supply advanced tools and systems for data management and analytics.

6. Capacity Building and Training Providers:

- **Vocational Training Centres (e.g., Rural Training Centres):** Deliver specialized training and internship programs.
- **Professional Associations (e.g., Solomon Islands Professional Foresters Association):** Support continuous professional development and certification.

7. Civil Society and Environmental Groups:

- **Local NGOs (e.g., Solomon Islands Community Conservation Partnership):** Advocate for sustainable forestry practices and climate change mitigation.
- **International NGOs (e.g., World Wildlife Fund - WWF):** Engage in capacity building, advocacy, and provide technical support.

By involving these diverse stakeholders, the project aims to foster a collaborative and inclusive approach to improving forest management, enhancing capacity, and contributing to climate change mitigation in the Solomon Islands.

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4.2.4.2 Scheduling and Sequencing Activities for Multipurpose National Forest Inventory Action Plan

Table 35 Scheduling and Sequencing Activities for Multipurpose National Forest Inventory Action Plan

Timeline	Activity	Responsibility	Stakeholder
Y1/Q1	**Activity 3.1**: Upgrading existing data collection tools and software (Initial phase: Assess current tools, gather requirements)	MECDM, MoFR	Forest Data Collection Team, IT Support Division, Software Vendors
Y1/Q1	**Activity 4.1**: Designing and launching advanced training programs for forestry professionals (Initial design and planning)	MoFR	Forestry Professionals, Training Providers, Solomon Islands National University (SINU), Private Sector Training Institutions
Y1/Q2	**Activity 3.1**: Upgrading existing data collection tools and software (Implementation phase: Upgrade and test new tools)	MECDM, MoFR	Forest Data Collection Team, IT Support Division, Software Vendors
Y1/Q2	**Activity 4.1**: Designing and launching advanced training programs for forestry professionals (Launch first round of training programs)	MoFR	Forestry Professionals, Training Providers, Solomon Islands National University (SINU), Private Sector Training Institutions
Y1/Q2	**Activity 4.2**: Establishing internship programs with leading forestry organizations and research institutions (Setup partnerships and program details)	MoFR	Partner Organizations (e.g., World Wildlife Fund (WWF) Solomon Islands, Research Institutions), Interns, Program Coordinators
Y1/Q3	**Activity 3.2**: Integrating GIS and remote sensing technologies for better data accuracy (Initial setup: Evaluate existing GIS technologies and plan integration)	MECDM, MoFR	Partner Organizations (e.g., National Forestry Development Programme (NFDP), Research Institutions), Interns, Program Coordinators
Y1/Q3	**Activity 4.2**: Establishing internship programs with leading forestry organizations and research institutions (Start first batch of internships)	MoFR,	Partner Organizations (e.g., National Forestry Development Programme (NFDP), Research Institutions), Interns, Program Coordinators
Y1/Q3	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Plan and organize the first set of workshops)	MoFR	Forestry Professionals, Workshop Speakers, Attendees
Y1/Q4	**Activity 3.2**: Integrating GIS and remote sensing technologies for better data accuracy (Implementation: Integrate and test technologies)	MoFR and MECDM	GIS Professionals, Remote Sensing Experts, Data Users
Y1/Q4	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Conduct first workshops)	MoFR	Forestry Professionals, Workshop Speakers, Attendees

Timeline	Activity	Responsibility	Stakeholder
Y1/Q4	**Activity 4.4**: Providing hands-on training in the use of cutting-edge technologies (Initial sessions of hands-on training)	MoFR	Training Participants, Technology Experts, Equipment Suppliers
Y2/Q1	**Activity 3.3**: Developing a centralized database for forest data storage and retrieval (Planning phase: Design database architecture)	MoFR and MECDM	Forestry officer (Database Users, IT Staff, Data Administrators)
Y2/Q1	**Activity 4.4**: Providing hands-on training in the use of cutting-edge technologies (Continue hands-on training)	MoFR	Training Participants, Technology Experts, Equipment Suppliers
Y2/Q1	**Activity 4.5**: Facilitating mentorship opportunities between experienced professionals and interns (Establish and launch mentorship program)	MoFR	Local University (Mentors), Interns, Program Managers
Y2/Q2	**Activity 3.3**: Developing a centralized database for forest data storage and retrieval (Implementation phase: Build and deploy database)	MoFR	Forestry officer (Database Users, IT Staff, Data Administrators)
Y2/Q2	**Activity 4.5**: Facilitating mentorship opportunities between experienced professionals and interns (Launch and facilitate ongoing mentorship)	MoFR	Local University (Mentors), Interns, Program Managers
Y2/Q2	**Activity 4.6**: Evaluating and adapting training programs based on participant feedback and industry advancements (Collect feedback and adjust programs)	MoFR	Training Participants, Feedback Collectors, Program Developers
Y2/Q3	**Activity 3.4**: Implementing data interoperability standards for seamless data exchange (Plan and start initial implementation)	MoFR	• MECDM Data Exchange Partners, IT Staff, Data Users
Y2/Q3	**Activity 4.6**: Evaluating and adapting training programs based on participant feedback and industry advancements (Continue evaluation and adjustments)	MoFR	• Training Participants, Feedback Collectors, Program Developers
Y2/Q3	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices	MoFR	• Forestry Professionals, Workshop Speakers, Attendees

Timeline	Activity	Responsibility	Stakeholder
	(Plan and execute additional workshops if needed)		
Y2/Q4	**Activity 3.4**: Implementing data interoperability standards for seamless data exchange (Complete implementation and testing)	MoFR and MECDM	• Data Exchange Partners, IT Staff, Data Users
Y2/Q4	**Activity 4.6**: Evaluating and adapting training programs based on participant feedback and industry advancements (Finalize adjustments and prepare for next cycle)	MoFR and MECDM	• Training Participants, Feedback Collectors, Program Developers
Y3/Q1	**Activity 3.5**: Conducting training for staff on new data management systems (Preparation and initial training sessions)	MoFR	• Staff Members, Training Facilitators, IT Support
Y3/Q1	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Conduct additional workshops as necessary)	MoFR and MECDM	• Forestry Professionals, Workshop Speakers, Attendees
Y3/Q2	**Activity 3.6**: Regularly updating and maintaining the data management systems (Ongoing maintenance)	MoFR and MECDM	• Data Users, IT Support Staff
	Activity 4.4: Providing hands-on training in the use of cutting-edge technologies (Continue hands-on training as necessary)	MoFR and MECDM	• Training Participants, Technology Experts, Equipment Suppliers
Y3/Q3	**Activity 3.6**: Regularly updating and maintaining the data management systems (Ongoing maintenance)	MoFR and MECDM	• Data Users, IT Support Staff
	Activity 4.5: Facilitating mentorship opportunities between experienced professionals and interns (Review mentorship outcomes and adjust if needed)	MoFR and MECDM	• Mentors, Interns, Program Managers
Y3/Q4	**Activity 3.6**: Regularly updating and maintaining the data management systems (Ongoing maintenance and review)	MoFR and MECDM	• Data Users, IT Support Staff
	Activity 4.6: Evaluating and adapting training programs based on participant feedback and	MoFR and MECDM	• Training Participants, Feedback Collectors, Program Developers

Timeline	Activity	Responsibility	Stakeholder
	industry advancements (Finalize evaluations and plan for future cycles)		

4.2.5 Estimation of resources needed for action and activities

4.2.5.1 Estimation of Capacity Building Needs

A comprehensive capacity-building program is essential to effectively implement the Multipurpose National Forest Inventory (M-NFI) Action Plan. Below is a detailed estimation of the capacity-building needs:

Action 3: Develop Forest Data Management Systems

- Training programs for staff on new data collection tools and software.
- Technical support for installation and troubleshooting.
- Budget allocation for procurement of new tools and software.
- Specialized training in GIS and remote sensing technologies.
- Training on database management, data security, and retrieval techniques.
- Training for IT staff on maintenance and updating of data management systems.
- Implementation of a system monitoring performance and security.
- Technical support contracts with software vendors for ongoing support and updates.

Action 4: Undertake Specialized Capacity Building for Forestry Innovation and Internship Program

- Expertise in planning and managing workshops and seminars.
- Engagement of industry experts as speakers.
- Provision of resources and materials for workshops and seminars.
- Access to cutting-edge forestry technologies.
- Development of practical training modules focused on advanced technologies.
- Implementation of monitoring and evaluation mechanisms for mentorship programs.
- Fostering a culture of continuous improvement in training programs.

4.2.5.2 Estimations of costs of actions and activities

Table 36 Estimations of costs of actions and activities for Develop Forest Data Management Systems and Undertake Specialized Capacity Building for Forestry Innovation and Internship Program for M-NFI

Timeline	Activity	Budget (USD)	Funding Source
Y1/Q1	**Activity 3.1**: Upgrading existing data collection tools and software (Initial phase: Assess current tools, gather requirements)	25,000	International Donor (e.g., WB, UNDP)
Y1/Q1	**Activity 4.1**: Designing and launching advanced training programs for forestry professionals (Initial design and planning)	30,000	International Donor (e.g., FAO, GEF)
Y1/Q2	**Activity 3.1**: Upgrading existing data collection tools and software (Implementation phase: Upgrade and test new tools)	60,000	International Donor Government Funding
Y1/Q2	**Activity 4.1**: Designing and launching advanced training programs for forestry professionals (Launch first round of training programs)	40,000	International Donor (e.g., USAID, EU)
Y1/Q2	**Activity 4.2**: Establishing internship programs with leading forestry organizations and research institutions (Setup partnerships and program details)	15,000	Private Sector (e.g., CSR fund from logging company)
Y1/Q3	**Activity 3.2**: Integrating GIS and remote sensing technologies for better data accuracy (Initial setup: Evaluate existing GIS technologies and plan integration)	40,000	International Donor (e.g., JICA, ADB)
Y1/Q3	**Activity 4.2**: Establishing internship programs with leading forestry organizations and research institutions (Start first batch of internships)	20,000	Government Fund
Y1/Q3	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Plan and organize the first set of workshops)	25,000	International Donor
Y1/Q4	**Activity 3.2**: Integrating GIS and remote sensing technologies for better data accuracy (Implementation: Integrate and test technologies)	100,000	International Donor Government Funding
Y1/Q4	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Conduct first workshops)	40,000	International Donor
Y1/Q4	**Activity 4.4**: Providing hands-on training in the use of cutting-edge technologies (Initial sessions of hands-on training)	40,000	International Donor
Y2/Q1	**Activity 3.3**: Developing a centralized database for forest data storage and retrieval (Planning phase: Design database architecture)	40,000	International Donor Government Funding
Y2/Q1	**Activity 4.4**: Providing hands-on training in the use of cutting-edge technologies (Continue hands-on training)	40,000	International Donor
Y2/Q1	**Activity 4.5**: Facilitating mentorship opportunities between experienced professionals and interns (Establish and launch mentorship program)	30,000	Private Sector Government Funding
Y2/Q2	**Activity 3.3**: Developing a centralized database for forest data storage and retrieval	75,000	International Donor Government Funding

Timeline	Activity	Budget (USD)	Funding Source
	(Implementation phase: Build and deploy database)		
Y2/Q2	**Activity 4.5**: Facilitating mentorship opportunities between experienced professionals and interns (Launch and facilitate ongoing mentorship)	25,000	Private Sponsor Government Funding
Y2/Q2	**Activity 4.6**: Evaluating and adapting training programs based on participant feedback and industry advancements (Collect feedback and adjust programs)	15,000	International Donor
Y2/Q3	**Activity 3.4**: Implementing data interoperability standards for seamless data exchange (Plan and start initial implementation)	70,000	International Donor
Y2/Q3	**Activity 4.6**: Evaluating and adapting training programs based on participant feedback and industry advancements (Continue evaluation and adjustments)	15,000	International Donor
Y2/Q3	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Plan and execute additional workshops if needed)	20,000	Government Funding
Y2/Q4	**Activity 3.4**: Implementing data interoperability standards for seamless data exchange (Complete implementation and testing)	70,000	International Donor Government Funding
Y2/Q4	**Activity 4.6**: Evaluating and adapting training programs based on participant feedback and industry advancements (Finalize adjustments and prepare for next cycle)	20,000	International Donor
Y3/Q1	**Activity 3.5**: Conducting training for staff on new data management systems (Preparation and initial training sessions)	30,000	International Donor
Y3/Q1	**Activity 4.3**: Organizing workshops and seminars on innovative forestry practices (Conduct additional workshops as necessary)	30,000	International Donor
Y3/Q2	**Activity 3.6**: Regularly updating and maintaining the data management systems (Ongoing maintenance)	40,000	International Donor Government Funding
	Activity 4.4: Providing hands-on training in the use of cutting-edge technologies (Continue hands-on training as necessary)	35,000	International Donor
Y3/Q3	**Activity 3.6**: Regularly updating and maintaining the data management systems (Ongoing maintenance)	30,000	International Donor Government Funding
	Activity 4.5: Facilitating mentorship opportunities between experienced professionals and interns (Review mentorship outcomes and adjust if needed)	20,000	Private Sector Government Funding
Y3/Q4	**Activity 3.6**: Regularly updating and maintaining the data management systems (Ongoing maintenance and review)	25,000	Government Funding
	Activity 4.6: Evaluating and adapting training programs based on participant feedback and industry advancements (Finalize evaluations and plan for future cycles)	25,000	International Donor

4.2.6 Management Planning

4.2.6.1 Risks and Contingency Planning

Table 37 Risk and Contingency Plan for Develop Forest Data Management Systems and Undertake Specialized Capacity Building for Forestry Innovation and Internship Program for M-NFI

Risk Item	Description	Contingency Plan
Activity 3.1: Upgrading existing data collection tools and software		
Cost Risk	Unexpected software licensing fees or hardware upgrades could exceed the budget.	Allocate a 10% buffer in the budget for unforeseen expenses. Review and adjust the budget regularly as needed.
Scheduling Risk	Delays in obtaining or implementing new tools could push back the upgrade schedule.	Develop a detailed project timeline with milestones and regularly monitor progress. Include buffer time for potential delays.
Performance Risk	New tools may not integrate smoothly with existing systems.	Conduct thorough testing before full implementation and have a rollback plan if issues arise.
Activity 3.2: Integrating GIS and remote sensing technologies for better data accuracy		
Cost Risk	Costs may increase due to additional training or software requirements	Secure a flexible budget that can accommodate potential extra costs and seek quotes from multiple vendors.
Scheduling Risk	Integration may take longer than planned due to technical challenges	Allow extra time in the project schedule for troubleshooting and testing.
Performance Risk	The integration may not meet the expected accuracy or functionality	Set clear performance criteria and test thoroughly before full deployment.
Activity 3.3: Developing a centralized database for forest data storage and retrieval		
Cost Risk	Unforeseen costs for database development or maintenance.	Include a contingency fund specifically for database development and maintenance.
Scheduling Risk	Development delays could impact the overall timeline.	Break down the development into phases with clear deadlines and monitor progress closely.
Performance Risk	The database might not perform as expected under high data loads	Implement performance testing and optimize the database design based on test results.
Activity 3.4: Implementing data interoperability standards for seamless data exchange		
Cost Risk	Costs for compliance with standards may be higher than anticipated	Research and plan for compliance costs early in the project. Allocate additional funds if needed.

