Boosting Tourism: Environmental and Social Diagnostic of the Tourism Sector in Solomon Islands' Western Province

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Boats at Gizo, Western Province, Solomon Islands.

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Acknowledgments

The IFC Report – Western Province Tourism Investment Needs Assessment: Identifying Essential Investments for First-Stage Development of the Tourism Sector in Solomon Islands (October 2018) – identified 39 essential investment needs across accommodation, transportation, and destination experience in Western Province, Solomon Islands. For greenfield investments, the report recommended a mapping of environmental and social risks of developments near the gateway cities of Western Province to carefully assess and support a long list of sites that meet investment needs. To respond to this recommendation, Boosting Tourism: Environmental and Social Diagnostic Study for the Tourism Sector in Solomon Islands' Western Province takes a landscape approach and sets out a new assessment methodology and process, including a set of recommendations to reduce environmental and social risks and enhance the business environment to facilitate tourism development. This study was led by IFC in collaboration with the Ministry of Culture and Tourism.

The IFC Tourism Program in Solomon Islands is led by IFC Tourism Specialist Becky Last. This study was spearheaded by IFC's Environment, Social, and Governance (ESG) Advisory team (www.ifc.org/sustainability), led by Senior ESG Advisory Lead Kate Lazarus and Senior ESG Upstream Lead Eva Rossi.

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- Solomon Islands Government
- Ministry of Environment, Climate Change, Disaster Management & Meteorology – Environment and Conservation Division
- Ministry of Culture and Tourism
- Ministry of Lands, Housing and Survey
- Ministry of Development Planning and Aid Co-Ordination
- Ministry of Fisheries & Marine Resources
- National Disaster Management office
- Western Provincial Government
- Western Provincial Government Ministry of Tourism – Gizo
- Tourism Industry and Service Providers
- Tourism Solomons (Formerly Solomon Islands Visitors Bureau)
- Various Accommodation Providers
- Various Tour Providers
- Western Province Tourism Association
- Non-governmental Organizations and Civil Society Organizations
- Batuna SDA Vocational School
- Strongim Bisnis (Strengthen Business)
- Food and Agriculture Organization
- Kolombangara Island Biodiversity Conservation Association (KIBCA)
- Solomon Islands National Council of Women
- Tetepare Descendants Association
- United Church – Munda
- Western Province Environmental Consultants
- Committee
- Wildlife Conservation Society
- WWF
- International Donors
- Australian Department of Foreign Affairs and Trade
- New Zealand Ministry of Foreign Affairs and Trade
- Landowner representatives and members of local communities in Western Province

Acronyms

CIA	Cumulative Impact Assessment
CITES	Convention on International Trade in Endangered Species in Wild Fauna and Flora
CBMA	Community-Based Management Areas
CSO	Civil Society organization
EHS	Environmental, Health, and Safety
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
ESDS	Environmental and Social Diagnostic Study of Tourism in Western Province
ESG	Environment, Social and Governance
ESIA	Environmental and Social Impact Assessment
ESRI	Environmental Systems Research Institute
E&S	Environmental and Social
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GIS	Geographic Information System
IBAT	Integrated Biodiversity Assessment Tool
IFC	International Finance Corporation
IFC PS	IFC Performance Standards
IUCN	International Union for Conservation of Nature
IUCN Red List	International Union for Conservation of Nature's Red List of Threatened Species
LMMA	Locally Managed Marine Areas
MECDM	Ministry of Environment, Climate Change, Disaster Management and Meteorology
MMA	Marine management areas
MCT	Ministry of Culture and Tourism
MPA	Marine Protected Areas
NDMO	National Disaster Management office
NGO	Non-governmental Organization
NIIP	Solomon Islands National Infrastructure Investment Plan
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
PS	Performance Standards
SEA	Strategic Environmental Assessment
SIG	Solomon Islands Government
SINOP	Solomon Islands National Ocean Policy
SINTDS	Solomon Islands National Tourism Development Strategy
SPC	Secretariat of the Pacific Community
SPREP	Secretariat of the Pacific Regional Environment Programme
UNEP-WCMC	United Nations Environment Programme World Conservation Monitoring Centre
UXO	Unexploded Ordnance
WBG	World Bank Group
WPTINA	Western Province Tourism Needs Assessment
WWII	World War II

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Photo Credit: Robert Taupongi

EXECUTIVE SUMMARY

Executive Summary

OVERVIEW

The Solomon Islands Government (SIG) is seeking to encourage tourism development in Western Province, Solomon Islands (Map 1). As part of a program of activities, IFC commissioned an Environmental and Social Diagnostic Study (ESDS) to inform key stakeholders of potential landscape-level[1] environmental and social (E&S) risks and opportunities for tourism development. This report sets out a new assessment methodology and process, including a set of recommendations to reduce risks and enhance the business environment to facilitate tourism development.[2]

SCOPE AND PURPOSE OF THE ESDS

This study identifies E&S risks and opportunities for tourism development within the defined tourism corridor and selected sites in Western Province. Focus areas were the key gateway hubs of Gizo, Munda, and Seghe.

Within these areas, IFC previously identified registered land parcels and sites within those parcels that were attractive for tourism development. Through this study, these sites were then considered based on a risk register to determine low, moderate, and high levels of E&S risks, and how these would be compounded in case of tourism development.[3]

Using the study as a reference, the **SIG and the Western Provincial Government** can review the identified risks and related recommendations for enhancing current policy frameworks as well as strengthening legal requirements and enforcement. They can also identify ways to improve the business environment for existing and potential investors.

Potential tourism developers/investors can be more informed on business requirements and challenges within their sites of interest, particularly regarding access to customary land and natural resources. The study provides recommendations for sustainable business planning, so developers/investors can use its findings to estimate development time and cost in relation to potential risks.

Non-governmental organizations (NGOs), civil society organizations (CSOs), and local communities can make use of the findings to improve data collection and conduct more detailed studies to fill knowledge gaps. The findings can also facilitate their discussions with governmental agencies and developers/investors to enhance the likelihood of developing sustainable tourism in Western Province.

1 A landscape-level assessment is a geographically based assessment of a defined landscape area. It includes a) identifying components of the landscape, b) characterization and mapping to differentiate areas that are distinct from one another based on relevant criteria and evaluation of the landscape, and c) ranking or prioritizing areas that require high protection or management. It provides a high-level indication of wider landscape matters that can be used to make informed site selection for development. Further detailed investigation of a chosen site can then be undertaken.

2 Tourism development in the context of the ESDS refers to expansion of existing tourism assets and creation of new infrastructure, such as hotel facilities suitable for investment. Reference should be made to the *Western Province Tourism Investment Needs Assessment: Identifying Essential Investments for First-Stage Development of the Tourism Sector in Solomon Islands report (WPTINA)* completed by IFC's Solomon Islands Tourism Program in October 2018.

3 See *WPTINA*. To overcome a lack of investable land, a three-stage process of site identification was conducted. Land parcels were firstly filtered against the tourism corridor identified in the report, excluding those outside the corridor. Remaining land parcels were then filtered by status, excluding non-registered land parcels. Registered land parcels (and sites within them) inside the corridor were then visited to assess tourism attractiveness and suitability.

Map 1: Location of Solomon Islands and Western Province

METHODOLOGY

The key steps of the approach and methodology for the development of the study are outlined below:

Desktop Review of Existing Information and Geographic Information System (GIS)

The review aimed to examine information on the general E&S conditions in the study corridor of Western Province, including the country's legal and political framework as well as social and environmental situations. This included gathering available GIS data, previous environmental and ecological assessments, and social research and reporting.

Inception Plan

The study reviewed available data and identified information gaps to devise an inception plan that included an indicative approach to site visits in the study corridor and further research, stakeholder consultation, and on-site assessment to gather the required data.

Stakeholder Engagement Plan

Key stakeholders were identified for consultation and their inputs were incorporated into developing the risk assessment criteria with a focus on fulfilling the recommendations of the study.

Stakeholder Consultations

Involved discussions were held with key stakeholders to refine the weighting of key risks to align with stakeholder views to the extent possible, confirm all risks were addressed, and gain feedback on potential risk-mitigation options.

Field Assessments

This included in-field site surveys and stakeholder consultations to gather more E&S data to supplement desktop investigations.

Analysis of the Findings

Review of the gathered data was undertaken to identify the key risks and impacts requiring consideration at the contextual, corridor, and identified-site levels.

Risk Assessment

The assessment characterized key E&S risks and impacts that were identified and developed measurement criteria for them. Measurement of mapped and collected data against the relevant risk assessment criteria produced ratings (high, moderate or low) for areas along the study corridor and a prioritized rating for each identified site.

Recommended Actions

Identified actions to address and manage high-level risks and impacts at the contextual, corridor, and identified-site levels to enable the development of sustainable tourism.

RISK-ASSESSMENT METHODOLOGY

The risk-assessment process was guided by the IFC Performance Standards (IFC PS), as depicted in Figure 1 below.

Figure 1: Risk-Assessment Methodology Framework

Using baseline data, the E&S risks were characterized into three levels of assessment as detailed in Table 1. For the purposes of this study, only the risks considered relevant to tourism development in Western Province have been included.

Table 1: Characterization of Risks

Risks	Description
Contextual risks	• Contextual risks—from a private sector's E&S perspective—are defined as external risks at a country, sector, or subnational level that project developers do not control but can negatively impact a project's or private sector client's ability to meet IFC's E&S requirements and other international good practices. • Existing country-level risks in Solomon Islands, including in Western Province, considered applicable for the tourism sector are captured. They include security and conflict; political risks and governance; access to infrastructure; labor and workforce; food security and health epidemics; natural disasters; biodiversity, ecosystem services, and climate change; access to land and natural resources; social cohesion; gender; and reprisals. • The contextual risks were assessed based on IFC's contextual risk framework, professional judgment, field assessments, and stakeholder consultation. • High and moderate risks likely to turn into high without mitigation are included.
Corridor risks	• E&S risks that would occur in the study corridor (areas defined by IFC as within 20 kilometers of airports or less than 1 hour by boat of Western Province airports of Gizo, Munda, and Seghe as well as areas along the water transport route that are further than 20 kilometers from airports but have existing or high aesthetic potential for tourism development) and might vary depending on the availability and precision of data. These risks were assessed based on secondary data, particularly through GIS mapping, which seeks to support investors and government in identifying potential tourism sites with lower E&S risks. • The corridor risks were assessed using a low, moderate, and high rating.
Identified-site risks	• Site risks were determined through on-site investigations and stakeholder consultations, supplemented with secondary data. • Site risks were assessed through a multi-criteria analysis based on qualitative and semi-quantitative data. A linear scale from 1-10 was used to categorize the risk ratings (1-3 – low risk; 4-6 – moderate risk; 7-10 – high risk).

Details of the assessment methodology are covered in section 2.

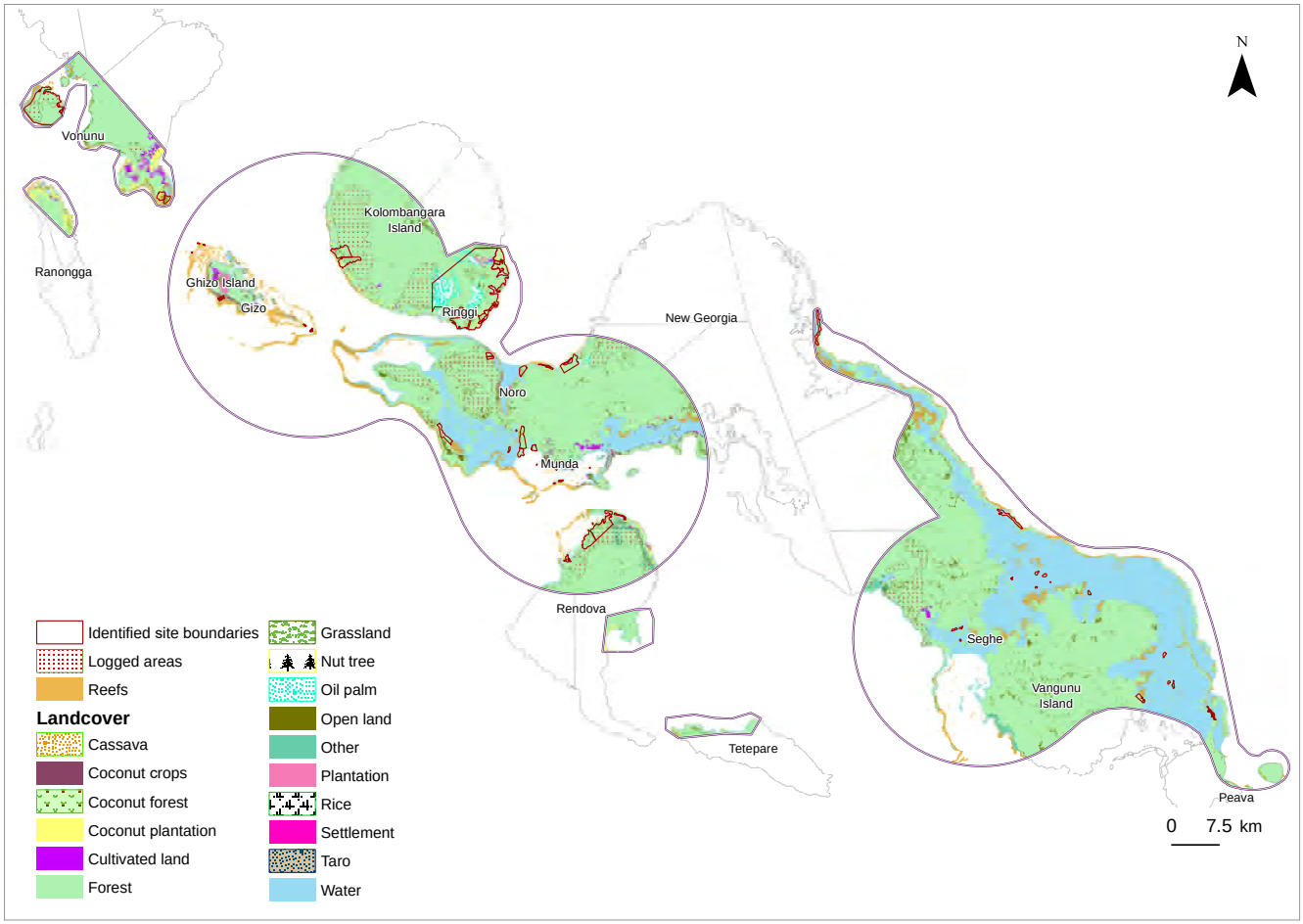
BASELINE DATA

Tourism in Western Province

The tourism industry is still in its infancy and centers on nature-based activities as well as cultural and/or historical tours, with a growing number of cruise and sailing tourists. Limited infrastructure, high operational costs, and tourism marketing have stunted the further development of tourism in the province.

To attract investors, the SIG began offering a Tourism Investment Incentives Package in 2017, providing tax reliefs, duty exemptions, and energy incentives. Map 2 depicts existing tourism providers in Western Province and indicates current land uses and known proposed infrastructure upgrades.

Map 2: Land Use, Existing Tourism, and Proposed Infrastructure



Out of the nine provinces in Solomon Islands, Western Province is by far the most popular for tourists. It has an area of 5,475 km², comprising 16 large islands and hundreds of smaller ones (see Map 3). Small but regular numbers of international tourists have been visiting the province since the 1990s. There are several reasons why Western Province is the tourism hub of the country: the geography of the province—with its many islands, lagoons, and extinct volcanoes—makes it spectacularly beautiful; the reefs in the province have some of the highest marine biodiversity in Asia-Pacific and are recognized as a world-class dive destination; and the province has historically been a center of trade and commerce, which makes the local communities more open to tourism development than more remote regions of the country.

Map 3: Map of Western Province

Since 2017, there have been positive developments benefitting the tourism sector in Western Province. Projects include extensions to telecommunication networks, energy and water supply, and upgrades of roads, ports, and airports.[4] The province has one international and four regional airports as well as one international port.

A real milestone for tourism was reached in March 2019 when the upgraded Munda International Airport, funded by the New Zealand Ministry of Foreign Affairs and Trade, opened a weekly direct flight from Brisbane, Australia to Munda. The SIG is trying to reduce the country's reliance on logging and sees tourism as a viable growth sector.[5] The focus on Western Province as a priority destination is due to its pristine environment and internationally recognized diving and World War II (WWII) sites.

Tourism operations in Western Province concentrate around the three main airport hubs of Gizo, Munda, and Seghe. Most are accommodation providers that also offer activities and excursions. Apart from two hotels in Gizo and Munda, most operations are located on scenic islands and can be described as small resorts or lodges. The core of the Western Province tourism sector is 15 operators who regularly receive international tourists as a result of being featured in the programs of wholesalers/specialized travel agents, or online travel agents in Australia and New Zealand. They are mostly foreign owned and operated. Apart from the established tourism operators, a growing number of local operators is trying to enter the market. There are also local guesthouses catering for local businesses and domestic travelers.

Political Context and Legal Framework

Solomon Islands is a unitary state with a national and provincial-level government. While the country and its provinces have both national and provincial legislation, customary rights and law take precedence over common law. Although customary rights protect the interests of tribes and local communities and families, the status quo presents challenges to the government and tourism investors because the bridge between Solomon Islands' legal systems and customary law is weak.

The SIG has gazetted and implemented various policies, legislation, and strategies relevant to tourism development, including the *Environment Act 1998*, the *Wildlife Protection and Management Act 2016*, the *Solomon Islands Visitors Bureau Act 1996*, the *Gaming and Lotteries Bill 2004*, the *Solomon Islands National Tourism Development Strategy 2015–2019*, and most recently the *Western Province Tourism and Culture Policy 2019-2021*. Relevant governing bodies and agencies at both national and provincial levels facilitate the implementation of the legal frameworks and policies, although their capacity to monitor and enforce E&S safeguards is limited.

One of the most pressing development challenges for Solomon Islands is access to land. Despite legal mechanisms to facilitate land registration, such as the *Land and Titles Act 1968 and the Customary Land Records Act 1994*, it remains a lengthy and arduous process because of conflicting land claims and the tendency to settle such claims through traditional mediation. As such, land registration records may not be up to date.

Due to these issues, IFC only considered registered land—not customary land—when selecting land parcels and sites. While registered land is a relatively small share of overall land, there is enough land with tourism potential to meet near-term investment needs. A lot of registered land is old plantations on small islands and along the coast with access to regional hubs that provide supporting infrastructure, such as airports, ports, suppliers, and services, to facilitate tourism development.

Status of the Environment and/or Biodiversity

Ecologically, Solomon Islands is part of a recognized eastern Melanesian biodiversity hotspot and is recognized as significant due to a high level of endemism, particularly for mammals and birds. It is also part of the coral triangle with significant, intact tropical coral reefs. Yet, at the study-corridor and investment-site levels, the distribution and occurrence of species considered to be of conservational significance is poorly documented. The Western Province terrestrial environment within the study corridor is dominated by anthropogenic disturbances,

4 Activities responding to IFC's *WPTINA* investment recommendations and other works undertaken by the SIG, donors, and the private sector since 2017 are tracked through the *Western Province Tourism Investment Plan*.

5 Solomon Islands National Development Strategy 2016-2035.

nearly all associated with the development of copra plantations on coastal fringes and extensive mechanized logging on coastal lowlands and ridges, including some higher altitude areas. This has given rise to a mosaic of successional vegetation communities, which in their own right have become a discernible habitat type. Based on The International Union for Conservation of Nature's Red List of Threatened Species (IUCN Red List) (IUCN 2020), the conservation-significant species that are known to occur at sites within the study corridor include three mammals, one reptile, one amphibian, 11 birds, 15 plant species, one fish, and one insect. Overall, these numbers reflect a small proportion of the overall known biodiversity of the region. Ninety-four fauna species are known to be introduced (invasive) to the environment.

Within the corridor, four key terrestrial communities are particularly sensitive based on-site studies and available information. They are:

- Forests that are above a 400 m altitude and include cloud forests and their unique species assemblages (flora and fauna), notably on Kolombangara Island
- Small island communities on coralline substrates – which are widely distributed throughout the corridor – where there is limited to no disturbance evident
- Any primary coastal lowland forest, but nearly all these areas have been logged and representative areas are restricted to limited localities such as on Tetepare Island
- Freshwater wetlands and the interface with intertidal communities, such as mangroves, but they remain rare, poorly understood, and relatively undisturbed on New Georgia and Vangunu islands

Socio-Economic

The total population of Western Province is estimated to be 99,000 (48 percent women), with 87 percent classified as living in rural areas.[6] This population consists of almost 14,000 households with an average household size of 5.3 people. The median age was 39.5 years in 2019, with an adult literacy rate of about 76 percent. The main socio-economic activities include fisheries, forestry (logging and plantations), tourism, and agriculture.

Cultural Context

In Solomon Islands, *kastom*[7] and the *wantok*[8] system – based on traditional culture – apply to doing business and, in some cases, public governance. The *wantok* system is perceived as a way of helping family, relatives, and neighbors during times of need. However, there have been cases where conflicts occur between the *wantok* system and formal governance systems inherited from colonial times. In addition, Western Province comprises several different tribes and villages, which all have their own leadership styles, customary governance, and languages.

Examples exist of disagreements and conflicts between tribes and villages when only one part of the community has benefitted from a business activity. Other factors affecting tourism development include religion, *kastom* practices, and cultural celebrations due to their meaning and importance to the cultural identity of the tribes and/or local communities.

About 95 percent[9] of the population follow a Christian faith, with 39 percent involved in the United Churches, which have the largest following within Solomon Islands.

Existing and Proposed Infrastructure and Access to Services

Western Province is accessible via its maritime ports that are scattered throughout the province and the public airports of Gizo, Seghe, and Noro. There are several informal or unused airstrips in the province, most of which were constructed during WWII.

The province's geographical characteristics have presented challenges to the construction and maintenance of transportation infrastructure in the islands and remote communities. The main form of transport is the "banana boat" or "ray boat," which is a 7-meter-long, 2.5-meter-wide open boat with an outboard motor. As a nation of islands, with many remote communities, the delivery of public goods/services and access to basic needs infrastructure are further exacerbated by logistical and financial challenges.

Similarly, other infrastructure and services, such as energy

6 Solomon Islands National Statistics Office, "Projected Population by Province 2010-2025."

7 *Kastom* is a Solomon Islands pijin term that can refer to shared traditions but also to contemporary ideas and institutions perceived to be grounded in indigenous concepts and principles. Thus, *kastom* is not, as is often supposed, synonymous with the English word "custom," which is typically conceived as Melanesian ways from before the arrival of Europeans in the islands. In addition to its usage in everyday language, anthropologists have analyzed and debated *kastom*'s meanings. Particularly in its political uses, *kastom* is often closely tied to indigenous means of dispute resolution, or "*kastom loa*," set in opposition to state or government law (Solomon Islands Historical Encyclopedia 2020).

8 People of an extended family and/or people from the same language group.

9 The 2009 Census categorized atheists/non-religious under "all other faiths," totaling 5 percent of the population.

systems, water supplies and systems, waste management, and telecommunications, are also limited.(10) Most proposed service infrastructure upgrades for power, water, and waste are focused around the towns of Gizo, Munda, and Seghe, with smaller projects providing other services such as jetty upgrades and mobile banking services in remoter areas of the province.

Map 2 summarizes the current land use, identifies the main settlement areas, existing tourism operators, and proposed infrastructure upgrades in Western Province.[11]

ANALYSIS OF FINDINGS AND RISK ASSESSMENT

Based on the data collected from various sources and site visits, risks and opportunities for tourism development have been identified. The main observations are:

CONTEXTUAL LEVEL

Social cohesion: Investors and developers should consider local tradition, culture, and religion in Western Province when planning tourism developments. Otherwise, discontent and conflict could erupt and cause unnecessary delays on proposed developments, increase investment cost, and pose security risks to government and business. Based on the stakeholder consultations undertaken, local communities realize that tourism development can influence their way of living because of increased interactions with visitors and greater exposure to different cultures. But the communities can also share their customs and cultural practices with visitors and developers to foster greater respect for their identities and more culturally sustainable developments.

Security and conflict: Over the last decade, there have been no notable wide-scale conflicts and/or security situations that could impact tourism development in Western Province. The conflicts in Guadalcanal and Malaita provinces during the late 1990s to 2000s and informal settlements in Honiara were considered in the analysis. However, the relevance of this risk is considered limited for tourism development in Western Province. Local conflict is covered separately under reprisal risk.

Labor and workforce: Solomon Islands has a young population that will provide enough staff to support a tourism workforce, but the average skill level is limited because of low education levels. Accessing labor from the local communities will likely require reasonable effort and investment in training. Tourism operations may help address gender inequality, which constrains many women to a limited set of defined roles and reduced access to benefits from development. Investment in training and/or capacity building in tourism operations and management would be necessary to maximize labor inputs from local communities. In the case of child labor, the SIG allows children as young as 12 to undertake some types of work under the *Labour Act* 1996, which does not align with the International Labour Organization's minimum working age of 15 (13 for light work).

Food security: While the country has a wide range of natural resources to support food production, there remains strong pressure on reef fish stocks due to overfishing. The country's resilience and capacity to deal with food shortages may be limited.

Health epidemic/pandemic: Solomon Islands' health system has limited capacity to cope with epidemics or pandemics. This is exacerbated in Western Province, where clinics in remote areas have only basic facilities. Tourism will potentially increase community vulnerability to epidemics/pandemics through the local and international movement of people. While the tourism sector would provide some buffering capacity and additional resources, the medical capacity to deal with emergencies and epidemics/pandemics, especially in the province's rural areas, is likely to pose a moderate to high risk.

Political risk and governance: Based on the desktop research, government agencies responsible for the efficient and equitable public-service delivery face challenges in enforcing relevant policies and/or legislation to ensure that E&S safeguards are in place. Complicating the problem is a weak link between customary practices, or *wantok*, and common law, resulting in lengthy and bureaucratic procedures for the setting up of businesses and potential integrity issues. Despite efforts to improve the business-enabling environment, the existing policy framework, limited capacity of government agencies, and insufficient data inhibit the smooth delivery of public services; government agencies are also facing difficulties in monitoring businesses' adherence to their E&S policies. Nonetheless, it should be noted that the SIG and the Western Provincial Government have strong political will to tackle

10 IFC, *WPTINA*, October 2018.

11 Proposed infrastructure has been mapped in sites that are able to be defined.

the issues and open the market for tourism development.

Natural hazards: Solomon Islands is situated in the "Ring of Fire," a seismically active location, and are also prone to tropical cyclones. A tsunami swept Western Province most recently in 2007. The community's ability to react to natural hazards will depend on strong disaster risk management planning, awareness, and warning-system practices, which remain limited at present.

Biodiversity, ecosystem services, and climate change: Based on the contextual analysis, deforestation, sedimentation risks to marine habitats, threats to the sustainable use of natural resources, government capacity in natural-resource and protected-area management, and climate change vulnerability and resilience present high risks. Policy gaps as well as implementation and enforcement of regulations and laws need to be addressed to strengthen the protection and conservation of local biodiversity and ecosystems. It is worth noting that Solomon Islands is highly vulnerable to the impacts of climate change and rising sea levels.

Access to land and natural resources: Tourism investors and developers have found it difficult to identify sites for development because of insufficient data on registered land titles and limited access to records. Much of the country's land, particularly customary land, is not surveyed or registered. Local tribes, communities, and families face challenges in recording customary land due to overlapping claims to land and/or resources.

Reprisals: In Western Province, reprisals are a high risk for tourism development as discontent and/or jealousy among local communities have led to conflict in the past.

CORRIDOR LEVEL

Environmental Findings

As most tourism activities in Solomon Islands are nature-based, the threat to local biodiversity and ecosystems could be critical. Thus, tourism development planning in the province should consider wildlife and the potential for increased interactions. At the corridor level, environmental risks were analyzed and categorized into three levels for both the marine and terrestrial environments, as shown in Map 17. Low-risk areas are highly modified and have limited ecological value; moderate-risk areas have some ecological value and potential sources of vegetation; and high-risk areas are important ecological habitats requiring management and/or protection. This map has used several inputs including information on conservation areas, habitat condition and landforms, the marine ecosystem, and the coral reef system.

Marine Environment

Low-risk areas: Open ocean areas that are not at risk from tourism development within the study corridor. Some reef systems are primarily associated with high fishing pressures, coral extraction, and other intensive resource use. These areas are afforded limited to no constraints to development at a corridor level.

Moderate-risk areas: Coral atoll reef systems of the smaller island conglomerations, particularly the Vona Vona Lagoon between Parara and Arundel (Kohinggo Island), Roviana Lagoons, and the outer barrier reef systems east and west of Vangunu Island. They support sparse but widespread settlement where artisanal fishing pressures are limited. Detailed site-level investigations are necessary to establish whether potential investments will meet good international industry practices.

High-risk areas: Six distinct areas in the corridor centering on reefs of outstanding known (and published) biodiversity values and extensive areas of mapped mangroves/intertidal areas that sustain critical ecosystem processes. Some of these locations include Marine Protected Areas, notably the area of Saeraghi Reef at the northern end of Ghizo Island.

Terrestrial Environment

Low-risk areas: Areas with low biodiversity and limited ecological value. These include areas comprising monoculture, such as coconut plantations and plantation forestry blocks on Kolombangara, cultivated areas and others that have been significantly modified by human activity, including urban and village areas and environs such as most of Ghizo Islands, Ringgi Station, Munda, Noro, and Seghe.

Moderate-risk areas: Areas that support harvesting activities and are a source for vegetation and/or livelihood for local communities. They provide key resources to local communities and ecosystem services.

High-risk areas: Areas that are commercially logged and heavily impacted by human activity often reaching their carrying capacity. Smaller sections of the terrestrial corridor support harvesting activities and are a source for vegetation and/or livelihood for local communities.

Key biodiversity areas and natural habitats within the terrestrial corridor sustain critical ecosystem processes and breeding areas for internationally listed threatened species, which may be disrupted or impacted by tourism development. These areas are already at risk because of logging activities affecting local biodiversity. Enforcement of environmental policies to protect and conserve the ecosystems in the areas is weak.

Social Findings

Social risks at the corridor level consider land tenure, presence of unexploded ordnances (UXO), and proximity to key infrastructure such as airports and medical facilities for access to goods and services. Other social indicators were discussed in the contextual and site-level analysis, but it would be difficult to measure them across the corridor because of a lack of data that allowed generalization. Map 18 shows social risks at the corridor level.

Low-risk areas: Registered land less than 15 km from airport and less than 10 km from a medical facility. Most areas would have a low likelihood of UXO presence. Low-risk areas are located on Ghizo Island, coastal margins of the Vona Vona Lagoon, and the environs of Munda, Noro, and Seghe.

Moderate-risk areas: Surveyed but not registered land 15 km to 30 km away from airport and 10 km to 15 km from medical facilities; these areas also include potential exposure to UXO. They cover the Rendova coast, small sections of Ranongga (excluding UXO) and Vonunu, Kolombangara Island, and the northern end of Gizo; other areas include a portion of Vangunu Island and an area north of Seghe on New Georgia Island.

High-risk areas: Customary land 30 km to 50 km away from airports and 15 km from medical facilities with potential exposure to UXO. All remaining areas of the map not named above are rated high as the land is either customary or surveyed and a larger distance from the airports and medical facilities.

Overall Environmental and Social-Risk Ratings

Map 19 depicts the overall environmental and social-risk areas of the corridor. Where an area of the study corridor is classified as high in the environmental assessment and low in the social assessment (or vice versa), it is considered to be an area of moderate risk overall, as reported below:

Low-risk areas: Considered to be more appropriate for tourism development because of their proximity to urban areas and infrastructure, such as Gizo, Noro, Munda, and Seghe. Land in these areas tend to be registered or surveyed for development. Most low-risk areas are in coastal locations and are not in proximity to areas of moderate-to-high-importance marine areas.

Moderate-risk areas: Rural or less developed areas with a mix of coastal and inland areas, with greater distance from urban areas and infrastructure. Landownership and/or identification can be more challenging in these areas as it includes unregistered land. They are likely to require further investigation to determine E&S risks, depending on the size and nature of the tourism development.

High-risk areas: Remote customary land with high-value ecological areas where human impacts are limited. These areas are likely to be significantly distanced from infrastructure and urban areas requiring travel on foot or by boat and are generally in land. They require the most planning and consideration before proceeding with any form of tourism development.

IDENTIFIED-SITE LEVEL

The risk categories and descriptors for environment, social, and natural hazards are summarized in Table 10, 11, and 12. The overall environmental, social, and natural-hazard ratings at the 70 identified sites combining all risks are summarized in Map 23.

Environmental risks: Field and walkover surveys were undertaken by observing the sites. While the general condition and integrity of habitats and ecosystem processes were recorded, detailed surveys of flora/fauna of conservation significance were not possible (see Table 10).

Social risks: These risks have been evaluated using specific-site observations, aerial photo review, and discussion with communities, stakeholders, landowners, and users. The risk categories and descriptors are summarized in Table 11.

Natural hazards: Some areas of the identified sites are more prone to natural hazards, including coastal vulnerabilities and sea-level rise. Limited secondary, site-specific data was available for Western Province, so natural hazards have largely been assessed based on site observations and professional judgment. In this study, it was surmised that sites with a low-risk rating could be more easily developed, but sites with moderate-to-high-risk rating could still be

considered for development if mitigation measures could be devised based on impact-assessment processes specific to individual sites (see Table 12).

CONCLUSIONS AND RECOMMENDATIONS

This report was developed as a high-level landscape study and site-screening tool to inform relevant government agencies in Solomon Islands and Western Province, potential and current tourism investors and developers, and other relevant stakeholders such as NGOs, CSOs, and local communities E&S situation and associated risks and opportunities for tourism development in the province.

The **SIG, the Western Provincial Government, and other government agencies** can use the report to ensure that E&S risks are addressed at the earliest stages of tourism-development planning. The analysis of risks and specific recommendations in Table 14 can inform policy priorities and strategic development plans.

Developers and investors can use the study to plan tourism projects, activities, or establishments, particularly regarding site selection. The report also lists out business requirements and challenges, especially concerning access to customary land and natural resources as well as the contextual risks in Solomon Islands and Western Province.

Local communities may use this study to learn about the opportunities and risks of tourism development that may affect them and collaborate with the SIG and the private sector.

For NGOs and CSOs, the information may augment or improve their programs in Western Province.

The E&S and natural-hazard risks identified through this study show the riskiest areas for tourism development at the landscape and site levels. Developing the low-to-moderate-risk areas, subject to environmental impact assessments (EIAs) and appropriate government approvals/permits, will ensure minimal incremental impact on biodiversity, ecosystem services, land tenure, and local communities.

For high-risk sites, robust E&S impact assessments, monitoring, and a comprehensive management plan should be required to manage the impacts during different phases of project development. Managing E&S risks is complex and takes time and resources; early and genuine engagement with local communities and other stakeholders can mitigate such risks. Participatory approaches that enable community-based initiatives is a proven way for developers/investors and local government authorities to devise a sustainable solution.

In addition to the risk-assessment recommendations above, the study recommends:

Enhancement of the regulatory framework: Taking into account the E&S risks presented in Table 14, policies relevant to tourism development, including the *Environment Act 1998* and the *Land and Titles Act 1968,* should be updated. Relevant government agencies, such as the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM), should reinforce the monitoring and implementation of environmental and social safeguards to conserve local biodiversity, protect communities, and strengthen the business-enabling environment. The government needs to strengthen the statutory obligations of these agencies.

Capacity building: E&S technical training of key government agencies is recommended to improve their capacity for delivering better public services and monitoring and enforcing policies. At the same time, the SIG and/or the Western Provincial Government can work with NGOs, CSOs, and academic and research institutes to provide training on tourism hospitality and health and safety to local communities so that they can share the benefits of tourism development.

Assessments to address information/data gaps:

- Improve the accessibility and quality of spatial data:
  - High-resolution topographical survey (mapping one-meter contours) will assist with development planning, hazard mapping for floods and tsunamis, and disaster planning.
  - Bathymetric surveys will improve navigation, maritime planning, and infrastructure development.
  - Update mapping and document key biodiversity areas and habitats in both the marine and terrestrial environments, including detailed species ordinances.
  - Update land and site-boundary surveys to assist with land transaction and leasing.
  - Record and register cultural and *tabu*[12] sites and areas, included detailed mapping with support of local communities.
- Strengthen marine-resource monitoring, such as the abundance and size of fish stocks, biosecurity, and the occurrence of bio-invasive species.
- Assess and identify the top training priorities within the SIG, in terms of services, to better support tourism development.
- Table 14 and 15 summarize the contextual, corridor, and identified-site E&S risks associated with tourism development as well as proposed actions to assist stakeholders in: (i) facilitating tourism development, (ii) mitigating risks to the natural and social environments, and (iii) attracting national and international partners.
- Only risks relevant to tourism development are included. The following have been excluded:
- Security and conflict are considered to have limited relevance to tourism development in Western Province. Petty conflict may occur among community members – this is covered under reprisal within the risk matrix.
- Biodiversity, ecosystem services, and climate change are discussed in the corridor section of the risk matrix.

Photo Credit: Becky Last

12 *Tabu*, as it has been adopted into the English language, has come to mean "set apart as sacred or accursed or forbidden by social convention;" *tabu* can also mean something is forbidden, usually with spiritual sanctions, and as such emphasizes the religious significance of the term (Burt 1988)

Photo Credit: Tourism Solomons (Chris McLennan)

REPORT

1. Introduction

1.1 BACKGROUND

The SIG aims to develop its tourism sector, particularly in Western Province. There are, however, several barriers for tourism developers to enter the market and invest in the sector.

This study aims to identify a balanced, equitable, and sustainable development pathway for tourism in the province over the short to medium term. It gives investors an overview of the potential E&S risks, impacts, and opportunities, with a focus on a tourism corridor. It also provides recommendations on how investors, SIG ministries, and the Western Provincial Government could reduce potential risks and impacts to realize the tourism development opportunities.

1.1.1 ASSOCIATED PROJECTS AND WIDER PROGRAM

The SIG recognizes tourism as a key industry that can form the foundation of sustainable development by creating job opportunities, stimulate the growth of small and medium enterprises, and contribute to government revenue.

In 2018, IFC completed a needs assessment for tourism development in Western Province detailing key aspects inhibiting the sector's growth (Western Province Tourism Investment Needs Assessment (WPTINA) report (IFC 2018). The assessment identified five strategies:

- Strengthening accommodation supply
- Improving access and transport connectivity
- Enhancing destination offers and experiences
- Stimulating and converting market demand
- Preparing host communities

The assessment prioritizes strategies 1 to 3, while strategies 4 and 5 are considered important to progress alongside the other strategies by development partners.

