



Mataniko Catchment Integrated Watershed Management Plan



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Suva, Fiji, 2021

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ABBREVIATIONS

ATTZ	Aquatic Terrestrial Transitional Zone
EbA	Ecosystem Based Approach
ECD	Environment and Conservation Division
EIA	Environment Impact Assessment
ESIA	Environment Social Impact Assessment
HCC	Honiara City Council
IUCN	International Union for Conservation for Nature
MAL	Ministry of Agriculture and Livestock
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology
MoFR	Ministry of Forestry and Research
MHMS	Ministry of Health and Medical Services
MLHS	Ministry of Lands, Housing and Survey
NAPA	National Adaptation Program of Action
SIEA	Solomon Islands Electrics Authority (Solomon Power)
SIWA	Solomon Islands Water Authority (Solomon Water)
TRHDP	Tina River Hydro Development Project
WHO	World Health Organisation

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The authors would like to thank those who have assisted and supported the development of this Mataniko River Catchment Watershed Management Plan 2021-2025 which includes the communities located within the boundary of the river. Our appreciation also goes to other partners who ensured that this management plan aligned well within their policies and instruments, especially the broader high level policy frameworks of Solomon Islands. Tangio tu mas to the assistance and support of the National Public Health Laboratory (NPHL), the Solomon Water (formerly SIWA) Management and Staff, Honiara City Council (HCC) and staff, Guadalcanal Province Assembly (GP or GPA) and the Ministry of Tourism and Culture (MTC), and others.

Finally, the authors would also like to thank the Pacific Community (SPC), Solomon Islands government (SIG) and the MECDM for their patience in the planning stages of this consultancy. We hope that this plan is a dream come true for the communities in the Mataniko River catchment watershed as a result of our working together and collaboration to restore and protect the Mataniko River. We call upon all potential stakeholders and local population to support and assist in the execution of this Management Plan to overcome environmental challenges and associated risks prone to the Mataniko Catchment.

FOREWORD

It is the intention of Solomon Islands Government to ensure there is proper framework in place to manage, restore and protect the Mataniko Catchment watershed due to its significance contribution supporting Honiara's development.

This plan provides the basis for strategic cooperation and support that encourage changing mindsets and attitudes to minimize waste and pollution in the Mataniko river. It is crucially important to protect and conserve critical areas faced with environmental degradation caused by human activities of unmanaged waste disposal.

Section 3 of this report expresses a plan of action to deliver this management plan noting the greater need to strengthen collaboration and partnerships. The Solomon Islands Government line ministries and agencies are encouraged to use this Plan in their routine work with the communities in the Mataniko River Catchment area. The successful implementation of this plan is dependent on the high-level cooperation and support from development partners, communities, and other potential partners in the country, and beyond.

Equally, managing the Mataniko Catchment watershed using the ridge to reef concept through the integration of water, land, forest, and coastal management requires commitments of all stakeholders, even in the absence of financial support. Innovative technologies and solutions that have been successfully tested in the country and elsewhere offer options to local communities to protect and manage ecosystem goods and services provided by the Mataniko river.

It is with great honor that this plan will be executed and monitored for continuous improvement and innovation throughout its implementation.

Solomon Islands cannot wait but must prepare for the future challenges and it is only through partnerships, commitment, innovation and respect for nature can we enjoy ecosystem goods and services of the Mataniko catchment into perpetuity.



A handwritten signature in black ink, consisting of a series of loops and flourishes, positioned above the printed name and title.

Dr. Melchior Matakai
Permanent Secretary
Ministry of Environment, Climate Change, Disaster Management & Meteorology
Honiara, Solomon Islands

1 PRELIMINARY

1.1 Context and purpose

This plan is made possible through the International Waters (IW) Ridge to Reef (R2R) Project hosted by the Environment and Conservation Division of Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM). This plan was developed through the cooperation from good partnership of the MECDM with the communities of Mataniko River Catchment and other stakeholders to collaborate and converse on the issue to protect, manage and rehabilitate Mataniko River Catchment.

Mataniko (or Matanikau) Catchment Area is located at the northwest of Guadalcanal islands. The Mataniko River has become a strategic location during the WWII Guadalcanal Campaign where it has become a potential site for eco-tourism activities. It is the main conduit of several tributaries from about 100 kilometres inland flowing downstream the Mataniko River separating the Central Business Area with China Town and National Referral Hospital. Along the Mataniko River Catchment from inland are hamlets, villages, squatters, residential areas like Tuaruhu, Vara Creek, Number 3 and China Town then the Lord Howe and Mamana water settlements. According to Trundle and McEvoy (2016), the Mataniko catchment area has a high growth rate of youth population. This can be a target group in raising awareness and the high levels of pollution in the river caused by indiscriminate dumping of municipal and toxic waste into the river.

Mataniko Catchment is classified as a highly prone area to natural disasters and hazards such as tropical cyclones associated with flooding, landslides and tsunamis. Huge damage and loss of lives in 2014 incurred high cost the government to relocate and compensate quite a number of people living within the Mataniko River Catchment. The 2014 catastrophic flooding was triggered by uncontrolled surface runoffs and debris upstream which forms a dam that later blasted flushing down the Mataniko River and causing extensive damages to properties and several deaths.

The significance of Mataniko Catchment (as outlined above) had urged the government to develop several policy instruments pertaining to disaster and community response. However, according to a report published by World Bank in 2014 on Rapid Assessment of Macro and Sectoral Impacts of Flash Floods in Solomon Islands¹ states that such frameworks were ineffective in response and tackling quick responses needed by the communities. Therefore, there is a high need for an ecosystem-based management plan for the Mataniko Ward. This was further supported by Mataniko River Environment Baseline report for the need of an ecosystem-based management plan in Honiara (Teleost Consultancy report, 2018).

This plan therefore aims to identify the challenges and opportunities to sustain and protect the catchment's ecosystem goods and services, biodiversity and water quality and quantity.

This was made possible through a thorough desktop review of relevant reports produced by other consultants and institutions through the technical support from SPREP, SPC and other regional and international organizations. In addition, this plan is also made possible from valuable consultation and workshops with various stakeholders and community members within the catchment area.

This plan aims to sustain, manage and protect the ecosystem goods and services, the biodiversity and water quality of the catchment by promoting responsible landscape and watershed management, capacity development and research and stakeholder cooperation.

¹ Government of Solomon Islands; Global Facility for Disaster Reduction and Recovery. 2014. Solomon Islands

1.2 Vision

A future that Mataniko River Catchment will become a noticeable asset and an important natural resource to the community and to Honiara which is rehabilitated and preserved. This plan envisioned a watershed that streams are sustained with good quality and is free of contamination or excessive erosion, allowing recreation within the catchment and adjacent areas and the forest cover is protected and where development is conducted in a manner that minimizes adverse impacts to the river systems.

1.3 Mission

To restore and protect the health of Mataniko River Catchment, its tributaries and its watersheds by collaborating with the community, government agencies, non-government agencies, faith based-organization, civil society organization and business houses to jointly plan and implement strategic interventions that address priority challenges and risks associated with the Mataniko river.

1.4 Scope

The management plan is applicable within the Mataniko River Catchment that is defined with its tributaries confluences with Mataniko River, squatter settlements, business houses, residents, visitors accessing and communities living along the catchment. The government, civil societies, regional organizations and donors are important partners in the implementation of the Mataniko integrated management plan.

1.5 Purpose of Mataniko River Catchment Watershed Management Plan

The intention of this Mataniko River Catchment Watershed Management Plan is to guide the management and development of Mataniko River Catchment Watershed. This management plan contains the linkages to its formulation with various government instruments, strategic objectives which were captured from consultation with community and other experts, and the review of public documents.

This document also strengthens Solomon Islands commitment and capability to comply with international, regional and national obligations where the country is party to. As required under the GEF funded Regional R2R projects in country, all proposed management interventions and information collected to support management work include gender considerations and social inclusion.

1.6 Legal, Policy and Institutional frameworks

It is the intention of the Solomon Islands Government (SIG) to curb development on important, highly sensitive and significant areas within the Solomon Islands and especially areas surrounding urban cities like Honiara. The government highlights the importance of these key areas (that includes communities, river catchments, reefs-atolls, mangrove areas, seagrass, mudflats, wetlands, areas above 400 meters (“sky islands”) mountainous regions) that for centuries have continued to support livelihoods for many decades.

Recognising this basis for improving livelihood, the government has expressed its intention in various policies and legislative frameworks that Solomon Islands will always promote eco-friendly approaches to development, protection of its ecosystem and people, conserve its heritage and manages aspirations and expectations of all stakeholders within and surrounding the Mataniko Catchment vicinity. This is also a significant move to increase blue-green economy without destroying or devastating vegetation and habitats that supports life.

This Management Plan focuses on managing human activities in highly significant key areas like the Mataniko River Catchment and operationalizes, SIG's intentions, commitment, and responsibility to promote, develop, manage and protect the environment, and its residents. Reference to residence and communities in this management plan, include men, women, youth and other vulnerable people in communities and target sites.