Risk Item	Description	Contingency Plan
Scheduling Risk	Aligning with standards might cause delays in data exchange processes	Develop a phased implementation plan and prioritize critical standards first.
Performance Risk	Data exchange may face issues if standards are not properly implemented.	Test interoperability extensively before full-scale implementation.
Activity 3.5: Conducting training for staff on new data management systems		
Cost Risk	Training costs may exceed initial estimates.	Allocate funds for additional training sessions and resources as needed.
Scheduling Risk	Training might take longer than expected, affecting project timelines	Schedule training in advance and provide additional time for unforeseen delays.
Performance Risk	Staff may not fully grasp the new systems, impacting efficiency	Offer follow-up support and refresher courses to ensure staff competency.
Activity 3.6: Regularly updating and maintaining the data management systems		
Cost Risk	Ongoing maintenance costs may be higher than planned	Include a long-term maintenance budget and regularly review and adjust as needed.
Scheduling Risk	Regular updates may require downtime or disrupt ongoing operations.	Schedule updates during low-usage periods and communicate with users in advance.
Performance Risk	Updates might introduce new issues or affect system performance	Implement a testing protocol for updates and have a rollback plan in place.
Activity 4.1: Designing and launching advanced training programs for forestry professionals		
Cost Risk	Development and delivery costs may exceed the budget	Budget for potential overruns and seek sponsorships or partnerships to share costs.
Scheduling Risk	Program development and launch might face delays	Set realistic timelines and include buffer periods for unforeseen delays.
Performance Risk	Training programs might not meet the desired outcomes.	Pilot the program with a small group and adjust based on feedback.
Activity 4.2: Establishing internship programs with leading forestry organizations and research institutions		
Cost Risk	Costs for setting up internships may be higher than anticipated.	Identify potential funding sources or sponsors to cover additional costs.
Scheduling Risk	Recruiting organizations or institutions may take longer than planned	Start recruitment early and maintain flexible timelines.

Risk Item	Description	Contingency Plan
Performance Risk	Internships may not provide the expected learning experience	Establish clear objectives and regularly review internship outcomes.
Activity 4.3: Organizing workshops and seminars on innovative forestry practices		
Cost Risk	Event costs may exceed the budget	Secure additional funding or reduce costs through partnerships.
Scheduling Risk	Event scheduling conflicts could affect attendance.	Plan events well in advance and coordinate with key participants.
Performance Risk	Workshops and seminars may not engage participants effectively	Gather feedback and adjust future events based on participant input.
Activity 4.4: Providing hands-on training in the use of cutting-edge technologies		
Cost Risk	Training costs may be higher due to technology requirements	Budget for potential technology-related expenses and seek cost-effective solutions.
Scheduling Risk	Hands-on training sessions may be delayed.	Schedule sessions with flexibility and allow extra time for setup.
Performance Risk	Participants may struggle with the new technologies.	Provide additional support and follow-up sessions to address issues.
Activity 4.5: Facilitating mentorship opportunities between experienced professionals and interns		
Cost Risk	Costs for facilitating mentorship may exceed initial estimates	Identify and allocate funds specifically for mentorship activities.
Scheduling Risk	Finding suitable mentors and coordinating schedules might take longer	Start the matchmaking process early and have a flexible schedule
Performance Risk	Mentorship relationships may not be effective or productive.	Regularly check in on mentorship progress and make adjustments as needed.
Activity 4.6: Evaluating and adapting training programs based on participant feedback and industry advancements		
Cost Risk	Costs for evaluation and adaptation may be higher than planned.	Allocate funds for ongoing evaluation and make adjustments based on findings.
Scheduling Risk	Evaluation and adaptation processes might take more time	Plan for iterative evaluations and incorporate feedback into the program timeline.
Performance Risk	Adapted programs may not fully address feedback or industry changes.	Implement a continuous improvement process and regularly review program effectiveness.

4.2.6.2 Next Steps

Next Steps for Develop Forest Data Management Systems and Undertake Specialized Capacity Building for Forestry Innovation and Internship Program

A. Immediate Requirements to Proceed

a. **Resource Allocation:**
- **Budget Approval:** Secure budget approval for both actions, including upgrading tools, integrating technologies, developing databases, training programs, internships, workshops, and mentorships.
- **Procurement:** Acquire necessary software, hardware, and equipment required for the data management systems and training activities.
- **Staff Assignment:** Designate project leads and teams for each activity across both actions.

b. **Planning and Documentation:**
- **Project Plan:** Develop a detailed project plan including timelines, milestones, and task breakdowns for both actions.
- **Risk Management:** Create a comprehensive risk management plan addressing potential risks and their mitigation strategies for both actions.
- **Communication Plan:** Establish a communication plan to ensure all stakeholders are informed and engaged in both actions.

c. **Stakeholder Engagement:**
- **Internal Meetings:** Conduct kickoff meetings with project teams and stakeholders to align on objectives and expectations for both actions.
- **External Partnerships:** Engage with potential partners, vendors, technology providers, and leading forestry organizations.

d. **Initial Setup:**
- **Pilot Testing and Training Preparation:** Begin pilot testing for upgrading tools and integrating new technologies, and develop training materials and schedules for staff on new systems.
- **Program Design:** Develop detailed plans for training programs, workshops, and seminars, including curricula and schedules.

B. Critical Steps to Succeed

a. **Continuous Monitoring and Evaluation:**
- **Progress Reviews:** Hold regular progress review meetings to monitor the status of each activity within both actions and adjust plans as needed.
- **Performance Metrics:** Establish and track performance metrics to evaluate the effectiveness of both the data management systems and capacity-building programs.

b. **Risk Management:**
- **Risk Monitoring:** Continuously monitor and update the risk management plan for both actions.
- **Mitigation Actions:** Implement mitigation actions promptly to address any emerging risks for both actions.

c. **Quality Assurance:**
- **Testing Protocols:** Implement thorough testing protocols for all new tools, technologies, databases, and training programs.

- **Quality Control:** Ensure quality control measures are in place to maintain high standards for both actions.

d. **Training and Capacity Building:**
   - **Effective Training:** Conduct comprehensive training sessions for staff on data management systems and provide ongoing support.
   - **Feedback Mechanism:** Implement feedback mechanisms to continuously improve training programs and workshops.

e. **Stakeholder Collaboration:**
   - **Engagement and Communication:** Maintain open and transparent communication with all stakeholders involved in both actions.
   - **Partnership Management:** Actively manage partnerships to ensure collaboration and resource sharing for both actions.

f. **Adaptability and Flexibility:**
   - **Agile Methods:** Adopt agile methods for project management, allowing for adjustments based on feedback and changing circumstances for both actions.
   - **Continuous Improvement:** Encourage a culture of continuous improvement, incorporating feedback and industry advancements.

g. **Sustainability and Impact:**
   - **Long-term Planning:** Develop sustainability plans for the long-term maintenance and updating of data management systems and capacity-building programs.
   - **Impact Assessment:** Regularly assess the impact of the programs and systems, making necessary adjustments to maximize their effectiveness.

4.2.7 TAP Overview for Develop Forest Data Management Systems and Undertake Specialized Capacity Building for Forestry Innovation and Internship Program for M-NFI

Table 38 TAP Overview Table for Develop Forest Data Management Systems and Undertake Specialized Capacity Building for Forestry Innovation and Internship Program for M-NFI

TAP overview table	
Sector	FORESTRY SECTOR
Sub-sector	National Forest Inventory
Technology	Multipurpose National Forest Inventory
Action	Develop Forest Data Management Systems and Undertake Specialized Capacity Building for Forestry Innovation and Internship Program
Ambition	Implement a comprehensive National Forest Inventory (NFI) using advanced technologies to enhance forest management and integrate data in the Solomon Islands.
Benefits	Improves forest data accuracy, supports REDD+ initiatives for emissions reduction payments, implements sustainable logging policies, protects high-carbon forests, secures legal status for protected areas, and enhances ecosystem services through effective forest conservation and climate change mitigation.

Activity to be Implemented	**Source Funding**	**Responsibility**	**Time Frame**	**Risk**	**Success Criteria**	**Indicators Monitoring of Implementation**	**Budget Per Activity (USD)**
Activity 3.1: Upgrading existing data collection tools and software (Initial phase: Assess current tools, gather requirements)	International Donor (e.g., WB, UNDP)	MECDM, MoFR	**Y1/Q1**	Incomplete or inaccurate requirements gathering leading to ineffective upgrades.	Comprehensive and accurate documentation of requirements.	Number of stakeholder meetings conducted, completeness of requirements documentation, and feedback from stakeholders.	25,000
Activity 4.1: Designing and launching advanced training programs for forestry professionals (Initial design and planning)	International Donor (e.g., FAO, GEF)	MoFR	**Y1/Q1**	Insufficient understanding of training needs leading to poorly designed programs.	Well-defined training curriculum aligned with industry needs.	Number of consultations with industry experts, completeness of training curriculum, and stakeholder approval.	30,000

Activity to be Implemented	Source Funding	Responsibility	Time Frame	Risk	Success Criteria	Indicators Monitoring of Implementation	Budget Per Activity (USD)
Activity 3.1: Upgrading existing data collection tools and software (Implementation phase: Upgrade and test new tools)	International Donor Government Funding	MECDM, MoFR	**Y1/Q2**	Technical issues during upgrade leading to delays or system failures.	Successful upgrade and testing of new tools without major issues.	Number of bugs or issues reported during testing, time taken to resolve issues, and user satisfaction post-upgrade.	60,000
Activity 4.1: Designing and launching advanced training programs for forestry professionals (Launch first round of training programs)	International Donor (e.g., USAID, EU)	MoFR	**Y1/Q2**	Low participation or engagement in training programs.	High participation and positive feedback from participants.	Number of participants, attendance rates, and feedback scores from training sessions.	40,000
Activity 4.2: Establishing internship programs with leading forestry organizations and research institutions (Setup partnerships and program details)	Private Sector (e.g., CSR fund from logging company)	MoFR	**Y1/Q2**	Difficulty in securing partnerships with leading organizations.	Established partnerships with key forestry organizations and well-defined internship program details.	Number of partnerships secured, agreements signed, and program detail completeness.	15,000
Activity 3.2: Integrating GIS and remote sensing technologies for better data accuracy (Initial setup: Evaluate existing GIS technologies and plan integration)	International Donor (e.g., JICA, ADB)	MECDM, MoFR	**Y1/Q3**	Inadequate evaluation leading to selection of suboptimal technologies.	Thorough evaluation and selection of appropriate GIS technologies.	Number of technologies evaluated, evaluation reports, and stakeholder approval on selected technologies.	40,000
Activity 4.2: Establishing internship programs with leading forestry organizations and research institutions (Start first batch of internships)	Government Fund	MoFR,	**Y1/Q3**	Internships not providing valuable learning experiences.	Positive feedback from interns and host organizations.	Number of interns placed, completion rates of internships, and feedback from interns and hosts.	20,000
Activity 4.3: Organizing workshops and seminars on innovative forestry practices (Plan and organize the first set of workshops)	International Donor	MoFR	**Y1/Q3**	Poorly planned workshops leading to low attendance and engagement.	Well-organized workshops with high attendance and engagement.	Number of workshops planned, attendance rates, and participant feedback.	25,000

Activity to be Implemented	Source Funding	Responsibility	Time Frame	Risk	Success Criteria	Indicators Monitoring of Implementation	Budget Per Activity (USD)
Activity 3.2: Integrating GIS and remote sensing technologies for better data accuracy (Implementation: Integrate and test technologies)	International Donor Government Funding	MoFR and MECDM	**Y1/Q4**	Technical integration issues leading to inaccurate data or system failures.	Successful integration and testing of GIS and remote sensing technologies.	Number of integration issues, time taken to resolve issues, and data accuracy post-integration.	100,000
Activity 4.3: Organizing workshops and seminars on innovative forestry practices (Conduct first workshops)	International Donor	MoFR	**Y1/Q4**	Low participant engagement or satisfaction during workshops.	High engagement and positive feedback from participants.	Number of participants, engagement levels during workshops, and feedback scores.	40,000
Activity 4.4: Providing hands-on training in the use of cutting-edge technologies (Initial sessions of hands-on training)	International Donor	MoFR	**Y1/Q4**	Participants struggling to understand and use new technologies.	Successful completion of training sessions with participants demonstrating competency.	Number of training sessions conducted, participant competency assessments, and feedback scores.	40,000
Activity 3.3: Developing a centralized database for forest data storage and retrieval (Planning phase: Design database architecture)	International Donor Government Funding	MoFR and MECDM	**Y2/Q1**	Flaws in database design leading to inefficiencies or data integrity issues.	Robust database architecture design meeting all requirements.	Completeness of design documentation, stakeholder approval, and alignment with requirements.	40,000
Activity 4.4: Providing hands-on training in the use of cutting-edge technologies (Continue hands-on training)	International Donor	MoFR	**Y2/Q1**	Decreased engagement or attendance in subsequent training sessions.	Consistently high attendance and engagement in all training sessions.	Attendance rates, engagement levels, and feedback scores for each session.	40,000
Activity 4.5: Facilitating mentorship opportunities between experienced professionals and interns (Establish and launch a mentorship program)	Private Sector Government Funding	MoFR	**Y2/Q1**	Difficulty in matching mentors with suitable interns or low engagement.	Effective mentorship relationships with positive outcomes.	Number of mentor-mentee pairs established, frequency of meetings, and feedback from both mentors and mentees.	30,000
Activity 3.3: Developing a centralized database for forest data storage and	International Donor	MoFR	**Y2/Q2**	Technical issues during development	Successful deployment of the	Number of development issues, time taken to resolve issues, and	75,000