IFC commissioned engagements with over 90+ stakeholders throughout Solomon Islands, including travel industry representatives and tourism investors, to develop the assessment.

To strengthen accommodation supply, a sub-strategy is to map and assess E&S risks of development near gateway cities of Western Province to support the preparation of a long list of sites that meet investment needs. Alongside the needs assessment, IFC has been working with the Ministry of Culture and Tourism (MCT) to conduct a survey of registered land and associated land titles in the province, considering that one of the key challenges to tourism development is the availability of land.

1.2 PURPOSE OF THIS REPORT

This report aims to inform key stakeholders of potential landscape-level E&S risks and opportunities for tourism development across the study corridor and identified sites. It sets out the methodology and process undertaken to identify and assess these risks and opportunities as well as outlines a set of recommendations to address them.

2. Methodology

2.1 INTRODUCTION

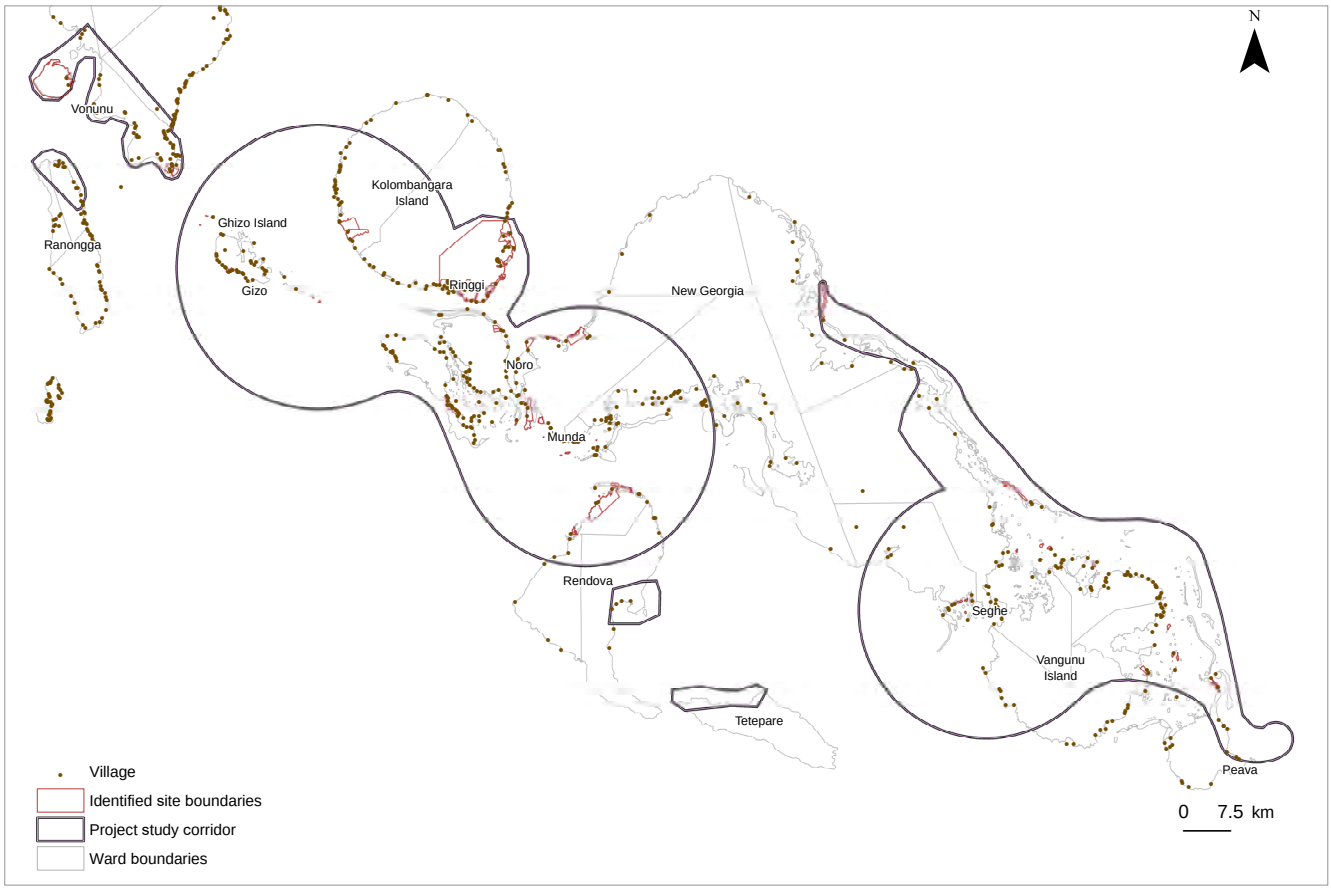
A landscape-level assessment is a geographically based assessment of a defined landscape area—in this case, the study corridor with 70 sites identified by IFC. It includes identifying components of the landscape, its characterization and mapping to differentiate distinct areas based on relevant criteria, and its evaluation ranking or prioritizing areas that require high protection or management. Such an assessment provides a high-level indication of wider landscape matters that can be used to inform site selection for development. Further detailed investigation of a chosen site can then be undertaken.

This section summarizes the methodology applied to the ESDS, with a focus on the risk-assessment approach applied for the contextual, corridor, and identified-site assessments. The risk-assessment approach forms the basis of assessment for the ESDS. It should be noted that the ESDS considers:

- Potential E&S risks on tourism development
- Potential E&S risks from tourism
- Recommended actions to avoid, minimize, mitigate, and manage the identified E&S risks and opportunities arising from tourism development

Map 4 displays the study corridor in Western Province, comprising the primary focus areas for this study and the identified sites within the corridor.

Map 4: Identified-Site Boundaries in the Study Corridor[13]



13 This study did not survey the interior of the islands and used secondary data.

2.2 GENERAL METHODOLOGY AND APPROACH

An overview of the wider project methodology as well as supporting-data collection and analysis is provided in appendix A. This section provides a brief summary of the ESDS's general approach:

Desktop Review of Existing Information and GIS Data

The team undertook a desktop review of the legal and political framework of the country as well as a review of background research on its E&S conditions, focusing on the study corridor. This included gathering available GIS data, previous environmental and ecological assessments, and social research and reporting.

Inception Plan

The study reviewed available data and identified information gaps to devise an inception plan that included an indicative approach to site visits in the study corridor and further research, stakeholder consultation, and on-site assessment to gather the required data.

Stakeholder Engagement Plan

Key stakeholders were identified for consultation and their inputs were incorporated into developing the risk assessment criteria with a focus on fulfilling the recommendations of the study.

Field Assessments

This included in-field site surveys and stakeholder consultations to gather more E&S data to supplement desktop investigations.

Analysis of the Findings

Review of the gathered data—in line with IFC PS and other guidance—was undertaken to identify the key risks and impacts requiring consideration at the contextual, corridor, and identified-site levels.

Risk Assessment

The assessment characterized key E&S risks and impacts that were identified and developed measurement criteria for them. Measurement of mapped and collected data against the relevant risk assessment criteria produced ratings (high, moderate, or low) for areas along the study corridor and a prioritized rating for each identified site.

Stakeholder Consultations

The study findings were discussed with key stakeholders to refine the weighting of key risks to align with stakeholder values and gain feedback on potential risk-mitigation options.

Recommended Actions

Identified actions to address and manage high-level risks and impacts at the contextual, corridor, and identified-site levels to enable the development of sustainable tourism.

2.2.1 STAKEHOLDER CONSULTATION

Stakeholder inputs to identify potential risks and opportunities for the ESDS were sought through the following activities:

- Prior to the study's commencement, IFC had undertaken site investigation and consultation with more than 90+ stakeholders for the purpose of developing the *WPTINA* report 2018.
- In February 2020, the study team visited 65 of the 70 identified sites to conduct brief semi-structured interviews with government officials, community members, and site owners/caretakers, using a purposive sampling method. In addition to these stakeholders, consultation was also undertaken with tourism industry representatives, service providers, international donors, NGOs, and CSOs. A full list of those who participated in the consultation were acknowledged in this report (see Acknowledgments).
- A second round of stakeholder consultation was proposed to test the study findings and inform the preparation of the final report. However, due to COVID-19 travel restrictions, alternatives formats to completing the consultation were undertaken, including leveraging local support, phone consultation, and virtual presentations.

Stakeholder inputs from the above activities are referred to as "consultation" throughout the report.

2.3 RISK-ASSESSMENT METHODOLOGY

2.3.1 GUIDANCE USED FOR RISK ASSESSMENT

There is limited published guidance on landscape-level assessments for evaluating risks to social and natural environments; however, it has similarities with the methodologies of a Cumulative Impact Assessment (CIA) and Strategic Environmental Assessment (SEA). This study borrows from CIA/SEA approaches that have been refined for conducting risk assessments of the tourism sector, the study corridor, and identified sites. The methodology, outlined in Figure 1, is also guided by the approach used for ESIAs and the IFC PS. Appendix A explains how the key E&S risks were characterized (indicators) and the measurement criteria were established. The Risk Summary Matrix in section 2.4 explains how recommended mitigations have been displayed and residual risks (and consideration of opportunities) have been considered.

2.3.2 RISK-ASSESSMENT LEVELS

The risks have been assessed at three main levels (see Figure 1 and Table 1 in Executive Summary):

- Contextual risks
- Corridor risks
- Identified-site risks

The contextual risks captured in this study relate to high or moderate risks that will likely escalate if not properly mitigated. Corridor-level risks have been given an assessment rating of low, moderate, or high. Risks at identified sites have been given a wider assessment rating scale of 1-3 (low), 4-6 (moderate), and 7-10 (high).

At both the corridor and identified-site levels, moderate and high risk-rating areas will require more costs and time from investors to ensure their developments are in line with national applicable laws and international good practice. All sites will likely require further assessments before development. The current risk rating is linked with the baseline condition recorded when this study was undertaken and is subject to change. Developers should reconfirm the ratings before proceeding with development.

2.3.3 CONSIDERATION OF CONTEXTUAL RISKS AND MEASUREMENT OF CORRIDOR AND IDENTIFIED-SITE RISKS

Contextual Risks

The IFC's 2012 Policy on Environmental and Social Sustainability requires that, as part of the categorization process, IFC considers "inherent E&S risks related to a particular sector as well as the context of a business activity's setting." Contextual risks—from a private sector's E&S perspective—are defined as external risks at a country, sector, or subnational level that project developers do not control but can negatively impact a project's or private sector client's ability to meet IFC's E&S requirements.

The study team used IFC's country-level, contextual-risk framework, to screen the risks applicable to tourism development in Western Province. Using its expert judgment and data collected, the team addressed each contextual risk's level of influence on tourism development and designed tailored recommendations. A thorough review of the available data was undertaken to understand the province's E&S situation. Data applicable to contextual risks were collected and validated during site visits. As a starting point, contextual risks are captured in security and conflict, social cohesion,[14] labor and workforce, food security, health epidemics/pandemics, political risk and governance, access to land and natural resources, natural hazards, biodiversity/ecosystem services, and reprisals.

Corridor Risk Measurement

These relate to general E&S risks that may manifest across the corridor and can be differentiated at a wider scale. Measurement of corridor-level risks is primarily based on secondary data, with limited supplementation of site-based findings if they present a pattern across areas of the corridor. Data that has been interrogated at the corridor level includes key biodiversity areas, protected areas (marine and terrestrial), undisturbed forest areas, land tenure, UXO presence, socio-demographic information from census data, and infrastructure location (existing and planned).

14 Gender and gender-based violence are assessed under the risk headings of social cohesion and labor and workforce.

To confirm the corridor-level risks, a list of indicators was developed. The associated data was then interrogated to confirm which could be measured and assessed in more detail within areas of the corridor. Specific criteria were used to assess key risks, which were then mapped spatially using GIS. The mapped risks allow areas of the corridor to be highlighted as susceptible to higher E&S impacts and this can guide investors in their decision-making.

Some of the corridor-wide E&S risks can be further interrogated at the identified-site level where further empirical data has been collected.

Reliable data with finer detail differentiating areas of Western Province was combined with on-site observations and reviews of recent aerial photos to map key E&S indicators wherever possible across the study corridor. Using the same approach, further review was undertaken at the site level, supplementing indicators that were not measurable across the entire corridor. The process of mapping indicators helped highlight the key risks present at each level. Once key risks where determined, measurement criteria were attributed to each risk at the corridor (see Table 2) and identified-site (see Table 4) levels.

Derivation of the risk indicators required considerable effort to curate and assess the veracity of the data as well as categorizing into an appropriate form to allow application of a risk-assessment context. This included consultation with Solomon Islands government ministries and NGOs as well as access to international partnership databases, such as the Integrated Biodiversity Assessment Tool (IBAT) and the IUCN Red List, and other available research and online spatial data portals. The subsequent data-gap analysis identified a paucity of site-specific data across the study corridor.

Environmental Indicators

Locational data and even basic data on ecosystems and biodiversity values were, at best, available only for Western Province, but most often biodiversity information could only be interrogated at a country level.

However, the essential habitat factors important to maintenance of ecosystem processes and functionality—and of fauna and flora generally (including species of conservation significance)—is well documented in scientific literature and online databases referenced in this report. Subsequently, the type, location, and the condition and integrity of the ecosystem was used as a reliable surrogate for assessing the potential risk to biodiversity values, and these risk bands were mapped for both marine and terrestrial ecosystems.

Essential habitat factors (as identified above) are a key ecological concept and include environmental features that are considered critical to the survival of populations of threatened fauna and flora and/or maintenance of natural ecosystem processes. The condition and integrity of these factors are a key to determining the likely presence of important species. For this study, "condition" refers to the abundance and distribution of natural vegetation types or marine community types, whereas "integrity" indicates the likely long-term viability or sustainability of ecological processes. The study considers the extent to which these processes have been affected by past or present land uses, the ability of the community (vegetation types) subject to these processes to rebound (or be rehabilitated), and a timeframe for any restorative process. Typically, timber harvesting (logging), impacts of tropical storms, large-scale clearing, and infrastructure development are the most obvious visual evidence of these indicators at a study corridor and site-level scale of resolution.

The environmental indicators were mapped at a study-corridor level, acknowledging that some indicators could only be mapped at an identified-site level. In the absence of site-specific data, the field survey team had general pro forma for the collection of data reflecting the indicators used of the study corridor. The field study aimed to verify secondary environmental data, such as the level of disturbance, extent of overfishing, potentially vulnerable ecosystems, status of logging, and cyclone recovery regrowth, albeit at a finer scale of resolution.

Table 2: Environmental and Social Assessment Criteria at the Corridor Level

Key Corridor Risks	Measurement Criteria and Data Source	Assessment Criteria		
		Low Risk	Moderate Risk	High Risk
Terrestrial biodiversity impacts	• IUCN/IBAT databases where relevant • Logging concession maps (Ministry of Forestry & Research) • Published research and studies	• Highly disturbed/ • modified environment • Represents low ecological value • Examples include active coconut plantations, residential/or housing areas, and agricultural land	• Moderately disturbed environment • Examples include former, abandoned coconut plantations with heavy secondary growth forest, or former logged areas with strong secondary growth • Relatively healthy reef ecosystem with some sign of human impact • Endangered or threatened species may be present	• Relatively undisturbed environment, such as primary forest • Healthy and intact ecosystems with limited impact from human activities • Endangered or threatened species likely to be present
Marine biodiversity impacts	• Presence of informal marine management areas, such as Community-based Management Areas (CBMA) • IUCN/IBAT databases where relevant	• Marine areas close to urban centers • Ecosystem health compromised through pollution, and overfishing • Shallow reef areas with no adjacent deep water • Visually stressed marine environment • Low ecological diversity and health	• Marine ecosystems that are relatively intact • Some evidence of human impact • Areas <5 km from nearest village • Moderate extent of reef, mangroves, or sea grass with visible indicators or stress or impact • Areas where adjacent land use, such as logging, will likely impact marine ecosystem health	• Extensive seagrass beds in good health • Well established and healthy mangrove areas • Healthy and reef ecosystems with wide fish diversity and little impact from fishing • Extensive reef systems with documented rich biodiversity • Rare or endangered species likely to be present • Sea turtle feeding or nesting areas • Sea bird roosting or nesting areas
Social impacts	• Land tenure/ access to land-use rights • Access to infrastructure; GIS measurement for distance from airport and medical facilities • Exposure to potential UXO areas	• Registered land • Less than 15 km from airport • Less than 10 km from medical facility • No potential exposure to UXO	• Surveyed land but not registered • 15-30 km from airport • 10-15 km from medical facility • Potential exposure to UXO	• On customary land • 30-50 km away from airport • Over 15 km from medical facility • Potential exposure to UXO

Note 1: Other social indicators discussed in the contextual and corridor-level analysis were difficult to measure and map across the corridor because of a lack of data, or they provided limited insight on differences across the corridor due to the uniformity of the data.

Note 2: Exposure to natural hazards and sea-level rise was not possible to accurately map at the corridor level because of limited available data. Both coastal vulnerability and sea-level rise were mapped at the identified-site level through empirical observations during site visits.

This allowed the team to refine risk assessment at both the study-corridor and identified-site levels. The resulting environmental indicators adopted for the study are summarized below and presented in more detail in Table 2 and Table 4.

- **Conservation areas:** Location/status of locally, nationally, or internationally recognized areas of conservation significance, including Marine Protected Areas, Community-Based Management Areas, and Locally Managed Marine Areas.
- **Location of fauna/flora of conservation significance:** This indicator is a standard international best practice when considering the potential risk of a project for a particular area.
- **Terrestrial habitat condition and integrity:** In the absence of species-specific location data, essential habitat factors and their condition and integrity were adopted as a surrogate measure to indicate likely areas of resource utilization by species of conservation significance.
- **Terrestrial landforms and types:** Landforms and types of the terrestrial environment were used as an indicator of potential risk at a study-corridor level. This included, for example, slopes above 30 percent, cliff areas, floodplains, and associated drainage depressions (freshwater swamps). At a site level, these factors were more finely delineated and verified during the field inspections.
- **Marine ecosystems:** They encompass a variety of habitats and types, including coral reefs, seagrass meadows, abyssal trenches, mangroves, and intertidal systems. Direct information on the condition and integrity of various marine ecosystems was not available as mappable digital data. Since each system's vulnerability to development varies, their individual degree of vulnerability, as established through the scientific literature referenced in this report, was used as indicator of potential environmental risk at a study-corridor level, with field verification at a site level.
- **Coral reefs:** The type and location of a coral-reef system determines, to a large degree, its level of vulnerability. Barrier reefs and ribbon reefs, owing to their distance from land and configuration, are less vulnerable to impacts from onshore pollution, particularly sediment from logging and clearing operations as well as nutrients from villages and towns, than atoll or fringing reef systems. More remote reef systems from densely settled areas are also less likely to be overfished owing to limitations on accessing these reefs by small village boats.

External data, including digital databases, GIS mapping, and published reports, were used to establish the locations and risk bands (low, moderate, or high) for the environmental indicators at a study-corridor scale of resolution. Some of the data, while mapped, represented such small areas (such as freshwater wetlands) that they could not be seen at a study-corridor level. Reconnaissance-level environmental data of most identified sites were obtained through field inspections. While the field inspections were unable to include surveys for threatened species because of time limitations, they did provide information on the environmental condition and integrity. Subsequently, potential environmental risks at a site level were refined and considered in the final risk assessment of each site in this report.

Social Indicators

National census data and information on social indicators is well documented and considered in various literature. However, localized data within the study corridor and identified sites is reasonably sparse and/or dated. Mapping details of social infrastructure and planned infrastructure has been piecemeal; social information is most reliable at the contextual level, with some data and site observations to support a general understanding of social risks at the corridor and identified-site levels.

Census data (most recently published in 2009) and reports give a clear picture of the social makeup of Western Province on specific areas in line with developing nation status reports.

The most recent full census in 2009 and follow-up focused studies, such as the 2014-2016 "Solomon Islands Education Management Information Systems," provide insight into the socio-economic factors of Western Province; this has been supplemented by anecdotal data on social infrastructure to paint a more detailed picture of today's situation for communities and tourism operators in Western Province.

Given the province's social context, understanding the vulnerability of communities to development is key to determining social risks. An awareness of existing social infrastructure and support for local communities can guide investors in addressing their needs in tourism planning.

Only a limited number of social indicators could be mapped at a study-corridor level because of data gaps; as such, these gaps were focused at the identified-site level. The social indicators considered for this study at both levels are summarized below:

- **Land use:** Settlements, area under cultivation (such as gardens, coconut plantations, forestry plantations, and logging areas), reefs, mangroves, and seagrass
- **Demographic profile:** Population density
- **Social vulnerabilities:** Subsistence living, education levels, health status of the community (for example, malnutrition and disease profiling), use of sanitation, and access to power
- **Land tenure/land-use rights:** Customary land, land under indigenous administration, and registered land (perpetual lease or fixed-term lease)
- **UXO hazards:** Presence of UXO
- **Social infrastructure:** Medical and health services, emergency response, transport (roads, airports, jetties, and ferry docks), potable water supply, markets for food and daily supplies, waste-management and water-treatment facilities, power, and telecommunications
- **Planned development:** Physical infrastructure projects
- **Tourism facilities and activities:** Existing accommodation and tourism operators

These indicators were examined against data and information availability, reliability of the data sources, and the ability to measure and map them at the corridor and site level. Many of the social indicators did not present sufficient data to be mapped and measured or were considered irrelevant following a background analysis. Indicators used to measure social risks are presented in Table 2 and Table 4.

Natural-Hazard Indicators

Natural-hazard indicators considered in this study include tsunami-prone areas, earthquake-prone areas, landslide-prone areas, cyclone and storm-prone areas, and sea-level-rise-prone areas. The assessment, however, focused more on earthquakes and tsunamis at the identified-site level, as there was limited information available on other natural hazards within the study corridor.

Identified-Site Risks

Scaling to the individual identified sites, risk assessments are largely based on on-site observations and discussions with local stakeholders and supplemented with reliable and accurate secondary information where available. The identified sites are given risk ratings on a linear scale of 1 to 10, with 1 as low and 10 as high.

Identified-Site Risk Weighting

The following weightings were developed in consultation with stakeholders to support the multi-criteria analysis. The agreed weighting used is outlined in Table 3.

Table 3: Risk Weighting at the Identified-Site Level

Risk Theme	Overall Importance Weighting	Key Risks	Initial Importance Weighting for Risk Attribute
Natural hazards	20%	Coastal vulnerability	50%
		Sea-level rise	50%
Social risks	40%	Presence of people	30%
		Presence of sources of livelihood	30%
		Remoteness of site/access to infrastructure	20%
		Presence of cultural heritage	20%
Environmental risks	40%	Terrestrial biodiversity value	50%
		Marine biodiversity value	50%

These weightings are applied to the ratings of the specific risks measured to provide an overall aggregate, which is then used to rate an identified-site risk profile low, moderate, or high.

The findings of the identified-site analysis are provided in section 4.4.

Table 4: Environmental and Social Assessment Criteria at Identified Sites[15]

Key Site Risks	Measurement Criteria and Data Source	Assessment Criteria (Score)		
		Low Risk (1-3)	Moderate Risk (4-6)	High Risk (7-10)
Coastal vulnerability	• Site observations • Evidence of erosion from site observations • Percentage of site within 50 m of shallow-to-medium-depth reef • IUCN/IBAT reef mapping • Aerial photos	• Sheltered locations within a lagoon or island group and unlikely to be affected by storm surges • No evidence of erosion • 60% or more of site perimeter surrounded by shallow or medium-depth reef	• Somewhat sheltered from storm surges; exposed location within lagoon environment • No evidence of erosion • 30% to 60% of site perimeter surrounded by shallow or medium-depth reef	• Reef fringe islands, exposed to weather events, and low elevation above sea level • Evidence of erosion • Less than 30% of site perimeter surrounded by shallow or medium-depth reef
Sea-level rise	• Semi-quantitative: Percentage of site over 1 m above sea level based on site observations • Aerial photos	• 70% or more of site area over 1 m above sea level	• 30% to 70% of site area over 1 m above sea level	• 30% to 70% of site area less than 1 m above sea level
Presence of people	• Buildings or houses on site based on site observation and aerial photos (Area of site=houses per hectare on site) • Where possible, non-residential buildings have been excluded and noted separately • Buildings included are of reasonable size to be considered for residential-dwelling purposes (outhouses and small utility buildings are excluded) • Head counts of site occupants were not undertaken	• No known communities, families, or individuals occupying or using the land parcel for living purposes • Confirmed caretakers living on site who may have associated gardens and livestock are given a rating of 1 and not included in the household count	• 1-3 buildings or houses per hectare occupying the land parcel	• 3+ buildings or houses per hectare of the land parcel
Presence of Livelihood	• Presence of gardens or crops based on site observations and review of aerial photos of used or fallow cropping and gardens • Estimate area size based on aerial and Land Use PacGeo layer	• No crops or gardens on site	• Fallow cropping, plantation, or gardening land occupying less than 30% of site	• Crops/gardens present on site and occupying 30% of site or more • Presence of villages

15 Since all sites are located on registered land, land tenure is not considered as a variable for risk rating at the identified-site level.

Key Site Risks	Measurement Criteria and Data Source	Assessment Criteria (Score)		
Proximity to existing infrastructure	• Measurement from known points	• 0-15 km from an airport • 0-10 km from a health clinic	• 15-30 km from an airport • 10-15 from a health clinic	• 30-50 km from an airport • 15-20 km from a health clinic
Presence of Cultural heritage	• Data from site visits/ area of site that are used for family graves, WWII relic or battle sites, cultural sites, *tabu* or *kastom* sites (sites of cultural significance), and animist sites considered important by the local community • Includes traditional resource- collection areas, such as forest products, shells for jewelry, and collecting building or weaving materials • Site used for recreational/ traditional purposes by local communities	• No historical or cultural sites confirmed	• Less than one site identified on the site	• More than one site identified
Terrestrial biodiversity	• Site observations • IUCN/IBAT databases where relevant • Information based on discussions with communities	• Highly disturbed or modified environment with low ecological value • Examples include active coconut plantations, residential/or housing areas, and agricultural land	• Moderately disturbed environment • Examples include former or abandoned coconut plantations with heavy secondary growth forest, or former logged areas with strong secondary growth present • Relatively healthy reef ecosystem with some sign of human impact • Endangered or threatened species may be present	• Relatively undisturbed environment, such as primary forest, and healthy and intact reef ecosystems with relatively limited impact from human activities • Endangered or threatened species likely to be present
Marine biodiversity	• Site observations of reef directly adjacent to site • Presence of informal marine management areas, such as community-based marine protected areas • Information based on discussions with communities • IUCN/IBAT databases where relevant	• Marine areas close to urban centers • Ecosystem health compromised through pollution and overfishing • Shallow reef areas with no adjacent deep water • Visually stressed marine environment with low ecological diversity and health	• Marine ecosystems that are relatively intact • Some evidence of human impact • Areas less than 5 km from nearest village • Moderate extent of reef, mangroves, or seagrass with visible indicators/ stress/impact • Areas where adjacent land use, such as logging, will likely affect marine ecosystem health	• Extensive seagrass beds in good health • Well-established and healthy mangrove areas • Healthy and reef ecosystems with wide fish diversity and little impact from fishing • Extensive reef systems with documented rich biodiversity • Rare or endangered species likely to be present • Sea turtle feeding or nesting areas • Seabird roosting or nesting areas

2.4 DATA LIMITATIONS

Given this was a landscape level study, primary data and/or field inspections were not undertaken and were qualitative. Detailed quantitative environmental investigations were not undertaken on site.

The risk mapping is indicative only and based on available data at the time of assessment. Conditions are likely to change over time. Any investors or potential developers should undertake their own due diligence to verify the information presented in this report at the time of the investment and development.

Secondary Data

There is broad and varied data and information available online and from other public sources, but much of it is more than a decade old. The majority of the biodiversity data is either too broad (covering the entire Western province) or too site specific (not relevant to the province), thereby providing limited relevance for the study.

Verification of the secondary data in the field and through discussions with communities, government agencies, and NGOs has demonstrated that about half of the data was inaccurate or outdated. This means, for the purpose this study, greater reliance has been placed on the primary data and/or field observations and discussions for the site-specific assessments.

Primary Data

Field inspections of selected sites and the tourism corridor in Western Province were undertaken in February 2020. They aimed to verify and validate the secondary data as well as gather additional information about each site and surrounding environs.

The primary data collection included:

- Visual inspections of terrestrial and marine ecosystems, including documenting site ecological observations as detailed in Table 19
- Observations of biophysical features, including surface-water features, springs, topography, geology, and natural outstanding features
- Observations of social characteristics of the site and communities in the area; social indicators considered for assessment are detailed in Table 20
- Discussions with site users and owners, nearby communities, and tourism operators
- General observations about the environmental integrity[16]

16 Field observations and discussions were frequently contrary to the secondary data collected.

Photo Credit: Robert Taupongi

3. Baseline Analysis

3.1 INTRODUCTION

The following section summarizes the E&S conditions in Western Province. An analysis of the existing situation provides the basis for identifying and assessing risks and opportunities that may arise from future tourism development. Information presented in this section is gained from a combination of secondary data, in-field observations, and stakeholder and community consultation.

3.2 TOURISM IN WESTERN PROVINCE

In 2016, a total of 46,748 people entered Solomon Islands; about half (49.6 percent) of them were visitors, with a majority (40 percent) coming from Australia. Of these visitors, only 32.9 percent were vacationers, while others visited families and friends, for business, or were in transit (SIG: National Statistics Office 2016).

A higher proportion of tourists visited Western Province compared to other places in the country. International flight services from Brisbane, Australia, to Munda in Western Province started in 2019, but the majority of tourists go through the capital city of Honiara and transit on connecting flights to Gizo, Munda, and Seghe.

Tourism in Western Province is still in its infancy with limited development of international tourism operations and small numbers of leisure visitors to the country. Western Province has the raw foundation for an outstanding visitor experience with a rich culture and varied way of life, pristine lagoons and diving opportunities, and remarkable landscapes to explore (IFC 2018).

Tourism operations and/or activities are generally focused on:

- Diving and snorkeling
- Kayaking, stand-up paddle boarding, and water-based activities
- Limited surfing opportunities
- WWII tours
- Game fishing
- Lagoon tours
- Hiking, nature conservation, and bird watching
- Cultural village visits
- Small cruise ship and live-aboard
- Some cruising yacht tourism in Western Province, with limited services for yachts

Infrastructure to support these activities is limited, with most sites accessible via small sea ray boats, including Gizo Airport, which is situated on its own island 15 minutes by boat from Gizo township.

While accommodations are abundant, tourism accommodation have limited facilities and are not well maintained and advertised, resulting in an under-utilization of total available rooms by international tourists (IFC 2018). The documented locations of existing tourism accommodation and a total of 41 operators (IFC 2020) in the corridor is included in Map 5.

In 2018, IFC undertook a tourism needs assessment that outlined recommendations on various areas for improvement for tourism operations (IFC 2018) to develop a successful tourism market in Western Province. Findings from the assessment include:

- A limited amount of market-ready accommodation and other tourism operators
- Widespread tourism sites with limited patronage
- Insufficient human-resource capacity
- Low success rate in engaging local communities in the travel and tourism economy

In 2018, the MCT set the Minimum Standards and Classification for Tourism Accommodation in 2018 to guide operators to develop offerings to international standards (SIG: Ministry of Culture and Tourism 2018); these standards, however, are not compulsory or enforceable and have no legal standing. The ministry also developed Towards a Code of Practice for the Tourism Industry.

Both of these standards are detailed in Table 22.

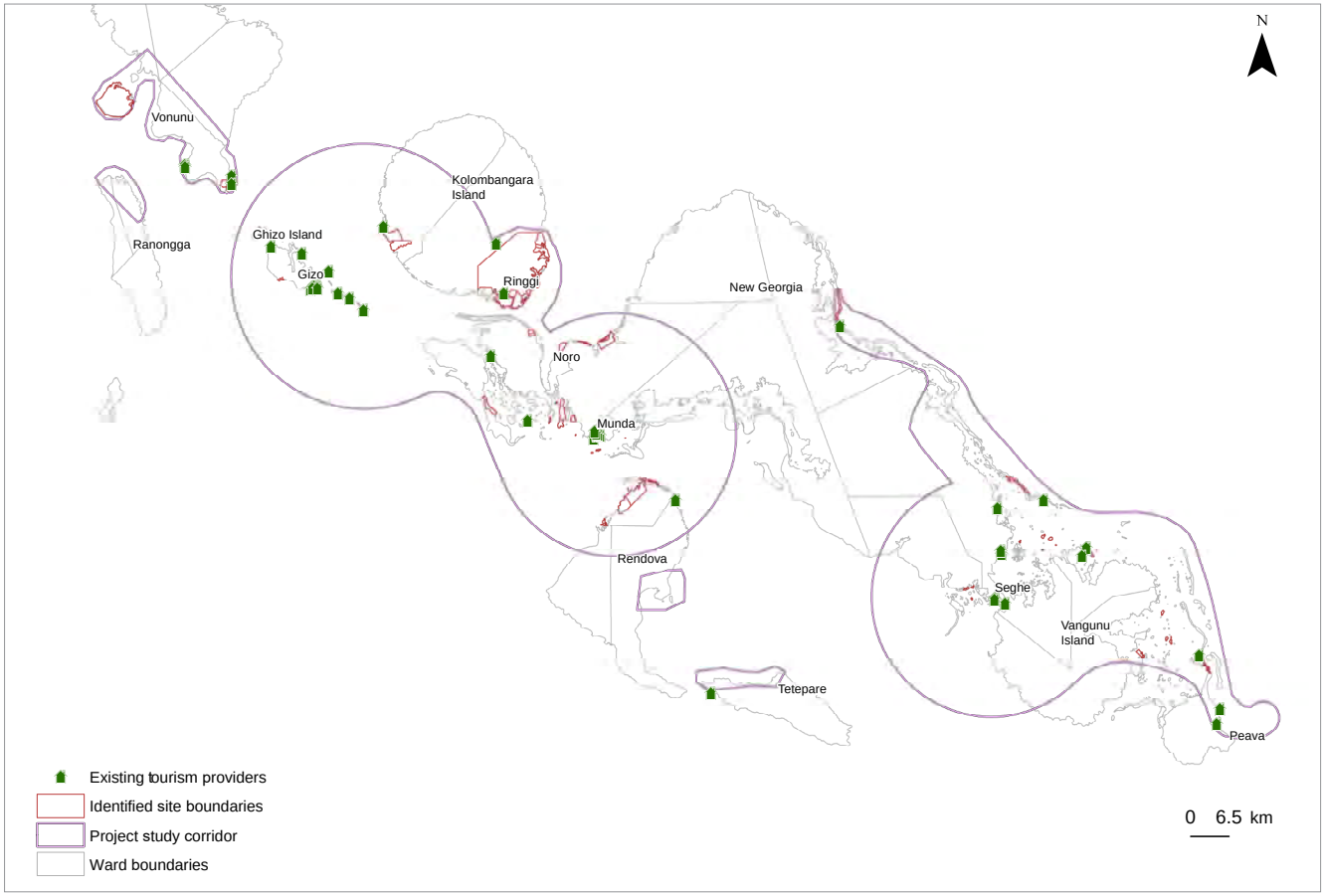
Tourism Investment Incentives Package 2017

Depending on the investment size or nature of the tourist activity and/or project, investors may be able to apply for the Tourism Investment Incentives Package 2017 (SIG 2017a) from the MCT, including:

- Tax holiday and/or offset incentives
- Duty exemptions on some capital goods and equipment not manufactured in Solomon Islands
- Duty exemptions on renewable-energy equipment
- Ability for some businesses to sell privately generated excess electricity back to the grid

Incentives are aimed at investors focused on tourism accommodation, marine and diving tourism, and aviation. There are also incentives for partnering with Solomon Islands locals and upgrading existing accommodation facilities.

Map 5: Tourism Providers in Western Province (IFC 2020)



3.3 SOLOMON ISLANDS GOVERNANCE

3.3.1 GOVERNMENT AGENCIES RELEVANT TO TOURISM DEVELOPMENT

Solomon Islands is a parliamentary democracy and part of the British Commonwealth, with the head of state as the British monarch represented by the governor-general and the head of government as the prime minister. Solomon Islands is a unitary state with a national and a provincial government, which was established under the Provincial Government Act 1981 and amended in 1997 (SIG: Ministry of Provincial Government 2018).

While Solomon Islands has organized government structures, legislations, and law enforcement, customary ways of life continue to play a significant role in various sectors in the country, particularly in terms of land tenure, ownership, and/or utilization of land.

The following government agencies are responsible for administration of legislation applicable to tourism development.

Central Government

Ministry of Lands, Housing and Survey: This ministry is responsible for land administration in the country. Their duties include registration of land, collection of land rents, recordkeeping of land records/documentation, and ensuring of statutory requirements for land surveys and valuations.

Ministry of Culture and Tourism (MCT): This ministry is responsible for the formulation and implementation of tourism policies and programs, including legislation and regulations, tourism education and training, tourism projects, product development, planning, research and development, and provincial tourism coordination and development.

Tourism Solomon Islands (formerly Solomon Islands Visitors Bureau): Under the MCT, Tourism Solomon Islands functions as the marketing office for tourism in the country.

Tourism Task Force/Tourism Working Group: The task force was created in 2010 through IFC's support and aimed to improve the country's tourism investment climate through strengthening the country's marketing strategies, improving processes for tourism developers and transportation infrastructure, and boosting capacity building and quality standards in the industry (World Bank Group 2019). The Tourism Working Group has developed over the years and its key stakeholders include Australian Aid (Department of Foreign Affairs and Trade), the New Zealand Aid Program (Ministry of Foreign Affairs and Trade), Japan International Cooperation Agency, and Solomon Airlines.

Ministry of Fisheries and Marine Resources: This ministry is responsible for fisheries management, development, and operations. It devises and implements policies in accordance with the *Fisheries Management Act 2015* and administers community-based marine protected areas.

Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM): This ministry is in charge of sustainable environmental management, climate-change adaptation and mitigation, disaster risk management, and meteorological services for Solomon Islands. It is responsible for the following environmental laws:

- *Environment Act 1998*
- *Environmental Regulations 2008*
- *Protected Areas Act 2010*
- *Protected Areas Regulations 2012*
- *Wildlife Protection and Management Act 1998*
- *Wildlife Protection and Management Regulations 2008*

Ministry of Commerce, Industry, Labour and Immigration: This ministry is responsible for the formulation and implementation of economic and industrial development strategies for Solomon Islands. It also manages the procedures and facilitates investments in the country.