1.6.1 Policy context

This management plan is governed by policies and legal instruments that promotes sustainable development and natural resource management. These policy instruments of the government link with international and regional commitments made by the SIG specially to adhere to the UN Sustainable Development Goals. Such instruments that shape the context at which this management plan is developed and implemented within the communities of Mataniko Catchment include:

- Democratic Coalition Government for Advancement (DCGA) Policy Statement 2016-2021
- National Solomon Islands Fisheries Policy 2019-2029
- Solomon Islands National Minerals Policy
- National Forestry Policy
- Solomon Islands National Health Strategic Plan 2016-2020 (under review)
- Role Delineation Policy for Solomon Islands

1.6.2 Legislative context

All the laws of Solomon Islands recognise the role and function of the local communities and the indigenous communities (landowners) in management and development aspirations for the people of Solomon Islands. A local community is one of the important stakeholders in the implementation of any government's aspirations. For decades, governments have worked closely with the community through project design, national project implementation and management. This will continue to flourish in this plan going forward as it harmonises or recognises the traditional and the state domain translating into sectors for poverty alleviation, safety and security, healthy standard of living, and natural resources management.

Listed below gives legislative context to the rationale of preparing and implementing the Mataniko River Catchment Management Plan:

- Provincial Government Act 1997
- Environment Act 1998
- Environment Regulation 2008
- Wildlife Management and Protection Act 1998

- Protected Areas Act 2010
- Water Resources Bill
- Environmental Health Act 1980
- Environment Health (Public Health Act) Regulation
- Town and Country Planning Act 1996
- Fisheries Management Act 2015
- Land and Titles Act Cap 133
- SIWA Act 1992
- Police Act 2013
- Explosive Act 1968
- Charitable Trust Act 1996

1.6.3 Institutional responsibilities

Table 1 shows the institutions that will support the implementation of this plan

Institute	Mandate	Legal provisions for catchment management	Ongoing efforts
Ministry of Environment Climate Change, Disaster Management and Meteorology (MECDM)	<ul style="list-style-type: none"> • Environment, impacts, management, protection and conservation • Environment monitoring • Collaborate with MFMR and Ministry of Forestry and other line agencies and stakeholders 	<ul style="list-style-type: none"> • Environment Act 1998 • Environment Regulation 2008 • Protected Areas Act 2010 • Wildlife Protection and Management Act 1998 	Ongoing monitoring of the Mataniko River and Honiara Coastal
Ministry of Forestry and Research (MoFR)	<ul style="list-style-type: none"> • Timber harvesting and management • Botanical inventory services 	<ul style="list-style-type: none"> • Forest Resources and Timber Utilization Act with other orders and regulations 	Timber milling process and supporting development for communities Forestry inventory
Ministry of Mines, Energy and Rural Electrification (MMERE)	<ul style="list-style-type: none"> • Provide geological science advice to the government and supports development and management of minerals, petroleum, and energy and water resources. • Mitigate geological and hydrological related hazards that includes emission of GHG, ODS into the atmosphere. 	<ul style="list-style-type: none"> • Mines and Energy Act • Water Resources Bill 	Mining development in the country Supports in developing Hydro Supports community for disseminating energy and water supply Manages State Owned-Enterprise like Solomon Water and Solomon Power.

Institute	Mandate	Legal provisions for catchment management	Ongoing efforts
Ministry of Health and Medical Service (MHMS)	Establishes the environment health division mandated to monitor environmental health to ensure public health issues are managed.	Environment Health Act 1990	Environment health Officers are stationed in around all provinces. Coordinates public health monitoring
Ministry of Commerce, Industry, Labour and Immigration (MCILI)	Establishes divisions that looks after processes for registering entities.	Charitable Trust Act 1996 Companies Act 2009	Governance structures for establishing charitable trusts and liability companies
Provincial Governments especially the Guadalcanal Provincial Government	The Guadalcanal Provincial Government is a devolved agency of the Solomon Islands Government (SIG) to manage and controls its own affairs and environment	Provincial Government Act 1997 – Devolution of powers for the province to make ordinance to manage and protecting their environment.	Lead agencies and providing funding. Ongoing programs throughout all Provinces
Solomon Islands Water Authority (SIWA) trading as Solomon Water	Pollution control and prevention	SIWA Act Section 7 (e) to provide, construct, operate, manage and maintain buildings, works, systems and services for the conveyance, treatment and disposal of sewage, disposal of trade and industrial waste and other connected purposes.	Develops a 30 years Strategic Plan to reticulate sewage and treatment systems in Honiara. The status for short term plans is to establish water treatment Plant on strategic locations within Honiara.
Ministry of Lands, Housing and Survey (MLHS)	Land related issue for waste and pollution disposition	Land acquisition under the Lands and Titles Act (Cap 133)	There are land acquisition and recordings throughout the Solomon Islands
Ministry of Infrastructure and Development (MID)	Infrastructure Development, roads, clinics and hospitals etc.	Infrastructure development and management	NA
Ministry of Fisheries and Marine Resources (MFMR)	Inland connectivity and aquaculture development	Fisheries Management Act 2015	Ordinance been reviewed and still awaiting accenting from Guadalcanal Provincial Government

Institute	Mandate	Legal provisions for catchment management	Ongoing efforts
Ministry of Police, National Security and Correctional Services – Royal Police Force of the Solomon Islands (RPFSI) Explosives Ordinance Disposal team	Providing a safe, secure and peaceful Solomon Islands	Police Act 2013 Explosive Act 1968	Powers and duties of Police force Solomon Islands with the community Prohibits the manufacture and to regulate the importation, possession, storage, transport, sale and use of explosive
International and local organisations, CSO (Civil Society Organization), NGO and other institutions	Skills and capacity development	Support community manage natural resources according to government policy	Ongoing in the country
Mataniko Community and resource owners	Advocate communal rights and manage impacts of environmental activities	Guadalcanal Environment Ordinance	Needs review and define roles with management measures

1.7 Overview of Mataniko River Catchment Management

1.7.1 A Brief History of Mataniko River Catchment

Mataniko River catchment has been affected by many natural disasters in the past. The worst was in April 2014 flooding. Guadalcanal, Isabel, Malaita and Makira Province were severely affected, however Honiara which is situated in Guadalcanal Province had one of the costliest and most evident damages.²

In an assessment by the UN-Habitat: Cities and Climate Change, 2014 had highlighted and identified the most vulnerable places in Honiara, especially the informal settlements and residents along the Mataniko River Catchment were at high risk at being greatly affected by natural disasters, particularly flooding. Those most at risk in these informal settlements and residents along the Mataniko River catchment include women, children and people with disabilities in all sectors of communities.

This highlights the seriousness of the vulnerability of these communities. Further, 62% of these deaths are persons below the age of 14. These deaths are results of drowning and trauma subsequently after being taken by the flood. Apart from these deaths there have been other impacts including a flu and diarrhoea outbreak (Natuzzi *et al* 2016).

These areas lack proper sanitation, water sources, and have houses constructed with traditional building materials (Trundle & McEvoy, 2016) and depends highly on subsistence farming for income and food (Teleost Consultancy report, 2018) from within the catchment. The communities upstream (and so-called landowners) resort to agriculture and husbandry farms, logging and timber milling. Such activities cause high threats to natural resources and poses risks for flooding and infections to the local communities along the watershed. As large areas of land are cleared, pollutants from

² Ibid 1

farming chemicals percolates into water ways (as associated with sediments and silts), overharvesting of terrestrial and coastal resources and other unsustainable development practises. At the mid-Mataniko Catchment notably Tuvaruhu (Six Box settlement) and Vara Creek are sewage treatment sites which are disposed into the Mataniko River. The lack of sanitation along the catchment heightens the vulnerability of the Mataniko Catchment communities and the city during flooding. Associated water-borne infections may enter the food chain from use of urban springs and water sources for washing, drinking and garden irrigation interacting with effluent and other pollutants in the Mataniko Catchment.

In a report (SPREP, 2018) it was stated that, *“Honiara has high population growth, rapid urban expansion, and high reliance of households on the natural environment for food, water, shelter, income opportunities, and health and wellbeing. This makes remnant fragments of terrestrial, freshwater, and marine ecosystems highly valuable to Honiara’s urban and peri-urban communities.”* This project aims to fulfil the need for ecosystem management in Honiara specifically for Mataniko Ward. Trundle and McEvoy, (2016) states that Mataniko catchment has a high growth rate of youth population confirming as also with the Solomon Islands 2009 census report.

In addition, the highlighted threats and challenges outlined above contribute to further issues like non communicable disease and related outbreaks. These outbreaks were due to lack of proper infrastructure and water related diseases which have resulted in a great number of illnesses, injuries and deaths. The communities of Vara Creek and Koa Hill, located opposite each other along the Mataniko River, suffered the highest combined outbreaks of over 81% (25 of 33 injuries, 19 of 21 deaths). This has proven to be very quick and costly for the families, communities and the country (Natuzzi et al 2016).

Therefore, an ecosystem-based approach is most sustainable, feasible and effective way to manage and utilize natural resources with great significance to the people (Teleost Consultancy report, 2018).