Activity to be Implemented	Source Funding	Responsibility	Time Frame	Risk	Success Criteria	Indicators Monitoring of Implementation	Budget Per Activity (USD)
retrieval (Implementation phase: Build and deploy database)	Government Funding			leading to delays or system failures.	database without major issues.	system performance post-deployment.	
Activity 4.5: Facilitating mentorship opportunities between experienced professionals and interns (Launch and facilitate ongoing mentorship)	Private Sponsor Government Funding	MoFR	**Y2/Q2**	Mentorships not yielding the desired professional development outcomes.	Positive feedback from participants and demonstrable professional growth.	Number of mentorship meetings, progress reports from mentees, and feedback from mentors and mentees.	25,000
Activity 4.6: Evaluating and adapting training programs based on participant feedback and industry advancements (Collect feedback and adjust programs)	International Donor	MoFR	**Y2/Q2**	Insufficient or biased feedback leading to ineffective program adjustments.	Constructive feedback collected and used to make meaningful adjustments.	Volume and quality of feedback collected, number of adjustments made, and subsequent participant satisfaction.	15,000
Activity 3.4: Implementing data interoperability standards for seamless data exchange (Plan and start initial implementation)	International Donor	MoFR	**Y2/Q3**	Implementation challenges leading to data exchange issues.	Successful initial implementation of interoperability standards.	Number of implementation issues, time taken to resolve issues, and successful data exchanges.	70,000
Activity 4.6: Evaluating and adapting training programs based on participant feedback and industry advancements (Continue evaluation and adjustments)	International Donor	MoFR	**Y2/Q3**	Continuous evaluation not leading to significant improvements.	Ongoing improvements based on continuous feedback and evaluations.	Number of evaluations conducted, number of adjustments made, and participant satisfaction post-adjustments.	15,000
Activity 4.3: Organizing workshops and seminars on innovative forestry practices (Plan and execute additional workshops if needed)	Government Funding	MoFR	**Y2/Q3**	Additional workshops not addressing participant needs or interests.	Additional workshops are well-received and meet participant needs.	Attendance rates, participant feedback, and repeat participation.	20,000
Activity 3.4: Implementing data interoperability standards for seamless data	International Donor	MoFR and MECDM	**Y2/Q4**	Final implementation	Seamless data exchange achieved without issues.	Number of successful data exchanges, system	70,000

Activity to be Implemented	Source Funding	Responsibility	Time Frame	Risk	Success Criteria	Indicators Monitoring of Implementation	Budget Per Activity (USD)
exchange (Complete implementation and testing)	Government Funding			issues leading to data exchange failures.		performance, and user satisfaction.	
Activity 4.6: Evaluating and adapting training programs based on participant feedback and industry advancements (Finalize adjustments and prepare for next cycle)	International Donor	MoFR and MECDM	**Y2/Q4**	Final adjustments not addressing key issues identified in feedback.	Final adjustments effectively address feedback and prepare for the next training cycle.	Feedback on adjustments, participant readiness for the next cycle, and overall program improvement.	20,000
Activity 3.5: Conducting training for staff on new data management systems (Preparation and initial training sessions)	International Donor	MoFR	**Y3/Q1**	Initial training sessions do not adequately prepare staff.	Staff demonstrate understanding and competency with new systems.	Number of training sessions conducted, participant competency assessments, and feedback scores.	30,000
Activity 4.3: Organizing workshops and seminars on innovative forestry practices (Conduct additional workshops as necessary)	International Donor	MoFR and MECDM	**Y3/Q1**	Decreasing interest or engagement in additional workshops.	Continued high engagement and positive feedback for additional workshops.	Attendance rates, engagement levels, and participant feedback for each additional workshop.	30,000
Activity 3.6: Regularly updating and maintaining the data management systems (Ongoing maintenance)	International Donor Government Funding	MoFR and MECDM	**Y3/Q2**	Insufficient maintenance leading to system performance issues.	Systems remain up-to-date and function smoothly.	Number of maintenance activities completed, system performance metrics, and user satisfaction.	40,000
Activity 4.4: Providing hands-on training in the use of cutting-edge technologies (Continue hands-on training as necessary)	International Donor	MoFR and MECDM		Repeated training sessions not improving participant skills.	Participants show continuous improvement and competency with technologies.	Number of training sessions conducted, participant competency assessments, and feedback scores.	35,000
Activity 3.6: Regularly updating and maintaining the data management systems (Ongoing maintenance)	International Donor Government Funding	MoFR and MECDM	**Y3/Q3**	Long-term maintenance challenges leading to system degradation.	Sustained system performance and reliability.	Regular maintenance logs, system performance reports, and periodic user satisfaction surveys.	30,000
Activity 4.5: Facilitating mentorship opportunities	Private Sector	MoFR and MECDM		Mentorship outcomes not	Mentorship program leads to significant	Mentorship outcome reviews, feedback from	20,000

Activity to be Implemented	Source Funding	Responsibility	Time Frame	Risk	Success Criteria	Indicators Monitoring of Implementation	Budget Per Activity (USD)
between experienced professionals and interns (Review mentorship outcomes and adjust if needed)	Government Funding			meeting expectations.	professional development.	mentors and mentees, and program adjustments based on outcomes.	
Activity 3.6: Regularly updating and maintaining the data management systems (Ongoing maintenance and review)	Government Funding	MoFR and MECDM	**Y3/Q4**	Lack of periodic review leading to overlooked issues.	Regular reviews ensure any issues are promptly addressed.	Frequency of maintenance reviews, issues identified and resolved, and user satisfaction.	25,000
Activity 4.6: Evaluating and adapting training programs based on participant feedback and industry advancements (Finalize evaluations and plan for future cycles)	International Donor	MoFR and MECDM		Incomplete or inaccurate requirements gathering leading to ineffective upgrades.	Comprehensive and accurate documentation of requirements.	Number of stakeholder meetings conducted, completeness of requirements documentation, and feedback from stakeholders.	25,000

4.3 Action Plan for Network of Terrestrial Protected Areas

4.3.1 Introduction

The Terrestrial Protected Areas (TPA) in the Solomon Islands was established under the PA Act 2010, ensuring legal protection and recognition under national law. Its objectives focus on preserving biodiversity, connecting habitats, and managing vulnerable ecosystems against human and climate threats. TPA involves local communities in its establishment, promoting sustainable resource use and fostering stewardship. Benefits include biodiversity conservation, livelihood support through ecosystem services, eco-tourism opportunities, and scientific research. Challenges include funding, managing conflicting land uses, and enforcing conservation laws effectively.

The Network of Terrestrial Protected Areas (NTPA) in the Solomon Islands has been selected for further analysis in climate change mitigation technology action plans due to several key reasons:

1. **Mitigation Potential**: NTPA plays a crucial role in mitigating climate change impacts by sequestering carbon through preserved vegetation and soil, contributing to global efforts to reduce greenhouse gas emissions.
2. **Adaptation Potential**: Protecting ecosystems within NTPA enhances their resilience to climate change impacts such as extreme weather events, sea-level rise, and shifts in precipitation patterns, thereby supporting adaptation strategies for local communities.
3. **Environmental Benefits**: Preserving biodiversity and ecosystems within NTPA maintains ecosystem services vital for climate regulation, water purification, and soil stabilization, which are essential for both environmental health and human well-being.
4. **Social and Economic Benefits**: NTPA provides socio-economic benefits by supporting sustainable livelihoods through ecotourism, enhancing cultural values associated with protected areas, and promoting community engagement in conservation efforts.
5. **Cost-effectiveness**: While initial costs may be involved in establishing and managing NTPA, the long-term benefits, such as reduced disaster risks and enhanced ecosystem services, outweigh these expenses, making it a cost-effective climate change mitigation strategy.
6. **Integration into National Strategies**: Integrating NTPA into climate change mitigation action plans aligns with national goals for sustainable development, biodiversity conservation, and resilience building, ensuring its relevance and effectiveness in broader policy frameworks.

4.3.2 Ambition for the TAP Network Terrestrial Protected Areas (N-TPAs)

The ambition for the Network of Terrestrial Protected Areas (N-TPAs) within the climate change Technology Action Plan (TAP) in the Solomon Islands aligns with national priorities and environmental goals to address deforestation and climate change challenges. With over 89% forest cover, the Solomon Islands aims to reduce emissions from deforestation and degradation (REDD+), guided by a forest reference level (FRL) to quantify carbon emissions

and removals. The country plans a comprehensive national forest inventory to improve forest management and research, implement sustainable logging policies, and protect forests above 400 meters. Additionally, the goal of protecting 20% of terrestrial areas and enhancing ecosystem resilience through NTPA supports broader strategies outlined in the National Biodiversity Strategic Action Plan and National Forestry Policy by 2030. This integrated approach seeks to mitigate greenhouse gas emissions from logging activities while promoting sustainable livelihoods and ecosystem services for local communities.

4.3.3 Actions and Activities Selected for Inclusion in the TAP

4.3.3.1 Summary of Barriers and Measures to Overcome Barriers

Identifying barriers to implementing Terrestrial Protected Areas (TPAs) in the Solomon Islands revealed significant economic and non-financial challenges. Economic barriers include insufficient funding for establishing and maintaining TPAs, estimated at USD 148 million for covering 20% of Solomon Islands' forests by 2030. Non-financial obstacles encompass policy gaps, complex administrative procedures, inadequate institutional capacity, limited technical skills, technological deficiencies, and socio-cultural complexities. Overcoming these barriers requires securing diverse funding sources and developing long-term financial strategies like carbon trading. Policy-wise, clear regulations defining permissible activities are crucial, enhancing institutional capacity and streamlining administrative processes. Strengthening technical skills through training and improving data quality and dissemination are essential, as is fostering socio-cultural awareness and engagement to ensure effective NTPA implementation and conservation outcomes.

Table 39 Overview of Barriers and Measures to Overcome Such Barriers for Network Terrestrial Protected Area

Category	Identified Barriers	Measures
Economic and Financial	insufficient financial support for establishing and maintaining terrestrial protected areas.	Seek International Climate Mitigation Funding through Donor Partnerships for TPAs
Policy and Regulation	The lack of political prioritization and standardized definitions for TPAs hampers their role as effective conservation tools	Advocate for higher political priority and clear standards for TPAs.
Institutional and Organizational Capacity	The bureaucratic complexity and limited managerial authority hinder effective MPA development and stakeholder engagement	Streamline bureaucratic procedures and empower managers for effective TPA development and stakeholder engagement.
Technical and Human Skill	Lack of clarity in geographic delineation, inadequate scientific expert and limited technical capacity for TPA Management	Enhance geographic mapping accuracy, bolster scientific expertise, and expand technical capabilities for effective TPA management.
Technology:	Critical gaps in up-to-date forest maps and foundational data pose formidable challenges to effectively establishing, monitoring, and evaluating Terrestrial Protected Areas (TPAs)	Develop and integrate comprehensive forest mapping and data systems to overcome critical gaps, ensuring effective TPA establishment, monitoring, and evaluation.
Socio Culture and Awareness	Insufficient public awareness, conflicting views on socioeconomic and ecological impacts, inadequate incentives for resource	Implement comprehensive public awareness campaigns, foster inclusive dialogues on socioecological impacts,

Category	Identified Barriers	Measures
	owners, and disparities post-TPA establishment	establish equitable incentives for resource owners, and address disparities post-TPA establishment.

4.3.3.2 Actions selected for inclusion in the TAP

The specific actions highlighted in **Table 40** have been selected from the identified measures in **Table 39** as integral components of the Technology N-TPAs TAP.

Table 40 List of Action – Establish the Network Terrestrial Protected Areas (N-TPAs)

Action	Description
Foster Sustainable funding for TPAs	**Description:** This action involves securing long-term and stable financial resources for Traditional Protected Areas (TPAs). It includes exploring diverse funding sources such as government grants, private donations, corporate sponsorships, and international aid. **Purpose:** To ensure TPAs have the necessary financial support for effective management, conservation efforts, and community programs.
Advocate for TPA reform.	**Description:** This action focuses on promoting policy changes and legislative reforms that support the protection and sustainable management of TPAs. It includes engaging with policymakers, raising public awareness, and lobbying for enhanced legal protections. **Purpose:** To create a supportive legal and policy environment that strengthens the conservation and management of TPAs.
Strengthen TPA Governance Frameworks	**Description:** This action aims to improve the governance structures and processes within TPAs. It involves developing clear guidelines, enhancing accountability mechanisms, and fostering inclusive decision-making that involves all stakeholders. **Purpose:** To ensure transparent, effective, and equitable management of TPAs.
Capacity Building for TPA Management expertise and volunteer.	**Description:** This action focuses on building the skills and knowledge of TPA managers and volunteers. It includes providing training programs, workshops, and certification courses, as well as developing volunteer engagement strategies. **Purpose:** To improve the capacity of TPA staff and volunteers to manage protected areas effectively and sustainably.
Modernize TPA Data Infrastructure and management	**Description:** This action involves upgrading the data infrastructure and management systems within TPAs. It includes implementing advanced data collection technologies, improving data storage and analysis capabilities, and ensuring data accessibility for decision-making. **Purpose:** To enhance the accuracy, efficiency, and effectiveness of data-driven management practices in TPAs
Promote Community Engagement in TPAs	**Description:** This action focuses on fostering strong relationships between TPAs and local communities. It includes organizing community outreach programs, involving community members in conservation activities, and ensuring that local voices are heard in management decisions. **Purpose:** To build community support and participation in the protection and sustainable use of TPAs, ensuring that conservation efforts benefit both the environment and local populations.

4.3.3.3 Activities identified for implementation of selected actions

The list below outlines the specific activities related to each action aimed at promoting Network Terrestrial Protected Areas (N-TPAs)

Action 1: Foster Sustainable Funding for N-TPAs

Activity 1.1 Identifying potential funding sources such as government grants, private donations, and international aid.