The Ministry of Health and Medical Services: This ministry is responsible for the following environmental laws:

- *Environmental Health Act (Cap 99)*
- *Environmental Health (Public Health Act) Regulations 1980*

Ministry of Home Affairs: This ministry is responsible for the *Gaming and Lotteries Act 2004* and processing applications for gaming/lottery licenses.

Gaming and Lotteries Board: Under the *Gaming and Lotteries Act 2004,* the board is responsible for granting or revoking the commercial gaming, casino, and lotteries licenses, as well as its renewal; it also manages the gaming licenses across the different provinces of Solomon Islands. The board is under the Ministry of Finance and Treasury.

Ministry of Provincial Government and Institutional Strengthening: This ministry is responsible for the administration of the nine provincial governments in Solomon Islands. Under the *Provincial Government Act 1997,* the ministry must define its core functions, programs, and priorities through its planning processes and devolve these functions to provincial governments, enabling them to deliver services at the provincial and community levels.

Biosecurity Solomon Islands: This unit manages compliance with the principles and systems developed by the International Plant Protection Convention and the World Organization for Animal Health. The SIG is a signatory to the World Trade Organization and strongly supports international cooperation in controlling pests of plants and plant products and of animals and animal products through science-based quarantine measures.

Royal Solomon Islands Police Force: The police have certain enforcement powers for general and environmental crimes.

Provincial Government

Western Provincial Government: Under the *Provincial Government Act*, Solomon Islands is divided into provinces. Each provincial government, composed of an assembly and executive, has its own legislative and executive functions. The Western Provincial Government is the provincial governing body tasked with the planning, management, and/or implementation of tourism development plans within the study corridor.

Western Province Ministry of Tourism: This ministry promotes Western Province as the best tourist destination in Solomon Islands (Bennett, et al. 2014). It aims to align tourism policies with the central government.

Western Province Ministry of Lands: The regional land center was established in Gizo in 2003 as part of the Solomon Islands Institutional Strengthening of Land Administration Project to divulge land administration functions of the central government to provincial offices. The provincial department now manages titles for government-owned and registered land; yet, important decisions, such as the creation of new parcels, sub-divisions, and transfers, are still managed through the Ministry of Lands' central office in Honiara.

The department also manages town planning on registered government land and allocates land for residential, business, school, and other community uses as required. People can apply for registration of lands within the province, and the department collects associated fees and processes these requests on behalf of the central government.

Town and Country Planning Board: The board overseas development consents and approves the development of new or redeveloped land in all areas of Western Province. While all sites are required to produce EIAs, as required by the *Environment Act,* and obtain development consents and engineering approvals, most local landowners fail to do so and proceed with their developments unchecked.

Development on government-owned land is further scrutinized. Usually, the required permits are applied for and reviewed by specialists employed by the board.

EIAs are checked by the Secretary of Western Province.

Western Province Ministry of Environment: The ministry is the provincial link with the MECDM and provides provincial environmental department services. They collaborate on all environmental activities within Western Province.

3.4 POLICY AND LEGISLATIVE REVIEW

A detailed review of the SIG and Western Province's strategies, policies, legal frameworks, and their implementation and relevance to tourism development is presented in Appendix B. The policy review considered IFC PS and World Bank Group (WBG)'s Environmental, Health, and Safety guidelines, which represent a framework of Good International Industry Practice providing both general and specific advice for an industry sector. In particular, the WBG's Guidelines for Tourism and Hospitality Development contain information relevant for business and city hotels, resorts, eco lodges, and other accommodation and catering facilities (IFC 2017). The guidelines outline potential environmental, health, and safety issues associated with tourism and hospitality activities and ways to manage the risks in this sector.

Key issues relevant to tourism development, based on the above reviews, are discussed below.

3.4.1 PERMITS AND LICENSING OF TOURISM BUSINESSES

A summary of the key permits and licenses required for most tourism operations are included in Appendix B. Those of interest to this study include:

- Environmental permitting
- Business licensing
- Foreign investor permitting
- Permits for casinos and gambling establishments[17]

3.4.2 COMPLIANCE AND ENFORCEMENT

Environmental Compliance

As part of the business-licensing process and development consent issued by the MECDM, an EIA is required prior to the start of a tourism development project; without the EIA, it is illegal to proceed with a prescribed development. The MECDM is responsible for implementing compliance with the EIA and the final report should be gazetted and/or circulated so that stakeholders may provide comments or objections. The MECDM's Director of Environment and Conservation will review these comments and/or objections and confirm that the project is safe for development before issuing a "Development Consent." Community stakeholders and/or landowners can appeal to the Environment Advisory Committee and Minister of Environment within 30 days of notice of the consent. There is, however, an associated cost of US$200 when filing an appeal.

Under the Solomon Islands EIA guidelines, the proposal application should include the type, size, and nature of the development, but there are no specific requirements on the size of the tourism facilities. Nonetheless, the development proposal should include a map to indicate the site's geographic location, elevation, slope, nearby areas of environmental significance such as proposed or declared reserves, protected areas, world heritage sites, watercourses, wetlands, and adjacent land uses, including the nearest villages/communities (Ministry of Environment, Conservation and Meteorology 2010).

At the provincial level, development of tourism businesses, establishments, and/or activities must be approved by the Western Provincial Government.

As such, investors should allocate sufficient time and resources on the required processes and/or permits.

The Foreign Investment Bureau, on behalf of the Attorney General of the National Government, is charged with ensuring EIAs are carried out to an appropriate national standard. Otherwise, the SIG has little subsequent recourse to force the business to implement mitigation measures in case of environmental degradation.

Government organizations have limited E&S capacity and resources to enforce the *Environment Act* and provincial laws as well as keep proper records of and monitor all developments in accordance with the required development consents and business licenses. Insufficient manpower and poor accessibility to some islands and/or remote sites also hamper the MECDM's ability to send government employees to ensure that development projects comply with E&S safeguards, policies, and legislations (Chêne 2017).

While the *Environment Act* requires a proposed development to inform local communities via gazetted notices so that they can raise any grievances, this process often has not considered their education level, which may limit their understanding of the impacts and related mitigation measures presented. In case of disputes, local communities may need to seek legal advice and may likely be reluctant to engage in a potentially lengthy dispute-resolution process. This can lead to disgruntled communities and longer-term conflicts (Chêne 2017).

A business license is required for new businesses and prior to on-site construction. In Western Province, the application process includes an engineer review, including environmental considerations, of any construction plan. Ultimate license approval is granted by the Western Province Executive who can require an EIA to be undertaken if the construction is expected to affect the environment (Moore 2015). The business license, however, is not conditional on a satisfactory EIA submission, so it can still be issued without an EIA.

Construction-permit processes have been investigated by the World Bank (2019). The findings reveal that it takes a local business an average of 99 days per project to obtain a building permit, which costs on average 19 percent of the project's value.

17 Gambling, casinos or equivalent enterprises are included on IFC's exclusion list: http://www.ifc.org/exclusionlist

The study also shows that required inspections by the MECDM may not be conducted due to the remoteness of areas and limited capacities of the government agencies.

Royal Solomon Islands Police Force and ministry officers are given certain powers to enforce environmental laws and ensure compliance with regulations against the following offences (Moore 2015):

- Carrying out logging and mining operations without an EIA and/or a development consent—a permit issued by the Director of Environment and Conservation in the MECDM imposing certain conditions such as minimizing environmental risks and/or harm, provision of reports, and conducting baseline studies/surveys and periodic audits
- Felling and milling trees without the necessary license or not in accordance with a license/ permit
- Extracting minerals such as gold, nickel, and bauxite without the necessary license or not in accordance with a license
- Engaging in fishing without a license, exceeding the limit on the number of fish, catching fish that are too small, or using illegal fishing methods
- Coral or sand harvesting without approvals or the appropriate effects assessment
- Carrying out certain activities such as logging and mining or taking species from a protected area
- Importing or exporting prohibited or restricted plants and animals without the necessary permissions
- Causing pollution to the water/air and from certain premises without or in breach of the necessary permissions

Labor Compliance

The SIG has labor policies and/or legislations such as the *Safety at Work Act 1982* and the *Labor Act 1996* to protect employee or worker rights. The Office of the Commissioner of Labor is the main agency responsible for managing and implementing the labor laws, including provisions for casual employees or daily-wage earners, foreign workers, the minimum wage, working hours, and the employment of women and children.

The *Labour Act* 1996 has various provisions to protect the health and safety of women:

- Prohibit women from night work except under specified circumstances such as working in hotels, restaurants, and bars.
- Prohibit women from working in mines.
- Prohibit women aged 16 to 18 from working underground or on ships.
- Provide 22 weeks of maternity leave and insisting that women must take at least six weeks of leave or they will be in breach of their original contract.

The *Labour Act 1996* also restricts children and/or young people from certain work. Specific provisions are as follows:

- No child under the age of 12 shall be employed in any capacity whatsoever.[18]
- Work is allowed for persons under the age of 15. However, employment in the industrial sector requires an approval from the Ministry of Labour. Work on ships is strictly prohibited for persons under 15.
- Persons under the age of 16 are prohibited from employment in mines.
- For employment under the age of 18, (a) males can be allowed to work in the mines if he has a medical certificate, (b) for ships, employment is only allowed for the trimmer, stoker, or ship-types that are not propelled by steam, (c) employment in ships also requires a medical certificate, and (d) employment in the industrial sector during the night is prohibited.

The *Safety at Work Act* focuses on the safety and health of employees and workers, particularly in the industrial or construction sectors. A few provisions such as first-aid training protect employees in the commercial sector, including the tourism industry.

18 Section 46 of the *Labour Act 1996* states that "no child under the age of 12 years shall be employed in any capacity whatsoever." This is not consistent with international standards requiring a minimum age of employment not lower than 14 years. On ratifying the International Labour Organisation's Convention 138, the government has declared 14 years as the minimum age, thus it is envisaged that an amendment may be made to the *Labour Act* to reflect this declaration (International Labour Organisation 2016).

3.4.3 POLITICAL STABILITY

In Transparency International's Corruption Perceptions Index 2019, Solomon Islands ranked 77 out of 180 countries. Weak governance can be associated with poor implementation of the rule of law and policies in the country, particularly in the forestry and mining sectors where foreign-owned companies and local politicians are in collusion (Chêne 2017). In the case of logging, the Ministry of Forestry cannot effectively manage permit approvals and oversee logging companies because of a lack of manpower and resources to perform effective monitoring.

Conflicts of Interests of Members of Parliament and "Big Man"

Some Solomon Islands Members of Parliament gain and maintain their position through the traditional "Big Man" leadership system, referring to highly influential individuals in a tribe who provide their followers with protection and economic assistance in exchange for their support. Campaigns are often dominated by exchange of goods between candidates and voters, a kind of patron/client relationship that characterizes the "Big Man" leadership system of *kastom* way (Kabutaulaka 1998). This system focuses on relationships between family members and *wantok*, or those who are from the same tribe (further explained in section 3.10.1).

The Leadership Code Commission established under the *Leadership Code Act 1999*, reviews required declarations from all Members of Parliament outlining all their assets and financial interests within three months of taking office and every two years after that. If there is a perceived or actual conflict of interest, the commission has the power to direct the Members of Parliament to either divest themselves of that interest or give up their office. The information is not yet publicly available for Solomon Islands citizens to review and confirm that integrity issues are being addressed by the commission (Transparency Solomon Islands 2010). Nonetheless, the local media has reported cases of Members of Parliament with personal conflicts of interests in the portfolios they oversee.

The SIG also has the *Code of Conduct – Solomon Islands Public Service* for all public servants, which highlights conflicting concepts between the *wantok* system and the principles of fair service to the wider population.

The government passed a legislative package of reforms aimed at improving political stability, women's access to parliament, the fight against corruption, and protection of whistleblowers in 2018. The *Anti-Corruption Act*, passed on July 25, 2018, provides for the creation of an independent anti-corruption entity. Parliament also passed the *Whistleblowers Protection Act* on July 31, 2018, with the aim of protecting people who come forward with information on corruption (United Nations 2019).

3.4.4 LAND ADMINISTRATION, TENURE, AND OWNERSHIP

The *Land and Titles Act 2016* governs landownership in Solomon Islands, including customary land. The act defines ownership arrangements, governs the management of land, and sets out procedures for the acquisition and lease of land. Land type in Solomon Islands is either customary (85 percent) or registered (15 percent). Most natural resources (with some exceptions such as river waters) belong to the landowners under custom. The Solomon Islands Constitution recognizes customary land rights (Solomon Islands Government 2017b).

Division 2 of Part V of the *Land and Titles Act* gives the Minister of Lands the power to compulsorily acquire any customary or registered land required for public purpose. Section 8 (1) of the Constitution outlines when compulsory acquisition can occur:

- The acquisition is "necessary or expedient in the interests of defense, public safety, public order, public morality, public health, town or country planning, or the development or utilization of any property in such a manner as to promote the public benefit."
- There is reasonable justification for causing any hardship to the interest holders.
- The acquisition is done under a law that provides reasonable compensation (including lump sum or instalments, and by cash or other form) in a reasonable time.
- The acquisition is done under a law that allows interest holders to appeal to the high court with respect to their ownership, the legality of the acquisition, or the compensation payable.

Map 6 provides an overview of land status in Western Province. The different land statuses—customary and registered land—are described in the following sections.

Customary Land

Customary land is used or occupied by a person or community in accordance with current customary usage. This includes land covered by water and things that grow on the land, buildings, and structures fixed to the land. Tribes, communities, or families can apply for their customary rights or land to be recorded under the *Customary Land Records Act*. Lease and sale of recorded customary land differs from registered land, as the government is involved in the demarcation of the land, with consideration to the number of land occupants and/or users of natural resources in the customary land. Part of the process to record land as customary includes the gazetting of the customary land record so that other rights holders to the land and natural resources would be able to inform if there are overlapping claims (Foukona 2007).

Map 6 identifies customary land and land that has been surveyed but not registered (referred to as "Land Reference—surveyed, not registered"). It is unclear if this land has been formally recorded under the *Customary Land Records Act*, but identifying the land like this shows that the extent of the land is known. Although there are legal mechanisms to regulate customary governance (see Appendix B) for landownership, communities and/or tribes in Solomon Islands perceive land as communally owned by tribes (Ogle 2014).

Under the country's policies and/or legislations, tribes and/or families can record their primary rights and/or ownership over a parcel of land under the *Customary Land Records Act*. With the primary owner's permission, other tribes and/or families may use land and marine resources in the said area. In addition, transactions or disputes in tribal land are to be addressed primarily through customary institutions before being escalated to the state legal system (SIG: Solomon Islands Law Reform Commission 2012).

Despite the availability of legal mechanisms for communal land, tribes and/or families still face the following issues in recording or registering their land (Corrin 2010):

- There is a lack of agreement and/or an overlapping of landownerships or boundaries; registration process can be lengthy and challenging due to conflicting claims over parcels of land and marine and forest resources.
- There is a lack of a bridge between a group's customary laws and the country's legal systems.
- Formal registration of ownership of specific resources, such as customary rights on timber, water, and minerals, may cause tribes and/or families to lose rights or benefits on other resources. As such, it is difficult to identify the right landowner/s but also ensure the equitable distribution of benefits from land lease or acquisition.
- Tribes and/or families are often asked to settle overlapping claims through traditional methods. While customary landowners and/or tribes can seek legal advice on land acquisition or lease from outside government agencies, they often lack the financial resources and/or information to seek qualified, professional advice.

Voluntary registration of customary land is under Division 1 of Part V of the *Land and Titles Act*:

> *"Customary land may be sold or leased to the Commissioner or any Provincial Assembly in accordance with the provisions of this Division... and the lease of that land from the registered owners."*

While a land register is maintained under the Ministry of Justice and Legal Affairs, the registry is not public, and it is difficult to ascertain the percentage of customary land that has been registered.

Registered Land

Under the *Land and Titles Act 2016,* customary land can be converted into registered land, which can then be transferred and leased. There are two types of registered land estates: perpetual and fixed term.

- Similar to a free-hold estate, a perpetual estate grants the permanent right to use and occupy the land, subject to any conditions laid out by the *Land and Titles Act*. According to the country's constitution, only a Solomon Islander (or other person prescribed by Parliament such as the Commissioner of Lands) has the right to hold or acquire a perpetual estate.
- A fixed-term estate is granted on a registered perpetual estate allowing use and occupancy of the land and its produce for a fixed period, subject to the payment of rent and compliance with obligations and restrictions. Lease estates in land, including long-term leases, are also granted.

Land Administration

The Ministry of Lands, Housing and Survey facilitates and/or manages the lease, sale, and transfer of ownership of both customary and registered land via the *Customary Land Records Act* 1994 and the *Land and Titles Act 2016*. After reaching an agreement with the landowners for the lease of land, investors are required to submit the agreement forms to the ministry. The forms include provisions such as the size of the land and names of the landowners and/or council. For leasing customary land, additional details such as rent, payment schedule, and length of the lease need to be included.

The Ministry of Lands, Housing and Survey and provincial governments maintain a record of land titles of customary, recorded, and registered lands. Map 6 provides an overview of land status in Western Province as of 2006 when the last digital records were presented spatially.

Division 2 of Part V of the *Land and Titles Act 2016* covers compulsory land acquisition and legislation guiding the compensation process (SIG: Ministry of Lands, Housing, and Survey 2016). The level of compensation is largely determined by the Commissioner of Lands, but the landowners can dispute it through the High Court (SIG: Ministry of Mines, Energy and Rural Electrification 2017). Under the *Land and Titles Act 2016*, compensation or compensation rental shall be made payable to a group of persons claiming rights or interests in land based on current customary usage of natural resources or land. Further, compensation shall be payable to the group and for the benefit of all of them.

Compulsory acquisition of land can occur should any land, both customary and registered, be required for public purpose. The Ministry of Lands will need to demarcate the land required for public development and identify customary-rights owners, landowners, and interested stakeholders. The notice on compulsory-land acquisition will need to be gazetted so that the customary-rights holders can register their interest or appeal to the High Court on how the said land acquisition will affect them.

For registered land, compensation will be determined by the High Court based on the condition of the land and other matters in relation to the diminution in value to the occupier of the land. For customary land, the Commissioner of Land will first offer to transfer or grant to the person or group of persons entitled to the compensation for the land acquired an estate in land, in lieu of paying to such person or group of persons any compensation claimed by them. Customary-rights owners to the land can refuse or dispute the offer within three months. If there is no dispute, the High Court will determine the compensation or compensation rental based on the customary usage of natural resources and land. If the customary-rights owners, who constitute a majority of the affected group, are dissatisfied with or dispute the initial offer from the Commissioner of Lands, they need to file a complaint or appeal to the court within three months. Any dispute as to whether any persons, being members of a group, constitute a majority of the group shall be determined by a magistrate's court unless the parties agree otherwise. Under its constitution, the following procedures are required for government-led land acquisition for development purposes:

- Prior negotiations with the landowners
- Owners have the right to access independent legal advice
- As far as practicable, the interest acquired shall be limited to a fixed-term interest[19]

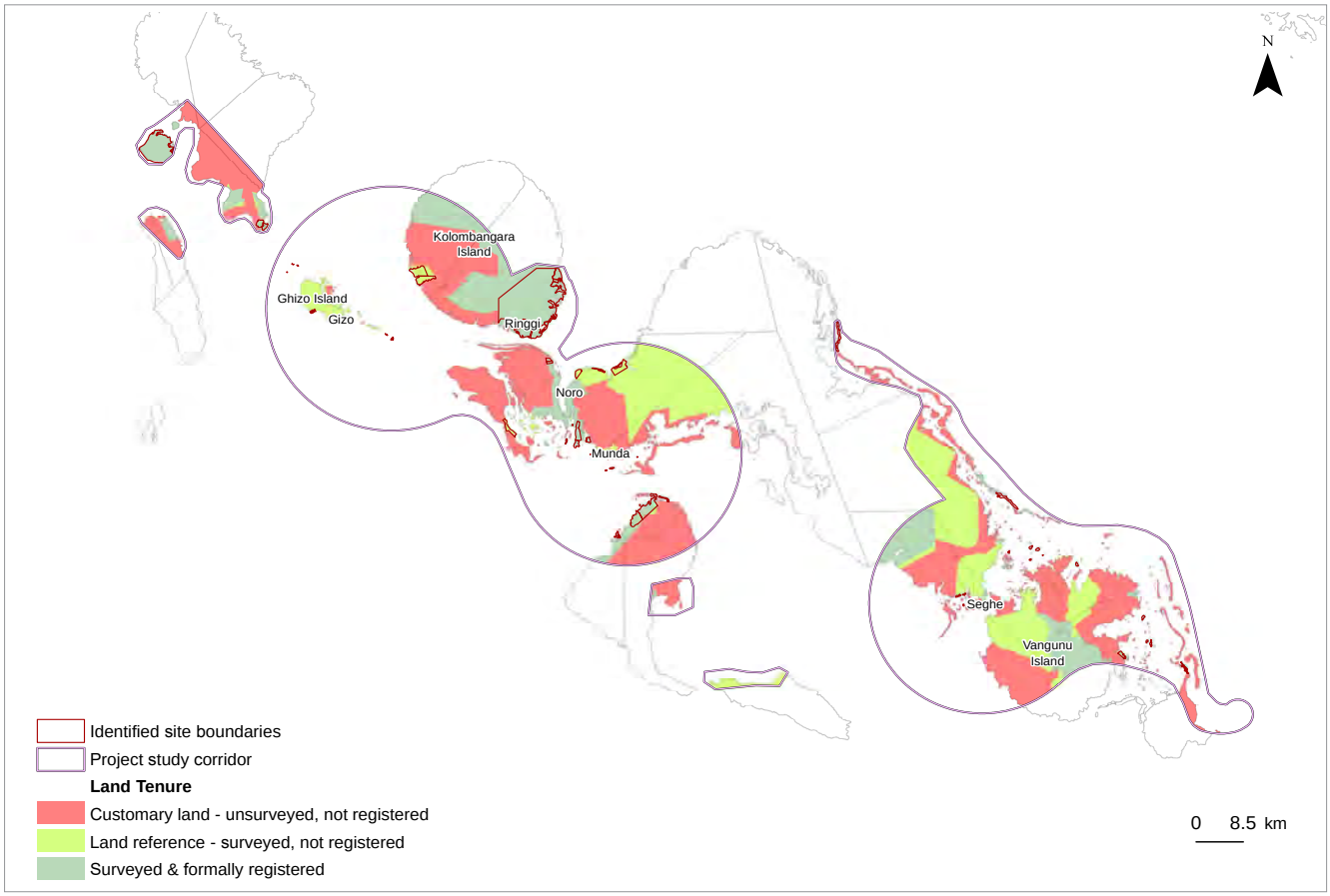
19 While both the Solomon Islands Constitution and the *Land and Titles Act* have this provision, it remains unclear on the length or how payment conversion of fixed-term interest should occur (Corrin 2010).

Based on the constitution, customary landownership should take precedence over commercial-related transactions. However, there is no clear national legislation or action plan concerning involuntary displacement or resettlement should the development project be led by the government. The SIG also has limited resources for the efficient registration of customary land and dispute resolution (Corrin 2010), making it difficult to administer the required procedures as defined under the constitution.

Housing Tenure

In addition to land tenure, housing tenure was also examined. Census 2009 data showed that across the study corridor, predominant housing tenure is "own mortgage" or "rent free"; small proportions in central parts of the corridor near urban centers like Noro, Munda, Nusa Roviana, Gizo, and South Kolombangara show people living with "private rent," "subsidized rent," or "as caretakers." Own mortgage includes those who own and live on the land but have a mortgage against it. Rent free includes those who either own their land or do not pay rent to live on it (likely to include customary-land occupants). Private rent and subsidized rent refer to occupants who pay a landlord, whereas caretakers are given access to live on the land in exchange for services to maintain and protect it for the landowners. Caretakers are reasonably common in parts of Western Province and highlight the need to consider them differently from other occupiers when considering occupation of land (SIG: National Statistics Office 2009).

Map 6: Land Tenure in Western Province as of 2006 (SIG: Department of Lands and Survey 2006)[20]



20 "Land reference – Surveyed, not registered" is understood to be customary land that has been surveyed for the purpose of recording customary interest in the land. It is unclear if this land has been formally recorded under the *Customary Land Records Act 1994*.

3.4.5 TOURISM DEVELOPMENT STRATEGY

The MCT and the Western Provincial Government have both recently devised relevant policies to support the development of sustainable tourism:

- MCT: Solomon Islands National Tourism Development Strategy 2015-2019
- MCT: Tourism Investment Incentives Package 2017
- MCT: Minimum Standards and Classification for Tourism Accommodation 2018
- Western Provincial Government: Western Provincial Government Tourism and Culture Policy 2019/2021

These documents outline initiatives to support tourism development in the region, such as:

- Identifying areas for tourism development
- Integrating tourism resources, markets, and operators to develop sustainable products and marketing strategies
- Infrastructure planning
- Protecting environment and conserving culture for tourism development
- Strengthening relevant governance mechanism, business registration, and permits and licensing processes
- Providing guidance for businesses to invest in Western Province
- Providing guidance on standards of accommodation
- Educating communities about sustainable practices and impacts of tourism
- Integration with the national strategy on tourism development
- Building capacity and capability for tourism development
- Planning for visitor safety and positive experience
- Working with villages and community groups to develop community-based tourism in order to support the region's development

Western Province's Tourism Development Plan has identified Gizo, Munda, and Seghe as the three tourism hubs in the province. The following areas will be created as tourism-protected areas under the National Heritage Bill:

- The Marovo Lagoon
- Turupu Island
- Tetepare Island
- Kolombangara Island
- Ghizo Island
- Uepi Reserve
- Njari Island and reef
- Simbo Island
- Vona vona Lagoon
- Shortland Island and Treasury Islands
- Kenelo
- Ugele-Titiru
- Baniata
- Vangunu-Zaira
- Ngatokae-Biche

All of the above listed tourism hubs and areas of natural-heritage value fall within the corridor. Most are located at or near the identified sites and are fairly distributed across the corridor.

3.5 PHYSICAL ENVIRONMENT

3.5.1 INTRODUCTION

Solomon Islands is a country in the South Pacific Ocean, lying to the east of Papua New Guinea and northwest of Vanuatu. With a total area of 28,900 km², the country comprises about 1,000 islands, of which around 350 are inhabited (Food and Agriculture Organization of the United Nations (FAO) 2016). Western Province is the largest (5,475 km²) of the country's nine provinces. Its provincial capital is Gizo, a town of roughly 3,000 people.

3.5.2 GEOLOGY

Solomon Islands has a complex geological history, having formed along the converging Indo-Australian and Pacific tectonic plates (Holl 2013). The New Georgia Islands that make up Western Province were formed in the late Miocene to recent period through second-stage arc volcanism (volcanoes formed above a subducting tectonic plate). The composition of the New Georgia Islands group is complex and includes a wide range of igneous rocks including basalt, andesite, and dacite (Petterson, et al. 1998). Younger reef limestone is found at coastal locations on most islands and has been recorded up to 145 m above current sea level, indicating that the coast itself is formed of recently uplifted reef limestone (Stoddart 1969).

Sea-level changes through the Pliocene and Quaternary periods have accounted for sea-level rise of not less than 150 m and regression of about 200 m (Stoddart 1969). In Solomon Islands, these sea-level shifts have been combined with continuous tectonic movements and active volcanicity, leading to an extraordinarily complex coastal formation.

3.5.3 CLIMATE

Solomon Islands lies within 12 degrees latitude of the equator and more than 1,500 km from the nearest continent (SIG: Ministry of Environment, Climate Change, Disaster Management and Meteorology 2020). The weather and climate of the region can be explained largely by the seasonal movement and development of the equatorial trough (a belt of low pressure that migrates between hemispheres) and the subtropical ridge of the southern hemisphere (a belt of high pressure typically located between 30 and 35 degrees south).

The country has little temperature variation throughout the year (average temperature 27°C), fluctuating 2°C from the average. The temperature is strongly tied to changes in the surrounding ocean temperature.

The country has two distinct seasons: a wet season from November to April and a dry season from May to October. The average annual rainfall is largely within the range of 3,000 to 5,000 mm. The Central and Western Provinces tend to average about 100 to 200 mm of rain per month during the dry season and 200 to 300 mm during the wet season. The eastern regions of Solomon Islands tend to have a more consistent rainfall (averaging 300 to 400 mm per month) with less seasonal variation (Pacific Climate Change Science Program Partners 2011). These values are, however, highly variable between islands. While there is limited data on the effects of elevation on rainfall, it is expected that rainfall is heaviest between 600 and 1,000 meters above sea level.

The winds in Solomon Islands are generally of a seasonal nature, with east to southeast winds occurring from May to October at a typical wind speed over the sea of around 30 km/h. West to northwest winds occur from November to April and are usually lighter and less persistent than the southeast winds. In addition to the seasonal winds, there are also strong diurnal wind patterns caused by the islands themselves. These are location specific but can be caused by ocean and land temperature changes and topography. The frequency of strong winds is relatively low with winds over 39 km/h occurring less than six days a year on average (SIG: Ministry of Environment, Climate Change, Disaster Management, and Meteorology 2020).

Thunderstorm activity peaks between December and March, with thunderstorms generally occurring over the large, more mountainous islands in the afternoon before drifting toward the coastal areas. Over the ocean, thunderstorms are more likely to occur during the night or in early morning.

Tropical low-pressure systems occur each year over Solomon Islands at times when the equatorial trough is in the vicinity, but few of these develop into tropical cyclones (winds with a gale force of at least 34 knots). Cyclone season tends to be from November to mid-May, but they can form outside of this period when the sea is warm. There is on average one cyclone per year, but this number is rising in the southern parts of the country (Pacific Climate Change Science Program Partners 2011). The cyclones that affect Solomon Islands are generally in their early stages and relatively small.

3.5.4 NATURAL HAZARDS

ThinkHazard! is a web-based tool created by the Global Facility for Disaster Reduction and Recovery to consider the impacts of disasters on new development projects. The tool is designed to be used at a countrywide or local level depending on the availability of country data. The Solomon Islands *ThinkHazard!* report outlines only country-level data and the following natural hazards (Global Facility for Disaster Reduction and Recovery 2019):

- **Coastal flood:** High-hazard level—potentially damaging waves are expected to flood the coast at least once in the next 10 years.
- **Earthquake:** High-hazard level—a more than 20 percent chance of a potentially damaging earthquake shaking in the project area in the next 50 years.
- **Landslide:** High-hazard level—the area has rainfall patterns, terrain slope, geology, soil, land cover, and earthquakes that make localized landslides a frequent hazard phenomenon.
- **Volcano:** High-hazard level—the selected area is located less than 50 km from a volcano that has recorded a damaging eruption in the past 2,000 years and future damaging eruptions are possible.

- **Cyclone:** High-hazard level—a more than 20 percent chance of potentially damaging wind speeds in the project area in the next 10 years.
- **Tsunami:** High-hazard level—a more than 20 percent chance of a potentially damaging tsunami occurring in the next 50 years.
- **Wildfire:** Moderate-hazard level—between a 10 percent and 50 percent chance of experiencing weather that could flame a hazardous wildfire posing risk of life and property loss in any given year.
- **Extreme heat:** Moderate-hazard level—a more than 25 percent chance of at least one period of prolonged exposure to extreme heat, resulting in heat stress, will occur in the next five years.
- **Urban flood:** Moderate-hazard level—a more than 20 percent chance that potentially damaging and life-threatening urban floods will occur in the coming 10 years.
- **Water scarcity:** Very low-hazard level—droughts will occur less than once every 1,000 years in the selected area.
- **River flood:** Very low-hazard level—a less than 10 percent chance that potentially damaging and life-threatening river floods will occur in the next 10 years. The Solomon Islands National Emergency Operation Centre has identified Honiara and Guadalcanal as more prone to river-flood risks (Government of Solomon Islands 2014) than the less developed Western Province.

The high ratings are appropriate given the history of many natural hazards occurring in or near Western Province. The only hazard rating that appears to be potentially underrated is river flood, which should likely be rated moderate. Given the high rainfall and steep topography around many larger Western Province islands, river flooding is a real risk for communities that live closer to rivers. While Western Province has not documented significant flood damages compared to Honiara and Guadalcanal, the country's housing infrastructures are highly vulnerable to natural disasters and flooding (Government of Solomon Islands 2014).

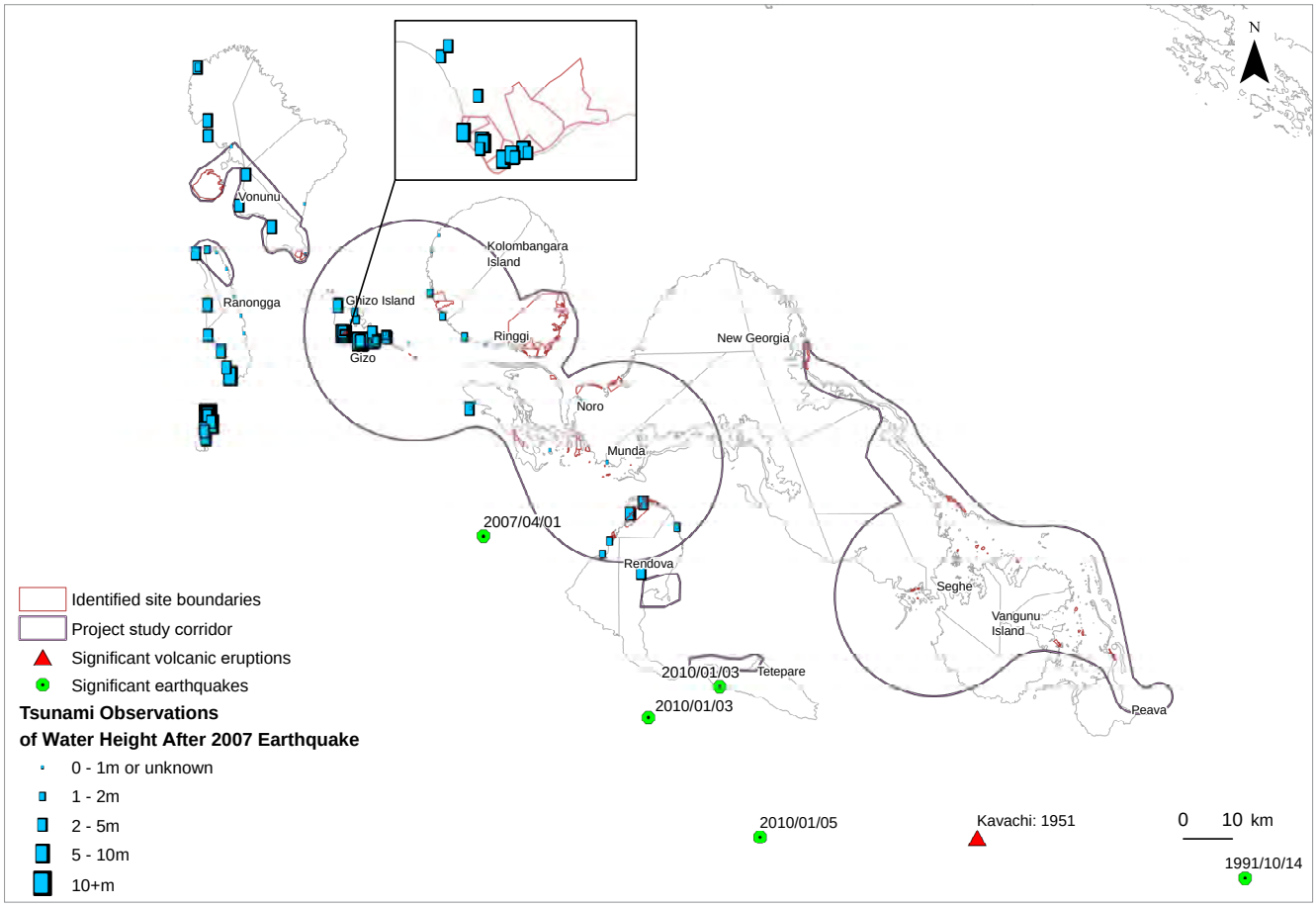
Removal of mangroves, vegetation, or reef coral for development may increase the potential for severe impacts from natural hazards, including landslides, storm surges, and erosion of coastal areas or rivers. As sea levels rise, developments need to be designed to withstand potential impacts from coastal inundation with climate change. Impacts may include incursion of water sources, overtopping of septic tanks or sewage treatment facilities, and the destruction of building foundations by wave energy.

Coastal vegetation and fringing coral reefs act as a protection or buffer zone for many high-risk natural disasters; their alteration or destruction can have wider impacts on the surrounding ecosystem, ultimately leading to a lack of natural protection along a wide span of the coastline.

At some sites, it is impossible to retreat to higher or more stable land in the event of tsunamis or earthquakes. Remote locations will restrict access to shelter and health services during weather events as boat travel would be unsafe. Therefore, the more remote a site is, the more likely it is to generate higher health, safety, and operational risks and costs for the transport of workers and service providers to the site.

Map 7 depicts the historic earthquakes and observations of associated tsunamis in Western Province.

Map 7: Visualization of Natural Hazards in Western Province



3.5.5 UNEXPLODED ORDNANCE

Western Province saw extremely heavy fighting during WWII with more than 40,000 troops involved in the conflict between June 21, 1943, and October 9, 1943 (SafeGround Inc. et al 2015). The province is littered with unexploded ordnance (UXO) such as bombs, bullets, artillery shells, and grenades from this period. The vast majority of these UXO have not been cleared and pose a significant risk to both locals and visitors. Large stockpiles of munitions and equipment were disposed of at sea after WWII. Smaller stockpiles on the former front lines and the munitions that had been fired and failed to explode were largely ignored at the end of the conflict and have been left where they were for the past 70 years (Eliseussen and Rodsted 2016).

The Solomon Islands Special Police Force has been trained by donor countries to clear UXOs discovered by the public. Any development of large sites where UXOs may be present will need to employ private contractors to clear sites at the developers' cost (SafeGround Inc. et al 2015).