1.7.2 Social terrain and Context

Upstream the Mataniko river can be categorised as ‘fast cash attitude’, giving right for access to land resources by loggers and timber milling companies and individuals. This practice is continues today. Mid-to downstream are residents, traditional villages and squatter settlements expanding within the flood plains abruptly. Given the opportunity to learn from the 2014 flooding, communities upstream are realigning to manage and rehabilitate areas degraded upstream and along the Mataniko River Catchment.

Mataniko River Catchment population consists of multi-ethnic and multi-racial peoples from in and around the islands wards and constituencies. It is difficult to identify full natives of Mataniko River Catchment. It is documented and also known as local knowledge of the area, that the Mataniko native people are the same to those living and exploring the catchments from Lungga and Mataniko Rivers which includes the Honiara City at the coast. They still living in three villages at the catchment of Lungga River, Mt Austin and upper Mataniko catchment namely Barana, Paravu (where Gifu Primary School is now) and Keo villages (ref. ??).

Most of their old heritages, tabu sites were destroyed during the World War Two (WWII) in the 1940s which resulted in the intense clearance of forests destroying some prominent parks in this catchment for example, the Queen Elizabeth Park (ESRAM v3 2018) and the Forestry Trial Plot in 1950s (Thomson, 1981).

Tandai House of Chiefs is the existing chiefly hierarchy function in this area. Recently, they incorporated

their function under the Charitable Trusts Act 1996 to function as leaders to the people within the Mataniko River Catchment. Such had represented one of the important stakeholders to consult if there be any development or issues in the catchment. Their role mainly on land issues and conflict resolutions by administrators through eight (8) tribal chiefs and a community committee.

Consent and access to resource usage are dealt directly through responsible community members and landowning groups. A process of consultations then followed with tribal chiefs and leaders where they are not necessarily permitted to give rights for access and consent for development. This will also build trust and commitments from the local communities and tribal members who are part of the EbA management efforts. Given the primarily traditional leadership structure, the inclusion of women, youths and other vulnerable groups in decision making related to land issues and resources are by the tribal chiefs and community committee. All effort will be taken to include women in this committees.

Before implementing this plan, key stakeholders were consulted on necessary processes of consent with the Guadalcanal Province Assembly (GPA) and other Solomon Islands Government (SIG) agencies raising awareness on policies and frameworks of the government in relation to this management plan and its intentions. This forms the basis of approach to the local communities in the Mataniko Region. Engaging local communities in the Mataniko Region in the proposed management work, will ensure the involvement of women, youth and other vulnerable members of communities.

1.7.3 Management and Development Trend

The government has existing frameworks for impacted communities to use during disasters. The frameworks are guidelines or procedures that non-government organizations (NGOs), government ministries and other institution can use during times of disaster.

These frameworks were not sustainable and not compatible for the local community to use having gaps of community governance and empowering mechanisms to enforce other means to prepare before responding in this context. Such frameworks were created by the national government and/or adapted from other countries or international organizations or conventions from United Nations as a result of commitments. These are a few of such frameworks to name a few:

- National Development Strategy, 2016-2035
- Honiara Urban Resilience and Climate Action Plan
- Solomon Islands National Climate Change Policy, 2012–2017
- Pacific Disaster Risk Reduction and Disaster Management Framework for Action (Regional Framework for Action or RFA) 2005–2015
- Hyogo Framework for Action (HFA) 2005–2015
- National Disaster Risk Management Plan, 2010
- National Adaptation Programme of Action (NAPA), 2008

These frameworks are available but have been ineffective with limitations to providing the quick response needed by the communities³. Therefore, there is a high need of an ecosystem-based management plan for the Mataniko Ward.

3 Ibid 1



1.8 Constrains and opportunities

This constrains and opportunities were identified during the review and consultation phases for the development of this plan. The approach is using small group of 4 to 5 for discussions and then presents later. Mataniko River Catchment is not new to resource management programs. The community had previously shown interests however constraints were identified to consider in this management plan.

Table 2 lists of constraints and opportunities considers for this management plan

Constraints	Opportunities
Deforestation	Rehabilitate deforestation areas into restoration and rehabilitation sites by re-planting or re-introducing planting of native plants or cash crops. Or convert such areas into carbon farming, wood production or water catchment protection areas.
River and Water Pollution	Ensure sustainable development which looks at pollution prevention by establishing infrastructures such as landfills and wastewater treatment before discharging into the river systems. Finally, water use management is important as well for homes and residents.
Human settlement expansion	Collaborate with states plan to reface or transforming Solomon Islands urban cities, human settlements, healthy, safe, resilient and sustainable.

Constraints	Opportunities
Infrastructure and building designs	Re-enforce infrastructure and building standards for respective areas of risks to mitigate unexploded ordinances (UXO), increased risks for runoffs with developments and low infiltration by assessing sites, landscaping, designing precautionary infrastructures to minimise river and stream degradation and creating buffered areas.
Urban development	Introduce and re-enforce environmentally and friendly designs for schools, waste fields, outlet market sites, pavements. For example, the Jacob's ladder project by Community Access and Urban Services Enhancement (CAUSE) Project and memorial monuments.
Agricultural irrigation and livestock pens	<p>Introduce irrigation and livestock methods and designs where wastes are drained into septic.</p> <p>Promote alternative projects for using wastes sludge from livestock pens into biogas and electricity.</p>
Strategic partnerships and collaboration	<p>Formalise understanding with communities, NGOs, government agencies, business houses, residents to further implement this plan.</p> <p>Sharing of information and data.</p> <p>Encourage community partnerships with other communities for a common purpose for example tackle and deter waste and pollutants from sources.</p> <p>Encourage partnership and collaboration in project designs that implements this plan's intention.</p>
Community participation and awareness	It is high time to strengthen community participation in projects for hands on job trainings that will influence shifts in mind set towards promoting catchment/watershed management, protecting lives and reducing risks.
Administration of catchment managed/protected areas	Administration is one of the key functions for a successful managed/protected area. Structures within administration will enable environment or processes to be current, innovative and sustained into the future.
Lack enforcement power	<p>Develop policies for community measures and enforcement. It is to ensure watershed plans and intention to rehabilitate such areas are alive and sustainable.</p> <p>Use other forms of structures in the local community in relation to local/community policing.</p>
Gender equality, Social Inclusion and Human Rights	Support communities to take ownership of processes of planning and project design that includes men, women, children (boys and girls), those of special attention needs and stakeholders in the decision-making table.

2 KEY POLICY AREAS AND STRATEGIC POLICY OBJECTIVES

The reviews plus the community consultations had enabled the team to identify key focused areas (KFA) and narrowing to develop the policy objectives (SPO). The policy objectives then further translated to strategic actions for achieving the SPO).

Table 3 shows the key focused areas for this management plan

Key Focused Areas	Description	Strategic Policy Objectives
Governance	There are complex issues in management of catchment/watershed. One way to ensure direction of planning is to establish a network of governance by which participants interact to solve complex problems with common goals for watershed/catchment management. Sharing of resources and facilitating learning between communities.	SPO 1: To ensure a network of governance between respective stakeholders and communities within Mataniko River Catchment that creates a common ground for working together for the restoration and protection of the catchment from degrading socially and economically.
Biodiversity assessment and catchment restoration	It is crucial to study the factors that alters the river systems over time especially the water quality and the biodiversity. This will help design the management, restoration and protection of the catchment.	SPO 2: To diagnose the adverse effects of the ongoing land use changes on the ecology and determine approaches to address issues of environmental management, restoration of natural ecosystems, restitution of corridors of organism migrations and quality of aquatic ecosystem.
Ecosystem goods and services	It is important to measure and manage the production supply of ecosystem goods and services within the catchment to ensure sustainability. Spatial mapping is one approach to identify the ecosystems and, by research, to identify the values at which this ecosystem produces.	SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through assessing and analyzing the changes in supply or production within the catchment.

Key Focused Areas	Description	Strategic Policy Objectives
Livelihood and poverty alleviation	It is important to secure and improve livelihood of the people living and depending on the catchment's goods and services. This is by managing and mitigating root cause or gaps to improve livelihood and alleviate poverty.	SPO 4: To improve social and economic livelihood of men, women and other members of communities by identifying suitable alternative sources for income generation to bring about a change in the living standard of people living within the Mataniko River Catchment.
Research and transfer of technology	Promote research and transfer of knowledge for the community in the catchment. It is important for the community to develop their knowledge on for the catchment by linking research with actions.	SPO 5: To ensure research and knowledge transfer is encouraged in the Mataniko River Catchment making sure scholars, visitors, researchers, students from overseas institutions or local institutions learn and at the same time transfer ways to improve the catchment's restoration process.
Sustainable financing scheme	<p>It will require an organizational approach for sustainable financial scheme.</p> <p>It is important to appreciate the contribution of the ecosystem services to the local and national economy. This will be employed through a consultation and negotiation process with respective stakeholders.</p> <p>Money raised from this plan will be for the management and development of the Mataniko River Catchment area.</p>	SPO 6: To establish a predictable financing mechanisms and economic instrument that secures the continuity and sustainability of this plans restoration and protection objectives and activities.
Partnership and corporations	Bringing together stakeholders and resources to address catchment or ecosystem degradation blends science with social and economic consideration. All stakeholders have a role to play. These partnerships must be based on mutual understanding to benefit the intention of the partnership.	SPO 7: To strengthen existing and new partnerships, collaboration and corporation between communities and respective stakeholders to support the intention to restore and protect the Mataniko River Catchment through pilot projects on issues pertaining to watershed or catchment management, water quality monitoring, waste management, information sharing and dissemination, skill based training and capacity development.