Activity 1.2 Establishing partnerships with philanthropic organisations and corporate sponsors.

Activity 1.3 Applying for grants and funding opportunities that align with N-TPAs conservation goals.

Activity 1.4 Creating an endowment fund or sustainable financing mechanism for ongoing support.

Action 2: Advocate for N-TPAs Reform

Activity 2.1 Lobbying policymakers and legislators to enact supportive policies and legislation for N-TPAs.

Activity 2.2 Forming alliances with advocacy groups and stakeholders to strengthen the case for reform.

Activity 2.3 Participating in public consultations and hearings to provide input on N-TPAs-related policies.

Activity 2.4 Drafting and submitting proposals for legislative amendments and regulatory changes.

Activity 2.5 Monitoring and evaluating the impact of advocacy efforts on N-TPAs reform initiatives.

Action 3: Strengthen N-TPAs Governance Frameworks

Activity 3.1 Conducting a governance assessment to identify strengths and weaknesses in current frameworks.

Activity 3.2 Developing and implementing governance policies and procedures for effective N-TPAs management.

Activity 3.3 Establishing transparent decision-making processes and accountability mechanisms.

Activity 3.4 Providing training and capacity-building programs for N-TPAs board members and staff.

Activity 3.5 Conducting regular audits and reviews to ensure compliance with governance standards.

Action 4: Capacity Building for N-TPAs Management expertise and volunteer

Activity 4.1 Offering training programs and workshops on conservation practices and management techniques.

Activity 4.2 Recruiting and training volunteers to support N-TPAs operations and conservation projects.

Activity 4.3 Establishing mentorship programs to transfer expertise from experienced to new volunteers.

Activity 4.4 Creating incentives and recognition programs to motivate and retain volunteers.

Activity 4.5 Developing partnerships with educational institutions for internship and practical training opportunities.

Action 5: Modernize N-TPAs Data Infrastructure and Management

Activity 5.1 Upgrading data collection tools and technology for more accurate and efficient data gathering.

Activity 5.2 Implementing digital platforms and databases for storing and analyzing N-TPAs-related data.

Activity 5.3 Integrating GIS (Geographic Information System) and remote sensing technologies for spatial analysis.

Activity 5.4 Ensuring data security, accessibility, and compatibility with national and international databases.

Activity 5.5 Training staff on using new data management systems and technologies.

Action 6: Promote Community Engagement in TNPAs

Activity 6.1 Organizing community outreach programs, events, and workshops to raise awareness about N-TPAs.

Activity 6.2 Collaborating with local schools, community groups, and NGOs to involve residents in conservation activities.

Activity 6.3 Establishing community advisory boards or forums for ongoing dialogue and input.

Activity 64 Supporting community-led conservation initiatives and projects within N-TPAs.

Activity 6.5 Celebrating cultural and ecological heritage through festivals, tours, and interpretive programs

4.3.3.4 Actions to be Implemented as Project Ideas

The chosen project idea has undergone a thorough evaluation process in accordance with the priority ranking framework established by the Forestry Sector Working Group to address climate change mitigation effectively. The decision-making process is fully explained in **Annexes 5, 6, and 12, which provide** a detailed analysis of the selection procedure, including the criteria and considerations involved in the decision.

A. Selected Action:

1. **Action 1:** Foster Sustainable Funding for N-TPAs
2. **Action 3:** Strengthen N-TPAs Governance Frameworks

B. Project Overview*:*

The project focuses on the Network of Terrestrial Protected Areas (N-TPAs) in the Solomon Islands to mitigate climate change through two key actions: fostering sustainable funding and strengthening governance frameworks. These actions are designed to ensure protected areas' long-term viability and effectiveness in conserving forest ecosystems and promoting sustainable forest management practices.

Foster Sustainable Funding for N-TPAs seeks to establish and secure long-term financial support for N-TPAs, ensuring they have the necessary resources to maintain and enhance their conservation efforts. By diversifying funding sources and creating a stable financial base, the project aims to support ongoing and future initiatives that contribute to climate change mitigation.

Strengthen N-TPAs Governance Frameworks focuses on improving the governance structures and policies that oversee N-TPAs. By enhancing governance frameworks, the project aims to ensure effective management, transparency, and accountability in the operations of protected areas, thereby supporting sustainable conservation practices.

C. Purpose

The purpose of Foster Sustainable Funding for N-TPAs and Strengthen N-TPAs Governance Frameworks in the Network of Terrestrial Protected Areas (N-TPAs) within the forestry sector of the Solomon Islands is to enhance the effectiveness and sustainability of conservation efforts for climate change mitigation. Sustainable funding ensures that N-TPAs have continuous financial resources to implement and maintain forest management practices that reduce deforestation and promote carbon sequestration. This funding supports capacity building, infrastructure, and market access, thus ensuring the economic viability and resilience of protected areas. Concurrently, strengthening governance frameworks promotes transparency, accountability, and efficient management, ensuring legal compliance, inclusive decision-making, and robust stakeholder engagement. These actions collectively enhance the ability of N-TPAs to conserve biodiversity, protect forest ecosystems, and mitigate the impacts of climate change by maintaining healthy, carbon-rich terrestrial landscapes in the Solomon Islands.

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D. Activities to Be Implemented

Action 1: Foster Sustainable Funding for N-TPAs

Activity 1.1 Identifying potential funding sources such as government grants, private donations, and international aid.

Activity 1.2 Establishing partnerships with philanthropic organisations and corporate sponsors.

Activity 1.3 Applying for grants and funding opportunities that align with N-TPAs conservation goals.

Activity 1.4 Creating an endowment fund or sustainable financing mechanism for ongoing support.

Action 3: Strengthen N-TPAs Governance Frameworks

Activity 3.1 Conducting a governance assessment to identify strengths and weaknesses in current frameworks.

Activity 3.2 Developing and implementing governance policies and procedures for effective N-TPAs management.

Activity 3.3 Establishing transparent decision-making processes and accountability mechanisms.

Activity 3.4 Providing training and capacity-building programs for N-TPAs board members and staff.

Activity 3.5 Conducting regular audits and reviews to ensure compliance with governance standards.

4.3.4 Stakeholders and timeline for implementation of N-TPAs

4.3.4.1 Overview of Stakeholders for the Implementation of the N-TPAs

1. **Government Agencies:**
    - Ministry of Forestry and Research: Responsible for policy formulation and oversight of forest management activities.
    - Ministry of Environment, Climate Change, Disaster Management, and Meteorology: It is involved in environmental regulation and climate change mitigation efforts.
    - Ministry of Finance and Treasury: This department is responsible for budget allocation and financial oversight, which are crucial for funding NFI activities.
2. **Local Communities and Indigenous Groups:**
    - Customary landowners: Holders of land rights and key stakeholders in forest management decisions.
    - Community-based organizations (CBOs): Engaged in local conservation efforts and sustainable resource use.
    - Tribal councils and village leaders: Representatives of traditional governance structures influencing land use and access decisions.
3. **International and Regional Organizations:**
    - United Nations Development Programme (UNDP), Food and Agriculture Organization (FAO), and other UN agencies: Provide technical assistance, funding opportunities, and capacity building support.
    - Pacific Islands Forum Secretariat (PIFS): Facilitates regional cooperation on environmental and climate issues affecting the Solomon Islands.
4. **Academic and Research Institutions:**
    - Local universities and research centres: Collaborate on data collection methodologies, technological innovations, and capacity building initiatives.

- International research organizations: Contribute expertise in forest ecology, GIS technology, and sustainable development practices.

5. **Non-Governmental Organizations (NGOs) and Civil Society:**
    - Conservation NGOs: Advocate for environmental protection, biodiversity conservation, and community empowerment in forest management.
    - Human rights organizations: Ensure equitable participation and representation of marginalized groups in decision-making processes related to forest resources.
6. **Private Sector and Industry Representatives:**
    - Logging companies and forestry enterprises: Stakeholders in sustainable logging practices, timber processing, and economic contributions to national development.
    - Telecommunication and technology firms: Provide infrastructure support for data management, satellite imagery, and GIS technologies for NFI implementation.
7. **Development Partners and Donor Agencies:**
    - Bilateral and multilateral donors: Provide financial support, technical assistance, and policy guidance for sustainable development initiatives, including forest management.
    - International climate funds: These funds projects aimed at mitigating climate change, adapting to it, and promoting sustainable land use practices.

4.3.4.2 Scheduling and sequencing of specific activities

Implementing the Network of Terrestrial Protected Areas in the Solomon Islands requires careful scheduling and sequencing of activities over a two-year period.

Table 41 Scheduling and Sequencing Activities for Network of Terrestrial Protected Areas (N-TPAs) Technology Action Plan

Time Frame	Activity	Responsibility	Stakeholder
Y1/Q1,Q2	**Activity 1.1:** Identifying potential funding sources such as government grants, private donations, and international aid.	MECDM	MoFT, UNDP, WB, NGOs
Y1/Q1,Q2	**Activity 3.1:** Conducting a governance assessment to identify strengths and weaknesses in current frameworks.	MECDM and MoFR	MoIA, Govenrment Ministry Legal advisor
Y1/Q2,Q3	**Activity 1.2:** Establishing partnerships with philanthropic organizations and corporate sponsors.	MECDM and MoFR	GEF,WWF
Y1/Q2, And Q3,Q4	**Activity 3.2:** Developing governance policies and procedures for effective NTPAs management.	MECDM and MoFR	MoIA, Govenrment Ministry NGos, University
Y1/Q3,Q4 and Y2/Q1	**Activity 1.3:** Applying for grants and funding opportunities that align with NTPAs conservation goals.	MECDM and MoFR	MoFT, UNDP, GEF

Y1/Q3,Q4	**Activity 3.3:** Establishing transparent decision-making processes and accountability mechanisms.	MoFR	MoIA, Govenrment Ministry NGos, University
Y1/Q4 and Y2/Q1,Q2	**Activity 3.4:** Providing training and capacity-building programs for NTPAs board members and staff.	MECDM	MoIA, Govenrment Ministry NGos, University
Y2/ Q1,Q2, Q3,Q4	**Activity 1.4:** Creating an endowment fund or sustainable financing mechanism for ongoing support.	MECDM and MoFR	MoFT, WB, ADB, GE, UNDP
Y2/Q2, and Q4	**Activity 3.5:** Conducting regular audits and reviews to ensure compliance with governance standards.	MECDM	MoIA, Govenrment Ministry NGos, University
Y2/Q4	**Activity 1.5** : Finalizing the establishment of an endowment fund or sustainable financing mechanism.	MECDM and MoFR	MoFT, WB, ADB, GE, UNDP

4.3.5 Estimation of Resources Needed for Action and Activities

4.3.5.1 Estimation of Capacity Building Needs

A comprehensive capacity-building program is essential to implement the Network Terrestrial Protected Areas Action Plan effectively. Below is a detailed estimation of the capacity-building needs:

Action 1: Foster Sustainable Funding for N-TPAs

1. Educate staff on identifying and researching potential funding sources.
2. Workshop on partnership building and management.
3. Workshop on grant application processes.
4. Train staff on endowment fund creation and management.
5. Workshop on Advanced fund management, monitoring, and reporting.

Action 3: Strengthen N-TPAs Governance Frameworks

1. Train staff on governance assessment techniques and tools.
2. Policy writing, implementation strategies, and compliance monitoring.
3. Transparent processes, accountability mechanisms, and stakeholder engagement.
4. Leadership development, financial management, and program evaluation.
5. Audit procedures, compliance checks, and reporting.

4.3.5.2 Estimations of costs of actions and activities

Table 42 Estimations of costs of action and Activities for Network of Terrestrial Protected Areas (N-TPAs) Technology Action Plan

Time Frame	Activity	Budget (USD)	Funding Source
Y1/Q1,Q2	**Activity 1.1:** Identifying potential funding sources such as government grants, private donations, and international aid.	20,000	International organisations and Government grants
Y1/Q1,Q2	**Activity 3.1:** Conducting a governance assessment to identify strengths and weaknesses in current frameworks.	30,000	International organisations and Government grants
Y1/Q2, Q3	**Activity 1.2:** Establishing partnerships with philanthropic organizations and corporate sponsors.	20,000	International organisations and Government grants
Y1/Q2, Q3, Q4	**Activity 3.2:** Developing governance policies and procedures for effective NTPAs management.	40,000	International organisations and Government grants
Y1/Q3-Q4 and Y2/Q1	**Activity 1.3:** Applying for grants and funding opportunities aligned with NTPAs conservation goals.	15,000	International organisations and Government grants
Y1/Q3-Q4	**Activity 3.3:** Establishing transparent decision-making processes and accountability mechanisms.	30,000	International organisations and Government grants
Y1/Q4 and Y2/Q1-Q2	**Activity 3.4:** Providing training and capacity-building programs for NTPAs board members and staff.	40,000	International organisations and Government grants
Y2/ Q1,Q2, Q3,Q4	**Activity 1.4:** Creating an endowment fund or sustainable financing mechanism for ongoing support.	20,000	International organisations and Government grants
Y2/Q2, and Q4	**Activity 3.5:** Conducting regular audits and reviews to ensure compliance with governance standards.	25,000	International organisations and Government grants
Y2/Q4	**Activity 1.5** : Finalizing the establishment of an endowment fund or sustainable financing mechanism.	20,000	International organisations and Government grants

4.3.6 Management Planning

3.3.6.1 Risks and Contingency Planning

Table 43 Risk and Contingency Plan Network of Terrestrial Protected Areas (N-TPAs) Technology Action Plan
Technology Action Plan

Risk Item	Description	Contingency Plan
Activity 1.1: Identifying potential funding sources		
Cost Risk	Low cost, primarily staff time.	Allocate additional hours or temporary staff if initial efforts are insufficient.
Scheduling Risk	Potential delay in identifying all sources.	Set intermediate milestones and reallocate tasks if delays occur.
Performance Risk	Missing some potential funding sources.	Use a broad approach, including consultations with experts.
Activity 1.2: Establishing partnerships with philanthropic organisations and corporate sponsors		
Cost Risk	Medium cost, including networking events and promotional materials.	Budget for unforeseen expenses and consider virtual meetings to reduce costs.
Scheduling Risk	Partnerships may take longer to establish than anticipated.	Start outreach early and track progress regularly.
Performance Risk	Difficulty in securing commitments from partners.	Diversify efforts across multiple potential partners.
Activity 1.3: Applying for grants and funding opportunities		
Cost Risk	Medium cost, application fees, and staff time.	Prioritize high-potential opportunities to optimize resource use.
Scheduling Risk	Grant application deadlines may be tight.	Create a detailed application schedule and seek external help if needed.
Performance Risk	Rejection of applications.	Develop strong proposals and apply for multiple grants.
Activity 1.4: Creating an endowment fund or sustainable financing mechanism		
Cost Risk	High initial setup cost, including legal and financial advisory fees.	Seek pro bono services or phased investment to manage expenses.
Scheduling Risk	Time required for legal and financial structuring.	Begin preparations early and monitor progress closely.
Performance Risk	Inadequate fund growth or returns.	Engage experienced financial managers and diversify investments.
Activity 3.1: Conducting a governance assessment		
Cost Risk	Medium cost, involving consultants or internal staff.	Use a mix of internal and external resources to control costs.
Scheduling Risk	Delays in completing the assessment.	Establish a clear timeline and milestones.