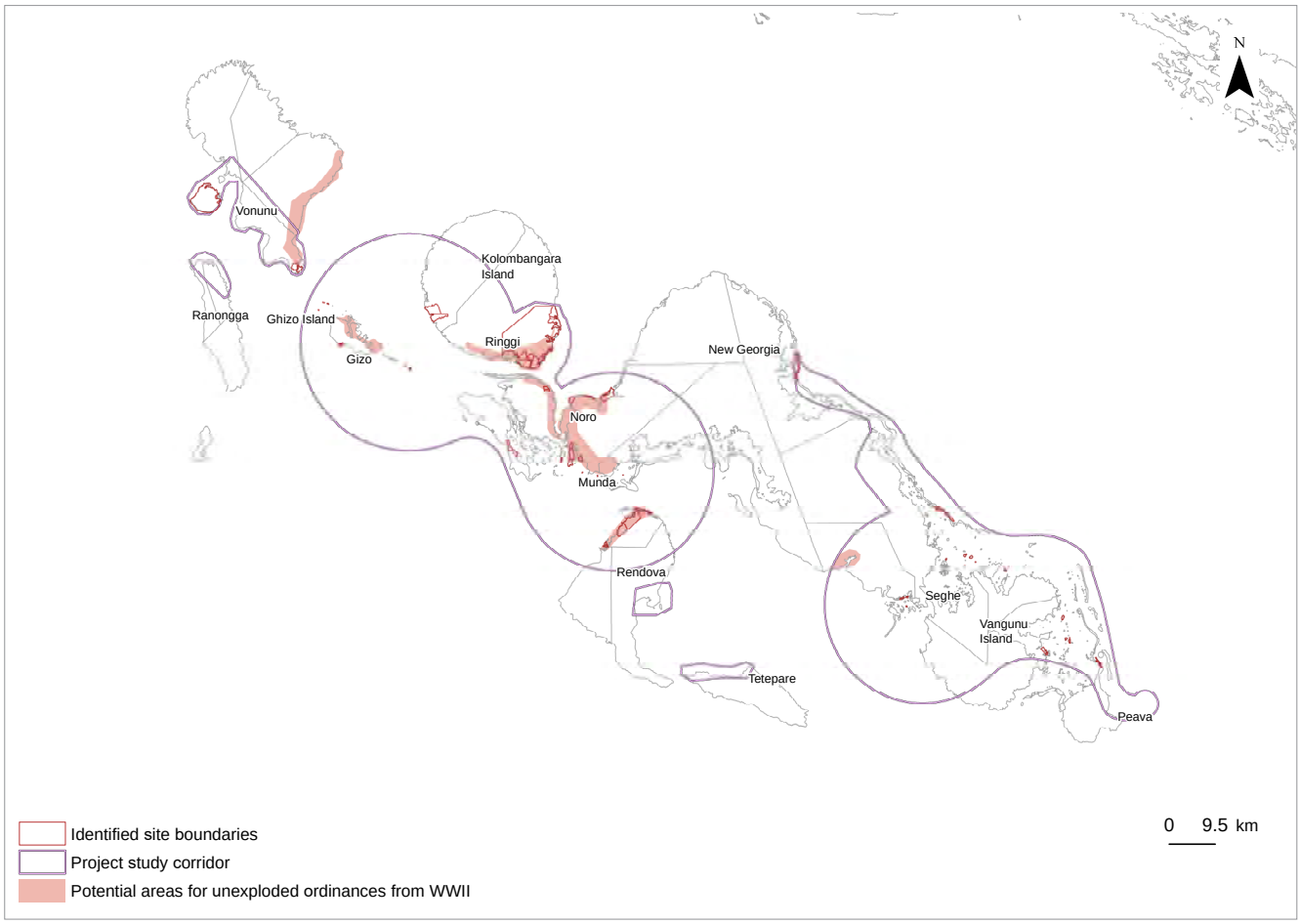
There is no official database on areas of known UXOs in situ. Yet, historical records of WWII battle areas and bombardments are well documented, so areas of high likelihood of UXOs can therefore be deduced from these records and are mapped in Map 8.

Areas where land battles and/or aerial/naval bombardment took place and UXOs have been found (World War II Database 2020):

- Wickham Anchorage on the southeastern coast of Vangunu Island
- Seghe on the southeastern tip of New Georgia
- Viru Harbor on the southwestern coast of New Georgia
- Rendova Harbor on Rendova Island
- Munda on the southwestern tip of New Georgia
- Enogai Point/Bairoko Harbor, northeast of Noro, on the northwestern shore of New Georgia
- Kula on the southeastern side of Kolombangara Island
- Kohinggo Island on the north side (known as Arundel Island in literature)
- Barakoma on the southeastern side of Vella Lavella Island

Of the above areas, Munda and Seghe have already been extensively cleared. Yet, stakeholders note that during clearing, further UXOs are sometimes discovered nearby but cannot be cleared simultaneously. As such, there is no mapped data showing areas of cleared sites as this would involve authorities taking on more efforts to ensure that no UXO remains on these sites. Because there is no register, it is the responsibility of the landowners and occupiers to manage these sites.

Map 8: Visualization of Potential UXO Areas in Western Province (SafeGround Inc. et al 2015)



3.5.6 WASTE MANAGEMENT

Waste management is underdeveloped across Western Province, with no formal waste-recycling facilities and only a municipal dump site in Gizo (with municipal-collection service) and an open-waste tip in Munda. Most households dispose of organic waste in their gardens or feed it to livestock such as pigs or chickens. A common practice is to burn combustible waste and sometimes it is simply disposed of in the terrestrial and marine environment.

Based on discussions with communities, there is limited awareness on good waste-management As one of the country's main tourist destinations, Western Province has made efforts to curb plastic pollution. Outdated data on Western Province's waste and wastewater facilities poses a challenge to waste-management planning, for example, the Solomon Islands National Waste Management and Pollution Control Strategy 2017-2026 still cites data from the 2009 census.

According to the Japanese Technical Cooperation Project for Promotion of Regional Initiative on Solid Waste Management in Pacific Island Countries (J-PRISM) study (SPREP 2011), it was determined that the household rate of waste generation in Gizo is 0.9 kg per day. Gizo has a recycling firm that purchases aluminum cans from residents, but the waste still needs to be shipped to Honiara, the main recycling hub for Solomon Islands (Pacific Region Infrastructure Facility 2018).

3.6 TERRESTRIAL ECOLOGY

Solomon Islands has unique biodiversity values recognized at an international level. However, most of the New Georgian Island group remain inadequately surveyed. The distribution and occurrence of conservation-significant species is not well-known in the study corridor or identified sites. Habitat integrity is a widely adopted ecological surrogate when considering the likely use of resources by a particular species in an area. If the habitat is relatively undisturbed, it retains a degree of connectivity with other habitats to promote genetic exchange and has a sufficient patch size to support a genetically viable population of conservation-significant species (generally classed as essential habitat factors). Specific essential habitat factors for individual threatened species may be found on the IUCN Red List profiles (IUCN 2020).

At the corridor level, it was difficult to discern habitats that met all of the essential habitat factors outlined above. Western Province's terrestrial environment within the corridor is dominated by anthropogenic disturbances, nearly all associated with the development of copra plantations on coastal fringes and extensive mechanized logging on coastal lowlands and ridges, including some higher altitude areas. This has given rise to a mosaic of successional vegetation communities, which in their own right have become a discernible habitat type.

3.6.1 FLORA

The vegetation communities of Solomon Islands and, by extrapolation, within the study corridor of Western Province demonstrate close affinities with those of Melanesia (Pikacha 2008) and can be broadly divided into similar associations. Six major categories of vegetation communities are recognized in Solomon Islands and occur throughout the study corridor (Bennett 2000):

Saline Swamp Communities

These are the vegetation communities within the intertidal zone and influenced by saline water, including wetlands such as mangroves and samphire flats. They are the typical Mangal communities found in the run-on areas at the mouth of estuaries on substrates of mud and marine silts, and along the banks of slow-flowing rivers that have allowed the deposition of transported sediments in the tidal reaches. The communities are more frequently found in the sheltered estuaries and embayment of the main islands of Vella Lavella, the southern coast of Ghizo and Kolombangara Islands, within the Marovo, Vona vona, and Roviana lagoons, and along the north New Georgia Coast.

Saline swamp communities are critical habitats supporting the life cycle of many reef fish species. The majority of those within the study corridor remain relatively undisturbed with high integrity, supporting an estimated 30 of the 38 species of mangroves known to occur in Solomon Islands. Nearly all mangrove species found in the study corridor, including those of the dominant genera Rhizophora and *Bruguiera*, are listed on the IUCN Red List as conservation-significant species (UNEP-WCMC and IUCN 2019).

Freshwater Marshes and Swamps

These are seasonally inundated vegetation communities that vary in floristic composition and structure from sedge lands comprising various treeless areas of grasslands and sedges to tall treed freshwater swamps. The latter are primarily found in the near tidal zone, often persisting as extensive areas of wetlands behind the main strand and littoral zone adjacent to the coast. In some localities, these wetlands are almost natural monocultures of the sago palm *Metroxylon salomonense* and *M. wareburgi*, both of which are culturally important species as traditional building material and an ingredient to make sago flour (although this practice is no longer widespread in the study corridor) (Dowe 2002). Common larger tree genera found in association with these swamps include *Dillenia*, *Terminalia*, and *Calophyllum*, with the species *Campnosperma brevipetiolata* being a common diagnostic floristic element.

These communities are major regulators of flood and coastal-drainage processes and are important contributors to coastal-foreshore stability. Larger areas are predominantly restricted to the base of hilly and mountainous locations on the bigger islands within the study corridor, primarily New Georgia and Vangunu, but occur as smaller discrete units in numerous coastal locations.

Coastal Forests

These are the most frequently encountered communities within the study corridor, varying from the simple floristic diversity of the vegetation of coral atolls and islands to complex littoral and strand communities on larger islands. They exhibit a high degree of anthropogenic influence, often hosting a heavy level of land use, from occupation for villages and settlements to extensive copra (coconut – *Cocos nucifera*) plantations and logging activities. Almost exclusively this vegetation has formed on alluvia and/or coral substrates; it is well adapted to providing shelter to lowland forests from strong winds, cyclonic seas, and storm surges, with numerous larger tree species, such as *Barringtonia asiatica*, *Calophyllum inophyllum*, and *Terminalia catappa*, frequently encountered throughout the study corridor within the strand environment. The species comprising these communities are not listed as conservation significant, but where the community is relatively undisturbed, they are vital coastal vegetable types contributing to shoreline stability.

Lowland Forests

Once the dominant vegetation on the coastal lowlands of the large islands in the study corridor, these forests are now almost extinct as a result of commercial logging. This community is characterized by about 60 large tree species, most of them commercially valuable. The high value of timbers on the international market has meant that remaining primary lowland forests are restricted to a few inaccessible areas or areas where villagers have resisted commercial logging. While there is no known primary forest within the corridor, successional forest is widespread and of varying ages, with the regrowth being actively logged in many areas.

Compared to other tropical mainland forests and those of nearby Melanesia, the forest diversity is relatively low, with only 12 primary species: *Calophyllum kajewskii*, *Calphyllum pseudovitiense*, *Campnosperma brevipetiolatum*, *Dillenia salomonensis*, *Elaeocarpus sphaericus*, *Endospermum medullosum*, *Gmelina moluccana*, *Maranthes corymbosa*, *Parinari salomonensis*, *Pometia pinnata*, *Schizomeria serrata*, and *Terminalia calamansanai*.

Within the study corridor, regrowth species, including *Vitex cofassus* and *Canarium sp.*, were dominant in logged-over areas and species of the *Ficus* genera—notably strangler fig trees (*Ficus obliqua, F benjamina, F glandulosa, F xylosycia,* and *F subordata*)—are a common canopy component present near coconut plantations and within secondary forest. The common climbers and epiphytes associated with these coastal forests include *Epipremnum amplissimum, E. dahlia, E. nobile, Pothos hellwigii, P. rumphii, Rhaphidophora korthalsii*, and *Spathiphyllum commutattum*. Ferns of the genus *Staenochleana* and *Pandanus sp.*, including successional regrowth, are common in the lowland forests.

Hill Forests

This is a distinctive community occupying lowland areas to altitudes between 400 m and 600 m above sea level on the larger islands within the study corridor. Compared to coastal lowland forests, hill forests have formed on in-situ derived soils of primarily volcanic or metamorphic origin (as opposed to alluvial/sedimentary soils) and occupy higher, well-drained landscapes.

Diagnostic canopy species include *Calophyllum pseudovitiense, Dacrydium sp.*, and *Eugensia sp.* Other associates include *Ascarina maheshewarii, Astronia sp., Belliolum haplopus, Cyathea brackenridge, Dipteris sp., Garcinia sessils, Gleichenia kajewskii, Homalium tatambense, Pandanus sp., Pemphis acidula, Podocarpus pilgeri, Racembambos scandens, Schefflera sp.*, and *Streblus glaber*. Ephiphytes (including many Orchidaceae) and vines are common.

This community is not as rich in commercially valuable timbers as lowland forests and is more difficult to access because of topographical constraints. Subsequently, logging has been less intensive, and areas of moderate-to-high-integrity hill forest remain across the study corridor, primarily on Kolombangara Island and the uplands of New Georgia, Vangunu, Rendova, and Tetepare islands.

Montane Cloud Forests

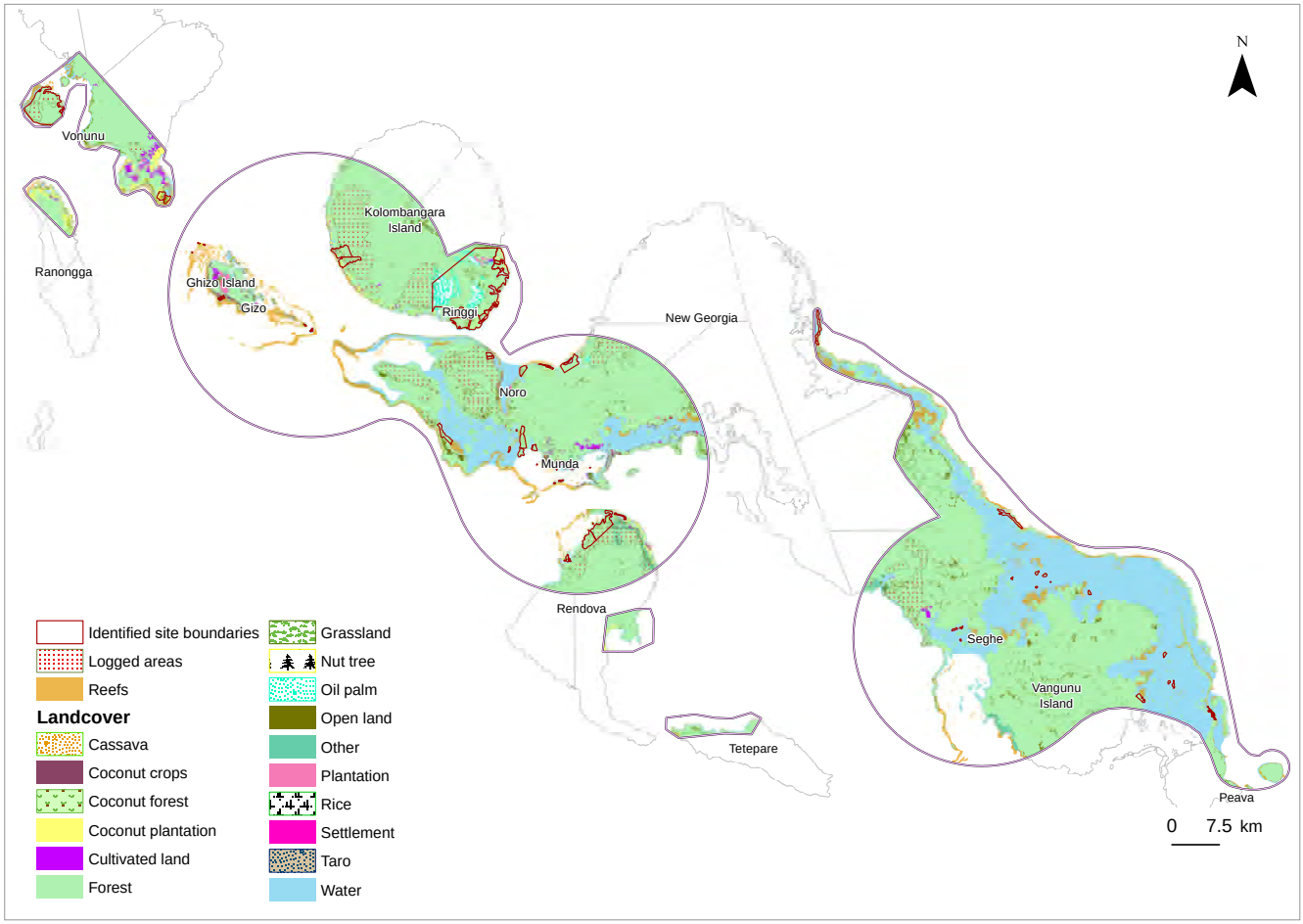
These unique communities persist at higher altitudes as a result of "cloud stripping," where the vegetation obtains moisture from humid cloud formations passing through the mountains (the "Massenerhebung effect"). This ensures an almost year-round supply of water and the community is not overly reliant on monsoonal rain activity. On oceanic islands, these cloud forests may be as low as 400 m to 600 m above sea level, whereas they only exist at much higher altitudes on mainland ranges. Mount Veve on Kolombangara Island exceeds 1,700 m and its montane cloud forests are broadly divided into three subcategories (Filardi 2004): sub-montane forests (900 m to 1,200 m), montane bamboo forest (1,300 m to 1,500 m), and mossy elfin cloudy forest (above 1,500 m). Leaf size decreases on increasing altitudinal transect from mesophyll forest (400 m to 600 m above sea level) to nanopyll/microphyll leaf size.

The components of the montane forest of Kolombangara are primarily shrubs and understory species, including *Cyrtandra laciniata, C. filiabracteata, C. atheroclyx, C. cominsia*, and trees of the *Syzygium* genus. Lichens and mosses covering the trees and shrubs are characteristics of montane forests, and many restricted/endemic or otherwise poorly known species are found in these communities. Ferns from the genera *Davalia sp.* and *Trichomanes sp.* are also common.

New Georgia and Vangunu islands also have sparse coverage of montane forests extending from 600 m to 900 m above sea level. Logging in these areas has generally been mitigated through poor accessibility, a paucity of commercial timbers, and high costs because of the extensive road and track networks required. Yet, the slopes of Mount Veve on Kolombangara Island remain vulnerable, with ongoing attempts by commercial-logging operations to access upper slopes for specific high-value timbers unique to species in these areas.

The montane forests are believed to harbor the majority of conservation-significant, endemic, or other significant flora (and possibly fauna) species, although they are poorly documented (Pikacha 2008). No tourism investment is proposed for these localities, which will unlikely be affected by tourism activity to any quantifiable extent. Map 9 shows the general land cover for the study corridor, highlighting the wider spans of forested areas and indicating areas that have been logged.

Map 9: Land Cover in Western Province



3.6.2 TERRESTRIAL FAUNA

The fauna of Solomon Islands is globally significant because of its recognized biological diversity and high level of endemism. Similar to its flora, data on the location, abundance, distribution, and general ecology of most of the terrestrial fauna is sparse to non-existent; this is particularly true for Western Province.

Mammals

Within the study corridor, 41 mammal species have been recorded (Pikacha 2008), of which 19 are considered endemic and 20 are listed under the provisions of the IUCN Red List, including three critically endangered bat species (see details in Appendix I). Among them, the New Georgia monkey-faced bat was considered extinct in the 1960s following logging of habitat in the lowlands; it was, however, rediscovered on Kolombangara Island in 2015 (outside the area of influence of proposed tourism investment sites).

Birds

Solomon Islands is classified by Birdlife International as an Endemic Bird Area important for the study of bird evolution, speciation, and population genetics. An estimated total of 245 species of birds are known from the country, of which 170 have been recorded in Western Province. Forty-one of these have been recorded only on New Georgia (BirdLife International 2020). Solomon Islands has more restricted-range species than any other country in the world (Moyle and Andersen 2017) because of its isolation from any significant land mass. Key habitats are represented in the study corridor by the montane and upland forests of Kolombangara and New Georgia islands, freshwater wetlands/swamps, mangrove communities, offshore coral island atolls, and remnant primary forest of any vegetation type.

Reptiles and Amphibians

Reptiles include skinks, geckos, crocodiles, monitor lizards, forest dragons, snakes, and five species of marine turtle. A total of 85 reptile species, including 19 endemic ones, are recorded for Solomon Islands, including the world's largest prehensile-tailed skink (*Corucia zebrata*). It is unknown how many endemic species occur within the study corridor or in their general locality, although essential habitat factors for reptiles is presumably best met by primary forest or undisturbed habitats of high integrity, including beaches for marine turtles laying eggs.

Of particular note is the estuarine crocodile, *Crocodylus porosus*. Once widely hunted throughout Solomon Islands for its skin and as food, the government ban on commercial crocodile hunting in 1993 has seen a dramatic increase in its population across the country (van der Ploeg et al. 2019). As a marine-reliant species (although they may be found in freshwater environments), estuarine crocodiles are discussed separately in section 3.6.9.

A total of 23 frog species are documented for Solomon Islands: three are endemic and frogs of the New Georgian Islands are known to be highly variable occupying all altitudes and forest types (Pikacha et al. 2016). Several poorly documented species, notably various Hylidae, are restricted to the montane uplands, while most others rely on clean water sources, such as high-quality surface water, for breeding. The exact location and associated records for amphibians are not available for the study corridor, although particularly sensitive areas include riparian communities, upland montane forests, freshwater swamps, and waterbodies.

Invertebrates

Similar to most tropical areas throughout the world, invertebrates in Solomon Islands remain poorly studied and documented. Guilds with some basic information include *Lepidoptera* (butterflies and moths, 130 species recorded, 35 endemic), *Gastropoda* (snails, 25 endemic), Cicadidae (cicadas, 31 endemic), and *Heteroptera* (grasshoppers and similar, representing 28 genera and 12 families with 60 percent endemism at the species level). A total of 63 *Odonata* (dragonflies and damselflies) species were also recorded, representing 37 genera and 12 families with 44 percent of the species endemic and one new to science. Solomon Islands is estimated to have between 40,000 and 50,000 insect species, of which only 14,511 are formally described (Greenslade 1969). Records for invertebrates within the study corridor offer no details on locations or site-specific conditions, such as habitat types. It is assumed that the most sensitive areas are associated with ecosystems with little to no significant disturbances.

3.6.3 FRESHWATER ECOLOGY

The study corridor has a wide representation of freshwater bodies including rivers, streams, lakes, swamps, wetlands, and underground water expressed as natural springs. Across Solomon Islands, the different habitat types have given rise to a very diverse fish community with a high level of endemicity and uniqueness, similar to other Pacific Islands. A total of 73 fish species are recorded for the country's freshwater systems: 13 are endemic to the bioregion and all are found in the major rivers and watercourses within the study corridor. Of the fish species listed under the IUCN Red List, one species (a goby) is considered vulnerable and four are listed as data deficient (poorly known). However, the information available is caveated in that many species have not yet been evaluated.

A unique characteristic is that freshwater systems are primarily colonized by fish guilds (such as *Gobiidae* and *Eleotridae*) with a life cycle adapted to the prevailing conditions in these distinctive insular habitats, such as young oligotrophic rivers, subject to extreme climatic and hydrological seasonal variation. These guilds are almost exclusively amphidromous in their life cycle, with the species spawning in freshwater and the free embryos drifting downstream to the sea where they undergo a planktonic phase before returning to the rivers to grow and reproduce. These amphidromous guilds have marine ancestors that contribute to the diversity of fish communities and the highest levels of endemism, a trait shared with many other Pacific Islands and the eastern tropical coast of Australia.

Other instream fauna remains poorly studied. *Gyrninidae* (water insects including whirligig beetles and water boatmen) are represented by nine species across Solomon Islands and *Simulidae* (black flies with an aquatic life stage) have 10 known species. About 90 percent of both groups are entirely restricted to Solomon Islands. The status of mollusks, crustaceans, and other insects with aquatic life cycles is almost completely unknown. Details for the status and occurrence of even the recorded freshwater groups are unknown for areas within the study corridor.

3.6.4 INTRODUCED SPECIES

The level of threat from introduced species across Western Province and within the study corridor is highly variable depending on the habitats and level of disturbance encountered.

At a vegetation level, Solomon Islands is particularly vulnerable to foreign weed invasions owing to the high level of disturbance through logging, colonial introductions for horticulture, and the accidental escapees from modern horticulture. It was estimated over 30 years ago that 520 species were introduced into the Pacific Island region (Swarbrick 1989), with at least 18 of them deemed commercial threats to horticulture and island cropping. Since then, the Pacific Island Ecosystems at Risk database and the Invasive Species Compendium (CAB International 2020) have identified 212 of the estimated 520 as occurring on Solomon Islands, 44 of which are listed as among the most invasive weed species in the world, such as *Mikania micrantha*. Nearly all of those recorded for the country are now ubiquitously established across Western Province, with a high-to-very-high representation within the study corridor.

Ninety-four fauna species are introduced into the country (CAB International 2020) and many of them, such as crazy ants, tilapia (a mouth-brooding fish), and gambusia (mosquito fish), have significant quantifiable adverse impacts on tropical forest and freshwater ecosystems. All of these species occur throughout the study corridor. The government deliberately sponsored the introduction of some species, such as Mozambique tilapia (*Tilapia mozambicus*), to provide a supplementary or main source of animal protein (SIG: Ministry of Fisheries and Marine Resources 2019).

3.6.5 CONSERVATION-SIGNIFICANT TERRESTRIAL SPECIES

Information on the occurrence, abundance, distribution, and general ecology of conservation-significant terrestrial fauna/flora species in Solomon Islands, particularly Western Province, is scarce. No government agency maintained public databases and research outcomes are published in scientific journals, many of which are unavailable for casual review.

The IUCN Red List (IUCN 2020) provides the most reliable repository of external information on conservation-significant species. The Red List categorizes the conservation status of species into several categories based on expert panel advice. For Solomon Islands, a search on the Red List database returned the following:

- **Extinct:** two species
- **Critically endangered:** 15 species
- **Endangered:** 41 species
- **Vulnerable:** 213 species
- **Lower risk/conservation-dependent:** three species
- **Near threatened:** 221 species
- **Least concern:** 2,550 species
- **Data-deficient:** 175 species

Many of them are marine species, with most coral, reef, and pelagic fish listed as vulnerable. The Red List database can be further interrogated at a regional level based on existing information. This information should be regarded as preliminary as detailed surveys for most of the listed species have not been undertaken.

Based on the Red List, the conservation-significant terrestrial associated species known to occur within the corridor are presented in Table 23. This includes three mammals, one reptile and one amphibian, 11 birds, 15 plant species, one fish, and one insect. Overall, they represent a very small proportion of the region's known biodiversity. See appendix C for more information on conservation species.

3.6.6 GENERAL BIODIVERSITY VALUES

Solomon Islands is part of the Coral Triangle region, a global center for marine diversity that exemplifies the richness, uniqueness, and beauty of the world's coastal and marine environment. The coral reef fish fauna of Solomon Islands' waters alone consists of at least 82 families, 348 genera, and 1,019 species (Green et al.(eds) 2006). Forty-seven of these had not been documented in Solomon Islands prior to 2004. A more recent Honiara market survey conducted on behalf of the Ministry of Fisheries and Marine Resources identified a further 55 species, representing new records for the country (Tua and Rhodes 2016).

The diversity is largely because of the complex marine physiography and subsequent habitats that include globally significant coral reefs, mangroves, seagrass areas, seamounts, and deep-sea trenches. Many of them remain unexplored: within the country's exclusive economic zone of 1,580,000 km², 80 percent of the ocean is deeper than 8,000 m.

The diversity sustains both large-scale commercial offshore fisheries dominated by tuna fishing, comprising purse-seine, long-line, and pole and line fishing, to inshore artisanal small-scale fisheries supporting village and household incomes. In rural areas, where most Solomon Islanders live, nearly half of all women and 90 percent of men fish or collect aquatic resources for food and income (SIG: Ministry of Fisheries and Marine Resources 2019). Fishing, as well as collection, is done with a wide range of equipment and techniques; the fisheries themselves are diverse and composed of multiple species.

The corridor includes examples of nearly all major habitat types, excluding deep-ocean-upwelling areas associated with abyssal trenches, the nearest of which is about 26 km to the west of the study corridor. Many of the reef systems are subject to fisheries pressures; those within small-boat range (several kilometers) of larger settlements/townships are affected by overfishing and degradation. Both explosive fishing (usually with home-mixed explosives of nitram fertilizer and diesel) and poison fishing using cyanide injection (where cyanide is sourced from mining ventures who use it as an ore separator for certain minerals) are undertaken in some localities. Within the study corridor, the coral reef systems with the highest integrity are associated with those furthest from easy access. They include coral atolls (notably within Saeraghi Reef at the northern tip of Ghizo Island), offshore barrier reefs, and ribbon-reef systems on the edge of open ocean trenches. Nearly all of the 485 coral species identified in Solomon Islands are listed under the IUCN Red List provisions in various conservation-status categories.

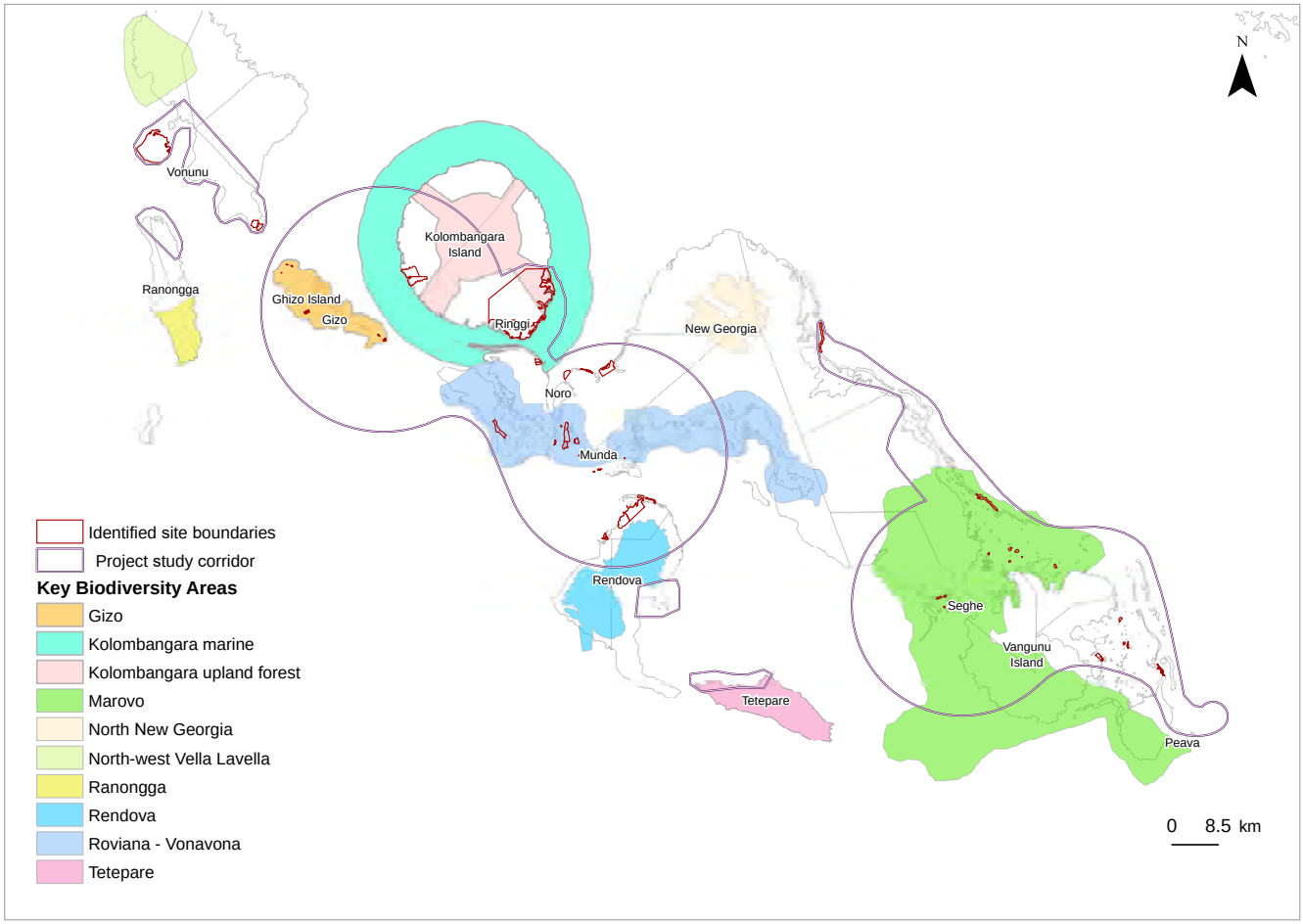
Mangrove communities and seagrass beds are prominent features of the inshore marine environment of the study corridor. As previously noted, 30 of the 38 species of mangroves known to occur in Solomon Islands are also found inshore around the estuaries of the main watercourses on the larger islands. They frequently form the seaward boundary of many of the inshore islands. Fourteen of the 30 species are endemic to Solomon Islands. These mangrove communities occupy about 650 km², with 120 km² within the study corridor (Warren-Rhodes et al. 2011). Mangroves are critical components of the marine/terrestrial interface ecosystem. They provide various ecosystem services, including nursery areas for many fish species of commercial and conservation significance, and are among the most nutrient-productive ecosystems in the world with very high biomass turnover. They regulate tidal movement and the impact on foreshores from storm surges and cyclonic waves. They also provide a filter/buffer capacity for nutrients and sediments from terrestrial origins directly entering the inshore waters.

Throughout the world, mangrove systems have rapidly diminished as coastal development and land degradation continue to affect these communities. Within the study corridor, these factors have had minimal wide-scale impacts on mangroves as a community and the effects have so far been restricted to smaller, site-specific disturbances, such as clearing for a boat ramp or landing area.

Similarly, of at least 100 km² of seagrass meadows mapped in Solomon Islands, over 100,000 hectares are estimated to be within the inshore marine ecosystems of Western Province, with a significant proportion represented within the study corridor (McKenzie, L, Campbell, S and Lasi, F 2006).

Key biodiversity areas of Western Province, as developed by the Key Biodiversity Partnership, are displayed in Map 10. In terms of tourism, there are no specific provisions in national and/or provincial policies related to the management of key biodiversity areas. Nonetheless, tourism developers can integrate existing policies into their tourism planning and operations to mitigate potential development risks to these areas (see section 6.1.1).

Map 10: Key Biodiversity Areas in Western Province



3.6.7 CORAL HARVESTING

A common practice observed during the field inspections is coral (predominantly dead) and sand harvesting. Local communities harvest coral heads, aggregates, and sand from the marine environment for use as construction, fill, and paving materials. In a 2015 study, Albert et al. interviewed coral-reef users in Western Province (Saeraghi and Paelonghe) and Central Province (Leitongo and Hagalu) and found that local communities historically used coral-based products for construction and lime for betel nut. There is, however, an increasing demand from local businesses to purchase their coral sand, rubble, and stone for the purpose of land reclamation (Albert, et al. 2015). In comparison to the Central Province, the level of coral extraction in Western Province is still lower (Albert, et al. 2015).

The impact of this activity could not be determined because of limited data on the status and/or state of coral reefs in Solomon Islands, but it may exacerbate marine biodiversity threats, alter habitats and coastal processes, and reduce the resilience of the ecosystem.

3.6.8 CONSERVATION-SIGNIFICANT MARINE SPECIES

The conservation status of many marine species is relatively well understood because of the fisheries sector's high commercial value to the SIG and the importance of artisanal fishing to local villages and settlements. There is, however, no government legislation that prescribes specific protected marine species or ecosystems, devolving the identification of conservation status to external parties, including the IUCN and numerous NGOs.

The IUCN Red List for Solomon Islands identifies 274 terrestrial and marine species of a threatened conservation-risk status including "extinct," "critically endangered," "endangered," "vulnerable," and "conservation dependent." Of these 274 species, 244 are marine species, including corals (nearly all are listed as vulnerable), sea turtles (endangered), marine mammals (dugongs and cetaceans), and various fish including many sharks, rays, and larger sedentary fish species such as groupers (IUCN 2020). Nearly all of these species use the wide variety of marine habitats represented within the study corridor.

A further 2,946 species are listed for Solomon Islands in lesser conservation-significant categories:

- **Near threatened:** 221 species
- **Least concern:** 2,550 species
- **Data deficient:** 175 species

Of the above, 1,065 are marine species, comprising predominantly coral and fish species. Nearly all mangroves recorded in the study corridor are listed under IUCN categories. Threatening processes identified by various IUCN conservation expert panels include commercial and artisanal overfishing, coral harvesting, sediment, and nutrient runoff from land-clearing/logging operations, climate change/coral bleaching, and sea-level changes.

3.6.9 ESTUARINE CROCODILE

The estuarine crocodile (*Crocodylus porosus) i*s a widely distributed pantropical species found in marine, estuarine, and freshwater habitats between India and the central Pacific, including Southeast Asia, Australia, Melanesia, and Pacific Islands. In nearly all areas, the estuarine crocodile, along with most other crocodile species, has been commercially hunted for skins. The intensity of hunting, particularly since the 1950s, had severely reduced its populations in many areas, leading to its extinction in some localities. The estuarine crocodile was listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the SIG, as a signatory to CITES, banned the hunting of estuarine crocodiles and export of crocodile skins in 1993.

Subsequently, the number of estuarine crocodiles (there is only one species in Solomon Islands) increased dramatically, particularly following a gun ban in 2003. Human encounters with crocodiles became more frequent (Hviding 2018), so the Solomon Islands National Biodiversity Strategic Action Plan 2016–2020 identified the need to develop a management plan for estuarine crocodiles. The Asian Development Bank funded a crocodile study in 2018 through WorldFish, which surveyed 234 villages throughout Solomon Islands and recorded 225 attacks (83 fatal) within the previous decade (van der Ploeg et al. 2019).[21]

The WorldFish report, through systematic interviews with villagers, local police, and conservation organizations, identified no preferential pattern in habitats, localities, or human activity type in attacks by estuarine crocodiles. Attacks were recorded in Gizo harbor, on sandy atoll beaches, on coral reefs, in villages, in rain-forested catchments/freshwater rivers, mangroves/estuaries, and in freshwater lakes. Divers, fishermen, people canoeing on rivers, children swimming in front of their villages, and people going to the water for ablutions were all attacked. There was no particular activity (except proximity to water), higher-risk areas, nor habitats that favored crocodile attacks. Interviewed villagers said no matter where they were, what they were doing, or whether it was day or night, they simply needed to remain vigilant and take preventative measures to minimize the risks of crocodile attacks. The physical and village surveys supporting the WorldFish report concluded that the estuarine crocodile is a ubiquitous species in Solomon Islands: widespread, highly mobile, and may be found in any habitat at any particular time.

With reference to Western Province, the following table is adapted from Annex 2 of the WorldFish 2019 report and estimates the number of estuarine crocodiles, both sub-adults and adults, in various localities.