Key Focused Areas	Description	Strategic Policy Objectives
Community involvement	<p>Important for community participatory, collaborative process where focus is on communities managing their own natural resources.</p> <p>By decentralizing the management approaches to the community, this will empower them to become better stewards.</p>	<p>SPO 8 : To encourage approaches where community stakeholders at all levels (which includes women, youths, churches, resource owners, residents, settlers, etc) are involved in the decisions makings, management and development activities of the Mataniko River Management Plan.</p>
Management measures and enforcement	<p>Support the management plan to set up a framework for rangers or enforcers under the Protected Areas Act 2010. Community policing is there by principle to work with police.</p>	<p>SPO 9: To ensure this management plan provides avenue to impose terms and conditions (compliance duties) to deter and curb unhealthy activities, attitudes and behaviors pertaining to risk of life or disposing of harmful substances to the river system.</p>

3 THE MATANIKO RIVER CATCHMENT IMPLEMENTATION AND MONITORING PLAN

With the support from several stakeholders this section presents the implementation and the monitoring plan was developed. The actions and indicators were then validated by the community to ensure their involvement and support on the implementation phase. Each actions therefore have indicators which were bound with their estimated times.

Table 5 shows the strategic objectives and activities at which they will be monitored with the indicator and when to achieve the activities.

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 1: To ensure a network of governance between respectiv stakeholders and communities within Mataniko River Catchment that creates a common ground for working together for the restoration and protection of the catchment from socially and economically degradation	Establish administration for the catchment’s overarching need to protect and restore through this management plan by including all stakeholders within the community	Management plan committee is established	MECDM + Community reps, Landowners	√	√	
	There should be an advisory committee which consists of Guadalcanal Provincial Government, MECDM. HCC, Solomon Water. This committee will be gender inclusive.	Advisory committee is developed	MECDM which includes the Guadalcanal Province Government, HCC, Solomon Water, community reps (partners)	√	√	
	Identify and map out the communities within the Mataniko River Watershed	Well detailed map of location of communities is produced	MECDM, Environment Conservation Division (ECD)	√		
	Map and locate zones to specific management rules and regulation in consultation with sectorial stakeholders and the community	Map of zone and document linking rules and regulations to said zones	MECDM, ECD	√		
	Establish a Committee for the implementation of this management plan. This committee will include men and women in the Mataniko region.	Mataniko catchment Committee is established and functioned	MECDM, Community members, Community local stakeholders	√		

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 1: To ensure a network of governance between respective stakeholders and communities within Mataniko River Catchment that creates a common ground for working together for the restoration and protection of the catchment from socially and economically degradation	On the first year of this plan the MECDM, ECD will work closely with the community to organise a general meeting for the office of the Mataniko Catchment Committee.	General meeting minutes (including attendance list)	MECDM + partners	√		
	Develop a ToR ⁴ for outlining the committee's purpose, scope of work, roles and function and the stakeholders that this plan will be in partnership with.	TOR for the committee is developed and agreed upon	MECDM + Community Committee for the management plan	√	√	
	The committee will ensure to declare Mataniko River Catchment Watershed under the Protected Areas Act 2010 in linkages to other laws of Solomon Islands	Declaration of Mataniko River Catchment Watershed under Protected Areas Act 2010 in linkage to other laws	MECDM + Community Committee for the management plan	√	√	
	The committee will consist of representatives from communities	Fully representation of the catchment community documented	MECDM + partners	√	√	
	The committee will consist of a chairperson, a vice-chairperson, secretary, representative from landowning groups and women, youths within the churches along the Mataniko River Catchment	Committee is endorsed and approved by all stakeholders	MECDM + partners	√	√	√

⁴ Develop a holistic approach TOR for the resource owners, communities and office bearers taking into consideration of roles and responsibilities; function of Committee, scope of work and terms in the office.

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 1: To ensure a network of governance between respective stakeholders and communities within Mataniko River Catchment that creates a common ground for working together for the restoration and protection of the catchment from socially and economically degradation		Committee has 3 years of office				
	Create formal collaboration and links with customary structures within the Mataniko vicinity for example with House Chiefs of the area and others	Written understanding between Tandai House of Chief	Mataniko River Catchment Committee + MECDM	√	√	√
	Conduct frequent meetings on issues that needs attention or consensus from the community with recommendations	Number of meetings per year and minutes of these meetings	Mataniko River Catchment Committee + MECDM	√	√	√
	Develop by-laws for the community to adhere to for clean environment. These meetings and the bylaws developed will be gender and socially inclusive.	Management measures and actions are endorsed by stakeholders	HCC, MECDM, Mataniko River Catchment Committee, enforcers or rangers	√	√	√
		Identify critical areas potential for management measures	Community stakeholders + partners	√	√	√
		Identify trial management sites and increase by 10% of critical areas	Community stakeholders + rangers	√	√	√
		# of infringements and issues				

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 2: To diagnose the adverse effects of the ongoing land use changes on the ecology and determine approaches to address issues of environmental management, restoration of natural ecosystems, restitution of corridors of organism migrations and quality of aquatic ecosystem	Collaborate with MECDM to conduct inventory and monitoring of biodiversity and water quality of the catchment	Consult with MECDM on monitoring of biodiversity programs	Mataniko River Catchment Committee		√	√
	Biodiversity assessment					
	Map of the areas to observe for biodiversity assessments, including critical areas and proposed areas for restoration programs	Map of critical sites/ biodiversity hotspots	MECDM + partners	√	√	√
		Map of soil and geology of the site				
		Map of risk areas				
		Map of different features and developments in the area				
	Identify, encourage and record all traditional knowledge pertaining to restoration and protection of the catchment	Proper storage of traditional knowledge documents and instruments	Mataniko River Catchment Committee + MECDM + Ministry of Tourism and Culture + Solomon Islands Visitors Bureau	√	√	
	Identify control sites at the upper catchment for water quality, freshwater and terrestrial ecology	2 or 3 control sites at the upper catchment of Mataniko River	Mataniko River Catchment Committee + MECDM + partners	√		

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 2: To diagnose the adverse effects of the ongoing land use changes on the ecology and determine approaches to address issues of environmental management, restoration of natural ecosystems, restitution of corridors of organism migrations and quality of aquatic ecosystem	Identify samples sites targeting critical areas of influence to the river system for example, drainages, wastes sites, confluence areas, residential areas, squatters, settlements, clinics	5 or 6 sample sites at mid and lower reaches of the river	Mataniko River Catchment Committee + MECDM +partners	√		
	Enlist the species diversity in the region plus their endemism status	List of all biodiversity flora and fauna of the catchment plus their endemism status	MECDM + partners	√	√	
	Conduct an inventory and assessment values for value and status of biodiversity assessment and of the catchment	Inventory study is agreed upon with the community with the support of MECDM	MECDM + partners		√	√
	Conduct a sedimentation and siltation profiling study of the Mataniko River Catchment	Sedimentation rate study review report	MECDM + partners		√	√
	Mataniko River Catchment Watershed State of Environment (SOE) report developed	SOE report for Mataniko River Catchment watershed	MECDM + partners	√	√	
	Catchment based Restoration and planning					
	Plan restoration into scale activities; catchment (basin management approach), corridor (river management) and channel (problem management).	Establish a plan and specific approaches depending on the environment.	Mataniko River Catchment Committee + MECDM + communities	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 2: To diagnose the adverse effects of the ongoing land use changes on the ecology and determine approaches to address issues of environmental management, restoration of natural ecosystems, restitution of corridors of organism migrations and quality of aquatic ecosystem	Involve the local community to establish restoration activities	Participants including women, children and the elderly to be involved in documented activities	MECDM + Committee		√	√
	Work with other local stakeholders such as farmers to undertake nutrient budgets and create buffer strips	Record keeping of minutes & Consult with farmers, residents and contractors	MECDM + Committee	√	√	√
	Involve community and community stakeholders to identify sites for conducting restoration projects. Women, youth and other vulnerable members of the community will be a part of this.	Sites been identified and mapped	MECDM + Committee + partners	√	√	√
	Identify and recreate areas susceptible to flooding, erosion, run offs, infiltration sites, including old storage areas	Community participation and involvement documented	Committee + Rangers + catchment community members	√	√	√
	Monitor the outcome of the management plan activities projects and approaches	MECDM and community to monitor progress	MECDM + Community Rangers		√	√
	Forests					