Risk Item	Description	Contingency Plan
Performance Risk	Incomplete or inaccurate assessment.	Cross-check findings with multiple sources.
Activity 3.2: Developing and implementing governance policies and procedures		
Cost Risk	Medium cost, includes staff time and possible legal consultation.	Allocate contingency funds for additional consultation.
Scheduling Risk	Time-consuming policy development process.	Set incremental deadlines and review progress regularly.
Performance Risk	Policies may not be fully effective.	Pilot policies before full implementation and adjust as needed.
Activity 3.3: Establishing transparent decision-making processes and accountability mechanisms		
Cost Risk	Low to medium cost, largely staff time.	Utilize existing resources and seek external advice if needed.
Scheduling Risk	Potential delays in stakeholder agreement.	Engage stakeholders early and often to build consensus.
Performance Risk	Incomplete buy-in from all stakeholders.	Communicate the benefits clearly and adjust approaches based on feedback.
Activity 3.4: Providing training and capacity-building programs		
Cost Risk	High cost, including training materials, facilitators, and possibly travel.	Seek funding or in-kind support for training programs.
Scheduling Risk	Coordinating schedules for all participants.	Plan well in advance and offer multiple training sessions.
Performance Risk	Variability in training effectiveness.	Use feedback to improve training programs continuously.
Activity 3.5: Conducting regular audits and reviews		
Cost Risk	Medium cost, audit fees, and internal resources.	Budget for regular audits and seek competitive bids to manage costs.
Scheduling Risk	Audits can be time-consuming.	Integrate audits into the regular schedule to minimize disruption.
Performance Risk	Non-compliance findings.	Develop corrective action plans and conduct follow-up audits.

3.3.6.2 Next Steps

To proceed effectively Foster Sustainable Funding for N-TPAs and Strengthen N-TPAs Governance Frameworks in the Solomon Islands, it's crucial to identify immediate requirements and critical steps:

A. Immediate Requirements to Proceed

a. Formation of a Project Team:
- Assemble a dedicated project team with fundraising, grant writing, financial management, governance, and capacity building expertise.
- Assign a project manager to oversee the overall progress and coordination of both funding and governance activities.

b. Stakeholder Engagement:
- Identify and engage key stakeholders, including government agencies, potential funding partners, local communities, and N-TPAs board members and staff.
- Organize introductory meetings to communicate project objectives, gather initial feedback, and secure stakeholder buy-in.

c. Baseline Assessments:
- Conduct baseline assessments to understand the current status and gaps in sustainable funding and governance frameworks.
- Gather data on potential funding sources, existing partnerships, current governance practices, and organizational strengths and weaknesses.

d. Resource Allocation:
- Allocate initial resources, including budget, personnel, and time, for the first phase of activities.
- Secure any necessary approvals or permissions required to proceed with the project.

e. Develop Detailed Action Plans:
- Create detailed action plans for each activity, including specific tasks, timelines, and responsible parties.
- Establish clear milestones and deliverables for monitoring progress.

B. Critical Steps to Succeed

a. Robust Project Management:
- Implement a robust project management framework to ensure effective planning, execution, and monitoring of activities.
- Use project management tools to track progress, manage resources, and address issues promptly.

b. Effective Communication:
- Maintain open and transparent communication channels among all stakeholders.
- Regularly update stakeholders on progress, challenges, and successes.

c. Capacity Building and Training:
- Provide training and capacity-building programs for the project team, N-TPAs board members, and staff to enhance their skills and knowledge.
- Ensure that training programs are tailored to address specific needs in fundraising, governance, and management.

d. Diversified Funding Strategy:
- Develop a diversified funding strategy to secure multiple sources of funding, including government grants, private donations, corporate sponsorships, and international aid.

- Establish partnerships with philanthropic organizations and corporate sponsors to leverage additional resources.

e. Governance Framework Development:

- Develop and implement governance policies and procedures for effective N-TPAs management.
- Establish transparent decision-making processes and accountability mechanisms to ensure good governance practices.

f. Monitoring and Evaluation:

- Conduct regular audits and reviews to ensure compliance with governance standards and assess the effectiveness of funding strategies.
- Use feedback from monitoring and evaluation activities to make necessary adjustments and improvements.

g. Sustainable Financing Mechanisms:

- Create an endowment fund or other sustainable financing mechanisms to provide ongoing support for N-TPAs.
- Engage experienced financial managers to oversee the fund and ensure its growth and sustainability.

4.3.7 TAP overview table for Foster Sustainable Funding for N-TPAs and Strengthen N-TPAs Governance Frameworks, NTPAs Technology

Table 44 TAP overview table for Foster Sustainable Funding for N-TPAs and Strengthen N-TPAs Governance Frameworks, NTPAs Technology

TAP overview table	
Sector	FORESTRY SECTOR
Sub-sector	National Forest Inventory
Technology	Network Terrestrial Protected Areas
Action	Foster Sustainable Funding for N-TPAs and Strengthen N-TPAs Governance Frameworks
Ambition	The Solomon Islands aims to create a **Network of Terrestrial Protected Areas (NTPAs)** covering 20% of the forest area by 2023. This initiative targets deforestation and climate challenges by managing forest cover, reducing emissions, and supporting sustainable practices to preserve forests, improve livelihoods, and protect biodiversity.
Benefits	The Network of Terrestrial Protected Areas (NTPAs) in the Solomon Islands preserves unique biodiversity, supports climate change mitigation through carbon sequestration, and protects cultural heritage while boosting local economies through ecotourism and sustainable resource use. Additionally, NTPAs enhance ecosystem services such as water regulation and soil fertility, provide opportunities for scientific research and education, and strengthen governance and management frameworks through collaboration and effective conservation practices.

Activity to be Implemented	**Funding Source**	**Responsible body and focal point**	**Time Frame**	**Risks**	**Success criteria**	**Indicators for Monitoring of Implementation**	**Budget (USD)**
Activity 1.1: Identifying potential funding sources such as government grants, private donations, and international aid.	International organisations and Government grants	MECDM	Y1/Q1, Q2	Difficulty in identifying sufficient and suitable funding sources. Limited response from potential donors	Comprehensive list of potential funding sources including government grants, private donations, and international aid. At least 10 viable funding sources identified	Number of potential funding sources identified and documented. Quality and relevance of sources in relation to NTPAs goals.	20,000
Activity 3.1: Conducting a governance assessment to identify strengths and weaknesses in current frameworks.	International organisations and Government grants	MECDM and MoFR	Y1/Q1, Q2	Incomplete or inaccurate assessment findings. Resistance from stakeholders in	Comprehensive governance assessment report identifying strengths,	Completion and approval of the assessment report. Number of stakeholders engaged and	30,000

Activity to be Implemented	Funding Source	Responsible body and focal point	Time Frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget (USD)
				sharing information.	weaknesses, and recommendations. Engagement and cooperation from relevant stakeholders.	contributing to the assessment.	
Activity 1.2: Establishing partnerships with philanthropic organizations and corporate sponsors.	International organisations and Government grants	MECDM and MoFR	Y1/Q2, Q3	Difficulty in securing partnerships or sponsorships. Misalignment of goals between partners.	Formation of at least 3 strategic partnerships or sponsorship agreements. Clearly defined roles and contributions from each partner.	Number of partnerships established. Formal agreements or memorandums of understanding (MOUs) signed.	20,000
Activity 3.2: Developing governance policies and procedures for effective NTPAs management.	International organisations and Government grants	MECDM and MoFR	Y1/Q2, And Q3, Q4	Development of policies that are not aligned with practical needs or stakeholder expectations. Slow approval or implementation process.	Approval and implementation of governance policies and procedures. Clear and actionable guidelines for NTPAs management.	Completion and formal adoption of governance policies. Compliance with policies and procedures in day-to-day operations.	40,000
Activity 1.3: Applying for grants and funding opportunities that align with NTPAs conservation goals.	International organisations and Government grants	MECDM and MoFR	Y1/Q3,Q4 and Y2/Q1	High competition for grants leading to application rejections. Misalignment of grant requirements with NTPAs conservation goals.	Submission of grant applications to at least 5 relevant opportunities. Securing funding from at least 2 grants.	Number of grant applications submitted. Number of grants awarded and funding received.	15,000

Activity to be Implemented	Funding Source	Responsible body and focal point	Time Frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget (USD)
Activity 3.3: Establishing transparent decision-making processes and accountability mechanisms.	International organisations and Government grants	MoFR	Y1/Q3, Q4	Lack of buy-in from key stakeholders. Ineffective or unclear decision-making processes.	Implementation of transparent decision-making processes and accountability mechanisms. Stakeholder satisfaction with the new processes	Documentation of decision-making processes and accountability measures. Feedback from stakeholders on the effectiveness of the new processes.	30,000
Activity 3.4: Providing training and capacity-building programs for NTPAs board members and staff.	International organisations and Government grants	MECDM	Y1/Q4 and Y2/Q1, Q2	Insufficient participation or engagement in training programs. Training programs not addressing actual needs.	Completion of training programs with high participation rates. Improved capacity and skills among NTPAs board members and staff.	Number of training sessions conducted and attendees. Post-training assessments or evaluations showing improved skills and knowledge.	40,000
Activity 1.4: Creating an endowment fund or sustainable financing mechanism for ongoing support.	International organisations and Government grants	MECDM and MoFR	Y2/ Q1, Q2, Q3, Q4	High initial setup costs and administrative complexity. Insufficient funds raised or invested.	Establishment of an endowment fund or financing mechanism with initial capital. Clear investment strategy and financial management plan in place.	Amount of capital raised for the endowment fund. Documentation of the investment strategy and fund management processes.	20,000
Activity 3.5: Conducting regular audits and reviews to ensure compliance with governance standards.	International organisations and Government grants	MECDM	Y2/Q2, and Q4	Incomplete or inaccurate audit results. Non-compliance with governance standards.	Regular and thorough audits conducted with actionable recommendations. Demonstrated compliance with	Frequency and quality of audit reports. Follow-up actions taken based on audit findings	25,000

Activity to be Implemented	Funding Source	Responsible body and focal point	Time Frame	Risks	Success criteria	Indicators for Monitoring of Implementation	Budget (USD)
					governance standards		
Activity 1.5 : Finalizing the establishment of an endowment fund or sustainable financing mechanism.	International organisations and Government grants	MECDM and MoFR	Y2/Q4	Delays in fund setup due to regulatory or administrative hurdles. Insufficient funds or incorrect fund structure.	Endowment fund or financing mechanism fully operational with all necessary approvals and documentation. Achieving targeted financial milestones (e.g., initial capital amount).	Operational status of the fund or financing mechanism. Financial reports showing fund status and growth	20,000

4.4 Project Ideas for the Forestry Sector

4.4.1 Brief summary of the project ideas for the Forestry Sector

A. Main Project Idea: Integrated Sustainable Forestry and Protected Areas Management (ISFPAM) in the Solomon Islands

B. Description

The Integrated Sustainable Forestry and Protected Areas Management (ISFPAM) project in the Solomon Islands is a comprehensive initiative designed to improve forest management and conservation practices. At its core, the project aims to enhance the sustainable use and protection of forests by implementing a Multipurpose National Forest Inventory (M-NFI) and strengthening the Network of Terrestrial Protected Areas (N-TPAs). Focusing on these key aspects, the project addresses pressing environmental and socio-economic concerns.

Furthermore, in alignment with the goals outlined in the Technology Action Plan (TAP) for the forestry and protected areas sector, the ISFPAM project prioritizes the promotion of technology transfer, diffusion, and deployment. Specifically, the project is geared towards facilitating the adoption of relevant mitigation technologies to combat climate change. These technologies encompass advanced remote sensing methodologies for improved forest monitoring, promoting sustainable forest management practices, and developing robust governance frameworks for protected areas.

Ultimately, the ISFPAM project serves as a multifaceted approach to environmental stewardship, aiming to mitigate the impacts of climate change, conserve biodiversity, and foster sustainable socio-economic development within the Solomon Islands. Through its comprehensive strategies and targeted focus, the project endeavours to positively impact both the natural environment and the local communities dependent on these vital resources.

C. Key Components

1. **Sustainable Forest Management**:
   - **Implementing the Multipurpose National Forest Inventory (M-NFI)**:
     - Utilize advanced remote sensing technologies to gather comprehensive data on forest resources.
     - Conduct ground surveys to validate remote sensing data and enhance inventory accuracy.
2. **Strengthening Protected Areas**:
   - **Enhancing the Network of Terrestrial Protected Areas (N-TPAs)**:
     - Develop and enforce robust governance frameworks for protected areas.
     - Promote sustainable management practices within these areas to conserve biodiversity and mitigate climate change impacts.
3. **Technology Transfer and Deployment**:
   - **Facilitating the Adoption of Mitigation Technologies**:

- Promote the use of advanced remote sensing for forest monitoring.
- Support the deployment of green technologies and sustainable practices in forestry.
- Align with the Technology Action Plan (TAP) to ensure effective technology transfer and diffusion.