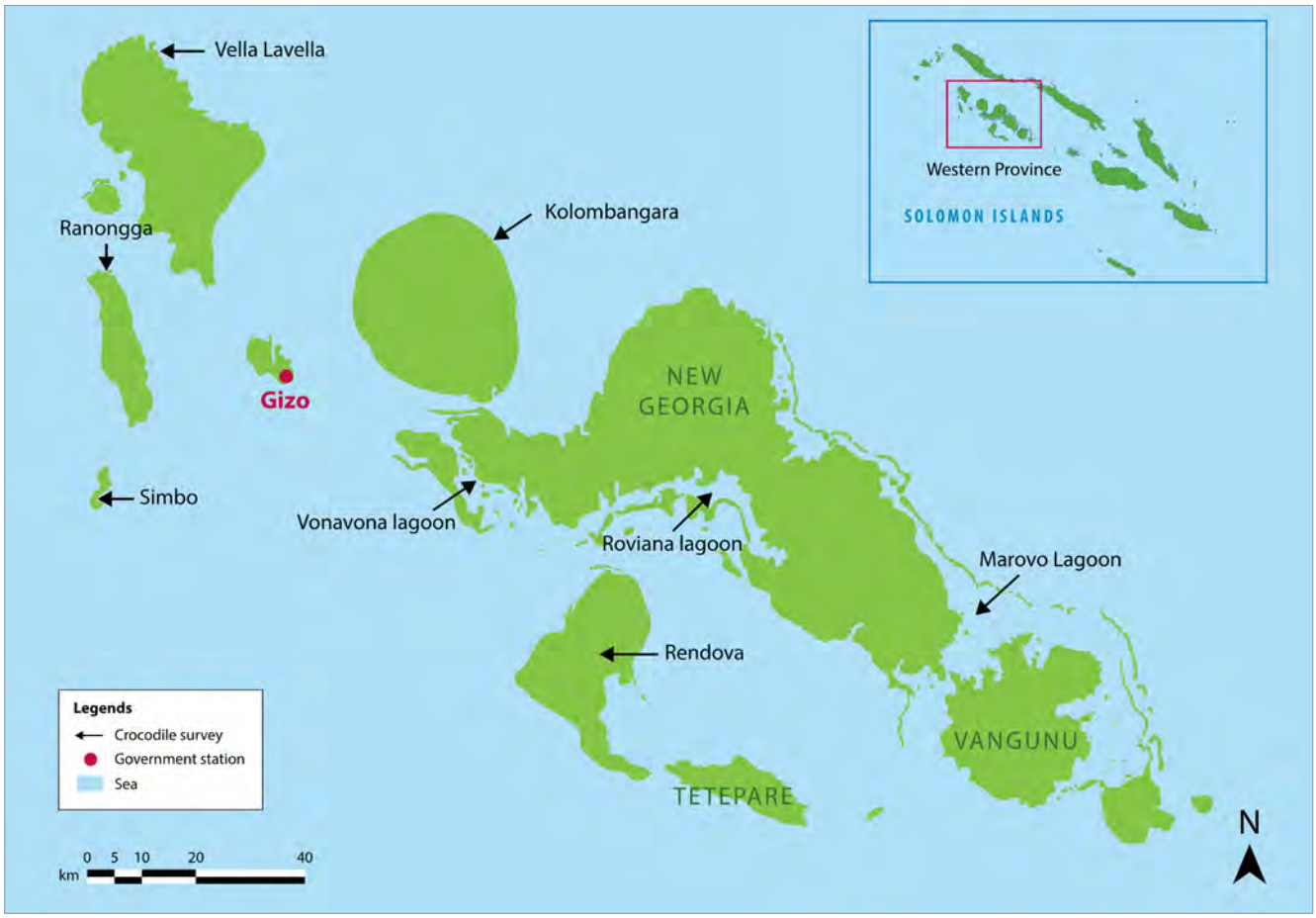
21 Van der Ploeg J, Ratu F, Viravira J, Brien M, Wood C, Zama M, Gomese C, and Hurutarau J, Modified from Annex 2 of *Human-Crocodile Conflict in Solomon Islands*, Penang, Malaysia: WorldFish, Program Report: 2019–02, 37.

Table 5: Estimated Estuarine Crocodile Population in Western Province[22]

Area	Estimated Number of Estuarine Crocodiles (Range)	
	Sub-adults	Adults
*Vella Lavella**	40–60	20–30
Ranongga	40–50	10–20
Simbo	30–45	10–20
Kolombangara	20–70	20–35
*Vonavona Lagoon**	40–80	25–35
*Roviana Lagoon**	50–75	30–50
*Marovo Lagoon**	40–60	20–30
*Rendova**	40–60	25–35

The survey areas are shown in Map 11.

Map 11: Estuarine Crocodile Hotspots in Western Province[23]



22 These numbers are derived through triangulation by village and area and corrected by removing unrealistic observations based on numbers and sizes. Areas indicated with an asterisk (*) were also visited by Messel and King (1990).

23 Van der Ploeg J, Ratu F, Viravira J, Brien M, Wood C, Zama M, Gomese C, and Hurutarau J, Modified from Annex 2 of *Human-Crocodile Conflict in Solomon Islands*, Penang, Malaysia: WorldFish, Program Report: 2019–02, 37.

The likely presence of crocodiles occurring within or adjacent to any of the 70 potential investment sites was considered with respect to the findings of the WorldFish report, village surveys, and the known ecology of the estuarine crocodile (Messel and King 1990).

The conclusion is that estuarine crocodiles are a ubiquitous species across the study corridor and a potential hazard at all potential investment sites. Similar to sharks, stonefish, cone shells, and other marine/estuary hazards in the corridor, estuarine crocodiles are an elevated operational hazard, not a determinant, in site assessment. There is no evidence to support any one locality or habitat type featuring more in attack records in Western Province than in other localities.

Photo 1: Estuarine Crocodile Photographed on Coral Reef Around Russell Islands in Central Province, Solomon Islands[24]

3.7 BIOGEOGRAPHICAL CONTEXT

3.7.1 MARINE

The islands of Western Province lie parallel and adjacent to the New Britain Deep Sea Trench, representing the closest point of Solomon Islands to this seismically active area. Several submarine seamounts, periodically active as deep-sea volcanoes, are also located along this trench, the largest being Kana Keoki Seamount, about 26 km offshore to the west of Rendova Island. The largest islands in Western Province are of volcanic origin and have developed complex fringing reef and intertidal wetlands, including extensive mangrove areas; they are unique in having formed on primarily basaltic substrates in various locations around these larger volcanic islands. Elsewhere in the province, the tidal patterns and currents generated by the complex island biogeography has resulted in diverse areas of coral atolls, barrier reefs, ribbon reefs, deep water shoals, and shallow-water seagrass meadows.

The juxtaposition of cold-water, deep-sea upwelling with warm-water, complex reef structures and inshore terrestrially influenced lagoon systems has given rise to a diversity of marine biological features of global significance. Within the study corridor, examples of these areas include the Saeraghi Reef Systems (see Map 12) on the northern tip of Ghizo Island and the ribbon reef systems extending in a 70-km-long band offshore to the east of Vangunu and Roviana islands. The diversity of fish life and coral forms in the Saeraghi Reef Systems is one of the highest in the world (Allen 2007).

The study corridor is part of a large eco-region known as the "Coral Triangle," which includes the Philippines, Malaysia (Sabah), Indonesia, Timor Leste, Papua New

24 Solomon Islands Dive Expeditions 2020.

Guinea, and Solomon Islands. The Coral Triangle is regarded as the global epicenter of marine biodiversity (Vernon et al. 2009). Within the triangle, the contribution of the high diversity of marine life in Solomon Islands is delineated separately, with the country included in the regional Bismarck Solomon Seas Eco-region covering northern New Guinea, eastern Papua New Guinea islands, and Solomon Islands (up to Makira Province).

3.7.2 TERRESTRIAL

The terrestrial biogeography of Solomon Islands shares many attributes with the Bismarck, Trobriand, Admiralty, and D'Entrecasteaux archipelagos surrounding the Solomon Sea. Primarily, they represent the peaks of ridges up-thrust as the result of tectonic plate movement and include islands formed through volcanic activity—some of which retain remnant volcanoes, such as Mount Veve on Kolombangara Island. Some landforms, such as coral atolls, are purely a result of marine island-building processes, giving rise to coralline-based islands ubiquitously distributed throughout the corridor but more prevalent in the lagoons between the larger islands, particularly between Vonavona and Kohinggo islands. A notable feature of landforms in Western Province is the marked altitudinal variation across the islands, with the highest elevation (Mount Veve) exceeding 1,700 m and several other peaks, mostly on New Georgia and Rendova islands, exceeding 900 m. A unique feature of the province's island uplands is the demarcation of cloud forests at altitudes typically hundreds of meters lower than those found on the mainland of Papua New Guinea or tropical Australia, where cloud forest starts at around 900 m above sea level. On Kolombangara Island, unique cloud forest begins at as low as 400 m above sea level, a physiographic oddity unique to island biogeography within the Pacific. Smaller areas of this cloud forest persist also on New Georgia and Rendova islands within the study corridor.

Solomon Islands is part of a recognized Eastern Melanesian Islands Biodiversity Hotspot characterized by a unique biodiversity determined by island biographical aspects regarding island size, landform processes, topographical variability, and degree of isolation from mainland ecological interactions (Diamond, E. and J. Mayr 2001).

A defining feature of these biogeographical interactions is that biodiversity indices, such as the number of flora and fauna species, are not particularly high per se, but the level of endemism, or species unique to Solomon Islands, is very high on a pro-rata basis when compared with the overall biodiversity count for the islands.

While general information on Solomon Islands provides an overview of the relative importance of the biodiversity on the international stage, much of the terrestrial environment remains understudied and poorly documented. For example, a bat species presumed extinct for many decades—the New Georgia Monkey-Faced Bat, *Pteralopex taki*—was rediscovered on Kolombangara Island in 2015. Its presumed extinct status was a function of limited research and understanding, rather than its actual population-conservation status.

This remains applicable across the study corridor. Specific information on terrestrial biodiversity values is mostly limited or absent and only site-specific detailed studies, such as the one undertaken for the presumed extinct bat, will improve the biodiversity knowledge of Western Province. Within the corridor, four key terrestrial communities are particularly sensitive based on-site studies and available information:

- Forests that are above a 400 m altitude and include cloud forests and their unique species assemblages (flora and fauna), notably on Kolombangara Island
- Small island communities on coralline substrates – which are widely distributed throughout the corridor – where there is limited to no disturbance evident
- Any primary coastal lowland forest, but nearly all these areas have been logged and representative areas are restricted to limited localities such as on Tetepare Island
- Freshwater wetlands and the interface with intertidal communities, such as mangroves, but they remain rare, poorly understood, and relatively undisturbed on New Georgia and Vangunu islands

3.8 NATURE-CONSERVATION AND RESOURCE-MANAGEMENT INSTRUMENTS

3.8.1 LEGISLATIVE MECHANISMS

Two key legislative mechanisms provide instruments to establish resource and conservation-management areas in Solomon Islands: the *Fisheries Management Act 2015* (superseding the repealed *Fisheries Management Act 1998*) and the *Protected Areas Act 2010*.

The *Fisheries Management Act 2015* concerns the conservation, management, and development of fisheries and marine resources. The law allows the creation of Locally Managed Marine Areas (LMMA), where the local communities decide the management policies and principles as well as voluntarily undertake the day-to-day management of these areas. They are the first step in establishing formal management plans and subsequent gazettal of LMMA as Marine Protected Areas (MPA), which afford more legal recognition and management rights to the communities than LMMA. Gazettal is a process of formal notification and assessment of proposed community management plans for particular nominated areas before the government can designate them as MPA. But the *Fisheries Management Act 2015* has various stages of gazettal and designation, which create a lot of confusion for the actual status of nominated LMMA or MPA.

The *Protected Areas Act 2010* allows the creation of Community-Based Management Areas (CBMA) with a greater emphasis on biodiversity and resource conservation compared to LMMA. CBMA have more legal rights and protection than LMMA; they are the precursor to having an area formally gazetted as a Protected Area under this Act, which offers the highest degree of legal protection under Solomon Islands legislation.

3.8.2 PROTECTED AREAS IN THE STUDY CORRIDOR

Protected Areas may be established under both the *Fisheries Management Act 2015* and the *Protected Areas Act 2010*. While the terminology is the same, the legal basis and conservation principles vary greatly for each. An MPA designation under the *Fisheries Management Act 2015* is a mechanism to implement fisheries management plans in a particular area. Conservation benefits are an outcome of managing fisheries in the area but not the main reason for the designation, which is to protect village or artisanal fishing rights from external commercial exploitation. There are six gazetted MPA (formally notified with approved management plans) under the *Fisheries Management Act* within the study corridor, but none have been formally designated and legally inscribed under the act at the time of this writing. All of them have management measures agreed to by local communities, but they are administered and monitored either through the Ministry of Fisheries and Marine Resource (and/or their provincial government representatives) or accredited external agencies including WWF, WorldFish, and incorporated community bodies.

A Protected Area under *Protected Areas Act 2010* covers both marine and terrestrial ecosystems. The act sets out the process for landowners to formally protect their land from commercial logging or mining, and other uses of the land will be subject to the terms of the management plan established for the land. A community or organization needs to apply to the Director of Environment for their site to be declared a Protected Area. The application should include a management plan and scientific studies to prove that the area is significant in terms of biodiversity and natural resources for the community, as well as an estimated budget for the area's management, an agreement by all customary landowners, and a map outlining the boundary and size of the site.

The Director of Environment will review the application and make recommendations to the Minister. The Minister shall consider whether:

- Conservation objectives of the proposed Protected Area are identified and in accordance with sound conservation practices
- Boundaries of the area are accurately identified or otherwise demarcated and surveyed
- Consent and approval are obtained from persons having rights or interests in the area
- An appropriate conservation, protection, or management plan is developed to ensure that the conservation objectives of the area will be achieved

The Protected Areas Committee declared the country's first Protected Area in 2016. Under the *Protected Areas Act 2010*, there are now three designated Protected Areas: the Arnavon Community Marine Park, the Sirebe Forest Conservation Area, and the Siporae Tribal Forest Conservation Area. Western Province and the study corridor have no Protected Areas, although proposals to gazette Kolombangara and Tetepare islands as Protected Areas are underway.

3.8.3 COMMUNITY-BASED MANAGEMENT AREAS IN THE STUDY CORRIDOR

The majority of communities in Solomon Islands (and within the study corridor) manage their resources as LMMA established and administered under the *Fisheries Management Act 2015* or as CBMA implemented under the *Protected Areas Act 2010*. LMMA were originally created under the repealed *Fisheries Act 1998* and many of them were not renewed by the communities when the *Fisheries Management Act* was passed. Since 2015, 24 LMMA have been established within the study corridor, of which two have been legally gazetted by the Ministry of Fisheries and Marine Resources while others are awaiting gazettal; another LMMA is currently proposed.

Under the *Protected Areas Act 2010*, CBMA can be established in both marine and land areas as true nature-conservation reserves with biodiversity maintenance as the key management principle. There is one CBMA gazetted within the study corridor: a 19,400-hectare area of Kolombangara exceeding 400 m above sea level and managed as a conservation reserve by the Kolombangara Island Biodiversity Conservation Association. Another CBMA proposed for Tetepare Island (managed by the Tetepare Descendants Association) includes land and sea areas within the study corridor. Several LMMA established under the *Fisheries Management Act 2015* are trying to become Protected Areas under the *Protected Areas Act 2010* to gain greater legal recognition and protection of biodiversity assets.

In the following table, "gazetted" means a formal notification and management plan has been accepted, "established" means a management plan has been submitted and is being assessed, and "proposed" refers to sites where communities have registered a formal interest in submitting a management plan for gazettal. None have been elevated to a designated MPA or Protected Area status. Map 12 depicts the various protected and managed areas as identified in the Protected Planet database developed by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC and IUCN 2019).

Map 12: Protected Areas in Western Province (UNEP-WCMC and IUCN 2019)

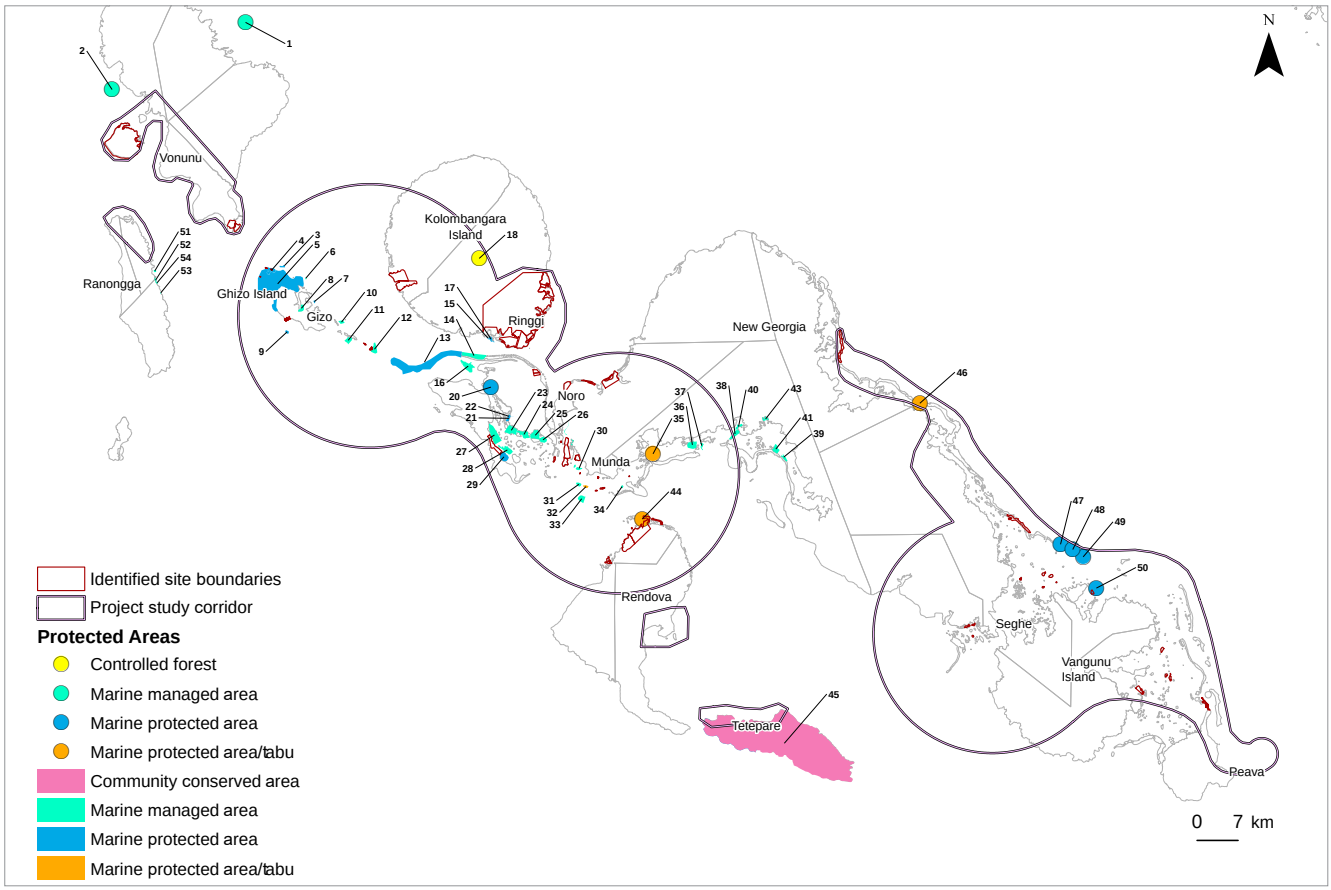


Table 6: Gazetted and Proposed Protected and Management Areas in the Study Corridor

Map ID	Management Area	Reserve Type	Status	Management Authority
1	Ladosama Reef	Locally Managed Marine Area	Established	Local village community
2	Jorio Marine Resource Management Plan	Locally Managed Marine Area	Gazetted under the *Fisheries Management Act*	Local village community
3	Varu North Reef	Marine Protected Area	Gazetted under the *Fisheries Management Act*	WWF, WorldFish, Gizo community
4	Njari Island	Marine Protected Area	Gazetted under the *Fisheries Management Act*	WWF, WorldFish, Gizo community
5	Saeraghi Reef	Marine Protected Area	Gazetted under the *Fisheries Management Act*	WWF, WorldFish, Gizo community
6	Hot Spot Reef	Locally Managed Marine Area	Established	Community
7	Pusinau Reef	Marine Protected Area	Gazetted under the *Fisheries Management Act*	WWF, WorldFish, Gizo community
8	Kogulavata Reef	Locally Managed Marine Area	Proposed	Community
9	Suvania Reef	Marine Protected Area	Gazetted under the *Fisheries Management Act*	WWF, WorldFish, Gizo community
10	Nusatupe Reef	Locally Managed Marine Area	Established	Community
11	Babanga Reef	Locally Managed Marine Area	Established	Community
12	Naru Reef	Locally Managed Marine Area	Established	Local village community
13	Grant Island, Patuparoana	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village community
14	Alale, Grant Island	Locally Managed Marine Area	Established	Community
15	Karikasi Reef	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village community
16	Niumala	Locally Managed Marine Area	Established	Community
17	Bakiha Reef	Locally Managed Marine Area	Gazetted under the *Fisheries Management Act*	Local village community
18	Kolombangara Forest Reserve	Controlled Forest	Proposed	Kolombangara Island Biodiversity Conservation Association
19	Kolombangara Island	Community-Based Management Area	Gazetted under the *Fisheries Management Act*	Kolombangara Island Biodiversity Conservation Association
20	Koqu Rua	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Community
21	Iriri Pasapasa	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village community
22	Lodu Hokata	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Community
23	Nazareti	Locally Managed Marine Area	Established	Community
24	Kinamara	Locally Managed Marine Area	Established	Community

Map ID	Management Area	Reserve Type	Status	Management Authority
25	Saika	Locally Managed Marine Area	Established	Community
26	Kida	Locally Managed Marine Area	Established	Community
27	Barasipo	Locally Managed Marine Area	Established	Community
28	Buni	Locally Managed Marine Area	Established	Community
29	Barivuto	Locally Managed Marine Area	Gazetted under the *Fisheries Management Act*	Local village community
30	Beta/Kandilae-Kindu	Locally Managed Marine Area	Established	Community
31	Kekehe	Locally Managed Marine Area	Established	Community
32	Dunde (Shark Point)	Marine Protected Area/*Tabu*	Established	Local village community
33	Dunde	Locally Managed Marine Area	Established	Community
34	Nusa Roviana	Locally Managed Marine Area	Established	Community
35	Sasavele/NB	Marine Protected Area/*Tabu*	Gazetted under the *Fisheries Management Act*	Local village community
36	Baraulu/Bule Lavata	Locally Managed Marine Area	Established	Community
37	Duduli Rereghana	Locally Managed Marine Area	Established	Community
38	Nusa Hope/Heloro	Locally Managed Marine Area	Established	Community
39	Ha'apai	Locally Managed Marine Area	Established	Community
40	Nusa Hope (Mangrove)	Locally Managed Marine Area	Established	Community
41	Olive	Locally Managed Marine Area	Established	Community
43	Kozou–Zone 1	Locally Managed Marine Area	Established	Community
44	Rendova Harbor	Marine Protected Area/*Tabu*	Gazetted under the *Fisheries Management Act*	Local village community
45	Tetepare	Community-Based Management Area/Marine Protected Areas	Proposed	Tetepare Descendants Association
46	Pipa/Kororo (Marovo)	Marine Protected Area/*Tabu*	Gazetted under the *Fisheries Management Act*	Local village community
47	Variparui Island	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village community
48	Petu Island	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village comxmunity
49	Vaininoturu Island	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village community
50	Vena Island	Marine Protected Area	Gazetted under the *Fisheries Management Act*	Local village community
51	Inuzaru Island	Locally Managed Marine Area	Established	Community
52	Jericho Reef	Locally Managed Marine Area	Established	Community
53	Niami Reef	Locally Managed Marine Area	Established	Community
54	Renjo Reef	Locally Managed Marine Area	Established	Community

3.9 SOCIAL ENVIRONMENT

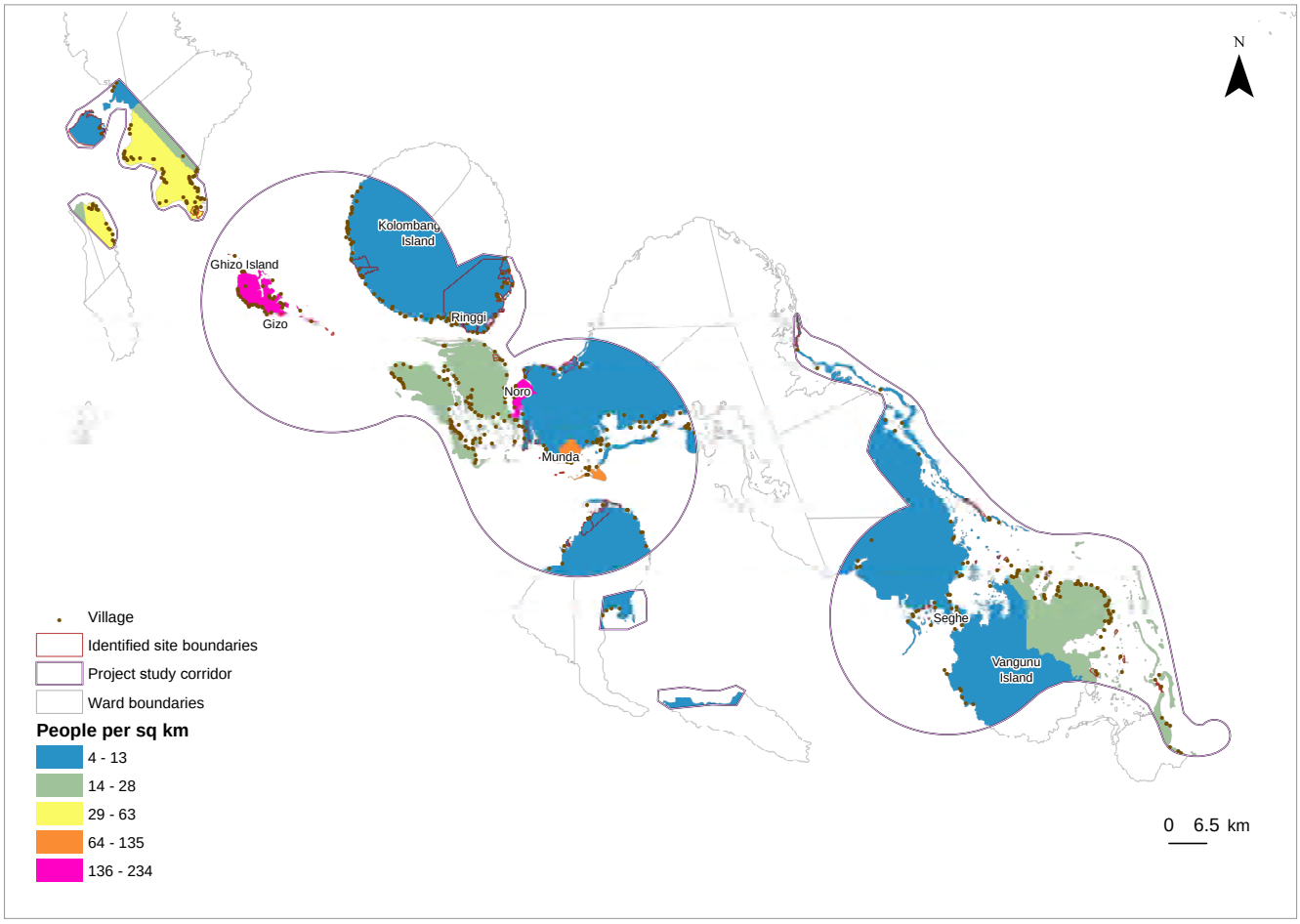
3.9.1 DEMOGRAPHICS[25]

In 2020, the total population of Solomon Islands was estimated at 694,000 (SIG: National Statistics Office 2020), with 78 percent classified as living in rural areas (Food and Agriculture Organisation of the United Nations (FAO) 2016). In Western Province, the total population in 2020 is estimated to be 99,000, with 87 percent living in rural areas (SIG: National Statistics Office 2020) and 48 percent of women in the entire population.

This population consists of about 14,000 households with an average size of 5.3 people. The median age in Western Province was 39.5 years in 2019.

Solomon Islands' average annual population growth rate between 2005 and 2015 was 2.2 percent with a population density of 20 inhabitants per km². Map 13 displays the population density across the corridor, showing most areas (except the urban centers of Gizo, Noro, and Vonunu as sparsely populated with the majority of settlements and villages located along the coast.

Map 13: Population Density and Location of Villages in Western Province



25 In this section, data from the 2009 Census—where it is the most up to date—has been used. More recent datasets from the Solomon Islands National Statistics Office and other national and international databases have been used where available and appropriate in all other cases.

Western Province had a total labor force (including all persons employed and unemployed) of 33,811 people (SIG: National Statistics Office 2009). The total number of people in paid employment was 17,031, which gives Western Province an employment-population ratio of 34 percent (for the population above 12 years of age), much higher than the national average of 23.7 percent (SIG: National Statistics Office 2009).

3.9.2 VULNERABILITY

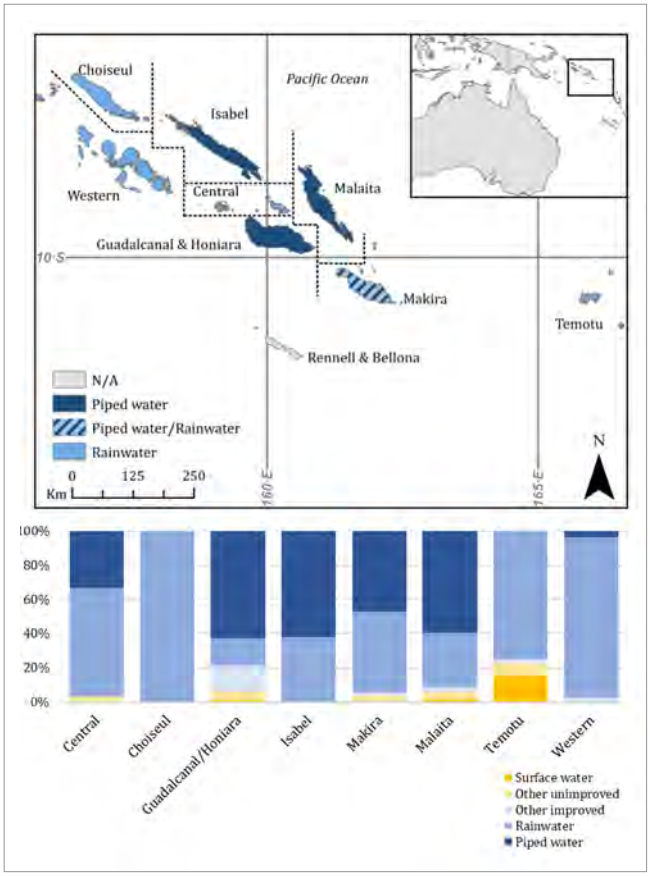
The vulnerability of the community is a measure of its resilience to impacts from the physical, social, and economic environment. Access to services and resources is likely to improve community resilience against external impacts such as natural hazards, sea-level rise, climate change, degradation, lack of social cohesion, and local economic fluctuations. The following indicators provide a measure of community access to key services and resources across Solomon Islands.

Access to Water, Energy, and Sanitary Services

Ninety-two percent of urban households and 55 percent of rural households in Solomon Islands has access to basic drinking water (Anthonj, et al. 2020). In Western Province, households still mostly rely on rainwater as their primary source of drinking water.

The main source of energy for lighting was kerosene lamps, used by 76 percent of all households. Only 12 percent of households were connected to the electric grid (see section 3.11 for more details). About 44 percent of households did not have access to a toilet facility, meaning neither a flush toilet, water-sealed toilet, or pit latrine (SIG: National Statistics Office 2009).

Figure 2: Main Drinking-Water Source in Urban Households in Solomon Islands by Province [%] (Anthonj, et al. 2020)



Education

Solomon Islands has an adult literacy rate of 76.6 percent (The United Nations Educational, Scientific and Cultural Organization 2009). In Western Province, 70 percent of the population has attained primary-level education, 19 percent has attained secondary education, and 4.2 percent has attained tertiary education. About 67 percent of men and 73 percent of women completed primary education; 20 percent of men and 18 percent of women above 12 years of age attained secondary education, while 4 percent of men and women received no schooling (attended preschool or only some primary education). Only 6 percent of men and 3 percent of women had tertiary education (SIG: National Statistics Office 2009).

In 2012, Western Province had 123 primary schools, 29 community high schools, five secondary schools, and six rural training centers. The education sector faces many challenges in the effective delivery of education services; one problem is not all children have access to all levels of education, particularly early childhood and secondary education. This problem is compounded by the dispersed nature of Western Province, making access to educational institutions difficult (Bennett, et al. 2014).

Poverty and Source of Livelihood

In 2015, an estimated 12.7 percent of the country's population lives below the poverty line; however, the incidence of poverty is far higher in Makira and Guadalcanal provinces. The percentage of people living below the basic-needs poverty line in Western Province was 6–7 percent and those below the food poverty line was 2–3 percent. The province accounts for between 5 and 10 percent of poverty in Solomon Islands. Poverty in the country is largely a rural phenomenon, with 87 percent of poor people living in rural areas (SIG: Solomon Islands National Statistics Office 2015b).

The poverty line in Solomon Islands varies significantly between provinces, with the cost of basic needs in Honiara being twice as much as most other provinces because of the higher cost of food and other goods. The cost of meeting basic needs in Western Province was less than half of that in Honiara (SIG: Solomon Islands National Statistics Office 2015b). The country has high costs of service delivery as a result of a small and geographically dispersed population.

The majority of the population is involved in subsistence or cash-crop agriculture, with less than a quarter involved in paid work. Agriculture and raw materials, including logging, accounted for 92 percent of exports, leaving the narrow-based economy vulnerable to shocks (Australian Department of Foreign Affairs and Trade 2019).

Education has an influence on poverty levels: about 40 percent of poor households have a family head not reaching six years of primary schooling. Data shows that the number of poor households declines with the head of the household attaining a higher level of education (SIG: Solomon Islands National Statistics Office 2015b).

The sale of fish, crops, or handicrafts was the main source of income for 55 percent of Western Province households (SIG: National Statistics Office 2009). Another 27 percent of household income came from wages or salaries. About 48 percent of households raised livestock and 83 percent engaged in fishing for both own consumption and sale of their catch (SIG: National Statistics Office 2009).

3.9.3 HEALTH AND NUTRITION

Life expectancy in Western Province is 69 years and the under-five mortality rate is 29 per 1,000 births (SIG: National Statistics Office 2009). In rural Western Province, access to food through gardening, fishing, and hunting is decreasing as local food production has significantly declined as a result of urbanization, depletion of natural resources, and increased access to cheap, poor-quality food imports. Such food imports have led to an increase in non-communicable diseases such as obesity, diabetes, heart disease, and associated health problems. Obesity is high in Western Province when compared to other provinces. The poor nutritional value of these foods is also leading to an increase in the numbers of children with stunted growth (Bennett, et al. 2014).

Total spending on healthcare in Solomon Islands in 2009 was estimated to be 5.4 percent of its gross domestic product, or around SB$313 million ($38.66 million). Health services in the country are provided through its nurse-led primary health-care system, with referral to doctors based in larger provincial towns as shown in table 7. This cost-effective system retains high numbers of nurses in provincial areas, with over 50 percent of health-care workers being nurses or nurse aides. Solomon Islands has a critical shortage of health-care workers, especially doctors, medical specialists, medical-laboratory staff, and radiologists (Hodge, Slatyer and Skiller 2015).

Table 7: Health Workforce Data for Solomon Islands (World Health Organization 2019)

Country	Year	Medical Doctors*	Nursing and Midwifery Personnel*	Dentists*	Pharmacists*
Solomon Islands	2018	n/a	21.642	n/a	n/a
	2016	1.937	n/a	0.468	1.195
	2013	1.873	19.937	0.473	1.313
	2012	1.546	17.371	0.396	1.097
	2011	2.013	17.858	0.665	0.813

*per 10,000 population

Western Province has one faith-based hospital, one provincial hospital (both within the central area of the study corridor), three area health centers, 23 rural health clinics, and 31 nurse-aid posts (Hodge, Slatyer and Skiller 2015). No health services are located on Vonunu, Tetepare, and Rendova islands (see Map 15). A list of health facilities and descriptions of services available at each are summarized in table 8. Some communities can only access medical facilities by boat during fine weather. Access to more specialized medical care is severely restricted and may require transport to Honiara or Gizo by plane or ferry.