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through green economic assessing and analyzing the changes in supply, provision or production within the catchment	Collaborate and partner with Ministry of Forestry and Research (MoFR) and the National Herbarium and MCT/ SIVB for reforestation and replanting	Understanding is endorsed and signed	MECDM + partners + Committee		√	√
	Reforest and afforestation on areas that degrades by bush fire and felled areas	Planning and planting of trees are recorded	Committee + partners		√	√
	Discourage harvesting of trees near rivers, water courses and streams	Risk map developed	MECDM + partners + Committee	√	√	√
	Identify an area within the catchment for nursery of native plants and other commercial species plants	An area is ear marked for piloting and complete plan developed	Committee + Community stakeholders + partners	√	√	
	Terrestrial Watershed					
	Discourage clearing and gardening into watershed areas or sensitive areas	Number of Awareness materials/campaignsMaps of high risk areas	MECDM+ Community+ partners	√	√	√
	Stop clearance, milling, felling of trees into watershed areas.	Awareness and buffer zone mapped	MECDM + partners	√	√	
	Discourage and ban disposing of any form of wastes within Mataniko watershed, beside and along the river system.	Ban notice published	Committee + Community	√	√	

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through green economic assessing and analyzing the changes in supply, provision or production within the catchment	Develop a watershed trust fund by creating sectoral partnerships with Solomon Water, Barana park committees and other catchment communities within Honiara Basin together with support from MECDM for partnerships	Trust fund is agreed upon and fully operational	MECDM + Committee + partners	√	√	√
	Establish partnership with potential conservation agencies, NGO and research institutes for biodiversity, ecology and socio-economic and water quality research and programs	Number of consultation and successful partnerships. Specific work outlined in partnerships to be documented.	Committee + MECDM + partners	√	√	√
	Freshwater springs and ground water wells					
	Discourage or stop harvesting, milling of timbers, gardening of trees near watersheds, near water sourced areas. Discourage and stop the dumping of waste in springs, streams and near water source areas	Awareness and buffer zone established plus mapped	Committee + Community stakeholder + partners		√	√
	Protect areas of sourcing water with fences to keep away animals	Identify water source areas vulnerable to animal accessing	MECDM + Committee	√	√	
		# of areas fenced		√	√	√
		Zone map of critical areas (provided in the risk map)		√	√	

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through green economic assessing and analyzing the changes in supply, provision or production within the catchment	Biodiversity (Flora and Fauna Ecology)					
	Seek support, technical assistance to undertake regular baseline studies for biodiversity values of the catchment	Number of concepts and proposals	Committee + MECDM + partners	√	√	√
	Encourage and establish partnership to promote biodiversity research to inform and review action plan of this management plan	Number of partnership arranged Number of awareness and workshops	Committee + MECDM + partners	√	√	√
	Ensure to protect important critical, vulnerable and endemic plants and flora under IUCN RedList.	List of flora and fauna with status is produced	MECDM + Committee	√	√	√
	Collaborate with Ministry of Agriculture and Livestock (MAL) for control measures pertaining to invasive plants or weeds and animals as such African snail (AS), Coconut Rhinoceros Beetle (CRB) that impacts productivity of commercial potential products	MOU is signed with MAL	Committee + MECDM + partners	√	√	√
	Implement invasive species control activity in the catchment	Number of programs for managing AS, CRB and other invasive plants.	Committee + Community stakeholders	√	√	√
	Culture and Heritage					

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through green economic assessing and analyzing the changes in supply, provision or production within the catchment	Encourage cultural practices for passing traditional knowledge and other values to younger generation within the catchment for example, stories, dances, languages, songs and lullaby and practices	Number of cultural talks in the communities. Number of reports, audio records and visual recordings.	Committee + MTC + Community stakeholders + MECDM	√	√	√
	Document and record all local knowledge to ensure protection value of such properties as traditional knowledge	Documentation of these talks to allow for further decision making regarding cultural practices and traditional knowledge	MTC + Committee + Community stakeholders	√	√	√
	Promote Mataniko River Catchment biodiversity and ecology as platform for cultural heritage learning.	Proper storage of reports, records and visual recordings	MTC + MECDM + Committee + partners	√	√	√
	Establish and set up a space in the catchment to promote cultural learning space for local art and crafts and advertisement for local products market sales. This will take into account the different cultural expertise and knowledge of men and women.	Number of awareness workshop and gender participation. Number of museum. Number of market outlets. Number of informative areas	MTC + MECDM + HCC + partners + committee	√	√	
	Consult with Explosive Ordinance Disposal team for the RSIPF on plans for WWII relic preservation within the catchment	Number of awareness programs and gender participation. Number of monitoring. Map of reported sites	RSIPF-UXO Team + Committee + MECDM	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 3: To synthesize approaches that encourages sustainability of the ecosystem goods and services through green economic assessing and analyzing the changes in supply, provision or production within the catchment	Regular monitoring of WWII relic sites	Inventory of WWII relics areas identified	RSIPF UXO team + Committee + MECDM + partners	√	√	
	Ban or stop illegal removal or selling of WWII relics from the catchment	Number of awareness. Number of ban and stop notice published. Location of notice put up	Committee + RSIPF-UXO Team	√	√	√
	Promote preservation of historic heritage associated with the Mataniko restoration and protection plan	Awareness Map of historic heritage sites	MTC + Committee + Community stakeholders	√	√	
	Encourage dissemination and production of historical heritages information through media outlets, social media, pamphlets, booklets and posters	Number of information produced Types of stakeholders targeted	MTC + Committee + Community Stakeholders	√	√	
	Associate with Barana Park to propagate support assistance from Japan and America and other potential stakeholders to support the protection and restoration of the upper prestige catchment sites.	Number of concept and proposal Number of consultation	MECDM + Committee+ partners			√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 4: To improve social and economic livelihood for men and women by identifying suitable, alternative source for income generation to bring about a change in the living standard of people living within the Mataniko River Catchment.	Aware communities and members of communities on importance for protecting and restoring the Mataniko catchment.	Number of awareness Number of participants- men, women and youths involved (documentation of type of awareness materials/ campaigns)	MECDM + partners + Committee	√	√	
	Link trust fund with livelihood activities suited for the catchment	Trust fund transaction plan	MECMD + GP + partners	√	√	√
	Ecotourism and Tourism Opportunities					
	Promote eco-tourism and tourism opportunities within the catchment establishing home stay, eco-lodge, camp eco-lodge, recreational sites etc	Map opportunity zones for eco-tourism and tourism activities Number of opportunity project sites	MECDM + GP + MTC + partners	√	√	√
	Support and promote existing local guides and operators through exchange and learning programs. Include women and youth in these learning programs.	Inventory of eco-tourism and tourism projects Rate of visitors, researchers visiting List of local guides produced	MTC + MECDM + Committee + partners		√	√
	Provide map of location of the eco-tourism and tourism activities within the catchment through sign boards, pamphlet, fact sheets, social media etc.	Map of existing eco-tourism and tourism activities	MTC + GP + MECDM + Committee + partners	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 4: To improve social and economic livelihood for men and women by identifying suitable, alternative source for income generation to bring about a change in the living standard of people living within the Mataniko River Catchment.	Promoting small businesses entrepreneur					
	Collaborate with responsible authorities to discuss, assist and support livelihood opportunities in the catchment. Identify livelihood opportunities that could target women/youth specifically.	Number of consultations.	Committee + GP + partners	√	√	√
		Livelihood opportunities set up for women, youths	Ministry of Commerce + MECDM + Committee + partners	√	√	√
	Improve market access for community (which include men, women, youth) to sell of local products from the catchment which includes, local foods, crops, vegetables, ornamental flowers from environment-friendly market sites in the catchment with proper designs and supporting facilities that models environment management	Market outlet sites Supporting facilities build, e.g. toilets, wastes bin, storage, proper drainage system, septic etc.	MECDM + Committee + partners + community stakeholders	√	√	√
	Encourage tree planting by visitors, community and stakeholder in contributing to the catchment restoration activities. Identify areas for specific women involvement.	Tree planting program established. Nurseries and seed collection activities done by women.	MECDM + MTC + Ministry of Commerce + Committee + partners + community stakeholders	√	√	

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 4: To improve social and economic livelihood for men and women by identifying suitable, alternative source for income generation to bring about a change in the living standard of people living within the Mataniko River Catchment.	Develop, establish and align standard environmental fees for specific activities in the catchment for example, ecotourism, bird watching, bush trekking/walk/hiking, WWII relic visits, Gifu ridge (Ridge 27), local museum, collection of specimens, resource centers, conferences, collection of bush materials, transport, tour guide etc.	Standard environmental fees established	MECDM + MTC + Committee + partners + community stakeholders	√	√	
	Establish a tour guide, rangers or volunteer team for the catchment management and research package. These teams to include women who are interested to participate.	Rangers program published	MECDM + MTC + Committee + partners + community stakeholders	√	√	