4. **Environmental and Socio-Economic Impact**:
   - **Mitigating Climate Change**:
     - Implement practices that reduce greenhouse gas emissions and enhance carbon sequestration.
   - **Conserving Biodiversity**:
     - Protect endangered species and their habitats through improved management of protected areas.
   - **Fostering Sustainable Development**:
     - Create socio-economic opportunities for local communities by integrating sustainable forest management practices.

4.4.2 Specific Project Ideas

A. **Introduction/Background:**

The ISFPAM (Improving Sustainable Forestry and Protected Areas Management) project is a comprehensive initiative focused on bolstering the management and sustainability of the Solomon Islands' forestry sector and terrestrial protected areas. The project recognizes the critical importance of accurate forest data, robust governance frameworks, and sustainable practices in effectively addressing climate change and promoting biodiversity conservation. In response to these issues' pressing urgency, the ISFPAM project combines the implementation of a detailed national forest inventory with efforts to strengthen the governance and management of protected areas. By thoroughly assessing the nation's forests and enhancing the oversight and management of protected areas, the project seeks to lay a solid foundation for sustainable forestry practices and the effective conservation of biodiversity.

B. **Objectives:**

1. To establish a comprehensive national forest inventory (M-NFI).
2. To provide accurate data for informed decision-making and sustainable forest management.
3. To enhance the governance and management of N-TPAs.
4. To promote sustainable resource use and biodiversity conservation.
5. To support climate change mitigation through improved forest carbon stock assessment and increased ecosystem resilience.

C. **Outputs:**

1. Detailed forest thematic maps and databases.
2. Certified national forest data collectors.
3. Accurate data on forest biomass and carbon stocks.
4. Governance assessment reports.
5. Approved governance policies and procedures.
6. Trained N-TPAs staff and board members.

D. **Relationship to Sustainable Development Priorities:**
The project aligns with national priorities for sustainable development, climate change mitigation, and biodiversity conservation, as outlined in the National Biodiversity Strategic Action Plan and National Forestry Policy. It supports the Solomon Islands' commitment to maintaining its forest resources and promoting sustainable forestry practices.

E. **Project Deliverables:**

1. Enhanced forest management capabilities through comprehensive data collection.
2. Improved governance and management of N-TPAs.
3. Increased carbon sequestration data and reduced greenhouse gas emissions.
4. Enhanced capacity of forestry officers and N-TPAs staff.
5. Greater community engagement in conservation efforts.

F. **Project Scope and Possible Implementation:**
The ISFPAM project covers all types of forests and terrestrial protected areas across the Solomon Islands. The M-NFI will initially focus on Choiseul Province, with plans to expand coverage to other provinces based on the project's success and available resources. The aim is to cover at least 20% of the Solomon Islands' total forest area. The N-TPAs project will cover all designated terrestrial protected areas in the Solomon Islands. This includes areas under the PA Act 2010 and other conservation areas managed by local and national authorities. Given the country's legal solid frameworks, existing conservation efforts, and commitment to sustainable forest management, it is feasible.

M-NFI builds on existing forest management frameworks and aims to enhance them with advanced data collection and analysis techniques. It aligns with past initiatives like forest carbon monitoring and sustainable forest management projects. N-TPAs project complements ongoing efforts to manage and expand protected areas under the PA Act 2010. It also integrates with previous and current conservation programs, including those focused-on biodiversity protection and climate change adaptation.

G. Project Activities for Integrated Sustainable Forestry and Protected Areas Management (ISFPAM) Project

1. **Planning and Preparation**
   - **Develop a Detailed Project Plan:** Define objectives, scope, timelines, and budget.
   - **Engage Stakeholders:** Identify and communicate with key stakeholders including government agencies, local communities, and international partners.
   - **Secure Funding:** Apply for grants, negotiate with donors, and finalize funding agreements.
2. **Data Collection and Analysis (M-NFI)**
   - **Deploy Remote Sensing Technology:** Use satellite imagery to gather forest data.
   - **Conduct Ground Surveys:** Collect on-site data for validation and detail.
   - **Integrate Data:** Create thematic maps and databases from collected data.
3. **Governance and Policy Development (N-TPAs)**
   - **Conduct Governance Assessments:** Evaluate current frameworks and identify gaps.
   - **Develop Policies and Procedures:** Draft and review new governance policies.
   - **Establish Transparent Processes:** Create mechanisms for decision-making and accountability.
4. **Training and Capacity Building (N-TPAs)**
   - **Develop Training Programs:** Design curriculum and materials for training.
   - **Conduct Training Sessions:** Deliver training to staff and local communities.
   - **Evaluate Training Effectiveness:** Assess the impact of training programs.
5. **Community Engagement**
   - **Facilitate Community Consultations:** Organize meetings and discussions with local communities.
   - **Implement Community Programs:** Develop and support initiatives that involve local stakeholders in forest and protected area management.
   - **Monitor Community Feedback:** Gather and respond to input from communities.
6. **Monitoring and Evaluation**
   - **Establish Monitoring Systems:** Develop frameworks and tools for tracking progress.
   - **Conduct Regular Audits:** Review project activities and outcomes periodically.
   - **Prepare Evaluation Reports:** Document findings and provide recommendations.

H. Timelines

Year 1-2: Planning and Preparation**,** including securing funding

Year 3-4: Implementation Data Collection and Analysis (M-NFI), Governance and Policy Development (N-TPAs), Capacity Building and community engagement

Year 5: Monitoring and evaluation

I. Budget/Resource Requirements

- **Estimated Budget:** $9.6 million (USD)
- **Funding Sources:** International grants, government contributions, and private donations.
- **Resources:** Staff, Remote sensing equipment, survey teams, and data analysts.

J. Measurement/Evaluation

- **Tangible Evaluation:** regular progress reports, completion of remote sensing data collection, governance framework reports, technology adoption rate, carbon sequestration data, biodiversity indicators, training completion reports and community involvement
- **Success Measurement:** Successful completion of the M-NFI with high data accuracy and coverage, adoption and implementation of new governance policies, improved management of protected areas, effective deployment of advanced remote sensing and green technologies, and evidence of their impact on forest management, Achievement of greenhouse gas emission reduction targets and improved carbon sequestration rates.

K. Possible Complications/Challenges

- **Challenges:** Securing funding, policy changes, technological adoption, community engagement, resistance to change
- **Complications:** Supply chain disruptions, coordination among stakeholders, data collection and integration issues, logistic issues and budget constrain.

L. Responsibilities and Coordination

- **Government Agencies:** MECDM, MoFR.
- **Community Organizations:** Community engagement
- **Project Team:** Planning, execution, monitoring, and evaluation

REFERENCES

ADB. (2016). Sustainable Transport Infrastructure Improvement Program. [online] Asian Development Bank. Available at: https://www.adb.org/projects/46499-002/main.

Agency, S.N. (2022). Climate Impact, Coastal Erosion, and Flooding: Protecting Seychelles' Coastlines May Cost up to $10m. [online] Seychelles Broadcasting Corporation. Available at: https://www.sbc.sc/news/climate-impact-coastal-erosion-and-flooding-protecting-seychelles-coastlines-may-cost-up-to-10m/ [Accessed 21 Jun. 2024].

Alves, F. L., Sousa, L. P., Almodovar, M., & Phillips, M. R. (2013). Integrated Coastal Zone Management (ICZM): A Review of Progress in Portuguese Implementation. Regional Environmental Change, 13, 1031-1042.

Ayyam, V., Palanivel, S., & Chandrakasan, S. (2019). Sand Mining and Strategies for Its Management. In Coastal Ecosystems of the Tropics: Adaptive Management (pp. 201-217).

BAEF. (2024). SI Barrier Analysis and Enabling Framework. Ministry of Environment, Climate Change, Disaster Management and Meteorology, Honiara, Solomon Islands.

Bower, E., Weerasinghe, S., & Mokhnacheva, D. (2022). Mapping of Planned Relocation Cases: A Foundation for Evidence-Based Policy and Practice. Forced Migration Review, (69).

Dugan, J. E., Airoldi, L., Chapman, M. G., Walker, S. J., Schlacher, T., Wolanski, E., & McLusky, D. (2011). Estuarine and Coastal Structures: Environmental Effects, A Focus on Shore and Nearshore Structures. Treatise on Estuarine and Coastal Science, 8, 17-41.

Garmendia, E., Gamboa, G., Franco, J., Garmendia, J. M., Liria, P., & Olazabal, M. (2010). Social Multi-Criteria Evaluation as a Decision Support Tool for Integrated Coastal Zone Management. Ocean & Coastal Management, 53(7), 385-403.

Ha'apio, M., Wairiu, M., Gonzalez, R., & Morrison, K. (2018). Transformation of Rural Communities: Lessons from a Local Self-Initiative for Building Resilience in the Solomon Islands. Local Environment, 23(3), 352-365.

Hunt Jr, I. A. (1959). Design of Seawalls and Breakwaters. Journal of the Waterways and Harbors Division, 85(3), 123-152.

Integrated Coastal Zone Management in the Mediterranean: From Vision to Action. (n.d.). Available at: https://www.vliz.be/projects/pegaso/images/stories/pegaso_draft_p5.pdf.

Jupiter, S., McCarter, J., Albert, S., Hughes, A., & Grinham, A. (2019). Solomon Islands: Coastal and Marine Ecosystems. In World Seas: An Environmental Evaluation (pp. 855-874). Academic Press.

Kereseka, J. (2021). Solomon Islands Ridge to Reef Island Diagnostic Analysis Report. Honiara, Solomon Islands.

Khaniya, B., Gunathilake, M. B., & Rathnayake, U. (2021). Ecosystem-Based Adaptation for the Impact of Climate Change and Variation in the Water Management Sector of Sri Lanka. Mathematical Problems in Engineering, 2021, 1-10.

Krishnamurthy, R. R. (Ed.). (2008). Integrated Coastal Zone Management. Research Publishing Services.

Lane, M. B. (2006). Towards Integrated Coastal Management in Solomon Islands: Identifying Strategic Issues for Governance Reform. Ocean & Coastal Management, 49(7-8), 421-441.

Mcleod, E., Bruton-Adams, M., Förster, J., Franco, C., Gaines, G., Gorong, B., ... & Terk, E. (2019). Lessons from the Pacific Islands–Adapting to Climate Change by Supporting Social and Ecological Resilience. Frontiers in Marine Science, 6, 289.

Ministry of Development Planning and Aid Coordination. (2016). National Development Strategy 2016 to 2035. [online] Honiara: Solomon Islands Government. Available at: https://solomons.gov.sb/wp-content/uploads/2020/02/National-Development-Strategy-2016.pdf.

Ministry of Environment, Climate Change, Disaster Management and Meteorology. (2012). Solomon Islands' National Climate Change Policy (2012-2017). [online] Honiara: Solomon Islands Government. Available at: https://www.adaptation-undp.org/sites/default/files/downloads/solomon_islands_national_climate_change_policy.pdf.

Ministry of Environment, Climate Change, Disaster Management and Meteorology. (2008). Solomon Islands' National Adaptation Programmes of Action (NAPA) 2008. [online] Honiara: Solomon Islands Government. Available at: https://www.adaptation-undp.org/resources/assessments-and-background-documents/solomon-islands-national-adaptation-programme-action.

Ministry of Environment, Climate Change, Disaster Management and Meteorology. (n.d.). Action Plan for Implementing the Convention on Biological Diversity's Programme of Work on Protected Areas. [online] Solomon Islands Government. Available at: https://www.sprep.org/attachments/VirLib/Solomon/action-plan-implementing-cbdpow.pdf.

Ministry of Environment, Climate Change, Disaster Management and Meteorology. (2021). Solomon Islands 2021 Nationally Determined Contribution (NDC). Available at: https://unfccc.int/sites/default/files/NDC/2022-06/NDC%20Report%202021%20Final%20Solomon%20Islands%20%281%29.pdf.

Ministry of Forestry & Research. (n.d.). JICA Project Overview. [online] Available at: https://www.mofr.gov.sb/en/jica-project.

Ministry of Infrastructure Development. (2016). Solomon Islands National Transport Plan 2017-2036. [online] Honiara: Solomon Islands Government. Available at: http://sirap.sb/images/Docs/SI_National_Transport_Plan_2017-2036_v03e.pdf.

Ministry of Lands, Housing & Survey. (2020). Available at: https://solomons.gov.sb/wp-content/uploads/2023/11/Solomon-Islands-National-Urban-Policy-2020-2035-Shared.pdf.

Ministry of Lands, Housing & Survey. (2020). Available at: https://solomons.gov.sb/wp-content/uploads/2023/11/Solomon-Islands-National-Urban-Policy-2020-2035-Shared.pdf.

Monson, R., & Foukona, J. D. (2014). Climate-Related Displacement and Options for Resettlement in Solomon Islands. In Land Solutions for Climate Displacement (pp. 291-308).

National Climate Change Policy. (2023). MECDM, Honiara, Solomon Islands.

National Waste Management and Pollution Control Strategy 2017-2026. (n.d.). MECDM, Honiara, Solomon Islands.

Opposition Leader Matthew Wale criticizes the deteriorating roads in Honiara, calling for urgent action and the re-establishment of the Public Works Department to address the worsening situation. Iroga, R. (2023). https://sbm.sb/honiara-roads-in-its-worst-state-ever-wale/. [online] 20 Mar. Available at: https://sbm.sb/honiara-roads-in-its-worst-state-ever-wale/ [Accessed 27 Aug. 2024].

Pioch, S., Kilfoyle, K., Levrel, H., & Spieler, R. (2011). Green Marine Construction. Journal of Coastal Research, (61), 257-268.

Pratiwi, A.Y. and Jaelani, L.M. (2021). Analisis Perubahan Distribusi Urban Heat Island (UHI) di Kota Surabaya Menggunakan Citra Satelit Landsat Multitemporal. Jurnal Teknik ITS, 9(2). doi:https://doi.org/10.12962/j23373539.v9i2.53982.

Rising Sea Levels Wipe Out Five Reef Islands in the Pacific. (2016). ABC News. [online] 7 May. Available at: https://www.abc.net.au/news/2016-05-07/rising-sea-levels-blamed-for-wiping-out-five-islands/7392986?utm_campaign=abc_news_web&utm_content=link&utm_medium=content_shared&utm_source=abc_news_web [Accessed 20 Jun. 2024].