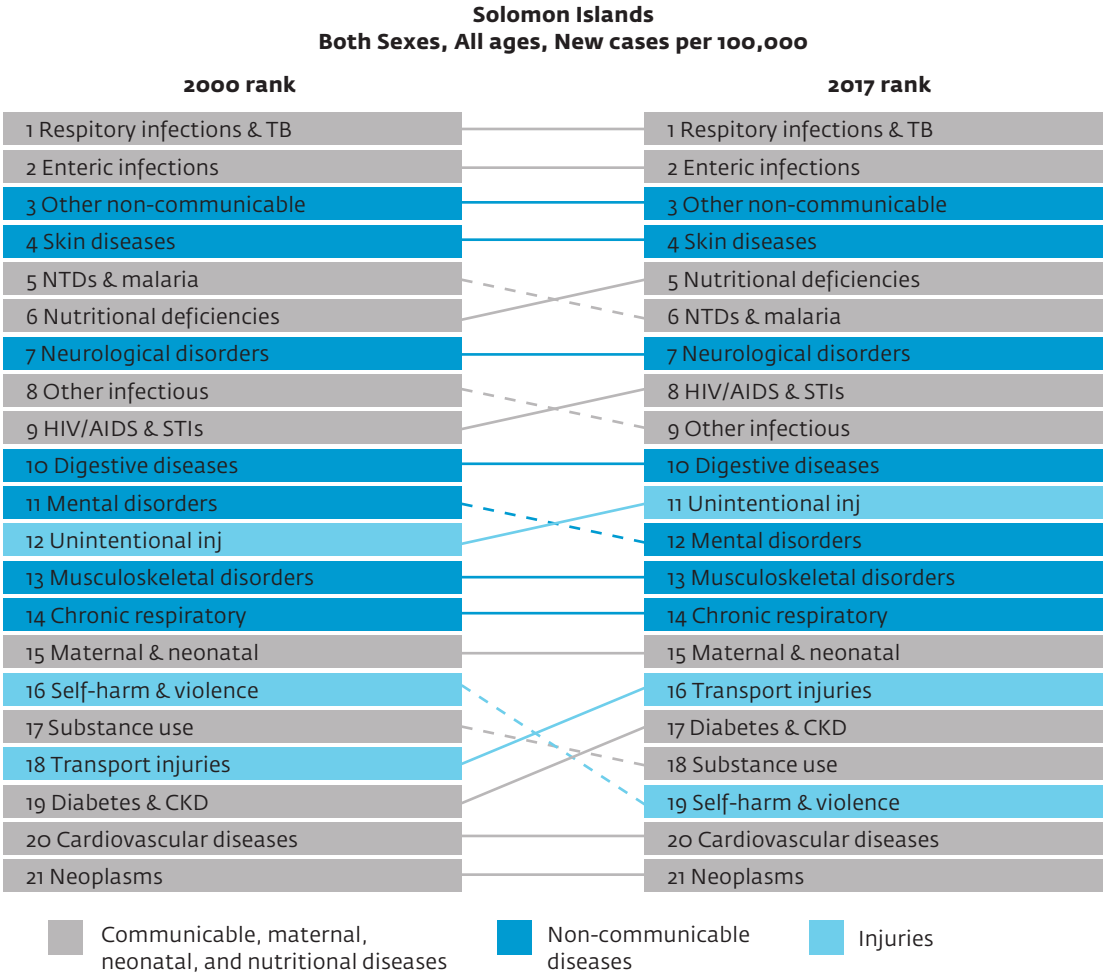
Table 8: Health Clinics Available in Western Province

Type of Facility	Number in Western Province	General Services Available at This Type of Facility[26]
Hospitals	1 – Gizo 1 – Munda (Private)	• Diagnosis and treatment of diseases and trauma • In-patient admissions for several types of cases, both short and long term • Surgical and specialist services • Anesthetic services • Basic dental clinic with resident services and visiting dental services • Access to doctors and specialists • Pharmacy dispensing and basic laboratory testing
Area Health Centers	3 – Public 1 – Noro (Private)	• Basic diagnosis and treatment of common diseases and trauma • In-patient admissions for several types of cases • Dental cases accepted • Access to doctors and visiting dentists • Pharmacy dispensing and basic laboratory testing
Rural Health Clinics	11 – Public	• Basic diagnosis and treatment of common diseases and trauma • Short-term in-patient admissions for specific cases only • Limited access to doctors • Pharmacy dispensing and basic laboratory testing
Nurse Aid Posts	12 – Public	• Basic diagnosis and treatment of common diseases and trauma • Short-term in-patient admissions for specific cases only • Limited access to doctors • Pharmacy dispensing and basic laboratory testing

26 For further detail on services provided at different facilities, visit: https://solomons.gov.sb/portal_map/

Although progress has been made to manage vaccine-preventable diseases, communicable diseases continue to account for a high proposition of disabilities in Solomon Islands. Infectious and emerging diseases continue to affect people in the country and pose a health security threat (World Health Organization 2012). Figure 3 shows that in 2017, neglected tropical diseases and malaria cases dropped 49 percent from 2000 (Institute for Health Metrics and Evaluation 2020). But a 7 percent increase was recorded in the incidence of HIV/AIDS and sexually transmitted diseases over the same period (Institute for Health Metrics and Evaluation 2020). The World Health Organization reported that the Solomon Islands National Health Strategic Plan for 2016–2020 looks at four key result areas: improving service coverage, improving service quality, building strong partnerships, and setting the foundations for the future. Despite the geographic challenges for service delivery, the country has made steady gains in reducing malaria morbidity and mortality and continues to achieve high coverage rates of immunization and births attended by skilled health workers (World Health Organization. Regional Office for the Western Pacific 2017).

Figure 3: Ranking of Incidence of Diseases and Injuries in Solomon Islands (2000 and 2017), New Cases Per 100,000 Persons (Institute for Health Metrics and Evaluation 2020)



3.9.4 GENDER BALANCE, GENDER-BASED VIOLENCE, AND CHILD WELFARE

As indicated in section 3.9.1, Western Province has a relatively even gender split like the rest of the country, with 48 percent of its population being women.

Cultural values and expectations of men and women in Solomon Islands are transmitted through well-defined gender roles (Bennett, et al. 2014). Stakeholder consultations in February 2020 found that women's roles typically include gardening, fishing, food collection, raising children, cooking, and cleaning.

The United Nations Development Programme Gender Development Index measures gender gaps by accounting for disparities between women and men in three dimensions of human development: health, knowledge, and living standards. Solomon Islands ranked 153 out of 189 countries (United Nations Development Programme 2020).

While the male literacy rate was 83.7 percent, it is only 69 percent for females in 2015 (SIG: Solomon Islands National Statistics Office 2015b). Localized census results show a similar pattern: women do not stay in school as long as men and are more likely to be illiterate.

The poverty risk for female-headed households (18 percent are headed by women) is slightly less than that for male-headed households (SIG: Solomon Islands National Statistics Office 2015b). The number of women in unpaid work is decreasing and more are getting paid work. Only 27 percent of women who earn money decide on how their earnings are spent, while the majority (56 percent) make joint decisions with their husband or partner. About 66 percent of married women participate in decision-making about their health care, household purchases, and visits to family or relatives, an improvement from 57 percent in 2006–2007 (SIG: Solomon Islands National Statistics Office 2015a).

Domestic violence remains a national issue. According to the Ministry of Women, Youths, Children and Family Affairs, around 64 percent of women (aged 15 to 49) who had been in a relationship reported experiencing physical and/or sexual violence by a partner (United Nations 2019). Australian Aid reported in 2008 that about 65 percent of women aged 15 to 49 had experienced sexual assault, but such figures were thought to be underreported. Among those surveyed, 37 percent experienced sexual violence before the age of 15, indicating gender and child violence are linked when examining prospects for change. The low societal status of women and children has affected their economic prospects as women are inhibited from fulfilling their capacity and most children do not attend school above the primary level (International Social Service Australia 2012).

Some of the reasons that restrict women from thriving in the workforce are discussed below:

- One reason for knowledge gaps between men and women is "period poverty": It is still uncommon for rural schools and villages to have toilets or facilities for young women to keep themselves clean during their menstruation cycles. As such, girls miss more school and fall behind quickly (Mohamed, et al. 2018). Sanitation practices are also basic, so girls do not get trained on how to use facilities outside home and are further limited as they seek formal employment.
- Consultation indicated that male and community expectations of women to provide food for the family can restrict them from seeking or continuing employment after having children, even if the father is also not working.
- Exploitation of women was also highlighted as an issue. Women are offered cleaning and cooking jobs that then transpire into sexual exploitation in some cases (Herbet 2007).

Domestic violence has a negative impact on children: witnessing domestic violence amounts to emotional abuse and parents engaged in a violent relationship are more likely to be harsh or negligent toward their children (United Nations 2019).

As a result of customary adoption practices and migration to urban areas, many children do not live with their biological parents, which may heighten the risk of neglect, abuse, and exploitation. Adolescents engage in alcohol and drug abuse, use the Internet inappropriately, and break the law (United Nations Children's Fund 2020).

To promote gender equality and address gender-based violence in the workplace, IFC launched a Waka Mere Commitment to Action initiative. As part of the initiative, IFC facilitated the establishment of domestic-violence contact teams within 15 participating Solomon Islands

companies, surveyed more than 6,500 of their employees, and published a report in 2019 on the impact of domestic violence on the workplace. Due to the issue's sensitivity, domestic-violence victims (both men and women) did not properly report the abuses and instead shared their experiences with colleagues, community-based counselling, or the police; a majority of those who reported to the police said there was little action or positive outcome (IFC 2019).

Solomon Islands enacted the *Family Protection Act 2014* in response to domestic violence, but this law only focuses on domestic violence and does not address workplace abuse or exploitation. There are no required grievance mechanisms to hold businesses accountable for abuse of women at work, which may increase the risk of exploitation. According to the IFC report, employees reported that employers are quite passive in providing support to victims of both domestic and workplace abuse. Stakeholder consultations held in February 2020 revealed that a community-based response was used in some cases of sexually abused women, but no legal or police action was taken.

Solomon Islands enacted the *Child and Family Welfare Act 2016* to reduce exploitation of children in the workplace. However, the country's minimum employment age is still set at 12 and the minimum age of criminal responsibility is set at eight, well below international standards (Humanium 2020). The Committee on the Rights of the Child recommends Solomon Islands to align its minimum age of criminal responsibility to 18 to ensure that all children benefit from the protection of juvenile justice. The country became a member state of the ILO in 1984 and has since ratified the eight ILO Fundamental Conventions, including the Conventions on Minimum Age (No.138) in 2013 and the Worst Forms of Child Labor (No.182) in 2012. Yet, sexual exploitation of child laborers and their risk of exposure to hazardous work remain concern areas (International Labour Organisation 2016).

3.10 CULTURE AND DIVERSITY

3.10.1 *KASTOM* CULTURE

In Solomon Islands, traditional culture, or *kastom,* constantly interacts with the introduced ways of life, especially modern institutions established post-European contact and affect each other.

The *Wantok* System

The *wantok* system is perceived as a way of helping family, relatives, and neighbors during times of need. This ranges from helping to pay school fees to acts bordering on corruption, such as offering a job or contract to a particular person because they are a *wantok.*

The *wantok* system has traditionally had many benefits, such as sharing and caring for the less fortunate as well as promoting community collaboration; however, the system can be misused for personal gains (Leua Nanau 2011) and impede development and progress, with revenue going to help *wantoks* (Lyabora 2016).

Cultural Leadership, "Big Man" Systems, and Chief Systems

Solomon Islands does not have a universal, identifiable traditional leadership. Two common leadership systems involve "Big Men" and chiefs (Sahlins 1963), with some villages being patrilineal and others matrilineal. There are many "Big Men" and chiefs who rule over limited geographical enclaves with relatively small populations.

The "Big Man" emerges as a leader of a group by proving his leadership capabilities in feasting or war, as an orator, or through other achievements such as gardening, exchange, or mastering certain forms of magic or healing. The position of "Big Man" is not hereditary but is acquired through personal efforts. One aspires to be a "Big Man" by accumulating wealth and distributing it, not only among one's immediate group but to others outside the clan, creating a network of allegiances and obligations that extend far beyond the village or even the island.

In chiefly societies, chiefs are very powerful in influencing public opinion in their communities. They may have an influence on which candidate people should vote for in elections and decide what their opinions should be on issues of national concern (Moore 2004). Stakeholder consultations in February 2020 noted politicians have been known to make use of their traditional and cultural ties to manipulate the electoral system through vote-buying or gifting to individuals and/or families.

3.10.2 ETHNICITY AND LANGUAGE

The 2009 Census (SIG: National Statistics Office 2009) indicated that Western Province had a very homogenous population composition, with 95 percent Melanesians and under 4 percent Micronesians. All other ethnic groups, such as Polynesians, Chinese, or Europeans, made up less than 1 percent of the population. Table 9 shows ethnic homogeneity across the study corridor, with the majority of people being Melanesian and some Micronesians in Gizo and Vonavona.

Melanesians are the predominant and indigenous inhabitants of Melanesia, an area extending from New Guinea to Vanuatu and Fiji, including Solomon Islands (Keesing and Kahn 2020). Most Melanesians speak one of the many Austronesian languages.

Micronesians are from the northwest area of the Pacific called Micronesia, north of Melanesia. The Gilbertese people are Micronesians.

Solomon Islands' official national language is English and Pijin is commonly spoken across all language groups. The country is linguistically diverse with the number of living languages and dialects ranging from 64 to 71 (Jourdan 2013). As a result of its British colonial history and arrival of Christianity, English became the official language and/or medium of education. Pijin is the lingua franca for everyday life, while tribes and/or local communities continue to use their vernacular language (Jourdan 2013).

Tribal Groups in the Study Corridor

The people of Western Province often follow a traditional hierarchy of leadership at the village level, with each tier having a defined responsibility in governing a community. A village or community may have several tribes, each with its own leadership structure and chief. In some areas of Western Province, there is a "house-of-chiefs" system, comprising various tribal chiefs spanning a particular island or region gathering to make decisions. There are 16 major languages spoken in Western Province, most of which are Austronesian languages believed to have originated from Southeast Asia about 8,000 years ago (Bennett, et al. 2014). There is limited data showing the distribution of tribes, and the impact of development may be unevenly distributed on certain tribes within the study corridor. No tribal groups have special mention in SIG policies.

3.10.3 SITES OF CULTURAL SIGNIFICANCE

The National Museum administers a small list of *tabu*, historic, and culturally significant sites; however, they are poorly documented and not actively protected or managed other than by local site occupiers and owners. Site-specific mapping has been undertaken by WWF on Kolombangara and Ghizo islands as part of the Ridges to Reef Conservation Plan (WWF-Pacific Solomon Islands 2018) and during site visits for this study; however, this data is still mapped at a wide scale and based on informal mapping techniques rather than ground-truth data. The *Western Province Preservation of Culture Ordinance 1989* lists protected sites in the province (Western Provincial Assembly 1989) but provides little detail on the sites, including no location coordinates of most protected sites. There appears to be no ongoing management of this list or oversight by the central or provincial government to ensure their protection.

Tabu sites, which were identified during site visits, through stakeholder consultations, and in the Western Province Preservation of Cultural Ordinance, are depicted on Map 14.

The word *tambu*, means forbidden, sacred, or "no entry." As indicated by WorldFish (2013), *tabu* (*tambu*) has been traditionally used to protect marine areas for the purposes of re-stocking of Trochus and other mangrove shellfish or marking the death of an important member of the community (grave or death site). *Tabu* areas are still used today for the protection of marine environments from overfishing. They may also refer to *kastom* sacred sites where traditional rituals are performed or skulls and shell money are stored; these sites may be marine or terrestrial (WorldFish 2013).

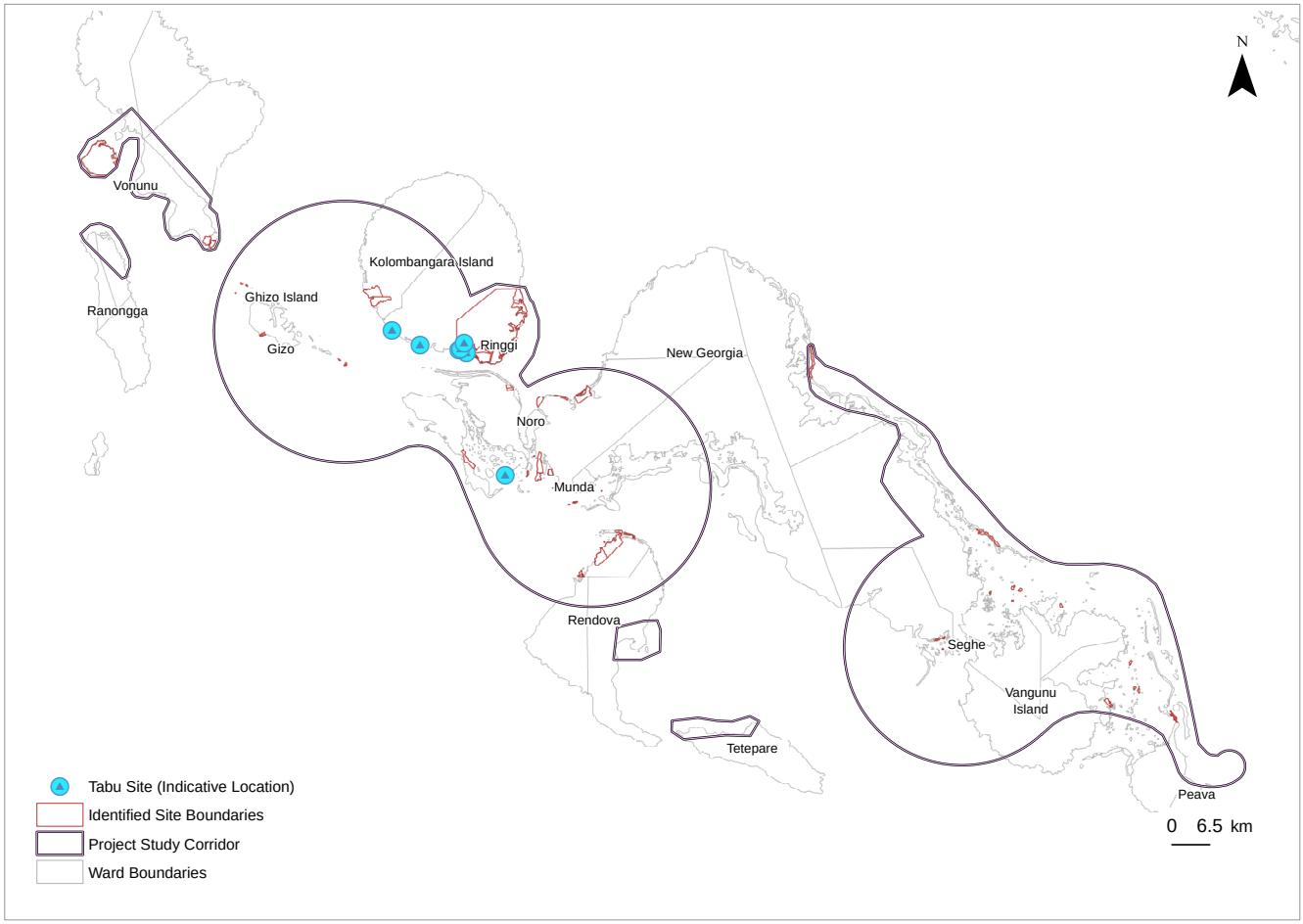
Cultural sites, *tabu* sites, reefs, and historic wrecks in water and on land are often tourist attractions. However, their mapping is only undertaken by the tour operators who frequent them and are not available publicly in a combined dataset (only the *tabu* sites witnessed during site visits and mentioned in the stakeholder consultations in February 2020 were mapped). Land occupiers, owners, and villages have different expectations on providing access to these sites, their maintenance, and the fees that should be charged for visits.

There is no set way for developers to approach these cultural sites as each has its own significance. Some must be completely avoided, others can be protected and visited by tourists for a fee, and some artefacts might be moved to make way for construction. Consultation with the local community is the key when dealing with these sites.

Table 9: Ethnicity of Western Province, by Ward in 2009 Census

Ward Name	Melanesian	Polynesian	Micronesian	Chinese	European	Other	Total population of the ward
Bilua	98.9%	0.0%	0.3%	0.1%	0.0%	0.6%	**4,290**
Buini Tusu	96.5%	1.2%	2.1%	0.0%	0.1%	0.0%	**2,965**
Central Ranongga	99.7%	0.1%	0.2%	0.0%	0.0%	0.0%	**2,514**
Dovele	99.8%	0.0%	0.0%	0.2%	0.0%	0.0%	**1,967**
Gizo	81.8%	0.7%	16.3%	0.5%	0.6%	0.1%	**7,177**
Iringgila	99.3%	0.2%	0.5%	0.0%	0.0%	0.0%	**2,833**
Kolombaghea	99.6%	0.0%	0.4%	0.0%	0.0%	0.0%	**1,783**
Kusaghe	98.9%	0.0%	0.0%	0.0%	0.0%	1.1%	**2,238**
Munda	97.7%	0.2%	1.7%	0.0%	0.1%	0.3%	**2,620**
Nggatokae	99.0%	0.6%	0.1%	0.1%	0.3%	0.0%	**3,050**
Nono	97.6%	0.2%	1.6%	0.1%	0.2%	0.3%	**3,610**
Noro	96.7%	1.1%	1.5%	0.1%	0.3%	0.2%	**3,365**
North Kolombangara	99.2%	0.5%	0.2%	0.1%	0.0%	0.0%	**2,278**
North Ranongga	99.4%	0.0%	0.2%	0.2%	0.2%	0.0%	**541**
North Rendova	99.0%	0.8%	0.0%	0.0%	0.2%	0.0%	**1,724**
North Vangunu	98.6%	1.0%	0.3%	0.1%	0.0%	0.1%	**2,661**
Nusa Roviana	98.3%	0.7%	0.6%	0.4%	0.1%	0.0%	**1,995**
Roviana Lagoon	99.2%	0.3%	0.3%	0.0%	0.0%	0.2%	**4,675**
Simbo	99.8%	0.2%	0.0%	0.0%	0.0%	0.0%	**1,782**
South Kolombangara	96.6%	0.1%	1.7%	0.8%	0.2%	0.7%	**4,023**
South Ranongga	99.6%	0.1%	0.1%	0.0%	0.0%	0.3%	**3,305**
South Rendova	99.2%	0.1%	0.1%	0.1%	0.0%	0.4%	**2,477**
Vonavona	83.7%	0.7%	15.2%	0.0%	0.1%	0.3%	**5,515**
Vonunu	98.8%	0.4%	0.3%	0.0%	0.0%	0.4%	**3,558**
Total	**95.8%**	**0.4%**	**3.3%**	**0.1%**	**0.1%**	**0.2%**	72,946

Map 14: Known Cultural Sites in Western Province[27]



Cultural Ceremonies and Festivals

Solomon Islands has limited public ceremonies, days of significance, and festivals. One of them is Independence Day, which is celebrated on July 7 and marks Solomon Islands' independence from the British Government. Celebrations are mainly family gatherings and sports, activities that may not be as open to tourists as other festivities. A parade is held in Honiara, in which the Solomon Islands police band performs, and tourists are welcome to attend (Solomon Islands Culture 2020).

Christian holidays (Christmas, Easter) are also celebrated in Solomon Islands, as the large majority of the population follow Christian faiths. These holidays give Christian travelers the chance to celebrate common beliefs and practices with people of Solomon Islands. On Easter, Honiara usually hosts a fun run, and for tourists, going to Mass is a wonderful way to get involved with the people. On Christmas, most locals will move back to their hometowns outside of Honiara or visit relatives in rural areas. Tourists are welcome to join events or gatherings that are usually held by churches and community halls (Solomon Islands Culture 2020).

The Lagoon Festival is held in October and is a cultural festival of the people of Roviana Lagoon. People from throughout Roviana Lagoon gather in Munda, Western Province, for this event of festivity and celebration. The festival includes traditional canoe races and a host of other competitions such as an open water swim (Tourism Solomons 2020).

27 The mapped *tabu* sites are based on empirical observations during site visits, from stakeholder consultations, and the WWF Ridge to Reef Study (WWF-Pacific Solomon Islands 2018) conducted in the Gizo and Kolombangara areas only. No other formal mapping of *tabu* sites or cultural sites has been uncovered to date. It is highly likely that more *tabu*, cultural and religious sites exist in the Western Province.

The Western Province Tourism and Culture Policy 2019/2021 has identified the following cultural events:

- Carver's Festival (Marovo region, third quarter of the year)
- Tomoko Festival (war-canoe building program in December)
- Ijo Maringi Festival (October)
- Simbo Organic Festival (December)
- Dughore Mini-Cultural and Organic Festival (November)
- Lagoon Festival (October)
- Lagoon Splash (July)
- Stunned Mullet Fishing Competition (late October-November)
- Cooking competition (December)

3.10.4 GILBERTESE

Undertaken between 1954 and 1971, the Gilbertese Resettlement Scheme resettled 2,753 Gilbertese to Solomon Islands. The scheme, led by the British Western Pacific High Commission that administered both Solomon Islands and Gilbert Island, aimed to address famines caused by low rainfall and poor soil on Hull and Gardner islands. The majority of Gilbertese were relocated to Ghizo Island in Western Province because Gizo and several surrounding islands had been registered as crown land by the British colonial authorities, as the land was unoccupied due to an intense period of tribal warfare in the 19th century. The crown land could therefore be allocated to the Gilbertese without causing conflict or disagreement (Tabe 2011). Yet, there has been animosity between Solomon Island tribes and the Gilbertese over historic claims to ownership or rights to access some sites in some areas of Solomon Islands (Tabe 2011) and during stakeholder consultations in Western Province. The Gilbertese have been occupying registered land scattered throughout Western Province and the study corridor, but most live around Ghizo and Kohinggo islands based on primary data for the identified sites. When comparing the ethnicity of enumeration areas against land tenure, the Gilbertese (Micronesian) communities might be more affected by tourism development, which would likely be targeting registered land as it provides clearer landownership. More Gilbertese occupy registered land than Melanesians (Solomon Islands natives).

Religion

Site visits and stakeholder consultations highlighted that most villages have religious buildings, such as churches. Data on areas or sites identified as having church presence is not publicly available.

The 2009 Census (SIG: National Statistics Office 2009) focusing on Western Province showed that more than 95 percent of its population follows a Christian faith. United Church had the highest number of followers, accounting for 39 percent of the population, while the two other largest religious denominations were Seventh Day Adventists (28 percent) and Christian Fellowship Church (15 percent). The remaining 18 percent was split between Roman Catholic (7 percent), South Sea Evangelical Church (3 percent), Church of Melanesia (3 percent), and all other denominations including atheists/non-religious (5 percent).

The three largest religious denominations in Western Province are outlined below:

United Church

The United Church was formed in 1968 as the Methodist Church united in Papua New Guinea and Solomon Islands. In 1996, the existence of one church covering two independent countries ceased and the United Church in Solomon Islands became an autonomous church of its own. Western Province remains the focal point for the United Church, which runs schools, a hospital, health clinics, education facilities, youth camps, and educational programs (World Council of Churches 2020). Its followers consider Sunday to be the day of rest.

Seventh Day Adventist

Seventh Day Adventist Church was first brought to Solomon Islands in 1914 and has since increased its following through schools, training institutions, and medical services. Seventh Day Adventist has now been active in Western Province for more than a century.

Its church members observe the Sabbath and do not work or trade on Saturdays. They consider it important for women and girls to wear conservative dresses, skirts, and modest shoulder-covering garments at all times. They also avoid eating and selling pork and water-purification species, such as crabs and clams.

Christian Fellowship of Christ

The Christian Fellowship of Christ is based mainly on the northern coast of New Georgia and has its headquarters at "Paradise," an area of restricted access and devoid of any public services. No tourism sites are located in this area. Followers of this group live in and around Munda and Noro of Western Province. There are two sub-groups within the Christian Fellowship of Christ Church with reported cases of conflicts among them.

3.10.5 CULTURAL CONFLICTS

While the population of Solomon Islands is largely composed of one ethnicity, there are various cultural diversities, including religion, tribal cultural practices, languages and dialects, historic immigration, and matrilineal and patrilineal societies.

For example, ethnic tensions on Guadalcanal rapidly escalated between 1998 and 2003. Many Guadalcanal people resented the influence of settlers from other islands and their occupation of undeveloped land in and around Honiara. The settlers, mostly from nearby Malaita, were drawn to Honiara and its environs because of comparatively greater economic opportunities. At the root of the tensions, particularly in Guadalcanal and Honiara, was illegal squatting, the use of customary land, the commercialization of land, rapid population growth, and weak management of urban growth. Violent clashes involving rival militant groups erupted, destabilizing Solomon Islands and undermining national institutions for more than four years. The militant groups were largely made up of unemployed youth, as a result of rapid urbanization, available for mobilization into competing militias (Tabe 2011).

In 2003, the Regional Assistance Mission to Solomon Islands was endorsed as a long-term commitment aimed at creating the conditions necessary for a return to stability, peace, and a growing economy. The mission was a partnership between Solomon Islands, Australia, and 15 contributing countries in the Pacific. Its military component was withdrawn in 2013 and development assistance was transferred to other donor programs, mainly Australia's, before the mission ended on June 30, 2017 (Australian Department of Foreign Affairs and Trade 2019).

From the stakeholder consultations, it was found that prospering businesses were often causing social-cohesion problems because of disparities in access to opportunities.

3.11 Infrastructure

This section discusses the availability and access to infrastructure such as transport, power, water, waste disposal, and telecommunications (see Map 15). Proposed infrastructure is also discussed and depicted in Map 16. Health infrastructure is described in section 3.9.3.

3.11.1 TRANSPORTATION SERVICES

Land

The road network in Solomon Islands is estimated to be 1,694 km (excluding logging tracks), of which only 127 km is sealed. One-fifth of the country's population has access to road networks, mainly in the provinces of Guadalcanal and Malaita. West Province only has about 150 km of road network, less than 20 km of which is sealed (SIG: Ministry of Development Planning and Aid Coordination 2013). This largely comprises the road from Noro to Munda and urban streets around Gizo and Munda. The majority of crossings over water courses are log bridges.

Sea

The country has two international ports: Point Cruz in Honiara and Noro in Western Province. About 90 percent of international freight management takes place in Honiara (SIG: Ministry of Development Planning and Aid Coordination 2013).

There are 120 wharves and jetties throughout Solomon Islands and 26 of them are in Western Province (Map 15 shows those that are within the study corridor). Ferries dock at Bunikalo, Gasini, Chea, Seghe, Ugele, Noro, Ringgi, and Gizo. Two ferries travel weekly from Honiara to Gizo. Although there are passenger ferries servicing these ports, they are rarely used by tourists because of the long trip duration (15 hours to Seghe, 19 hours to Munda, and 23 hours to Gizo) and a lack of facilities or services that meet international tourism standards (IFC 2018).

Most of these wharves and jetties suffer from a lack of maintenance and some are no longer in working condition. Many wharves are not connected to any road networks and small ray boats and dugout canoes are the main form of transport from these jetties to beaches and more remote villages. These forms of transport are the most prevalent manner in which Solomon Islanders commute locally and between islands. Stakeholder consultations highlighted the prevalence of accidents and fatalities from travelling in rough weather, and many boats do not carry basic safety equipment such as lifejackets or paddles.

There are two slipways in the country, both in the Central Province. A private slipway and marina is located in Liapari in Western Province.

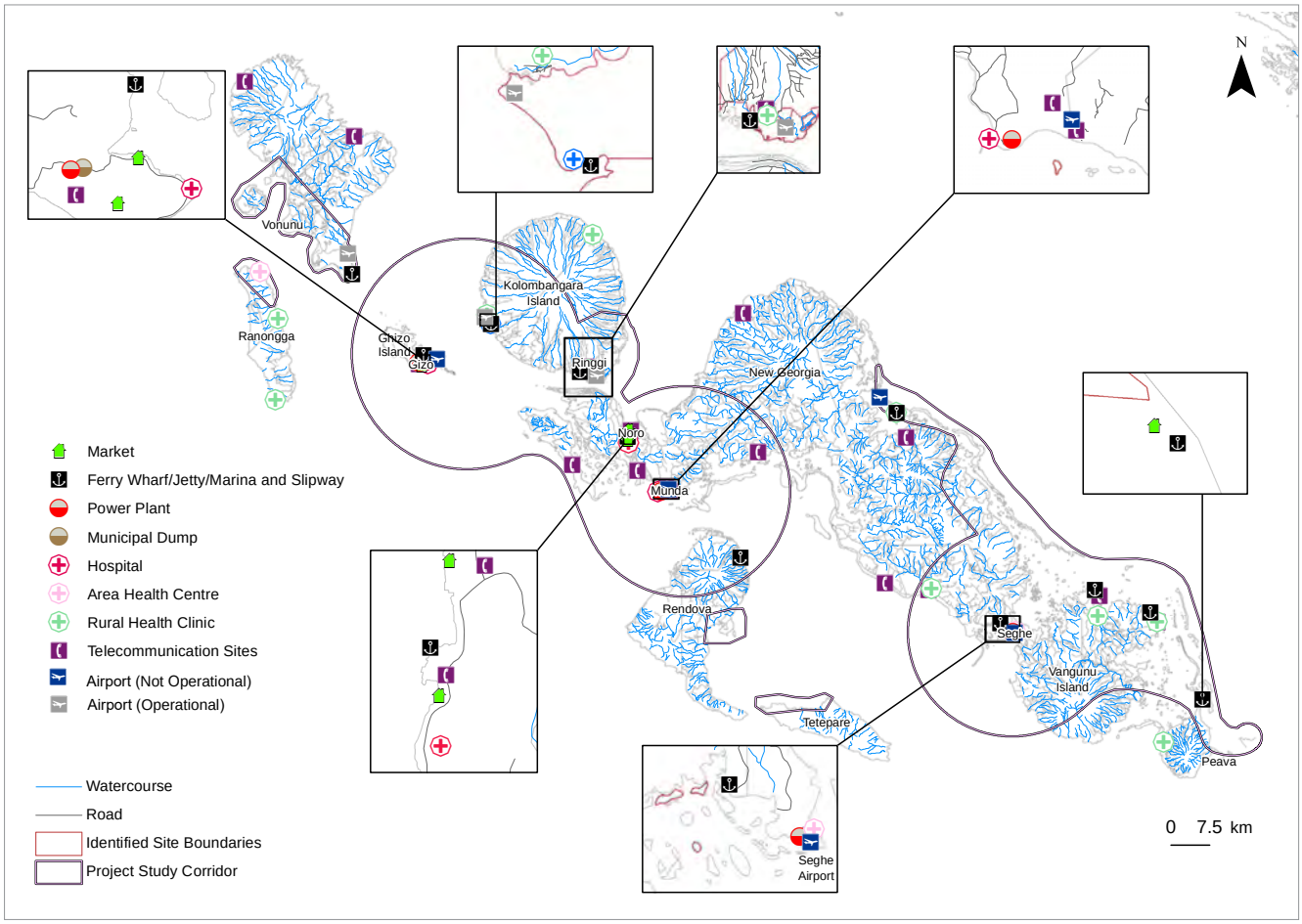
There are few cruising yachts, cruise ships, and liveaboards[28] in Western Province providing limited services. Locations for anchorages of larger cruise ships and sailing yachts in the province are also limited.

Access to the majority of identified sites is via ray boats or banana boats, beaching the boats on a patch of beach or coast not dominated by mangroves. Some sites have jetties in various states of repair, and they are used informally with the permission of the site occupiers. These jetties are made out of concrete, wood, and sometimes coral from the surrounding reefs.

Air

Solomon Islands has two international airports: one in Honiara and one in Munda (as of January 2020). There are 38 domestic airports/airfields in the country, but only seven of them are owned by the SIG. Within the corridor, domestic air services are available at Gizo, Seghe, and Ramata (private) as indicated on Map 15. Some unused WWII airstrips are located in the northern and southern parts of the corridor, including Vonunu, Kukundu, Villa Point on Kolombangara, and Nggatokae in the southeastern point of the corridor (closed in 2008 due to land disputes) (IFC 2018). More airstrips are reported at Ranongga and Vella Lavella, but they are understood to be outside the study corridor. There is a lack of comprehensive investment planning for the air transport sector as a whole (SIG: Ministry of Development Planning and Aid Coordination 2013).

Map 15: Existing Infrastructure in Western Province

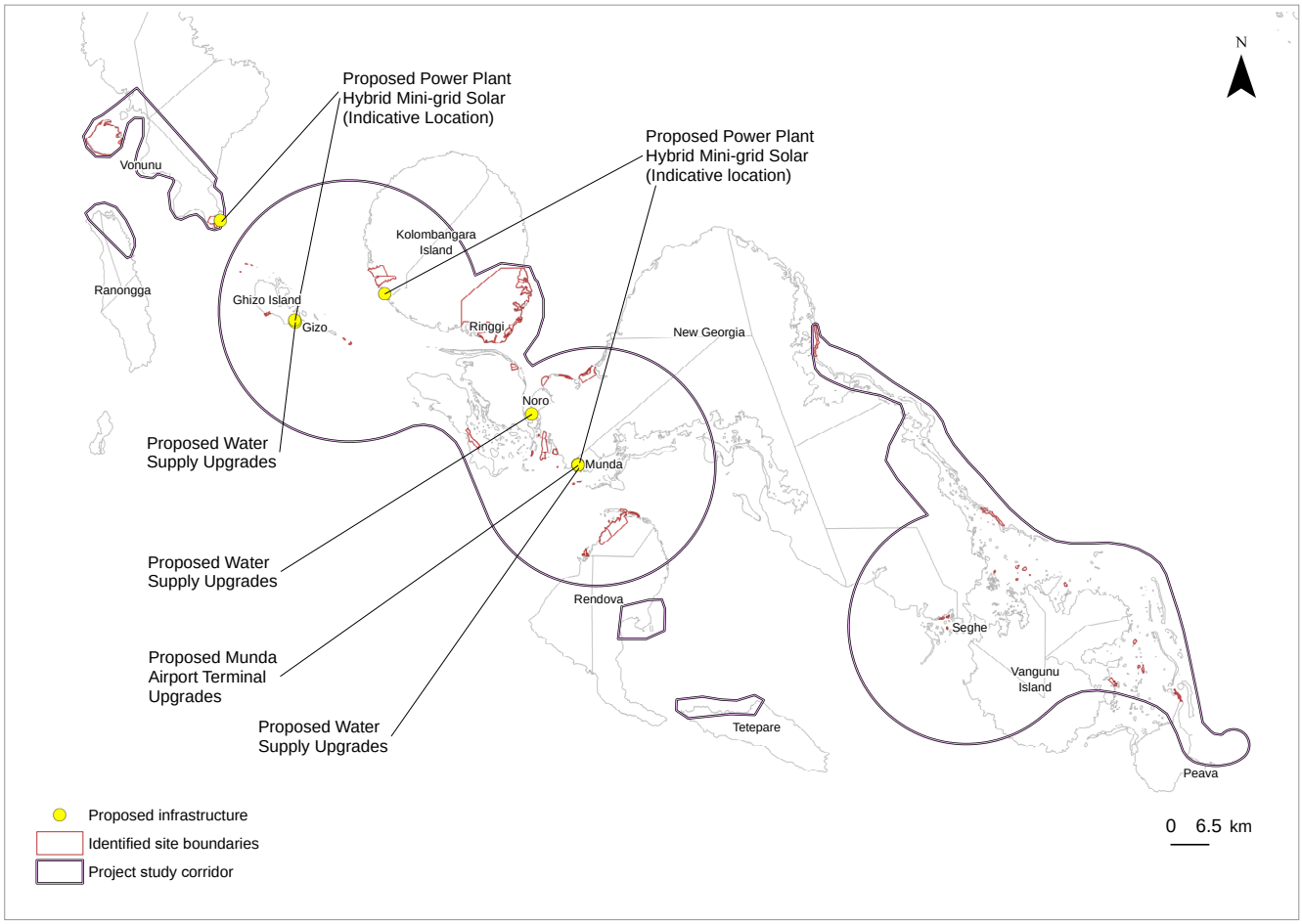


28 A liveaboard allows tourists to live on a boat or yacht for one to two weeks and takes them to different tourist sites, allowing them to snorkel, dive, or surf in the areas.

Stakeholder consultations revealed that the Seventh Day Adventist Church used to run an airline, Western Pacific Air Services, at Kukundu in the early 1990s to provincial areas including Kolombangara Island, providing a useful service to transport people rurally. It was later shut down because of competition with the national carrier, Solomon Airlines.