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 5: To ensure research and knowledge transfer is encouraged in the Mataniko River Catchment making sure scholars, visitors, researchers, students from oversea institutions or local institutions learn and at the same time transfer ways to improve the catchment's restoration process.	Establish collaboration with research institutes and scholars interested for biodiversity research or volunteer for improving the catchment management and development	Number of MOUs signed List of partners and their roles	MECDM + MTC + Ministry of Commerce + Committee + partners + community stakeholders		√	√
	Collaborate with specific stakeholders to provide or conduct training for the local community	Number of trainings Number of participants- Gender participation in all these workshops recorded. Documenting the results of the training	Committee + MECDM+ HCC + partners + community stakeholders	√	√	√
	Provide specific capacity and skill based trainings to the local community (including men, youth and women) members within the catchment for example finances, book keepings, business, leadership, administration and management, rangers, tour guides, natural resources management, ecosystem good and services	Number of types of trainings Number of participants- including gender participation. Document results of the training	MECDM + MTC + Ministry of Commerce + Committee + partners + community stakeholders		√	√
	Develop tertiary studies and scholarships and encourage south to south trainings between Honiara watershed catchment. Training opportunities will be gender inclusive	Criteria for trainings Opportunity list produced Number of space Number of trainings Duration of trainings Number of participants(men and women inclusion in this trainings) Lesson learnt reports	MECDM + MTC + Ministry of Commerce + Committee + SINU + community stakeholders		√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 5: To ensure research and knowledge transfer is encouraged in the Mataniko River Catchment making sure scholars, visitors, researchers, students from oversea institutions or local institutions learn and at the same time transfer ways to improve the catchment's restoration process.	Educate women, youths, men on the importance watersheds, catchment, land use, forests, WWII relics, freshwater etc. and risks surrounding these ecosystems	Number of awareness or workshops Map of risk and buffer zones Number of participants	MECDM + MTC + Ministry of Commerce + Committee + SINU + community stakeholders	√	√	√
	Encourage researches on cost effective farming harnesses production but with minimal inputs for example hydroponics, small scale aquaculture or integrated farming systems etc.	Number of trial farming systems Number of participants	MECDM + MTC + Ministry of Commerce + Committee + SINU + community stakeholders		√	√
	Identify and establish trial sites in the catchment for the cost effective farming for the community and members of the community	Number of demonstration sites Map of demonstration sites	MECDM + MTC + Ministry of Commerce + Committee + SINU + community stakeholders		√	√
	Collaborate with potential stakeholders to support trials for eco-friendly projects in community, schools, waste management etc. For example, Kastom Garden and others. Some of these trials for eco-friendly projects to specifically target women	Number of MOU signed with potential stakeholders Number of participants	MECDM + MTC + Ministry of Commerce + Mataniko Catchment Committee + SINU + community stakeholders + Kastom garden and others	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 6: To establish a predictable financing mechanisms and economic instrument that secures the continuity and sustainability of this plans objectives and activities	Undertake a cost-benefit analysis (CBA) options to implement reasonable fees on activities in the catchment and a trust fund	Develop a TOR for CBA options and model for Mataniko River Catchment	MECDM, HCC, SIVB, MTC, Community stakeholders, Mataniko Catchment committee	√	√	
	Explore the establishment of a trust fund for this plans activities	A trust fund model is identified A trust fund is developed and fully operational	MECDM, HCC, SIVB, MTC, Community stakeholders, Mataniko Catchment committee		√	√
	Improve consultation and links among agencies to allocate resources for this plan's implementation	MOU signed with agencies Number of agencies	MECDM, HCC, SIVB, MTC, Community stakeholders, Mataniko Catchment committee	√	√	
	Increase funding support and allocation for existing programs and support community ecosystem managements activities	Establish with MOU signed with agencies Funds are allocated accordingly to programs	MECDM, HCC, SIVB, MTC, Community stakeholders, Mataniko Catchment committee	√	√	√
	Strengthen development partnerships and networking to solicit support for implementing Mataniko catchment watershed management plan activities.	Aware and promote sustainable development. Information is shared with agencies within and surrounding the Mataniko Catchment. MOU is signed with operators and business houses	MECDM, HCC, SIVB, MTC, Community stakeholders, Mataniko Catchment committee	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 6: To establish a predictable financing mechanisms and economic instrument that secures the continuity and sustainability of this plans objectives and activities	Implement natural resources management audits for Mataniko HCC to review, develop and enforce existing standards and bylaws on waste management and buffer zones for communities	Community natural resources management measures developed and implemented	MECDM, HCC, SIVB, MTC, Community stakeholders, Mataniko Catchment committee		√	√
SPO 7: To strengthen existing and new partnerships, collaboration and corporation between communities and respective stakeholders to support the intention to restore and protect the Mataniko River Catchment through pilot projects on issues pertaining to watershed or catchment management, water quality monitoring, waste management, information sharing and dissemination, skill based training and capacity development.	Promote management plan to potential stakeholders to support the protection and restoration for the catchment	Number of stakeholder consultation. Consultations to be gender and socially inclusive Number of awareness and outreach Results documented	Committee + MECDM	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 7: To strengthen existing and new partnerships, collaboration and corporation between communities and respective stakeholders to support the intention to restore and protect the Mataniko River Catchment through pilot projects on issues pertaining to watershed or catchment management, water quality monitoring, waste management, information sharing and dissemination, skill based training and capacity development.	Establish corporation through MOUs with sectorial stakeholders like Solomon Water, MECDM, MTC, HCC, Solomon Islands National University (SINU), University of the South pacific (USP) and other institute for the purpose of research, visits, recreation etc.	Signed MOUs with sectorial stakeholders	MECDM + MTC + Ministry of Commerce + Committee + SINU + community stakeholders	√	√	√
	Enter into business and investment arrangement with local business that interest in community and watershed management	Records of consultation and engagement of all members of communities including men, women, youths. Beneficiary mapping and registration Trust deed developed and signed MOA for all parties	MECDM + MTC + Ministry of Commerce + Committee + SINU + community stakeholders	√	√	√
	Work and collaborate with MLHS, HCC to control the uncontrolled expansion of urban developments, rate of settlements encroaching the upper reaches of the river system	Information gathered Consultation and information sharing of data Management plan endorsed Submission of proposal Zone management is recognized by HCC and MLHS Development sites mapped Potential sites with low risk for development mapped	MECDM + HCC + Committee + community stakeholders	√	√	

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 8: To encourage approaches where community stakeholders at all levels (which includes women, youths, churches, resource owners, residents, settlers, etc.) are involved in the decisions makings, management and development activities of the Mataniko River Management Plan.	Encourage members of the community to be part of catchment projects, sustainable farming or as tour guide or volunteer team for researchers or to visitors visiting the catchment	Number of participants in each activities- (men, women, youths). Dissemination of opportunities for community involvement	MECDM + HCC + Committee + community stakeholders	√	√	√
	Involve children, youth, men and women in training and awareness programs and activities	Number of participants Number of awareness programs	MECDM + HCC + Committee + community stakeholders	√	√	√
	Establish rangers program to allow community participation and management at the catchment.	Number of rangers per community	MECDM + Committee + community stakeholders	√	√	
	Representative of committee to provide report, updates and feedback to local communities, local authorities and partners	Bi-annual monitoring and reporting	MECDM + Committee + community stakeholders	√	√	√
	Mobilize programs and activity responsibilities or roles between communities and tribal groups. These programs will be gender and social inclusive.	Duty roster of responsibilities	MECDM + Committee + community stakeholders	√	√	√
	Encourage competition on writing, arts and speech competition to promote Mataniko River Catchment Watershed Management	Environment day activities highlights	Committee + MECDM+ HCC + partners + community stakeholders	√	√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 8: To encourage approaches where community stakeholders at all levels (which includes women, youths, churches, resource owners, residents, settlers, etc.) are involved in the decisions makings, management and development activities of the Mataniko River Management Plan.	Promote awareness in schools, institutions and business houses and to the general public through pamphlets, booklets, social media, media outlets and other printed materials	Number of awareness programs Dissemination of information Types of mode	Committee + MECDM+ HCC + partners + SINU + community stakeholders	√	√	√
	Encourage zone management competitions on cleanliness where such zones a given awards	Map of Zones of residents Number of zones	Committee + MECDM+ HCC + partners + SINU + community stakeholders	√	√	
SPO 9: To ensure this management plan provides avenue to impose terms and conditions (compliance duties) to deter and curb unhealthy activities, attitudes and behaviors to catchment restoration and protection.	Develop general rules and by-laws in consultation with the catchment communities, HCC and MECDM	Communities are consulted Reports of consultation	MECDM + HCC + Community stakeholders + committee	√	√	
	Impose in rules and by-laws linkages, stakeholders to work together with purpose, scope, objectives and actions to enforce	Validation of rules and by-laws Vetting of instructions Drafting and publication of rules and by-laws	MECDM + HCC + Community stakeholders + committee		√	√

Strategic Policy Objectives	Actions	Indicators	Responsible stakeholders	Targeted Year Period		
				Short Term (1yr)	Medium Term (2-3yrs)	Long Term (4-5yrs)
SPO 9: To ensure this management plan provides avenue to impose terms and conditions (compliance duties) to deter and curb unhealthy activities, attitudes and behaviors to catchment restoration and protection.	Establish a demerit point system for any infringement with the by-laws and rule of the catchment	Categorize zones of management. Weigh rules and by-laws accordingly Number of infringement Value of each infringement Penalize according to points	MECDM + HCC + Community stakeholders + committee		√	√
	Rangers or enforcers to enforce/ impose bylaws and rules	Rules and by-laws are enforced and supported by the community	MECDM + HCC + Community stakeholders + committee		√	√
	Monitor and evaluate infringement and demerit point system of operation of penalizing	Infringement form developed and endorsed Monitoring and evaluation format for the infringement compatible to HCC standards for reporting cases	MECDM + HCC + Community stakeholders + committee		√	√

4 MISCELLANEOUS

4.1 Review and Amendment

This plan will be fully reviewed after a period of four years (2021-2024). A mid-term review will be made two years within the timeline that this plan is operational. Any major issues identified through MEL under Section 4.3 below may justify a full review or part review of the plan.