Santopietro, L., & Scorza, F. (2021). The Italian Experience of the Covenant of Mayors: A Territorial Evaluation. Sustainability, 13(3), 1289.

Scott, M. (2023). Adapting to Climate-Related Human Mobility into Europe: Between the Protection Agenda and the Deterrence Paradigm, or Beyond? European Journal of Migration and Law, 25(1), 54-82.

Seprila Putri Darlina, Bandi Sasmito and Bambang Darmo Yuwono (2018). ANALISIS FENOMENA URBAN HEAT ISLAND SERTA MITIGASINYA (STUDI KASUS : KOTA SEMARANG). Jurnal Geodesi Undip, 7(3), pp.77–87.

Siota, T. (2024). Director, Climate Change Division, Ministry of Environment, Climate Change, Disaster Management and Meteorology, Honiara, Solomon Islands.

Solomon Islands Maritime Authority (SIMA). (2011). Shipping Marine Pollution Regulations. [online] Available at: https://www.sima.gov.sb/wp-content/uploads/Shipping-Marine-Pollution-Regulations-2011.pdf.

Solomon Islands Relocation Guideline. (n.d.). MECDM, Honiara, Solomon Islands.

Stephenson, J., Newman, K., & Mayhew, S. (2010). Population Dynamics and Climate Change: What Are the Links? Journal of Public Health, 32(2), 150-156.

Solomon Islands Chamber of Commerce and Industry. (2024). Road Conditions Impacts Businesses. [online] Available at: https://www.solomonchamber.com.sb/news-reports/posts/2024/sicci-welcomes-solomon-airlines-five-year-strategy/road-conditions-impacts-businesses/ [Accessed 28 Aug. 2024].

The Solomon Islands Long-Term Low Emissions Development Strategy (LEDS). (2023). Available at: https://unfccc.int/sites/default/files/resource/SOLOMON%20ISLANDS%20LEDS.pdf.

The Solomon Islands Long-Term Low Emissions Development Strategy (LEDS). (2023). Available at: https://unfccc.int/sites/default/files/resource/SOLOMON%20ISLANDS%20LEDS.pdf.

Thia-Eng, C. (1993). Essential Elements of Integrated Coastal Zone Management. Ocean & Coastal Management, 21(1-3), 81-108.

TNA Report (2022), Prioritization of Technologies, Ministry of Environment, Climate Change, Disaster Management & Meteorology, Honiara, Solomon Islands.

UNDP. (2023). Strengthening Coastal Resilience in Tulagi. [online] Available at: https://www.undp.org/pacific/stories/strengthening-coastal-resilience-tulagi.

www.emission-index.com. (2024). Greenhouse Gas Emissions in Solomon Islands. [online] Available at: https://www.emission-index.com/countries/solomon-islands.

ANNEXES

Annexe 1 Adaptation Working Group Workshop

Annexe 2 List of Adaptation Working Group

SOLOMON ISLANDS TECHNOLOGY NEEDS ASSESSMENT (TNA)

TECHONOLGY ACTION PLAN WORKSHOP

ADAPTATION SECTORAL WORKING GROUP

ATTENDANCE REGISTER

Date: 4th July 2024 **Venue: GNW Conference Room, Mataniko River Plaza, and Honiara**

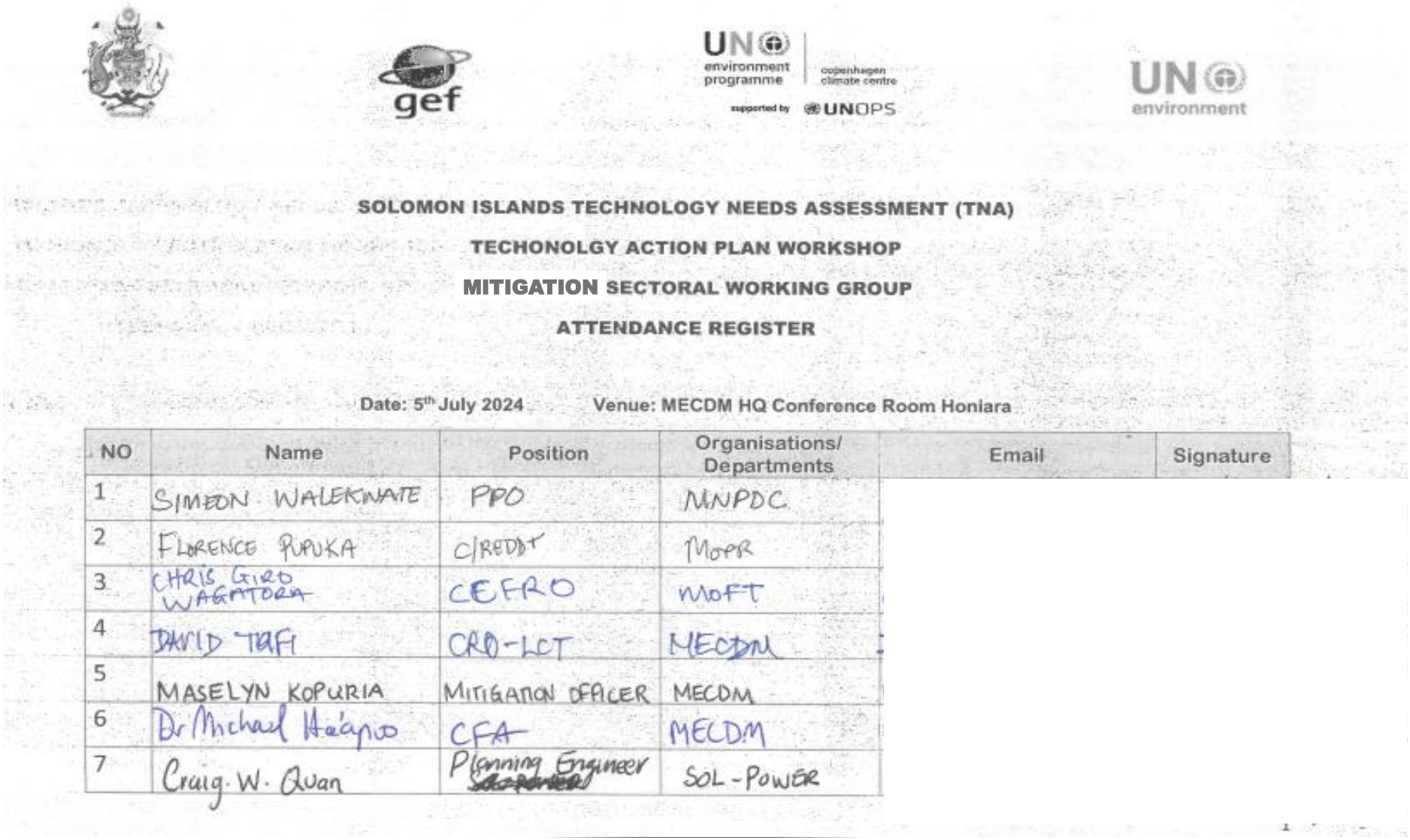
NO	Name	Position	Organisations/ Departments	Email	Signature
1	Nancy Raeka	TNA Project Coordinator SPC	PMCU/MECDM		
2	Robson Hevalao	Volunteer	PUACC.		
3	Wycliff Tupiti	Volunteer/Former PA, PMO			
4	Michel [illegible]	CFA	MECD		
5	Nelly Kere	CPO	PMCU/MECDM		
6	Moses Pelomo	[illegible]	KGA/[illegible]		
7	Douglas Yee	NPC/IPMP	FAO		

1

NO	Name	Position	Organisations/ Departments	Email	Signature
8	Rex Solo	Private	Post Engagement with IOM - Relocation		
9	Chanel Iroi	DST	MECDM		
10	Watson Mali	Program Manager	PWDSI or DPASI		
11	DAVID TUFI	CRO-LCT	MECDM/CCD		
12					
13					
14					
15					

Annexe 3 Mitigation Working Group Workshop

Annexe 4 List of Mitigation Working Group



SOLOMON ISLANDS TECHNOLOGY NEEDS ASSESSMENT (TNA)

TECHONOLGY ACTION PLAN WORKSHOP

MITIGATION SECTORAL WORKING GROUP

ATTENDANCE REGISTER

Date: 5th July 2024 **Venue: MECDM HQ Conference Room Honiara**

NO	Name	Position	Organisations/ Departments	Email	Signature
1	SIMEON WALEKNATE	PPO	NNPDC		
2	FLORENCE PUPUKA	C/REDDT	MOPR		
3	CHRIS GIRO WAGATORA	CEFRO	MOFT		
4	DAVID TAFI	CRO-LCT	MECDM		
5	MASELYN KOPURIA	MITIGATION OFFICER	MECDM		
6	Dr Michael Hakaoo	CFA	MECDM		
7	Craig W. Quan	Planning Engineer	SOL-POWER		

NO	Name	Position	Organisations/ Departments	Email	Signature
8	Nelly Kere	PMCU/MECDM	CPO		
9	Cyril Bernard Rachman	National Consultant Mitigation	SINU		
10	Agnes Takutile	TTC ~~NTF/MID~~	NTF/MID		
11	Chanel Iroi	DST	MECDM		
12	Moses Peloma	Pre-Launch Consultant	KGA/SIGAN		
13	Nancy Raeka	TNA Coordinator SPO	PMCU/MECDM		
14					

Annexe 5 Action Ranking Criteria

A. Action Ranking Criteria

Criteria for prioritizing actions in a Technology Action Plan focused on the activities mentioned, consider the following criteria:

1. **Impact on Sustainability Goals:**
    - Evaluate how each action enhances sustainability, reduces environmental impact, and achieves climate change mitigation goals.
2. **Cost-Effectiveness:**
    - Assess the cost-benefit ratio of each action, considering upfront costs versus long-term savings and benefits in terms of sustainability and community impact.
3. **Strategic Alignment:**
    - Ensure that prioritized actions align with broader strategic objectives, such as national or regional sustainability targets, climate action plans, and policy priorities.
4. **Feasibility and Readiness:**
    - Evaluate the readiness and feasibility of implementing each action, considering technological readiness, scalability, and compatibility with existing infrastructure.
5. **Stakeholder Engagement:**
    - Assess the level of stakeholder and community support for each action. Prioritize actions that have strong stakeholder buy-in and promote meaningful community engagement.
6. **Urgency and Timeliness:**
    - Consider the urgency of each action based on regulatory requirements, community needs, and environmental considerations. Prioritize actions that address immediate challenges or time-sensitive opportunities.
7. **Risk and Uncertainty Management:**
    - Identify potential risks associated with each action, such as technological risks, regulatory uncertainties, and social acceptance issues. Develop mitigation strategies to address these risks effectively.

Annexe 6 Action Ranking Value Guideline

B. Reference to put the value of each criterion:

- **Impact on Sustainability Goals:**
  - **1:** Negligible impact or no contribution to sustainability goals.
  - **2:** Minor impact; some contribution to sustainability goals.
  - **3:** Moderate impact; significant contribution to sustainability goals.
  - **4:** Substantial impact; major contribution to sustainability goals.
  - **5:** Transformational impact; critical contribution to achieving sustainability goals.
- **Cost-Effectiveness:**
  - **1:** Very high cost relative to benefits; not cost-effective.
  - **2:** High cost relative to benefits; limited cost-effectiveness.
  - **3:** Balanced cost relative to benefits; moderate cost-effectiveness.
  - **4:** Low cost relative to benefits; cost-effective.
  - **5:** Very low cost relative to benefits; highly cost-effective.
- **Feasibility and Readiness:**
  - **1:** Not feasible or ready for implementation.
  - **2:** Limited feasibility or readiness; significant barriers exist.
  - **3:** Moderate feasibility and readiness; some barriers exist but manageable.
  - **4:** High feasibility and readiness; minimal barriers to implementation.
  - **5:** Very high feasibility and readiness; ready for immediate implementation.
- **Stakeholder Engagement:**
  - **1:** Minimal stakeholder support or opposition.
  - **2:** Limited stakeholder engagement; mixed support.
  - **3:** Moderate stakeholder engagement; stakeholders generally supportive.
  - **4:** High stakeholder engagement; strong support from stakeholders.
  - **5:** Very high stakeholder engagement; unanimous support from stakeholders.
- **Urgency and Timeliness:**
  - **1:** No urgency or flexibility in timing.
  - **2:** Low urgency; can be addressed in the medium to long term.
  - **3:** Moderate urgency; should be addressed within a reasonable timeframe.
  - **4:** High urgency; needs to be addressed soon to avoid negative impacts.
  - **5:** Critical urgency; immediate action required to prevent severe consequences.

 Risk and Uncertainty Management:

- **1:** High-risk; significant uncertainties and potential negative impacts.
- **2:** Moderate-risk; some uncertainties and risks present.
- **3:** Balanced risk; risks and uncertainties manageable with mitigation measures.
- **4:** Low-risk; minimal uncertainties and risks.
- **5:** Very low-risk; risks and uncertainties negligible or non-existent.

Annexe 7 Technology Action Plan Working Group – Transportation Sector

Technology Action Plan Working Group
Transportation Sector

A. Instruction

Before starting the working group, please read this instruction so nothing will be missed during the activity:

1. Fill in the group identity information in Point B.
2. **For guidance on Sustainable Road, refer to Points C to H (Pages 2-8).**
3. Read Points C, D, and E (Pages 2-4) to complete the form in Activity Point F (Page 5).
4. Complete the activities outlined in Points G (Pages 6-7) and H (Page 8).
5. **For Electric Outboard Motor (E-OBM) information, refer to Points I to N (Pages 9-15).**
6. Read Points I, J, and K (Pages 9-11) to complete the form in Activity Point L (Page 12).
7. Complete the activities outlined in Points M (Pages 13-14) and N (page 15).