The World Bank is supporting the SIG with the development of a new international terminal at Munda. Construction is scheduled to commence in 2021. Stakeholder consultations also identified privately funded plans to reopen disused airstrips or develop more, such as near Liapari, within the corridor. These are not indicated on Map 16 as their status of planning has not been formally confirmed.

Map 16: Proposed Infrastructure in Western Province[29]

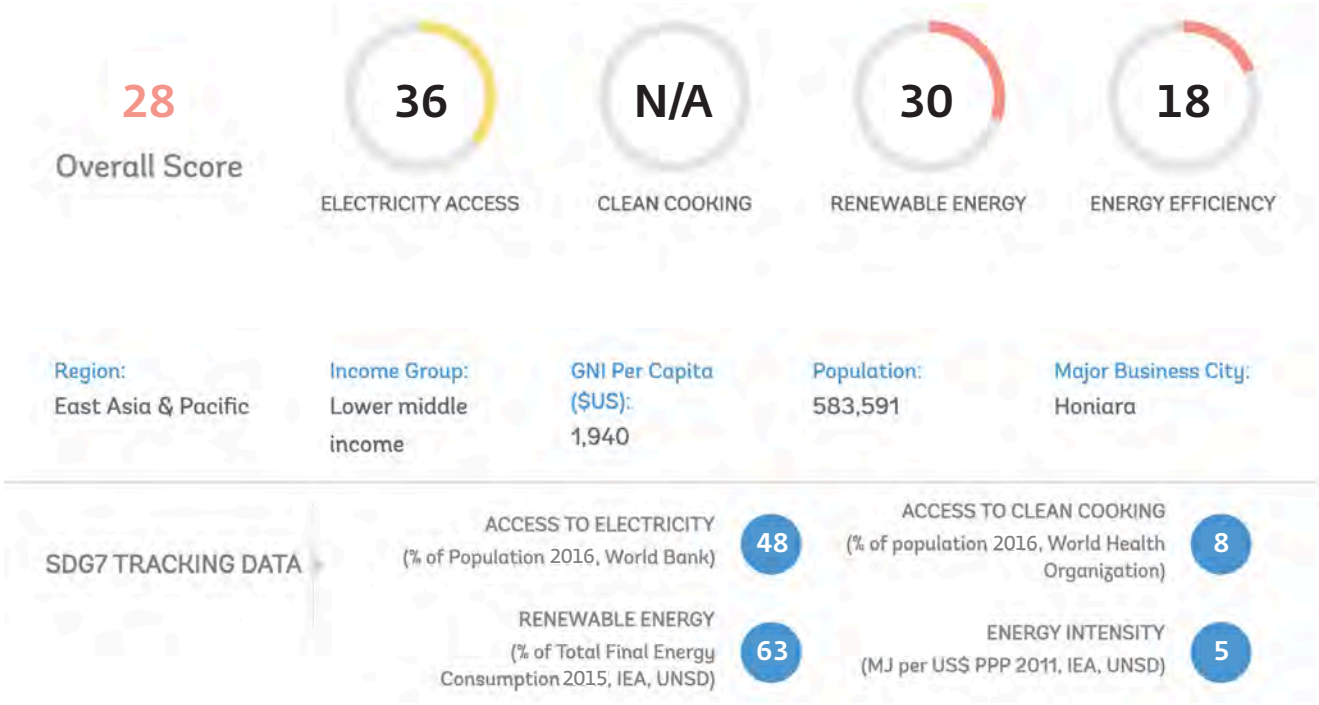


29 The proposed infrastructure map does not include private plans for the reopening of some rural airstrips as these have not been confirmed formally.

3.11.2 ENERGY INFRASTRUCTURE

According to the World Bank's data, 48 percent of Solomon Islands' population has access to electricity and 63 percent of its total energy consumption is from renewable energy. Solomon Islands has an overall score of 28 based on the World Bank's Regulatory Indicators for Sustainable Energy, as presented in Figure 4.

Figure 4: Country Energy Scores for Solomon Islands (World Bank 2017)



In 2009, only 12 percent of Western Province households were connected to the electricity grid and 76 percent of all households use kerosene lamps as the main energy source for lighting (SIG: National Statistics Office 2009).[30]

Solomon Islands Electricity Authority (trading as Solomon Power) has been strengthening and expanding its electrical and renewable-energy systems. In 2017, its investment program included commissioning and installing two outstations—solar-diesel hybrid systems—in Noro and Seghe and developing more than 40 proposed hybrid power generation and mini-grid distribution systems over the next 10 years. The program, funded by various organizations, helps low-income households' access existing and proposed electricity grids (Solomon Islands Electricity Authority 2017).

The authority is undertaking the Solar Power Development Project funded by the Asian Development Bank (2019). It plans to develop and operate grid-connected solar-diesel-battery power stations at five provincial centers in Solomon Islands, including Munda in Western Province (Solomon Power 2019).

These efforts will largely replace diesel power generation with sustainable alternatives to lower diesel consumption from 24 million liters per year. Solomon Power has 18 renewable-energy proposals, including the Solar Power Development Project, mini-hybrid solar-diesel-battery power stations, the World Bank-funded, grid-connected solar farms, and the Tina River Hydropower Project (Solomon Islands Electricity Authority 2019).

30 More up-to-date data at the provincial level is not available.

Solomon Islands has some of the highest costs for access to electricity in the world (up to 0.82 U.S. cents per kilowatt) (Matos 2019). As of June 30, 2019, Solomon Power had 19,561 customers. The company aims to increase its customer number to 30,000 by 2021 (Solomon Islands Electricity Authority 2019). Grid electricity via diesel generators is only available in Gizo, Munda, and Noro. Further plans for mini hybrids (solar, battery storage, and diesel back-up) are planned for Munda and Vonunu in 2020.

The remainder of Western Province operates on private generators and solar or no power at all. Grid electricity is very expensive and unaffordable for most communities (SIG: Ministry of Development Planning and Aid Coordination 2013) because of the high diesel cost. Upgrades and installations of new lines are also limited with high set-up costs and little uptake because of a lack of available land for infrastructure.

The majority of tourism accommodation providers operate self-contained electricity supplies as no grid power is available on island sites and remote areas of the province.

Fuel

Fuel is an important resource in Western Province because of the reliance on motorboats as the primary mode of transport. It is also used in power generators. Fuel costs in the Solomon Islands are amongst the highest in the world, which adds to operational costs for tourism operators.

Mobil operates a fuel terminal in Gizo, which serves as the main depot for Western Province, providing lubricants, kerosene, diesel, aviation fuel, and petrol, all of which are supplied via coastal shipping from Honiara.

Clipper Oil Marine Fuels operates another fuel depot in association with Sol Tuna in Noro and also supplies a full range of fuels.

There are also small, privately owned and operated fuel depots in Gizo, Munda, and Seghe, which are supplied by merchant boats traveling between the archipelagos. Field observations showed that fuel outlets in Western Province are underdeveloped and poorly managed for environmental impacts and spills.

3.11.3 WATER INFRASTRUCTURE

Across Western Province, 30 percent of dwellings were connected to a communal standpipe, 33 percent used a household tank, and another 18 percent a communal tank; about 14 percent obtained their drinking water from a river or stream (SIG: National Statistics Office 2009) and only 7 percent of the country's households use an appropriate method of water treatment prior to drinking (SIG: Solomon Islands National Statistics Office 2015a). All water in Western Province requires treatment prior to drinking.

Access to improved water supplies in Western Province is limited. Some standpipes have been installed by the provincial government and Members of Parliament to provide water from upper catchments to neighboring villages; however, the majority of Western Province relies on wells and rainwater tanks for water. Wells are typically not protected and there is little guidance from authorities to ensure they are not adversely affected by nearby septic systems and other potential groundwater incursion. Communities have been gifted various communal rainwater tanks by local Members of Parliament and charitable organizations. Most do not invest in this infrastructure independently. Some villages on larger islands rely on river water for cleaning and drinking, but it typically becomes unusable during heavy rain periods partly because of upstream logging and clearance activities.

About 44 percent of households did not have access to a toilet facility, meaning neither a flush toilet, a water-sealed toilet, or a pit latrine (SIG: National Statistics Office 2009). Stakeholder consultations highlighted that septic tanks are not managed or monitored by any particular body, therefore putting groundwater sources at risk of infiltration.

The majority of tourism operators manage their water needs on site and do not rely on communal water supplies.

Community water supplies, particularly on dry islands such as Gizo, are already severely affected and communities sometimes illegally connect to centralized water sources by cutting into plastic pipes, rendering them useless downstream or requiring major, costly repairs. Limited water supply from centralized water sources will continue to affect community health.

3.11.4 WASTE DISPOSAL

Government waste collection was used by 3 percent of households to dispose of their rubbish. The backyard was used by 58 percent of all households as their main means for waste disposal, followed by 24 percent using disposal at sea (SIG: National Statistics Office 2009).

Some villages still bury trash, while others burn them. Stakeholder consultations highlighted that proper disposal of waste was a low priority for many villages and waste was prevalent in even the remotest areas. Wells and rivers are not required to be monitored by external parties (such as the provincial government or local councils) for water safety, so there is no groundwater management to ensure no contamination from nearby uses, potentially imposing a risk on the health of communities and tourists.

Septic tanks are not monitored on private sites, so overflowing of the tanks leading to contamination of nearby water sources is probable. Wastewater management is inadequate to treat or dispose of full septic tanks. The only vacuum truck in Munda is owned by a private organization and is engaged by landowners to drain full septic tanks. It is unclear where the waste is disposed of as there is no wastewater-treatment facility in the vicinity. Septic tanks are used in parts of Seghe and outlying areas, but no facilities are in place to manage these tanks. Field-visit observations noted poorly executed septic systems: some are installed in the intertidal zone and would get inundated by tidal movements, rendering the entire system ineffective and causing sewage to flow directly into the marine environment.

Solid waste management is inadequate to manage waste in town centers, let alone in outer areas of the province. Many communities dispose of waste in pits or in the intertidal zone; some burn rubbish where possible and bury the rest. The province has extremely limited infrastructure and capabilities to deal with these issues.

3.11.5 TELECOMMUNICATIONS

Solomon Islands has two telecommunications networks providing land lines, mobile networks, and 2G, 3G, and 4G data access. However, various areas of Western Province do not have coverage for data and/or voice calls. There is no 4G data access in Western Province and 3G data access has only recently been implemented in some larger towns such as Munda (Speedcast International Limited 2018). Due to the challenging geography and sheer scale of the country's topography, mobile network coverage is poor and varies dramatically from island to island. In Map 15, there is a representation of Solomon Islands Telekom cell towers, which indicates the limited number of towers servicing Western Province (Telekom Solomon Islands 2020). The overwhelming majority of the towers shown have a service range of about 35 km and only support voice calls and texts, meaning most Solomon Islanders do not have cell data coverage. This also means geographical coverage of cell-phone service to support touristic activities across the region is limited.

Stakeholder consultations highlighted that a roll-out of more telecommunications devices is not profitable for providers partly because of the low density of some areas of the province and the upfront costs of setting up sites on privately owned or customary land (Pers Coms: Loyley Ngirah, Feb 2020). This leads to risks with emergency management and response. Phone plans are comparable to other island nations; however, the uptake in outer areas of Western Province is low as costs are still prohibitive for poorer communities.

Photo Credit: Tourism Solomons (David Kirkland)

4. Analysis of Findings

4.1 INTRODUCTION

This section provides an overview of key findings from the data analysis and trends where applicable. Sections 5 and 6 provide more in-depth review of the key risks, opportunities, and recommendations.

4.2 CONTEXTUAL FINDINGS

IFC's contextual-risk framework indicates the level of risks based on international datasets and analysis as well as their presence for all sectors in the country.

The risk rating identified below are based on investigations undertaken as part of this study. Risks are considered high or moderate with potential to become high if not well managed where applicable to the tourism sector in Western Province.

Security and Conflict (Moderate)

This rating is derived from historic conflicts on Guadalcanal in the late 1990s and early 2000s. The civil unrest was caused by discontent from Guadalcanal people, who were customary rights owners, against the relatively prosperous people from neighboring Malaita who had legally acquired land or were squatters on customary land.

There was also civil unrest among informal settlers pushing the boundaries of settlements upward toward the border of Honiara city. While there are still pockets of discontent, there has not been any notable conflicts in the last 10 years.

The relevance of this risk is limited in the context of tourism development in Western Province. Some petty conflicts, often as a result of jealousy, exist at the village level, but this will unlikely affect tourism development.

Social Cohesion (Moderate)

Based on the baseline analysis in section 3.10 and the cultural homogeneity of the study corridor, no recent conflicts were noted. However, some localized community conflicts were observed during site visits. These can potentially delay proposed tourism developments, increase investment cost as a result of dispute settlement, sabotage and vandalize tourism facilities, or pose security risks to tourism personnel or visitors.

The Western Provincial Government's policy to work with the locals to develop village and community-based tourism and raising awareness about the potential of tourism across the study corridor will help minimize conflicts with the communities.

Religion is an important part of many Solomon Islanders' daily lives. Investors and tourism operators need to understand and respect local practices to reduce conflict with local communities. Many church members interviewed were concerned that tourism growth would bring cultural challenges for their community, as tourists with different beliefs, customs, and standards of dress do not always understand or respect local cultures. Stakeholders noted that religion helps maintain peace and harmony between community members, with many activities and gatherings designed to bring the wider community together.

It was inferred from the stakeholder consultation that as tourism development increases, indigenous communities have the opportunity to practice and strengthen their cultural identities. However, influences from tourism activities may also alter the way indigenous people connect to land and practice customs as well as affect traditional community values.

The Gilbertese people who have mostly been allocated registered land could be at risk of being displaced as tourism development would prefer to occur on registered rather than customary land. The Gilbertese are therefore more susceptible to the ramifications of tourism development.

Labor and Workforce (Moderate)

Solomon Islands has a young population with a good supply of working-age people, but their skill level is limited because of the low education levels of a percentage of the population. The literacy rate was 83.7 percent for men and 69 percent for women in 2015. It is necessary to invest in training and capacity building in tourism operation and management to maximize employment opportunities and the tourism-development value chain for local communities.

Requirements for women and for men are different in some types of labor and a general disparity between genders is present. Tourism operations can help address this inequality, which constrains many women to a narrow set of defined roles and limit the potential benefits they may gain from tourism development. For child labor, the SIG now allows children as young as 12 to undertake some types of work under the *Labour Act*, a practice that does not align with the global minimum age of 14 (International Labour Organization 2020)

Based on site observations and stakeholder interviews, many Western Province communities said they are willing to get involved and be guided to make a meaningful and profitable living from tourism development.

Food Security (Moderate)

While the country has a wide range of natural resources to support food production, these are not widely understood by communities and strong pressure remains on reef-fish stocks because of overfishing. The country's resilience and capacity to deal with food shortages is therefore limited.

Health Epidemic/Pandemic (Moderate)

Although the tourism sector has some buffering capacity and resources to address emergencies, the medical capacity to deal with emergencies and epidemics, especially in rural areas of Western Province, is likely to pose a moderate risk.

Political Risk and Governance (Moderate to High)

The key sub-risks that warrant further consideration in the context of tourism development include weak governance structures (moderate risk) and access to basic infrastructure (high risk).

Weak governance is already discussed in section 3.4.3. Key risks include corruption, weak policy and processes, and weak compliance and enforcement.

Investors may encounter corruption, such as bribery to expedite permit processing, as there is still an overlap between traditional *wantok* customs and modern business practices. Media reported cases of government officials indicted with corruption over development projects. To address this problem, the SIG rolled out a three-year National Anti-Corruption Strategy in 2017. Further actions are, however, needed to enhance community understanding and participation to curb corruption across Solomon Islands.

Bureaucracy is another obstacle that may delay the decision-making and approval of development projects, which require permissions from both national and provincial government bodies.

While the Ministry of Commerce, Industry, Labor and Immigration has made efforts to improve business registration, investors still face challenges because of limited available data, such as the registry of landowners, and conflicting information on policies and the status quo.

While these issues are not unique to Solomon Islands, it does present challenges for improving the business-enabling environment and attracting investors to its tourism market.

There is a strong political will to develop tourism nationally, particularly in Western Province and the study corridor, based on a review of the tourism governance structure and tourism policy (see appendix B for a detailed review of specific policies) and legislative framework as described in section 3.4 and stakeholder consultations. While the SIG has established a legal framework to guide business activities and development projects, challenges remain in implementing the provisions and monitoring violations due to limited financial and technical resources.

Institutional capacity for evaluating and monitoring E&S impacts of projects is weak. This is because of limited technical capability and insufficient staff, operational budget, vehicles, and equipment to undertake inspection and compliance monitoring of developments against approval conditions and management plans. Tourism projects in remote islands are particularly vulnerable to noncompliance with E&S safeguards and regulations. Local communities there often have limited access to legal mechanisms that would allow them to file complaints against the aggravators.

Access to basic infrastructure is an ongoing challenge across Solomon Islands, particularly for remote communities such as those in Western Province. Although this is rated as a high risk, it will be a moderate risk for tourism developers as they most likely need to provide basic infrastructure, such as water supply, wastewater treatment, waste disposal, and power generation, in most locations outside of Gizo, Munda, Noro, and Seghe.

At present, there are gaps in SIG's policy frameworks, legislations, and action plans on energy and water resources and conservation in Solomon Islands. As tourism develops, the government should devise ways to address the waste, pollution, and wastewater generated by tourism establishments, which could affect the natural environment and water supplies for the local communities.

The government would need to define guidelines or standards to regulate and build infrastructure to treat waste, toxic chemicals, and wastewater discharged by these establishments.

Hospital and health clinic infrastructure are basic and evacuation to Honiara or overseas may be required for medical treatment.

No concrete maritime safety support is available, but the Western Province police department does respond to emergencies. This is discussed further in the Risks and Recommended Actions Matrix in section 5.

Natural Hazards (High)

Natural hazards are an important consideration as Solomon Islands is seismically active and prone to tropical cyclones as described in section 3.5. Tsunamis have occurred in Western Province as recently as 2007. This risk and potential mitigations are described in section 5.

Biodiversity Ecosystem Services, and Climate Change (High)

Biodiversity, ecosystem services, and climate change represent the greatest contextual risk, but it also transcends to the corridor and identified-site levels. Key risk attributes include deforestation and other threats to natural resources (moderate), government capacity in natural-resource and protected-area management (high), and climate change vulnerability and resilience (high).

Monitoring mechanisms for wildlife protection or biodiversity conservation are unavailable. Provisions between various policies[31] overlap and make process requirements for protection and management unclear.

While the SIG bans the sale of species listed under CITES, local communities' consumption of such species based on culture and *kastom* is still allowed. It is also difficult to determine if the species are being sold for local consumption.

The Ministry of Fisheries has acknowledged some gaps in the monitoring and implementation of regulations with regards to recreational fishing. There are no regulations to address these gaps now, but the ministry mentioned that it will be a focus in the future.

31 These legislations and policies include the *Wildlife Protection and Management Act 1998*, the *Protected Areas Act 2010*, the *Fisheries Management Act 2015*, Solomon Islands National Climate Change Policy 2012-2017, Solomon Islands National Ocean Policy 2018, and the *Simbo Megapode Management Area Ordinance 1990*.

All these aspects are important considerations for tourism development, as tourists often want to visit an area because of its natural beauty and natural resources. Climate-change vulnerability should be taken into account as it may affect future operability or viability of the operations. These risks and opportunities, together with potential mitigations, are further described in section 5.

Access to Land and Natural Resources (High)

Tourism investors and developers will likely find it difficult to identify sites for tourism development because of limited available data on registered land titles. Based on the SIG's request, IFC has undertaken a preliminary effort in listing registered sites in Solomon Islands, which are included in this report. Despite the SIG's attempt to improve the process, including digitizing some materials, it was challenging and time-consuming to access land titles and the manual, paper-based filing system.

Tribes and local communities and families have trouble recording customary land because of overlapping claims to land or resources, despite the government's passage of the *Customary Land Records Act 1998* to provide a legal mechanism for recording tribal land boundaries and customary rights and interests. Under the act, a group can apply to have their right to control customary land (primary rights) recorded, along with the name of the person who is authorized to represent the customary land-holding group. Still, customary landowners have seen little benefit in recording their land and the records have had limited uptake.

Reprisals (High)

Reprisal is a strong feature of Melanesian culture and a source of discontent within and between communities. Consultations with local communities and tourism operators identified numerous violent and destructive reprisal incidents that are often repetitive if not resolved. Potential mitigation strategies are further discussed in the Risks and Recommended Actions Matrix in section 5.

4.3 CORRIDOR LEVEL

The findings from the baseline situation described in section 3 are further analyzed here to identify potential opportunities and risks for tourism development in the study corridor in Western Province. This analysis takes into consideration the information gathered at the corridor and the identified sites as well as at the country level where only national data was available. This section is organized per the E&S indicators listed in section 2.3.3.

4.3.1 ENVIRONMENTAL FINDINGS AT THE CORRIDOR LEVEL

The environmental-risk assessment based on the indicators (see section 2.3.3) is described below. For a list of the broad indicators and data sources, refer to appendix A. Site-specific locational data, such as species records, is not available. Environmental-risk areas are marked in Map 17.

Marine Environment

Low-Risk Areas

- The vast majority of low-risk marine areas included within the corridor are open ocean areas that are not at risk from ecotourism development. Low-risk marine areas that include reef systems are primarily associated with high fishing pressures, coral extraction, and other intensive resource use, resulting in lower environmental significance. These are usually in proximity (2 to 5 km) to more densely settled areas along the coast and on islands.
- Low-risk marine areas in inshore localities are associated with coastal development, such as the clearing of mangroves and draining of intertidal areas for plantations. These localities are also associated with poor water quality as a result of land clearing and logging activities in the catchments adjacent to these environments.
- There are limited to no constraints to development inside or adjacent to low-risk marine areas. However, potential developers will need to ensure that the development meets all relevant statutory requirements and addresses potential environmental risks.

Moderate-Risk Areas

- Moderate-risk marine areas were primarily associated with coral atoll reef systems of the smaller island conglomerations, particularly Rendova and Vonavona lagoons between Parara and Arundel (Kohinggo Island), Roviana Lagoon, and the outer barrier reef systems east and west of Vangunu Island. Most of these areas support sparse but widespread settlement where artisanal fishing pressures are limited.
- Detailed site-level investigations are necessary to establish whether potential investments will meet good international industry practice.
- Further assessment at an EIA level must be commensurate with the outcomes of the risk and impact identification to minimize impacts on the area's biodiversity. Development projects will need an Environmental Management Plan to ensure that risks are mitigated, and performance outcomes are delivered.

High-Risk Areas

- Six distinct areas in the corridor were mapped as high-risk. These locations centered on reefs of outstanding (known and published) biodiversity values and extensive areas of mapped mangroves and intertidal areas that sustain critical ecosystem processes. Some of these locations include MPAs, notably the Saeraghi Reef at the northern end of Ghizo Island.
- Development within these areas should be limited and will require strong mitigation and management controls to ensure that impact is minimal.
- While small tourism activities or development projects may be perceived to have little impact on these areas, the government needs to strengthen the policy framework and enforcement of conservation regulations in these areas.

Terrestrial Environment

Low-Risk Areas

- These are areas representing low biodiversity and limited ecological value. They include areas comprising monoculture, such as coconut plantation and plantation forestry blocks on Kolombangara, cultivated areas, or areas that have been significantly modified by human activity, including urban and village areas and environs such as most of Ghizo Island, Ringgi Station, Munda, Noro, and Seghe.

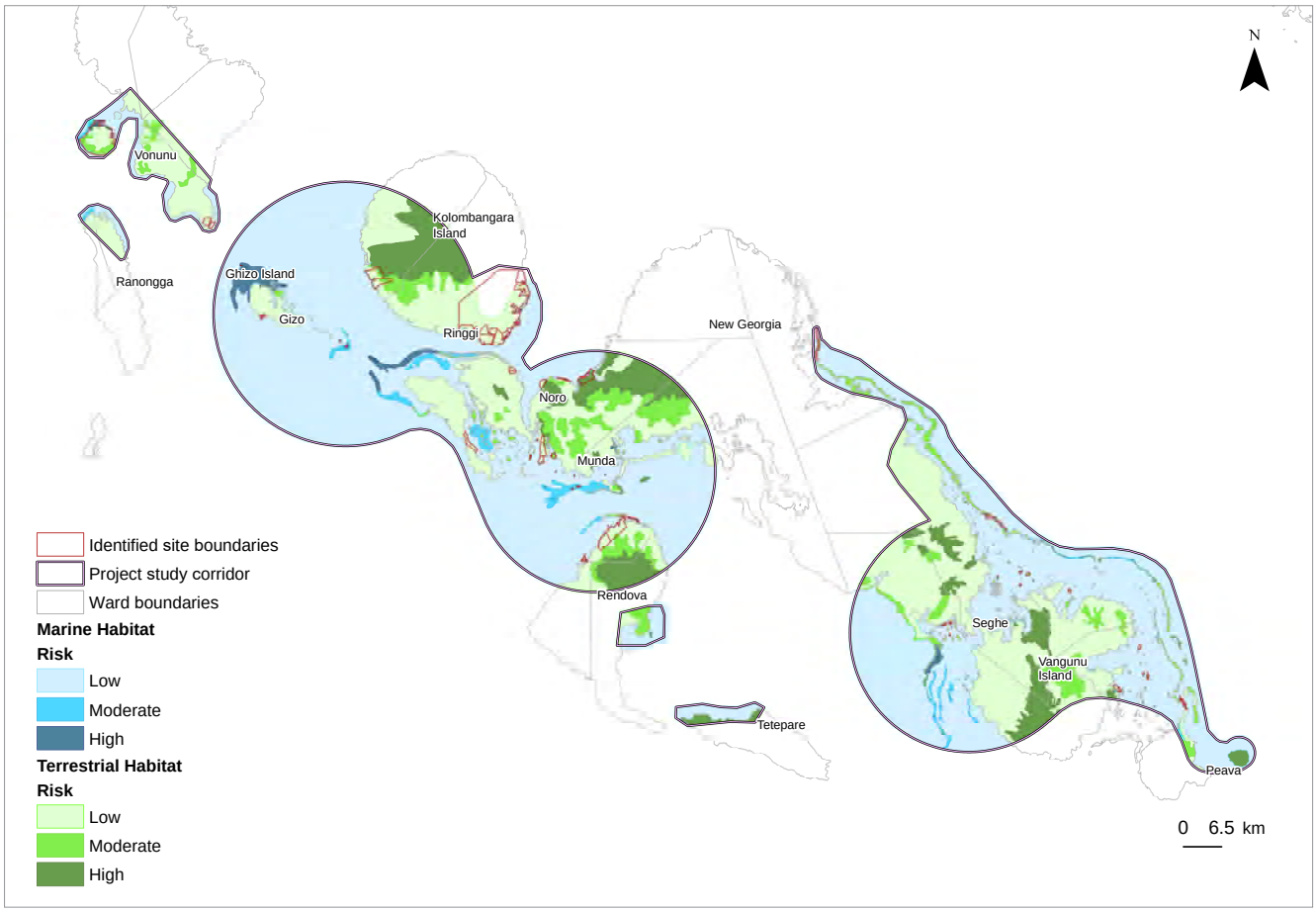
Moderate-Risk Areas

- The majority are associated with previously logged areas away from the coast on larger islands, such as New Georgia. These areas exhibit a moderate-to-high level of environmental condition and integrity as logging took place more than 10 years ago and forest has been allowed to regenerate without interference. As a result, they may provide key resources to threatened species and important ecosystem services.
- Other moderate-risk areas are larger offshore islands with small villages or isolated settlements and signs of resource usage, such as historically logged areas or small coconut plantations.
- Proposed development in these areas require detailed site-level investigations to determine whether they are considered "modified habitat".

High-Risk Areas

- High-risk terrestrial areas broadly fall into two categories: i) upland areas of ridges and mountains, such as the slopes of Kolombangara Island, which are difficult to access with modernized machinery for large-scale logging, increasing the cost of development; and ii) small islands with vulnerable littoral ecosystems that support breeding areas for internationally listed threatened species, including turtles and migratory marine birds.
- Development in these areas would present high environmental risks and should be highly constrained based on the indicators used in the study.
- Environmental risk in the corridor is already high because of logging activities affecting local biodiversity. Development projects in these areas may threaten vulnerable ecosystems.

Map 17: Environmental-Risk Areas at the Corridor Level



4.3.2 SOCIAL FINDINGS AT THE CORRIDOR LEVEL

This section discusses the various social risks and opportunities for tourism development at the corridor level based on the situational analysis in section 3 and the social indicators outlined in Table 20.

Presence of Livelihoods and People

As presented earlier in Map 6, the majority of identified sites are located near or within existing villages throughout the study corridor. Proximity to communities offers better access to workforce for tourism development. In return, the communities can also benefit from tourism-related training, jobs, and income generation by charging fees for access to land and marine resources.

Tourism may offer opportunities for local garden growers and fishermen to sell their produce to visitors and collaboration with investors to increase local production. However, unless managed well by tourism investors and communities, this could also lead local growers to sell their produce to hotels for cash income, causing themselves and their families to rely more on food with poor nutritional value.

While tourism development could improve the economic prospects for both men and women with training and work in a wider range of roles, it could also exacerbate social vulnerabilities within the study corridor. Risk factors include subsistence livelihood and weak food security, poor understanding of the impacts of tourism development and inequitable distribution of benefits, low education levels, poor health and nutrition, and gender imbalance and domestic violence. Land acquisition for tourism facilities development can also result in displacement of people if not properly managed.

Proximity to Infrastructure and Existing Tourism Facilities and Activities

Two main aspects were investigated to understand access to infrastructure for tourism development: i) physical access and ii) the capacity and capability of the services provided by the provincial or local government at the facilities. As described in section 3.11, access to grid power, potable water supply, and waste and wastewater disposal services are limited within the corridor and the communities. Some of these services are available in Gizo, Munda, and Noro in the central corridor and Seghe in the south and there are planned power-supply projects in some areas. But existing tourism facilities mainly rely on their own site-based facilities; therefore, the lack of or limited access to these common services do not necessarily pose a risk to tourism development.

The potential self-sufficiency of tourism developments may bring opportunities for locals to access some of these services from the tourism operators; the developments could also become a catalyst to improve the supply of these services along the corridor.

Further tourism growth will strain existing waste infrastructure, such as dumps for solid waste and on-site septic systems and outfall pipes for wastewater, used by most businesses and tourism operators. If the receiving environment becomes overloaded, it may alter the surrounding ecology and impair the tourist experience. Tourism development must be self-sufficient and environmentally friendly; thus, developers need to ensure the design will achieve the long-term environmental viability of solid waste and wastewater disposal.

Access to mobile telecommunications network varies across the corridor, but this will likely improve in some areas with the submarine telecom cable landing station installed in Noro. Tourism development could also become a catalyst to improve telecommunications services along the corridor.

In terms of transport infrastructure, the corridor can be accessed via the international gateway airport at Munda and domestic airports in Gizo and Seghe, with connections to other areas and islands via limited roads and logging tracks or local banana boats. The boat transport through open water, particularly during bad weather, poses a risk to life.

This can be alleviated by extending air access to the northern and southern parts of the corridor through reopening existing WWII airstrips located north of Liapari, adjacent to Vila Point on Kolombangara, Batuna on Vangunu Island, and Nggatokae Island. This can minimize longer boat rides through open water to destinations at extreme ends of the corridor. However, some of these locations could be on customary land, which might be challenged in land disputes.

While physical access to health services is challenging because of the corridor's island geography, the availability of trained staff and resources at these facilities is also an issue. Stakeholder consultation has highlighted that the predicted high population growth of Solomon Islands will continue to put pressure on the receiving environment and social resources; the country already has a critical shortage of healthcare workers, especially doctors, medical specialists, medical laboratory staff, and radiologists (Hodge, Slatyer and Skiller 2015). Also, tourists and developers should be aware that dengue fever and malaria occur across Solomon Islands. This healthcare shortage will be exacerbated by the increasing number of tourists, who may require medical services and even bring in infectious diseases.

Access to Land and Natural Resources

Development of tourism facilities and activities will need access to land and marine resources. The land use and land tenure in Solomon Islands, mainly in reference to the corridor, pose various opportunities and risks as outlined below.

- Land tenure across the corridor (Map 6) shows pockets of surveyed and formally registered, and surveyed but not registered, land in all sections of the corridor. Such land could be more accessible from a land title and registration perspective, but this is not to preclude customary land, which could involve lengthy and expensive land negotiation and compensation, from tourism development.
- Other nuances of land access and tenure to be considered include the use of land as gardens for subsistence living. Subsistence farming and fishing is a common practice in Solomon Islands, especially in rural and remote areas. During site visits and stakeholder consultations, this type of land use was found to be prevalent in areas near

villages across the entire corridor and was noted at several identified sites. Food gardens may also be found on vacant registered land by informal users; therefore, land negotiation and compensation would need to consider the presence of such gardens. Restrictions of access to land or marine areas can result in loss of livelihood for the landowners, occupiers, or users.

- Similar to the location of gardens on land, informal homes or building structures should also be considered during the land-access process. Destruction of these homes and structures can result in involuntary resettlement, creating conflict between the community and the developer. This can potentially increase the cost and timeframes of land access, pose safety and security risks for tourism facilities and activities, and delay the development.
- Although the local community may earn additional income from tourism, the lack of a common vision for tourism development and potential unequal distribution of opportunities and benefits within the community may give rise to disputes and social cohesion issues. Stakeholder consultations highlighted that fees for anchorage and reef access can cause disputes between yachts and local communities if not clarified and communicated clearly to all parties.
- Land use across the corridor shows concentration of settlements along the coast, with sparse settlements in the extreme northern and southern parts of the corridor. While the presence of communities provides access to workforce, cultural aspects of local people, and other facilities and services, it also poses the risk of competition for land use and involuntary resettlement.
- Other terrestrial land use across the corridor mainly include coconut forest, coconut plantations, and natural forest. Most land use within the corridor, except logging areas, are suitable for tourism development. As discussed in section 3.4.3, logging is illegally carried out in some areas beyond permissible boundaries. Such activity may create competing land use and adversely affect the area's amenity value for tourism development.
- The Western Provincial Government's policy to support locals in developing village and community-based tourism and promote tourism lease to landowners provides an opportunity to enable access to land while protecting the interests and sustainability of the communities.

Photo Credit: Becky Last

This includes:

- Raising awareness on how a community-based tourism project is established
- Explaining the benefits of tourism ventures for the community and the examples of Mbili, Simbo, and Tetepare
- Establishing a marine reserve and looking after the environment and the community
- Advising landowners on setting up a tourism lease—such as land-title registration costs, vetting and application of lessee, negotiation with lessee, and preparing legal contracts including which companies to use and how much to pay for the service—to facilitate access to land and help tourism developers become registered operators on leased land.

UXO

As seen in section 3.5.5, the corridor is at a high risk of exposure to UXO. The impacts could be fatal if tourism developers are not cautious in undertaking UXO clearance and during construction. It is, however, possible to clear an area and make it safe for tourism activities, thus UXO is not considered a "showstopper" for development.

Culture, Ethnic Diversity, and Conflict

See baseline analysis in section 3.10 and Social Cohesion under section 4.2.

Communities' Ability to Support Tourism Development (Livelihoods, Labor, and Other Social Vulnerabilities)

See Presence of Livelihoods and People under section 4.3.2.

Measured Social Findings

Based on the social risks discussed above, Map 18 presents the risk rating at the corridor level, as per section 2.3.3. Measurements used (detailed in Table 2) are:

- Land tenure
- Access to infrastructure (distance from airports and medical facilities)
- Exposure to potential UXO areas

Key findings from the assessment include:

Low-Risk Social Areas

These are registered and readily available land located in close proximity to infrastructure services, such as airports and medical facilities, and urban centers with access to goods and services. Most areas would have a low likelihood of UXO presence. They are located on Ghizo Island, coastal margins of and in the Vonavona Lagoon, and the environs of Munda, Noro, and Seghe.

Moderate-Risk Social Areas

These are areas on land tenure that is surveyed but not registered and are 10 km to 15 km from medical facilities and 15 km to 30 km from an airport with potential presence of UXO. They cover areas around Ringi on Kolombangara Island, northeast of Noro, southeast of Munda, and the interior of Kohinggo Island.

Rendova coast has also been given a moderate rating due to its registered land tenure status, although this area is more than 40 minutes by boat from Munda Airport. Small sections of Ranongga and Vonunu as well as western Kolombangara Island have also been rated as moderate, although they are also at least an hour by boat from Gizo Airport.

The northern peninsular of Gizo is regarded as moderate due to its customary land tenure and proximity to potential UXO areas. An area of Vangunu Island and north of Seghe on New Georgia Island are also rated moderate, as they are on registered or surveyed lands and are reasonably close to medical facilities.