4.2 Implementation and Monitoring Plan

A detailed implementation and monitoring plan is fully developed for this plan to work over the four-years period from 2021 to 2024 which is presented in section 3 above, Table 5.

Reporting will be developed and disseminated to respective stakeholders. Seeing that this plan reflects the good collaboration of the MECDM and the local communities herein, reporting will be consistent with MECDM's work plans and annual reporting.

It is important to monitor progress of the implementation of the plan. Critical areas to conduct partial or full review will be considered if there is a policy change or where aspects of work programs of this plan are deemed irrelevant.

REFERENCES

- Anon. 2004. Phosphorus: Canadian Water Quality Guidelines for the Protection of Aquatic Life, Canada
- Adler, G.H., Austin, C.C. and Dudley, R. 1995. Evolutionary Ecology: Dispersal and speciation of skinks among archipelagos in tropical Pacific Ocean. Chapman and Hall. vol9:529-541
- Agency, E. 2009. Water for life and Livelihood. Defra, 6 12.
- Agency, E. U. S. E. P. 2012. EPA's Web Archive. [Online] Available at: <https://archive.epa.gov/water/archive/web/html/vms59.html> [Accessed 22 February 2019].
- AS/NZS ISO 31000, 2009. Risk Management - Principles and Guidelines. Sydney: Sai Global.
- Australian Institute for Disaster Resilience, 2015. National Emergency Risk Assessment Guideline (pp. 134). Melbourne: Australian Government.
- Bartram, J. 2004. Water Quality Monitoring.
- BirdLife International, 2015. Endemic Bird Area factsheet: Solomon group. Retrieved on the 7th January 2015 at URL: <http://www.birdlife.org>
- BOM, 2013. Cyclone tracks - Southern Hemisphere [beta], Retrieved on the 10th of February 2015 at URL: <http://reg.bom.gov.au/cyclone/history/tracks/index.shtml>
- BOSETO, D. 2011. Aquatic fauna Survey of the Kovi Water Catchment, Guadalcanal Island, Solomon Islands. Honiara: IUCN
- Brett, J. 2014. Water temperature. Fundamentals of Environmental Measurements, 7 February.
- Chandan, 2013. INTERNATIONAL JOURNAL OF SCIENTIST & TECHNOLOGY RESEARCH. [Online] Available at: <http://www.researchgate.net/publication/273611489> Analysis Of The Causes And Impacts Of Water Pollution Of Burigana River A Critical Study [Accessed Friday February 2019].
- Coleman, P. J. 1965. Stratigraphical and Structural Notes on the British Solomon Islands with Reference to first Geological Map, 1962. British Solomon Islands Geological Review, 2, 17 - 31.
- Dutson, G. 2011. Birds of Melanesia: Bismarks, Solomons, Vanuatu and New Caledonia. Bloomsbury Publishing. London.
- Environmental, F. 2014. FONDRIEST. [Online] Available at: <https://www.fondriest.com/environmental-measurements/parameters/water-quality/ph/> [Accessed 24 February 2019].
- Haberle, S. 1996. Explanations for palaeoecological changes on the northern plains of Guadalcanal, Solomon Islands: the last 3200 years. The Holocene, 6(3), 333 - 338.
- Hackman, B. D. 1979. The Geology of Honiara area. Honiara: Solomon Islands Geological Survey Division.
- Middelmann, M. H. 2007. Natural Hazards in Australia. Identifying Risk Analysis Requirements (pp. 206). Canberra: Geoscience Australia.

- PCRAFI, 2015. Country Note Solomon Islands: Disaster Risk Financing and Insurance. Washington: The Pacific Community.
- Radford, D. & Blong, R. 1992. Assessments of Natural Hazards in the Solomon Islands and the Implications for other Pacific Island Countries AODRO Newsletter, 10(3), 1 - 8.
- Radford, D. A. & Blong, R. J. 1992a. Natural Disasters in the Solomon Islands (Vol. 1). Sydney: Macquary University.
- Radford, D. A. & Blong, R. J. 1992b. Natural Disasters in the Solomon Islands (Vol. 2). Sydney: Macquary University.
- Radford, D. A., Blong, R. J. & Flood, N. R. 1992. Natural Disasters in the Solomon Islands (Vol. 3). Sydney: Macquary University.
- UN OCHA, 2014. Solomon Islands: Flash Floods Situation Report No. 8 (as of 22 May 2014) (pp. 5). Suva: UN OCHA.
- UNISDR, 2015. Sendai Framework for Disaster Risk Reduction 2015-2030 (pp. 37): UNISDR.
- UNISDR, 2017. Words into action guidelines: National Disaster Risk Assessments (pp. 101). Geneva: UNISDR.

APPENDICES

Below a presentation of maps of land cover, communities and the land use of the Mataniko River Watershed Catchment sites