B. Group Identity

No	Name	Designation	Email
1	Agnes Takutile	NTF/MIP	
2	Craig W. Quan	SOL-POWER	
3.	Simeon. Waleknaite	MNPDC	
4.	chanel Iroi	MECDM	
5.	Nelly Kere	PMCU/MECDM	
6.	Cyril Bernard Rachman	Mitigation Coalition	
7	Nancy Raeka	SPO	

Annexe 8 Action Ranking Sustainable Road

F. ACTION RANKING - Sustainable Road

Action	Criteria							Total	Ranking
	Impact on Sustainability Goals	Cost-Effectiveness	Strategic Alignment	Feasibility and Readiness	Stakeholder Engagement	Urgency and Timeliness	Risk and Uncertainty Management		
Enhance Sustainable Funding Initiatives	5	5	5	5	5	5	4	34	(1)
Technical Plan for Sustainable Road Optimization Strategy	5	4	5	3	5	5	4	31	(4)
Community Engagement in Sustainable Road	5	4	5	4	5	4	3	30	(5)
Stewardship Initiative for Sustainable Urban Green Infrastructure	5	4	5	4	5	5	5	33	(2)
Capacity Building for Integrated Green Infrastructure Development Program	5	5	5	5	3	5	4	32	(3)

Annexe 9 Action Ranking E-OBM

L. ACTION RANKING - E-OBM

Action	Criteria							Total	Ranking
	Impact on Sustainability Goals	Cost-Effectiveness	Strategic Alignment	**Feasibility and Readiness**	Stakeholder Engagement	Urgency and Timeliness	**Risk and Uncertainty Management**		
Financial Initiative for Sustainable Economic Practices	5	5	5	4	5	5	5	34	(1)
Enhancing Regulatory Landscape for E-OBM Adoption	5	4	5	3	4	4	4	29	(5)
Maintenance Workshops and Vendor Networks	5	5	3	4	4	4	5	30	(4)
Optimized Charging Infrastructure: Enhanced Efficiency Ports	~~4~~5	4	4	4	5	5	4	31 ~~30~~	(3)
Green Wave E-OBM Awareness Drive	5	4	4	4	5	4	4	30	(4)
Innovative E-OBM Maintenance Training and Research Synergy	5	5	4	5	5	5	4	33	(2)

Annexe 10 Technology Action Plan Working Group - Forestry Sector

Technology Action Plan Working Group
Forestry Sector

A. Instruction

Before starting the working group, please read this instruction so nothing will be missed during the activity:

1. **For guidance on the National Forest Inventory (NFI) , refer to Points C to H (Pages 2-8).**
2. Read Points C, D, and E (Pages 2-4) to complete the form in Activity Point F (Page 5).
3. Complete the activities outlined in Points G (Pages 6-7) and H (Page 8).
4. **For guidance on Establish a network of terrestrial protected areas (NTPAs), refer to Points I to N (Pages 9-15).**
5. Read Points I, J, and K (Pages 9-12) to complete the form in Activity Point L (Page 13).
6. Complete the activities outlined in Points M (Pages 14-15) and N (page 16).

B. Group Identity

No	Name	Designation	Email
1	Chris Wangatova	CFFRD	
2	Florence Papuka	FRIDOT	
3.	MASELYN KOPURIA	MECDM	
4	Dr. Michael Haapio	MECDM/FCFA	
5.	DAVID TUFI	MECDM	
6	Moses Pelomo	KGA/SICA	

Annexe 11 Action Ranking M-NFI

F. ACTION RANKING - NFI Multipurpose NFI

	Action	Criteria							Total	Ranking
		Impact on Sustainability Goals	Cost-Effectiveness	Strategic Alignment	Feasibility and Readiness	Stakeholder Engagement	Urgency and Timeliness	Risk and Uncertainty Management		
(1) Access to	Global Partnerships for Climate-Resilient NFI Initiatives Funding	5	3	5	3	3	5	2	26	3
(2)	Comprehensive NFI Technical Roadmap	5	5	4	3	4	4	3	28	2
(3) Develop	~~Enhance~~ Forest Data Management Systems	5	3	5	4	4	5	3	29	1
(4) Undertake Specialized	~~Advanced~~ Capacity Building for Forestry Innovation and Internship Program	4	4	5	5	4	4	3	29	1
Conduct (5)	Transparent Stakeholder Engagement on Land Access Protocols and Permissions	4	4	5	4	4	4	3	28	2

Annexe 12 Action Ranking NTPAs

L. ACTION RANKING - Network Terrestrial Protected Areas (NTPAs)

Action	Criteria							Total	Ranking
	Impact on Sustainability Goals	Cost-Effectiveness	Strategic Alignment	Feasibility and Readiness	Stakeholder Engagement	Urgency and Timeliness	Risk and Uncertainty Management		
Foster Sustainable funding for TPAs	5	5	4	3	4	5	4	30	1
Advocate for TPA reform.	5	4	4	4	5	5	2	29	2
Strengthen TPA Governance Frameworks	5	4	5	4	4	4	3	30	1
Capacity Building – Enhance TPA Management expertise and volunteer.	4	3	3	3	3	4	4	28	3
Modernize TPA Data Infrastructure and management	5	5	4	4	3	5	3	29	2
Promote Community Engagement in TPAs	5	5	5	3	3	4	3	28	3

Annexe 13 List of Actions - Coastal Erosion Sector- Adaptation

A- List of Actions - Coastal Erosion Sector: ADAPTATION		
1	**Technology Name: Nature based Solution (NbS)**	
	Barriers	**Description of barrier details**
	(i) **Economic & Financial Barrier**	➢ Capital Cost for establishment prevents coastal communities' participation in this technology. ➢ Nature, which includes biodiversity and the vital services for human wellbeing provided by healthy ecosystems, is at the heart of critical development challenges like climate change, food security, health, jobs, poverty, inequality, and fragility. ➢ The national government must also factor this technology in some of its development strategies
	(ii) Institutional Barrier	➢ There is loosely organized institutional arrangement to deal with NbS in the country, ➢ The government must consider formulation of strategies grounded on its integrated vulnerability assessment (SIIVA) to design a NbS (sea wall) ➢ The government must also design strategy to implement NbS technology through cost sharing arrangement, provision of tax exemption, and training of local engineers with NbS skills and know how.
	(iii) Policy & Legal Framework	➢ The government to formulate policy on nature-based solution and progress through legal framework ➢ Policy must speak to the current review of NBSAP
	(iv) Social and cultural perspective	➢ Respective community must accept the join ownership and responsibility such as maintenance of such technology into the future. ➢ The root cause of this is inadequate community development advocacy and training to enhance ownership to achieve join benefit and improved well-being.

	Recommended Actions to be taken as part of the TAP	
	➢ **NbS dedicated policy**- There is a need to develop a national NbS focused policy for the country. The aim of this policy is to provide the average and low-income earners with the provisions to protect their vulnerable communities but at the same meeting the needs of loverhoods. The policy must address the institutional arrangements or the NbS. ➢ **Government incentives** – The government is required to partially meet the cost of this technology. This is aimed at leveraging the cost to individuals and communities across the country. The government may consider introducing new tax incentive to businesses/individuals to fund this new initiative. ➢ **Training and awareness** – The training and awareness are aimed at increasing awareness around NbS sea wall design and construction by communities and households. ➢ **Capacity building** – Locals must be trained with the technological skills to maintain and sustain the technology after the project implementation. This could be done through workshops, specialized and technical based training to local engineers, environmentalist, climate adaptation personnel, and local villagers.	
2	**Integrated Coastal Zone Management (ICZM)**	
	Barrier	Description's barrier details
	(i) Relatively high Capital Cost	➢ The relatively high cost is preventing individuals and vulnerable communities in participating in this technology. ➢ The government to start programing its projects and activities in consideration of ICZM principles and strategies. ➢ The national government must also factor this technology in some of its development strategies ➢ Development of proposal for donor aid partners to invest in this technology ➢ Obtain the support to this technology by MECDM, MAL, MID, etc.
	(ii) Under capacity to support technology	➢ The fundamental root cause of this economic incapacity is the inadequate level of financial support by the national government, ➢ Inability of the land-owning groups to initiate self-financing of long-term investment in such adaptation strategy ➢ No incentives for communities and households to participate in this technology

	(iii) Instructional arrangement	➢ The institutional barrier to diffusion of this technology includes lack of awareness by community membership on the impact of climate change. ➢ This further reflects the poor coordination by appropriate stakeholders' including government ministries, NGOs, land owning groups, potential investors and the public ➢ MECDM should take leadership in implementing any ICZM strategy
	(iv) Policy and legal framework	➢ No specific policy and legal framework to government this process (WIP) ➢ NBSAP must speak to this technology ➢ Academia to contribute into the design of any Policy and legal framework for this technology.
	(v) Limited capacity & expert knowledge to maintain the technology	➢ ICZM Concept may be new and thus require awareness and training of local communities of the concept and development of associated skill set. ➢ Incorparting of community practices into ICZM approaches
	Recommended Actions to be taken as part of the TAP	
	The following actions are selected to be included as part of the TAP for ICZM. ➢ **Government Investment into the technology** - The government is required to invest or partially meet the cost of the technology. This aimed at reducing the cost of the technology to communities, individuals and users at the local level. ➢ **Dedicated ICZM Policy development** - As part of the technology, the government would consider formulating a policy which is aimed at fulfilling its social responsibility to provide safe and resilient villages to its citizens, average and low-income earners across the country. ➢ **Training and awareness**—As a key component of this technology, the government would further incorporate training and awareness to increase stakeholders' knowledge about ICZM in the country. ➢ **Communities and People centered approach** - culture, Traditional knowledge and practices must be promoted through technology implementation.	

Annexe 14 List of Actions – Relocation Sector – Adaptation

	B- List of Actions - RELOCATION SECTOR: ADAPTATION	
1	**Technology Name**	**Climate Induced Relocation Policy (CIRP)**
	Barrier	**Descriptions of Barriers**
	(i) Capital and Financial Capacity	➢ The main economic and financial barriers that prevent coastal communities venturing into this technology like the earlier adaptation related technologies as discussed in chapter 1 are inadequacy of funds and access to by local population. ➢ For example, it will cost more than USD$250,000 to meet associated costs such as legal fees, logistics, workshop venues and etc. in the country to develop such policy.
	(ii) No Local- legal Expert (Capacity) to lead in Drafting and formulation of such policy	➢ Currently there is no dedicated Climate Change induced Relocation policy in the country. Although the NCCP and relocation guideline (RG) are available but there's a need to develop a dedicated policy that governs that process. ➢ The sequence of instruments flow in this matter should be: (1) Policy (2) Guideline (3) SOPs; in absence of the Policy the guideline is may be seen as too vague.
	(iii) No priority area for the ruling government (to allocate funding)	➢ It is noted that there is no prioritized funding available for relocation related activities in the country at the moment. ➢ Although there are numerous calls and examples of communities, faith-based groups and NGOs leading the way in this space.
	(iv) No direct economic benefit	➢ There is perception that land and resources are privately owned. Therefore, developing a national climate change-induced policy which will affect the tribal groups and people may require extensive national wide consultations. ➢ However, this process is not expected to yield direct benefits for individual families or communities. In this context, communities feel

		that the government must lead the way in this process.
	(v) Cultural insensitivity	➢ Relocation is a sensitive topic at both the national and local levels across the country. In light of this sensitivity, relevant authorities need to engage in extensive sectoral consultations at the national, provincial, and local levels. ➢ Cultural context of immigrant and migrant must be considered thoroughly.
	(vi) Little information on the benefit of the technology	➢ Relocating to a less desirable location may result in relocation stress, leading to depression and anxiety within communities. ➢ Relocation stress should be recognized as a risk factor for depression in long-term care residents, regardless of cognitive status, in the first year after relocation. ➢ There needs to be awareness and education on the positive aspects of relocation to reduce anxiety.
	(vii) Implementation issues	➢ A national policy on relocation will bear corresponding responsibility to the national government with its implementation. ➢ This will incur capital costs (related to land and infrastructures) and the cost of resources to communities and people involved in the process.
	Recommended Actions to be taken as part of the TAP	
	➢ **Government donor funding** – The government is required to meet partially the cost of the technology or secure funding from external sources to meet formulation of this important technology to the community. This is to enable vulnerable communities to participate in the relocation program knowing clearly their roles in this exercise. ➢ **Climate change Induced Relocation policy**- This is the heart of this technology, to develop a policy dedicated to effectively facilitate climate induced relocation initiatives in the country. There will be no confusing of responsibilities in this whole arrangement under the policy directive.	

	➢ **Public awareness**—Civic education through public awareness and consultations are key activities to increasing the education of stakeholders on the essence of participating in and adopting the new climate-induced relocation policy that is under formulation. Only with an adequate level of awareness and engagement will the public and the government rally support in favor of the new policy.	
2	Technology Name	Planned Relocation
	Barrier	Descriptions & proposed actions
	(i) Economic and financial barrier	➢ Like all the technologies identified and covered in detail for adaptation, the economic and financial barriers are identified as one of the main barriers that prevent individual and communities alike from establishing the technology for their own. ➢ For example, developing and establishing a technology of this magnitude would cost an average size community and households an approximately USD$500,000. ➢ The cost related to land acquisition, infrastructure development, building of homes and logistics and other administrative matters.
	(ii) Policy, legal, regulatory framework	➢ Currently there is no dedicated Climate Change induced Relocation policy in the country. Although the NCCP and relocation guideline are available but there's a need to develop a dedicated policy that governs that process. ➢ Any future policy must accommodate some current practices in the area climate change relocation and adaptation.
	(iii) Institutional Barrier	➢ The barriers to the diffusion of this technology include little political will support this technology, which resulted in poor coordination and implementation of this technology. ➢ The relevant Ministries must corporate in this endeavor - establishment of the planned relocation.
	Recommended Actions to be taken as part of the TAP	
		The following ideas are to be implemented as part of the project idea.

		➢ **Funding allocations -** The national government must invest in relocating some of the vulnerable communities to higher grounds at selective sites across the Island nation. Furthermore, she must take leadership in providing the financial resources available for this technology implementation prior to seeking donor partners for financial and expert assistance in this space. ➢ **Policy development** – The MECDM and MPGIS are committed to develop a policy that will govern the general adaption and implementation of the technology. The policy should also outline the fringe benefit the land-owning group and communities should get by allowing their land for technology implementation. ➢ **Monitoring and Evaluation & Knowledge management** – This is monitoring and evaluating of the activities of the technology after implementation. The findings of such activities should be used for lesson learned for future operations. ➢ **Effective awareness** program – The government through the MECDM and MPGIS in collaboration with MHA will assist with advocacy and awareness of the technology and its importance to the community.