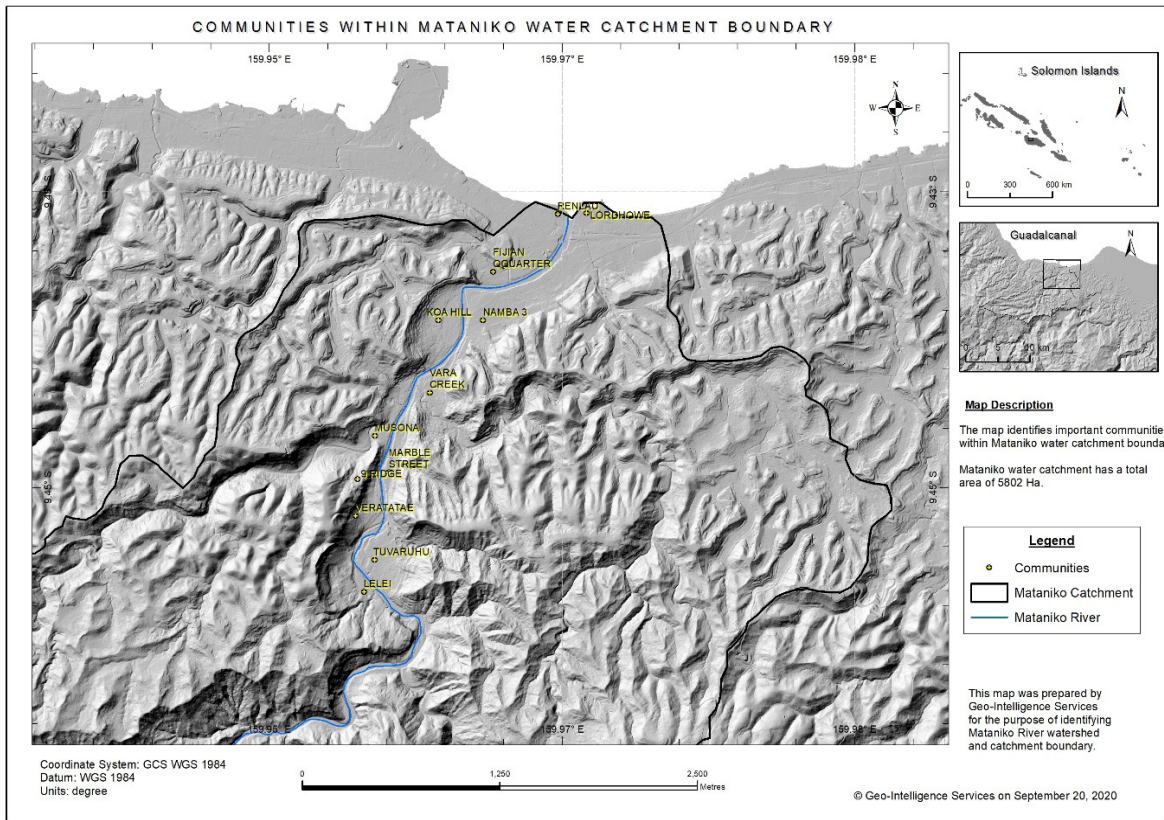


Figure 1 shows the communities within the Mataniko Catchment

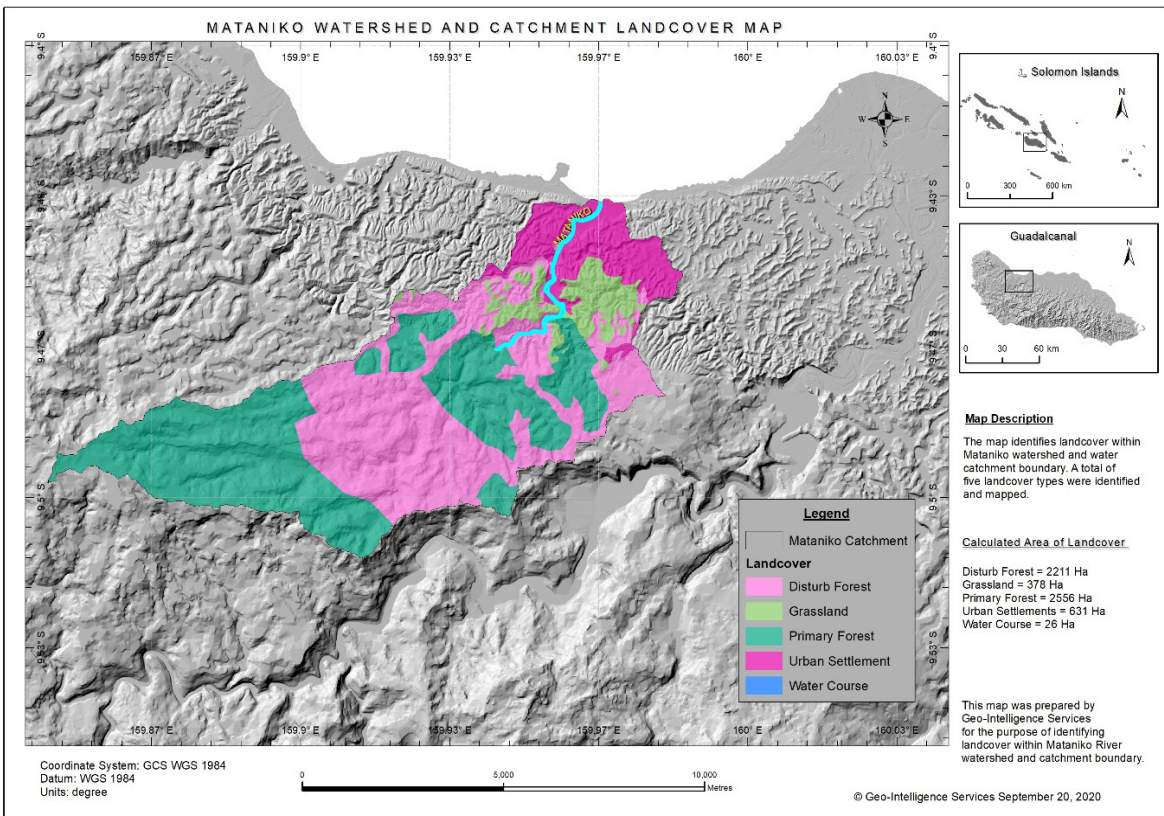


Figure 2 shows the land cover of the Mataniko River Catchment

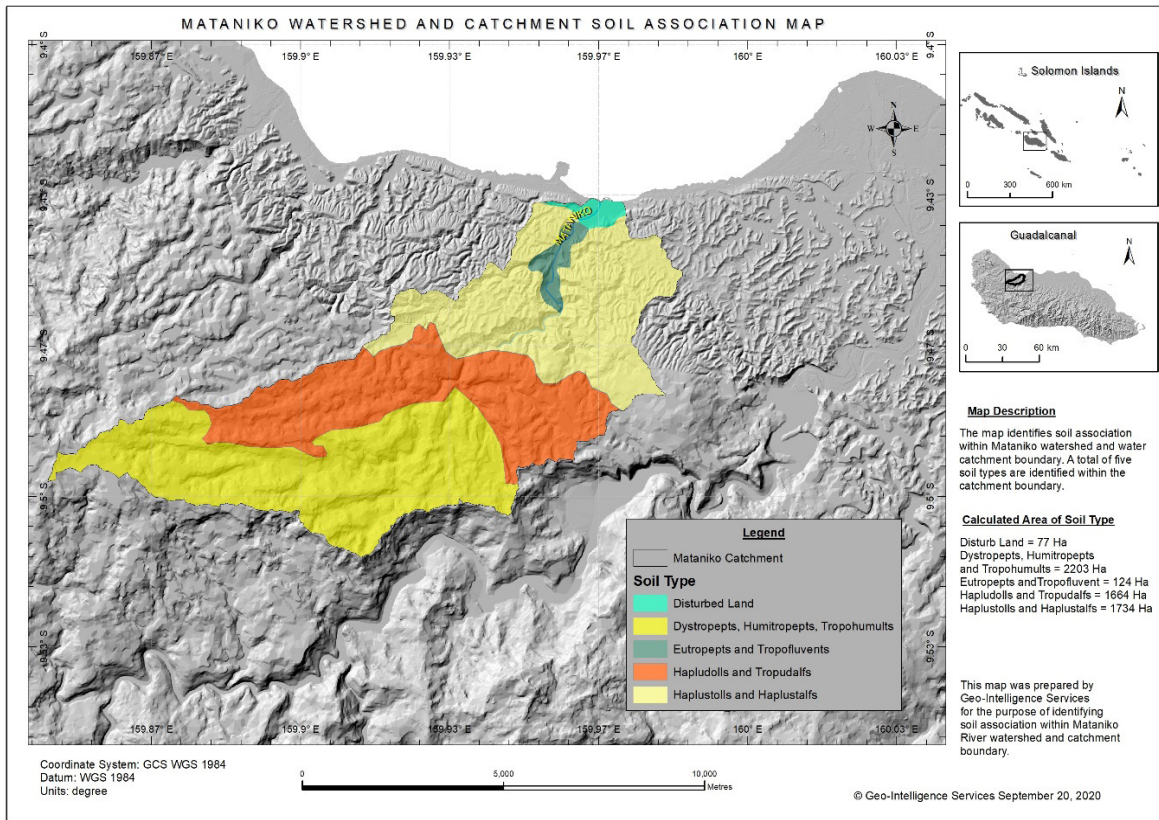


Figure 3 shows the soil types within the Mataniko Catchment

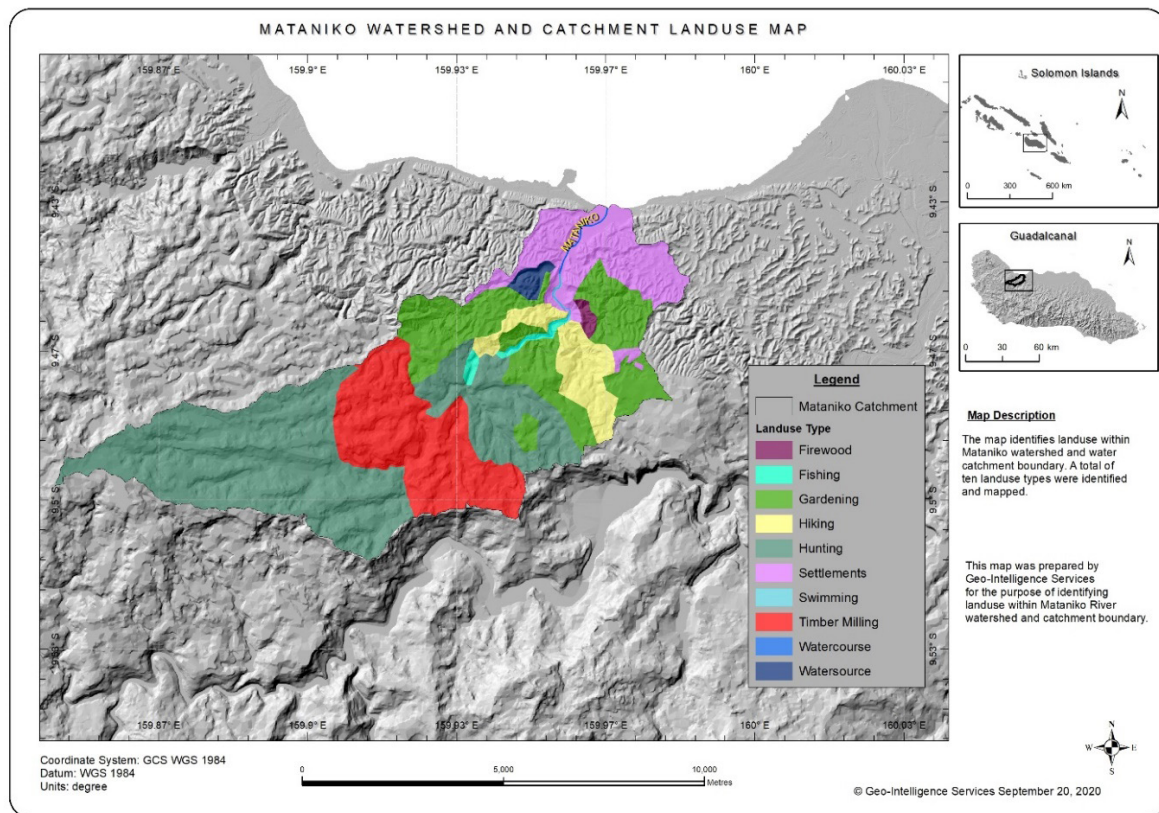


Figure 4 depicts the land use within the Mataniko River Catchment