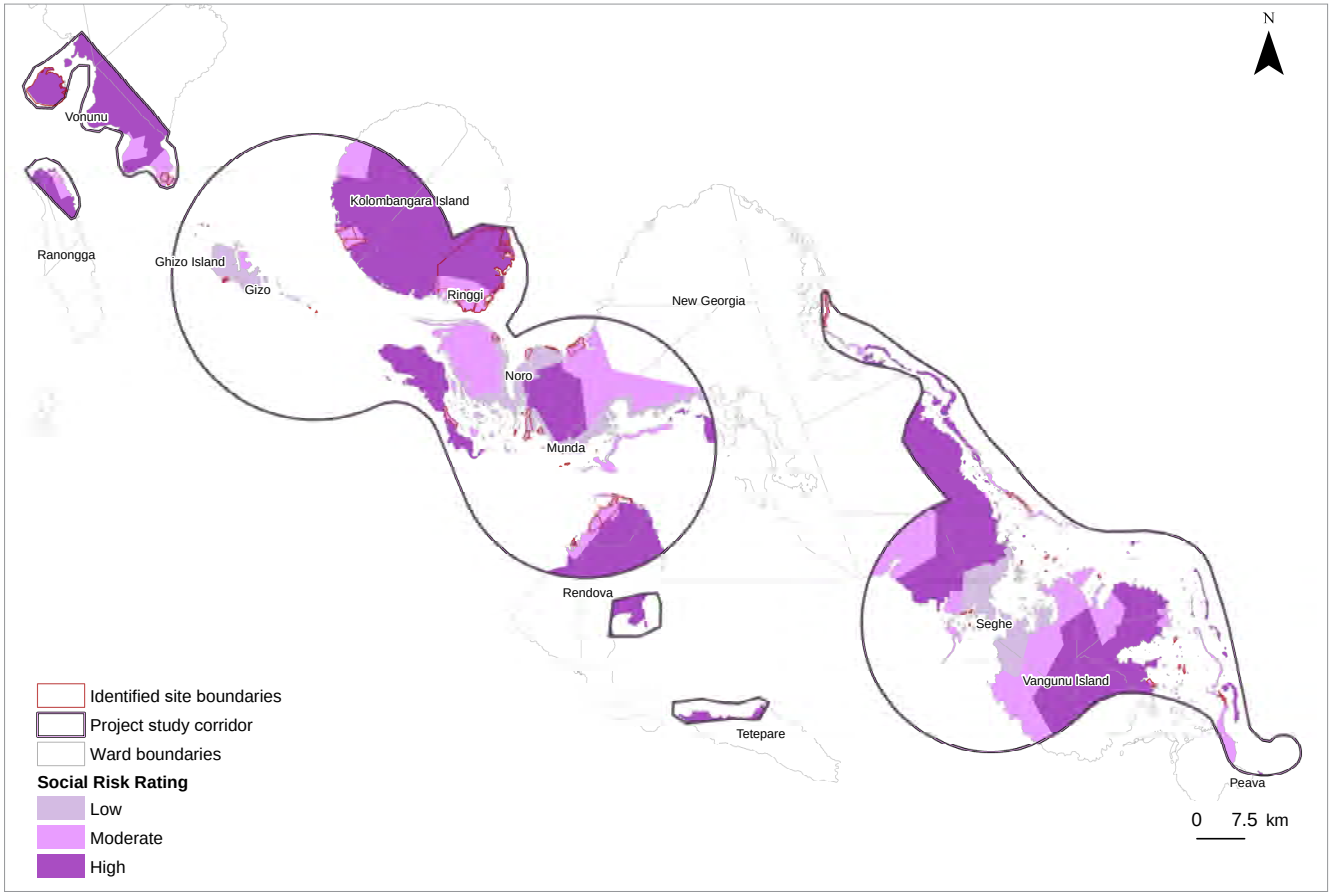
High-Risk Social Areas

These are areas on customary land with potential exposure to UXO and at least 15 km from medical facilities and more than 30 km from airports, requiring travel in a banana boat across open water to access the area.

All remaining areas of the map are rated high as the land is either customary or surveyed and at a longer distance from airports and larger medical facilities.

It should be noted that areas with moderate and high social-risk rating are not precluded from tourism development, but they would require implementation of mitigation measures and could involve longer timeframes and costs. As the social environment changes, social factors can also become obsolete; therefore, this mapping and rating should be reconfirmed after a few years to see if they are still applicable and to what extent.

Map 18: Social-Risk Areas at the Corridor Level



4.3.3 OVERALL CORRIDOR ENVIRONMENTAL AND SOCIAL-RISK MAPPING

Map 19 depicts the overall environmental and social-risk areas of the study corridor for tourism development. Recommended mitigations of these risks are summarized in section 5.2.

Low-Risk Areas

The map shows that the low-risk areas are within close proximity to the urban centers of Gizo, Noro, Munda, and Seghe. These areas are moderately disturbed from human activity and are therefore less important in terms of biodiversity and ecosystem services. They also appear to have more registered land and less customary land, so property acquisition (lease or purchase) is likely to be less complicated.

These locations are closer to essential tourism infrastructure, such as airports, ports (shipping of goods and materials), and hospitals.

Most low-risk areas are in coastal locations but are not close to marine areas of moderate or high importance.

Moderate-Risk Areas

These are generally rural or disturbed forest environments, with a greater distance from urban centers and infrastructure. Landownership is likely to be more complex and may include unregistered land.

Most moderate-risk areas are more inland, although some are also located along the coast. They include less developed areas of Western province, such as Bava Island, Vella Lavella, Kolombangara, Ranongga, Vonavona, and coastal zones on Rendova and Vangunu.

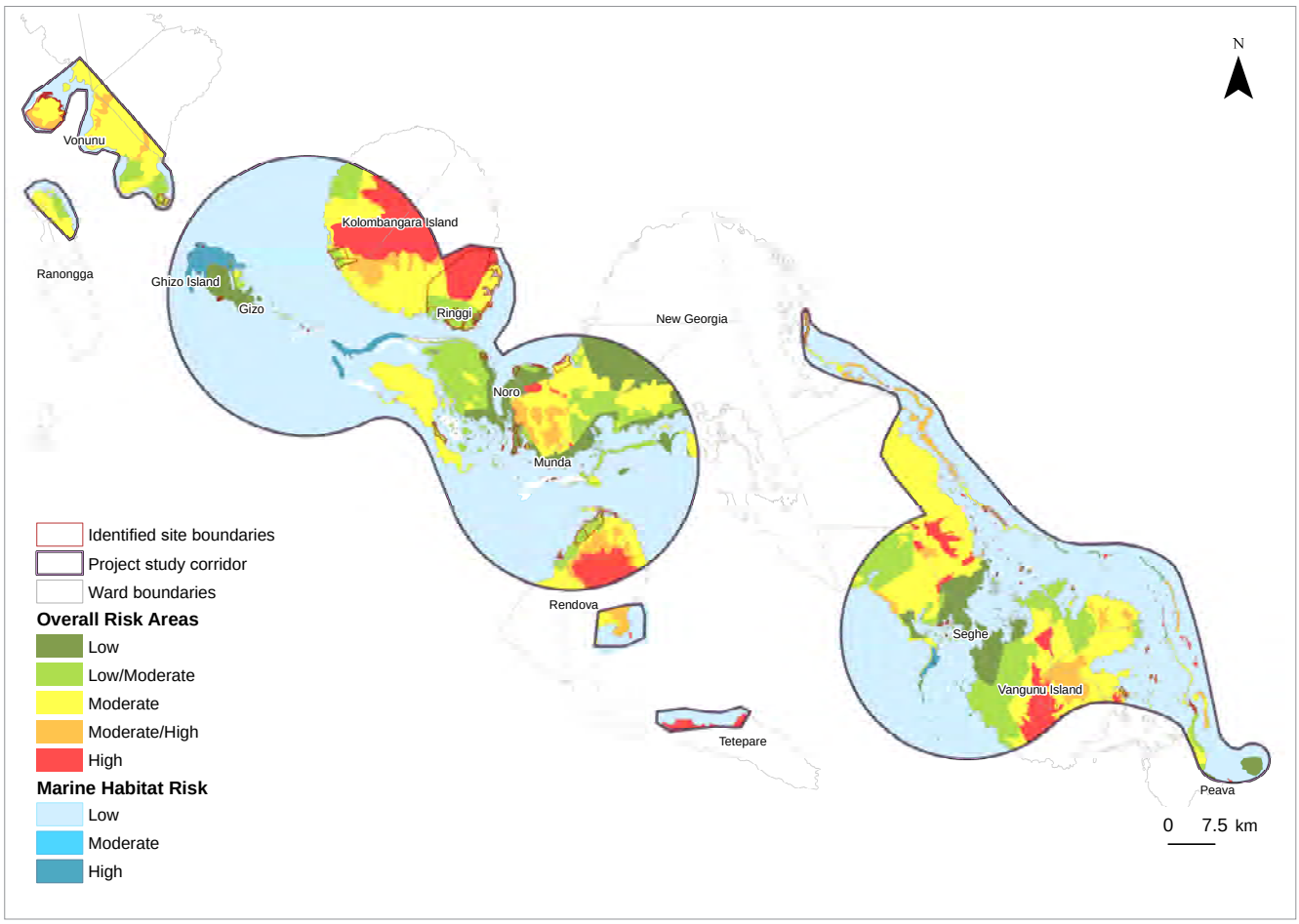
They may be adjacent to moderate-risk marine areas as described in section 4.3.1.

These areas likely require further investigation to determine E&S risks, depending on the size and nature of the tourism development.

High-Risk Areas

These are generally remote inland areas on customary land with higher terrestrial biodiversity importance, such as Tetepare Island and the above 400-m elevation area on Kolombangara. They have no road access and require travel by river or on foot.

Map 19: Overall Environmental and Social-Risk Areas at the Corridor Level



4.4 IDENTIFIED SITES

The environmental, social, and natural-hazard findings of the 70 identified sites are summarized in the following sections. Map 20 shows environmental risks, Map 21 displays social risks, and Map 22 indicates natural-hazard risks. An overview of the final risk rating for each site is shown in Map 23. The findings focus on the 70 identified sites of which entailed information can be found in the site profile sheets (see appendix D).

4.4.1 ENVIRONMENTAL FINDINGS AT THE IDENTIFIED-SITE LEVEL

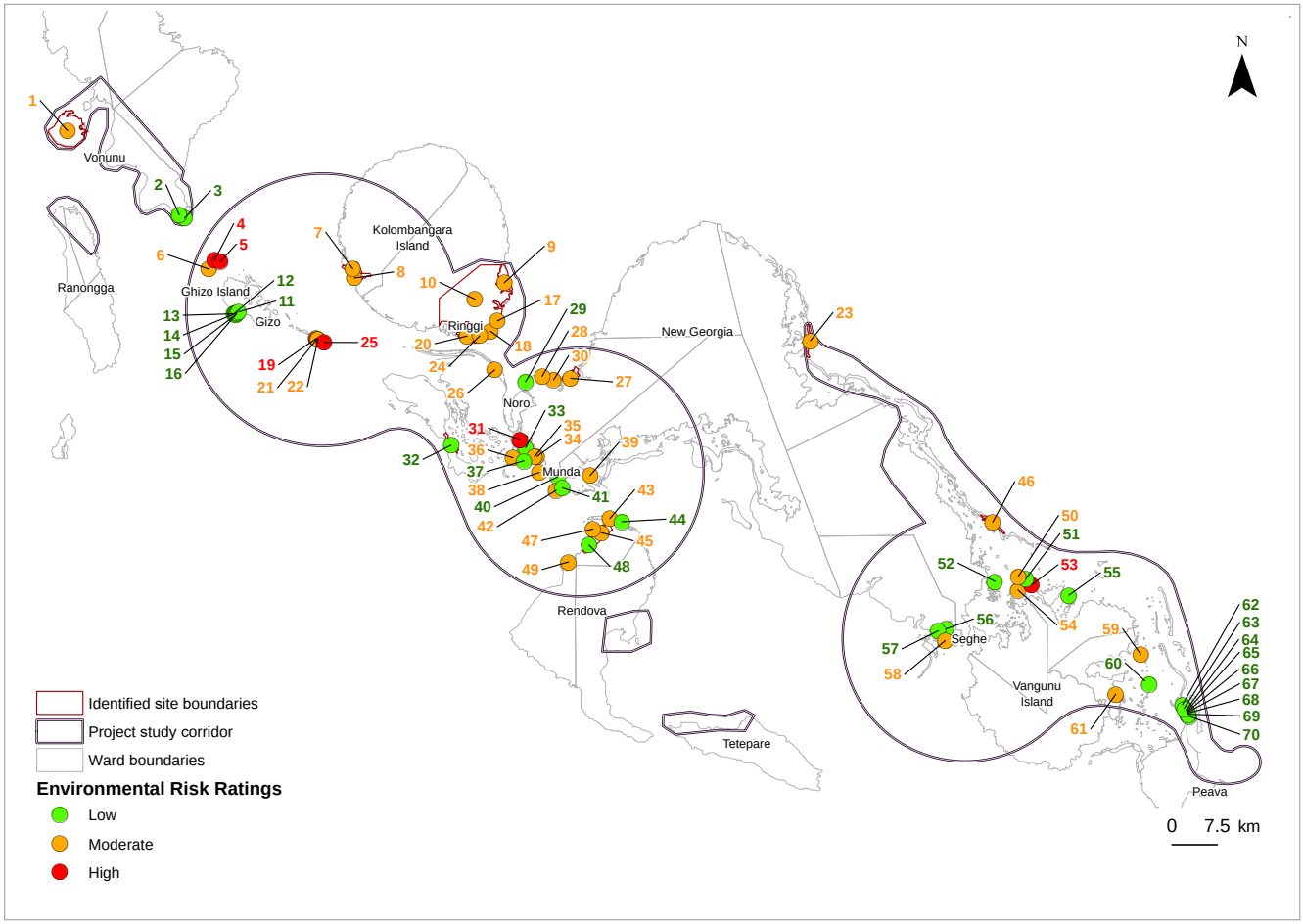
The following table summarizes the overall environmental-risk assessment for each identified site and the rationale for the rating. Overall, environmental risks were given a 40 percent weighting in the assessment.

The detailed dashboard for each site (appendix D) identifies the contribution of other risk indicators, including social and natural hazards. When considered in conjunction with the other weighted risk criteria, the overall risk ranking for each individual site may differ from that of the individual environmental (or social or natural hazard) risk rating. Each of the 70 potential investment sites had both marine and terrestrial risks ranked separately. When terrestrial and marine scores were combined, 6 sites were rated high risk, 40 moderate and 24 low risk.

Table 10: Identified-Site Analysis of Environmental Findings and Risk Assessment

Environmental Risks	Risk Rating	Description
Marine environment	Low **8 sites**	• There are few environmental constraints associated with development within or adjacent to low-risk marine areas considering the livelihood activities, such as artisanal fishing, coral harvesting, and tuna fishing, already occurring in the area. Nonetheless, development should follow the risk and impact-identification process.
	Moderate **57 sites**	• Despite evidence of resource utilization, such as fishing, ecological processes retain a high degree of functionality in these marine sites. They can still make important contribution to biodiversity values and the maintenance of ecosystem services. Tourism development may disrupt and/or damage such ecological processes and biodiversity in these areas.
	High **5 sites**	• Tourism development is not recommended as it can affect and increase the vulnerabilities of the ecosystems in these areas. High-risk areas require significant investment to mitigate and manage the following risks: • Measurable adverse impacts on the biodiversity values of critical habitats and on the ecological processes supporting these values • Net reduction in the global and/or national/regional population of any critically endangered or endangered species over a reasonable period
Terrestrial environment	Low **29 sites**	• Opportunities and constraints associated with development in these low-risk terrestrial environments are similar to those for low-risk marine environments. If developers identify, minimize, and mitigate the direct, indirect, and cumulative impacts of their identified projects on biodiversity and ecosystem services, as well as comply with regulatory requirements and good international industry practices, then development in these areas should be low risk.
	Moderate **32 sites**	• These sites may include large proportions of non-native species, such as coconut plantations, but may still retain areas of significant biodiversity. Prior to tourism development, a detailed environmental impact assessment (EIA) must be conducted at each site and the findings incorporated into a project environment management plan to reduce the negative effects of development on the significant biodiversity.
	High **9 sites**	• Similar to the high-risk marine areas, tourism and infrastructure development is not recommended in high-risk terrestrial areas. Most of these sites are highly constrained by their physical size, as many of them are small islands and are extremely vulnerable to edge effects as a result of any clearing. Even small clearings will promote changes in microclimates, potentially resulting in exotic species invasion and altering the phenology of local flora species.

Map 20: Environmental-Risk Ratings at Identified Sites



4.4.2 SOCIAL FINDINGS AT THE IDENTIFIED-SITE LEVEL

Table 11 summarizes the social-risk assessment for identified sites and the rationale for the rating based on the assessment criteria presented in section 2.3. The section concludes with an overall social-risk rating for each identified site as displayed in section 5. Map 21 shows 28 as low risk, 21 as moderate, and 21 as high risk.

Similar to the corridor-level risk assessment, the risk rating at the identified-site level is also based on expert judgment on how various social indicators interact with each other. The ratings, however, should be used only as an indicative tool.

Moderate and high-risks areas on the social map will likely require further assessment by tourism developers in terms of cost and time to access land-use rights and infrastructure as well as address potential land legacy issues and clearance of UXO. Access to public services and infrastructure, such as energy and waste management, are likely to remain a challenge.

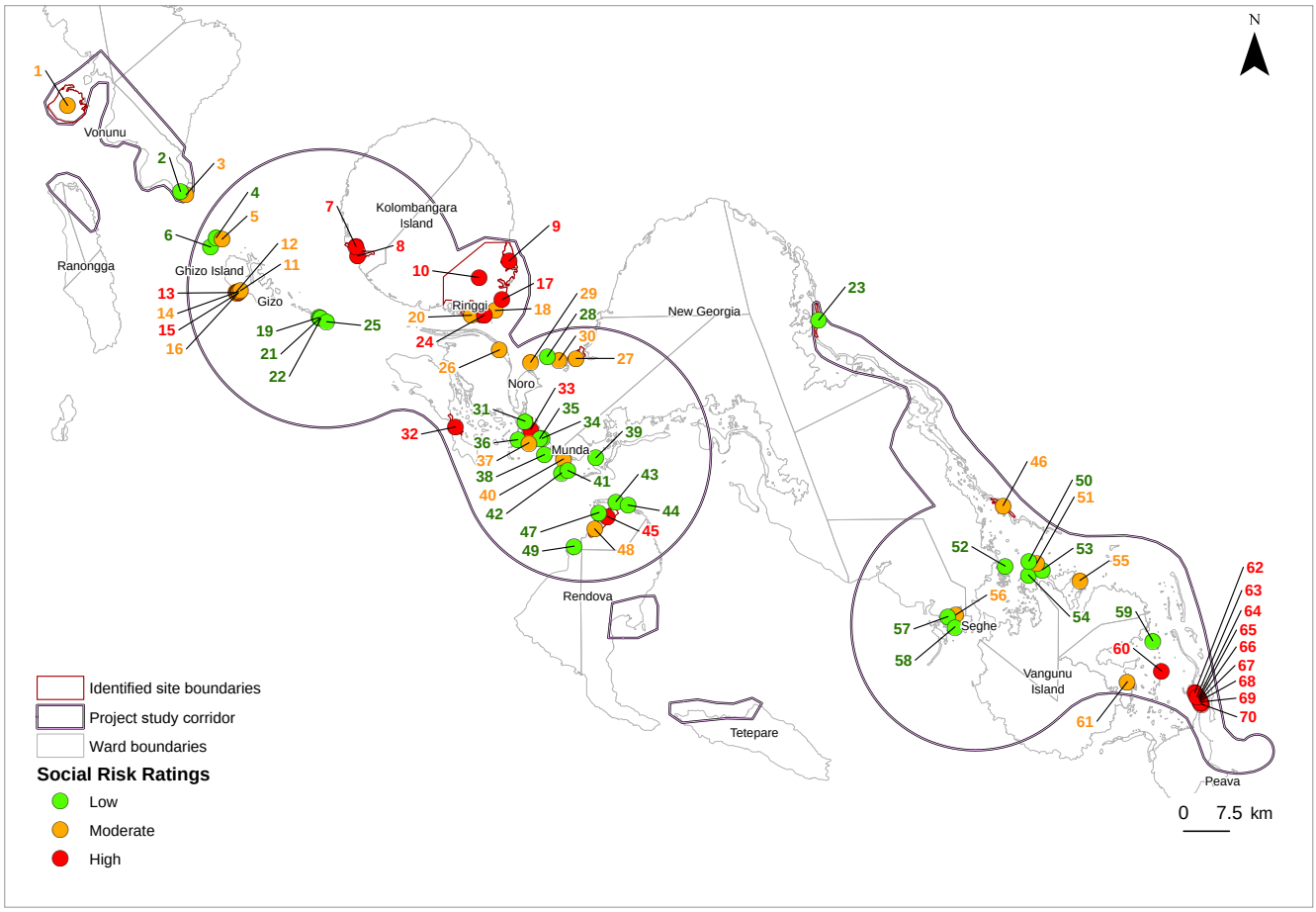
The detailed dashboard for each site (see appendix D) identifies the contribution of all social-risk indicators.

The table only identifies social risks that were weighted at 40 percent in the overall assessment.

Table 11: Identified-Site Analysis of Social Findings and Risk Assessments

Social Risks	Risk Rating	Description
Presence of people	Low **36 sites**	• These are identified sites that have no human occupation apart from those who seek to undertake tourism development. Therefore, there will be limited negative impact on these sites.
	Moderate **30 sites**	• These sites may have one to three households per hectare. The occupiers do not have sole control of the land and decision-making powers to manage its development, and they may be affected as a result. Tourism should consider the local communities' land use and/or traditional livelihoods to avoid or minimize its effects on their way of life.
	High **4 sites**	• These sites typically have a higher population density than the moderate-risk ones. In case of development, the local communities should be accommodated in a way that will not affect their way of life. Potential resettlement, conflict related to land use and land access, and cultural conflict are among some of the associated risks.
Presence of livelihoods	Low **31 sites**	• These are sites that are not used for gardening or plantations by the owners and/or users.
	Moderate **32 sites**	• These sites may have gardens and crops that support a person, family, or community, but there is still space to allow development without large impacts on these areas and the corresponding livelihoods they support. Tourism should be developed considering the local communities' land use and/or traditional livelihoods to avoid or minimize its effects on their way of life.
	High **7 sites**	• These sites are largely covered in crops and gardens. Tourism development on these sites is likely to require removal of crops, affecting surrounding communities. Investors should consult with local communities to ensure all development impacts are avoided and/or managed carefully.
Proximity to infrastructure (access to airport and health infrastructure)	Low **29 sites**	• Sites that are close to airports and medical facilities (up to 15 km from an airport and up to 10 km from a health clinic) can rely on these and other associated social infrastructure.
	Moderate **26 sites**	• These sites are further removed from an airport or a medical facility. They are, therefore, more challenging to develop and connect with other social infrastructure.
	High **15 sites**	• These are sites that are over 30 km from an airport and 15km from a health clinic. Such remote sites present health, safety, and logistical challenges for the workers and guests of tourism operators because of limited accessibility to public goods, services, and/or infrastructure.
Presence of cultural heritage	Low **50 sites**	• These have no known cultural heritage sites, including *tabu* sites, WWII historical sites, graves, or sites of other kastom significance. • While Solomon Islands and Western Province have a rich cultural and historical heritage, there are challenges in the protection and maintenance of artefacts and sites as they are not registered. Areas with no confirmed *tabu* or cultural heritage sites have been given a rating to reflect the notion that local communities may hold further information on the cultural significance of the sites. It is therefore important to consider cultural heritage on any site where detail has not yet been obtained. • Tourism development generates an opportunity to improve the situation through increased heritage surveys and consultations with local communities for the identification and preservation of artefacts and sites.
	Moderate **16 sites**	• Areas with identified but sparse cultural heritage sites are classified as moderate risk. These sites will likely be considered and avoided in a development plan.
	High **4 sites**	• Areas with several cultural heritage sites that are most likely impacted by development are classified as high risk. Associated risks include potential loss or damage to sites of cultural significance, resulting conflict with local groups, and lack of a common vision regarding tourism use and access to the site. Therefore, any development where cultural heritage sites are present should ensure comprehensive consultation with government, landowners, occupiers, and surrounding communities so that these sites are managed in a way that aligns with community opinions, applicable law and good practice.

Map 21: Social-Risk Ratings at Identified Sites



4.4.3 NATURAL-HAZARDS FINDINGS

The corridor is at high risk of exposure to natural hazards such as earthquakes, tsunamis, sea- level rise, and extreme weather events, which pose risks to tourism development and should be taken into consideration. Although Map 22 identifies areas of the province that have previously been subject to earthquakes and tsunamis, it is difficult for experts to make long-term predictions on where future natural hazards will occur. Still, identified sites within the corridor have been assessed (see appendix D) for their potential susceptibility to coastal vulnerability and sea-level rise.

Table 12 summarizes the natural-hazard risk assessment for identified sites and the rationale for the rating based on the assessment criteria presented in section 2.3. The section concludes with an overall natural-hazard risk rating (coastal vulnerability and seal level rise) for each identified site, which is displayed in Map 22 showing 9 sites had a high-risk rating, 32 sites had a moderate rating and 29 were rated as low risk.

While low-risk sites could be more easily developed, sites with moderate-to-high-level risk rating should not be precluded from development, as mitigation measures could be developed based on site-specific impact assessment.

The detailed dashboard for each site (see appendix D) identifies the contribution of all natural-hazard risk indicators. The table only identifies natural-hazard risks weighted at 20 percent in the overall assessment.

Table 12: Identified-Site Analysis of Natural-Hazard Findings and Risk Assessments

Natural-Hazards Risks	Risk Rating	Description
Coastal vulnerabilities	Low **11 sites**	• These are sites in sheltered locations with some elevation, such as those in the southern corridor around Seghe and the Marovo Lagoon.
	Moderate **44 sites**	• Sites centered on the Munda hub are slightly more exposed and are categorized as having a moderate rating. Sites around Noro, Kolombangara, and Bava are more exposed but are elevated, so they also fall into the moderate category.
	High **15 sites**	• Low-lying coral sand islands or coastal sites with little elevation are high-risk sites. In general, the sites with greater coastal sea-level-rise vulnerability are centered around the Gizo hub.
Sea-level rise	Low **21 sites**	• Low-risk sites have higher ground levels with only a small portion of them less than one meter above sea level. These sites allow for retreat and shelter in case of storm surges and sea-level rise.
	Moderate **44 sites**	• Moderate sites have between 30 and 70 percent of the areas below one meter above sea level. They are likely to experience the effects of sea-level rise but can still provide occupants some options to retreat.
	High **5 sites**	• High-risk sites are mostly low-lying coastal sites with more than 70 percent of the areas below one meter above sea level. They run the risks of inundation and damage from exposure to sea water on buildings as well as potential human injury if building maintenance is not kept up.

Map 22: Natural-Hazard Ratings (Including Coastal Vulnerability and Sea-Level Rise) at Identified Sites

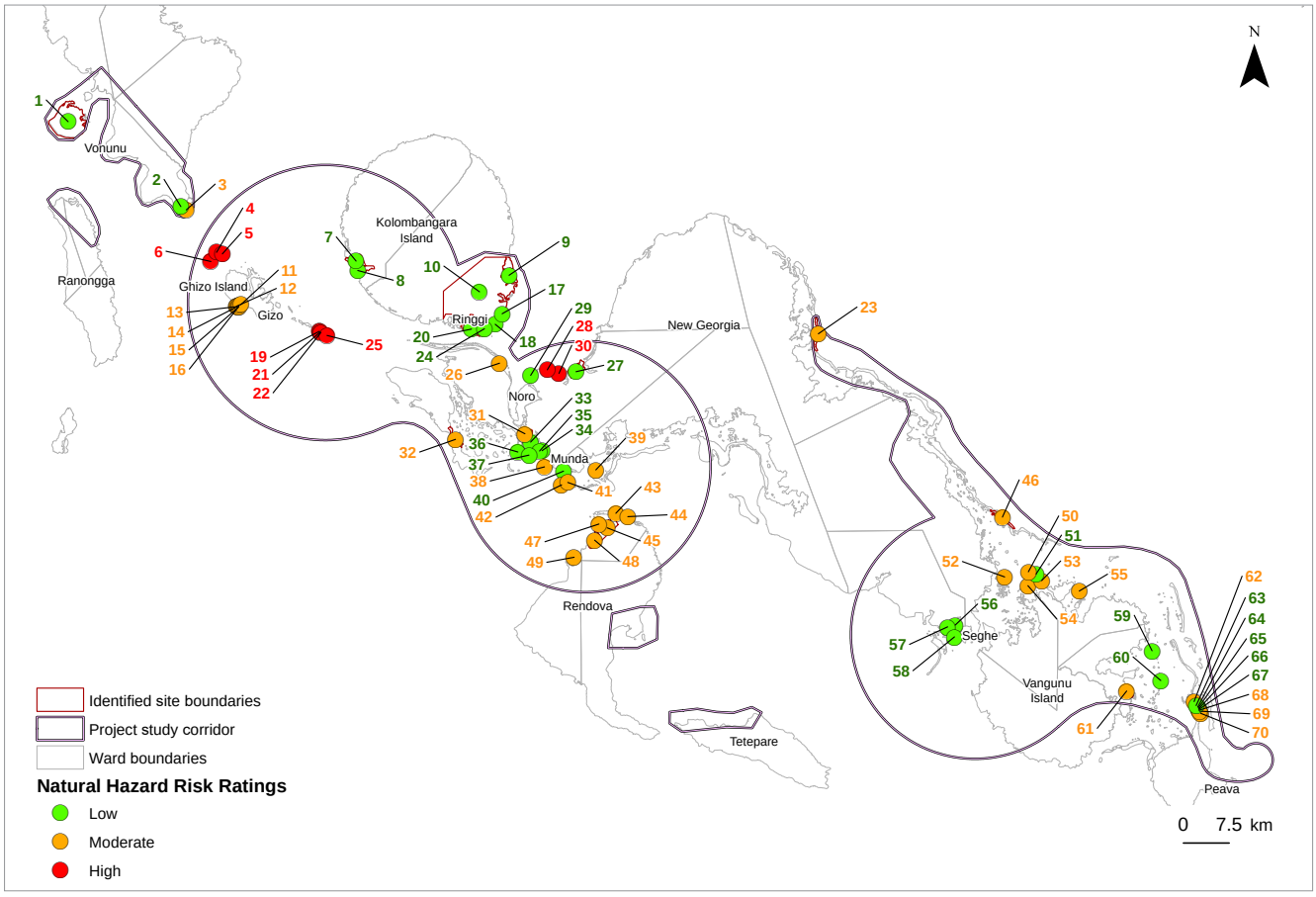


Photo Credit: Becky Last

4.4.4 OVERALL ENVIRONMENTAL, SOCIAL, AND NATURAL-HAZARD RISK MAPPING AT IDENTIFIED SITES

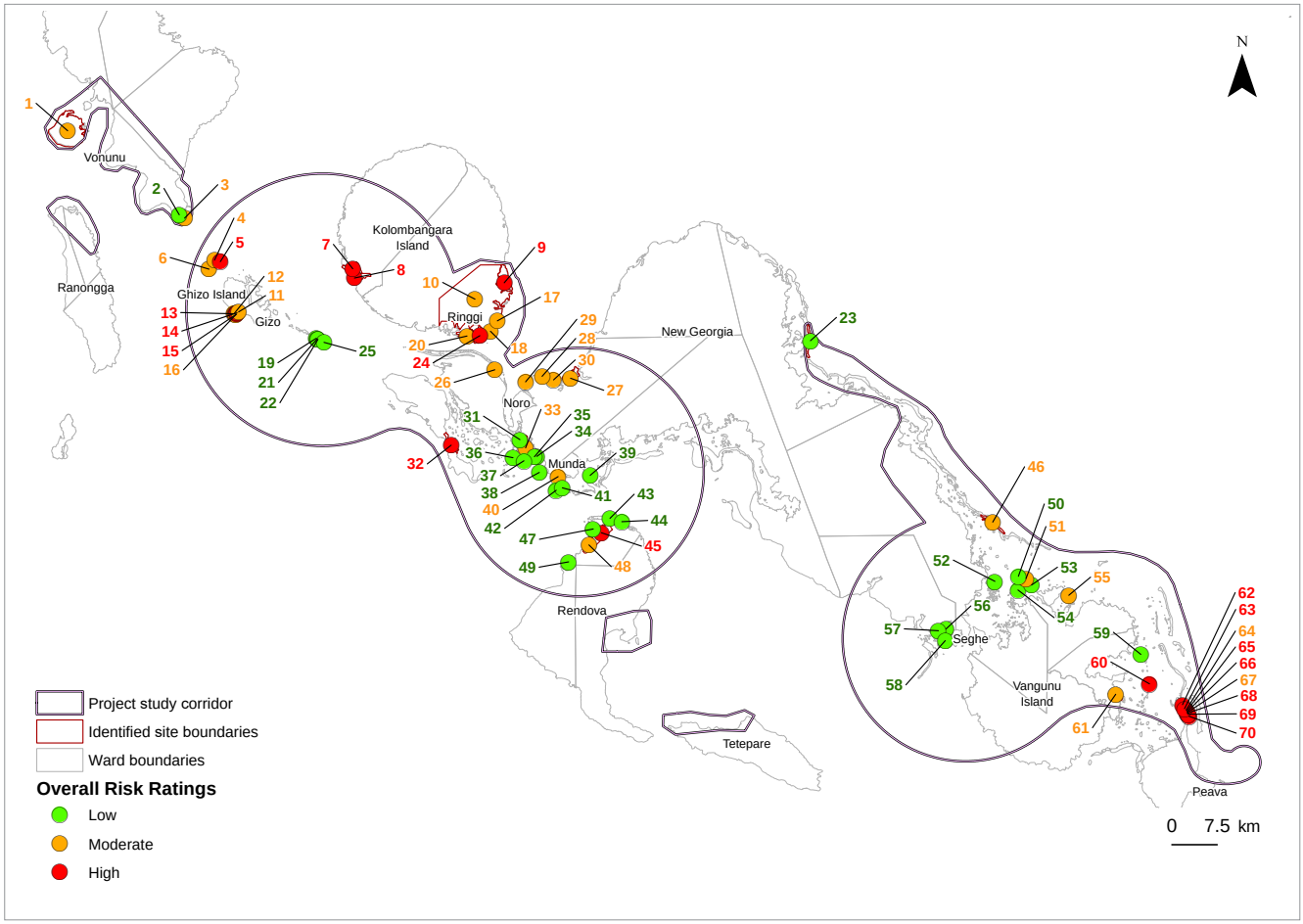
Table 13 and Map 23 below summarize the consolidated ratings of the identified sites using the weightings outlined in section 2.3.3 and Table 3.

Each site has been measured on its own merits using the risk measurements outlined in the Methodology (section 2.3.3). There are 27 low-risk sites, generally clustered around the hubs of Gizo, Munda, and Seghe towns, with some outliers at Rovomburi Passage scattered further from the three hubs. There are 18 high-risk sites around the three hubs and 25 moderate-risk sites located mostly in more exposed and remote areas or densely populated areas of the corridor.

Table 13: Summary of All Identified-Site Rankings

ID	Hub	Site location	Site identifier	RISK RATING			
				Natural hazard	Social	Environ-mental	Overall
19	GIZO HUB	South of Gizo:	**Olasana Island (North West)**	High	Low	High	Low
25	GIZO HUB	South of Gizo:	**Naru Island: Northern Block**	High	Low	High	Low
2	GIZO HUB	Vela Le Vella Island (South):	**Rovomburi Passage**	Low	Low	Low	Low
21	GIZO HUB	South of Gizo:	**Olasana Island (Center)**	High	Low	Moderate	Low
22	GIZO HUB	South of Gizo:	**Olasana Island (South East)**	High	Low	Moderate	Low
31	MUNDA HUB	Vona Vona:	**Karapata Islands**	Moderate	Low	High	Low
41	MUNDA HUB	In front of Munda:	**Hombu Hombu Island**	Moderate	Low	Low	Low
44	MUNDA HUB	North Rendova	**Mbarambuni Island**	Moderate	Low	Low	Low
37	MUNDA HUB	Vona Vona:	**Kuri Point**	Low	Moderate	Low	Low
34	MUNDA HUB	Vona Vona:	**Mbarikihi Islands: east**	Low	Low	Moderate	Low
35	MUNDA HUB	Vona Vona:	**Mbarikihi Islands: west**	Low	Low	Moderate	Low
36	MUNDA HUB	Vona Vona:	**Kolohite Island**	Low	Low	Moderate	Low
38	MUNDA HUB	In front of Munda:	**Nusa Zonga Island**	Moderate	Low	Moderate	Low
39	MUNDA HUB	In front of Munda:	**Himbi Island**	Moderate	Low	Moderate	Low
42	MUNDA HUB	In front of Munda:	**Hopei Island**	Moderate	Low	Moderate	Low
43	MUNDA HUB	North Rendova	**Kukurana Island**	Moderate	Low	Moderate	Low
47	MUNDA HUB	North Rendova	**Tambusolo Island**	Moderate	Low	Moderate	Low
49	MUNDA HUB	North Rendova	**Agana & Vangoro Islets**	Moderate	Low	Moderate	Low
53	SEGHE HUB:	Marovo:	**Veuru**	Moderate	Low	High	Low
57	SEGHE HUB:	Seghe and Surrounds:	**Tinovili Island**	Low	Low	Low	Low
52	SEGHE HUB:	Marovo:	**Gharamana Island**	Moderate	Low	Low	Low
56	SEGHE HUB:	Seghe and Surrounds:	**Mbatubosi Island**	Low	Moderate	Low	Low
58	SEGHE HUB:	Seghe and Surrounds:	**Lloro Island**	Low	Low	Moderate	Low
59	SEGHE HUB:	Marovo:	**Mbareho Island**	Low	Low	Moderate	Low
23	SEGHE HUB:	Ramata:	**Rovana Island**	Moderate	Low	Moderate	Low
50	SEGHE HUB:	Marovo:	**Mbukimbuki (West)**	Moderate	Low	Moderate	Low
54	SEGHE HUB:	Marovo:	**Karunohu Island**	Moderate	Low	Moderate	Low
4	GIZO HUB	North of Gizo:	**Njari Island**	High	Low	High	Moderate
3	GIZO HUB	Vela Le Vella Island (South):	**Liapari**	Moderate	Moderate	Low	Moderate
11	GIZO HUB	Gizo Island:	**Pailonge Point 6**	Moderate	Moderate	Low	Moderate
12	GIZO HUB	Gizo Island:	**Pailonge Point 1**	Moderate	Moderate	Low	Moderate
16	GIZO HUB	Gizo Island:	**Pailonge Point 3**	Moderate	Moderate	Low	Moderate
10	GIZO HUB	Kolombangara (South):	**Mbimbu Inlet and Mbarapati Pt**	Low	High	Moderate	Moderate
17	GIZO HUB	Kolombangara (South):	**Hikuana Point and Mbarati Pt**	Low	High	Moderate	Moderate
6	GIZO HUB	North of Gizo:	**Njingono Island**	High	Low	Moderate	Moderate
1	GIZO HUB	Vela Le Vella Island (South):	**Mbava Island**	Low	Moderate	Moderate	Moderate
18	GIZO HUB	Kolombangara (South):	**Teme Point & Single Mate**	Low	Moderate	Moderate	Moderate
20	GIZO HUB	Kolombangara (South):	**Kukuli Point**	Low	Moderate	Moderate	Moderate
33	MUNDA HUB	Vona Vona:	**Mbanga Island - Tabaka**	Low	High	Low	Moderate
29	MUNDA HUB	Noro (North):	**Tunguivili Point (East)**	Low	Moderate	Low	Moderate
40	MUNDA HUB	In front of Munda:	**Hombupeka Island**	Low	Moderate	Low	Moderate
48	MUNDA HUB	North Rendova	**Mandali Point**	Moderate	Moderate	Low	Moderate
28	MUNDA HUB	Noro (North):	**Lambete Kopi**	High	Low	Moderate	Moderate
30	MUNDA HUB	Noro (North):	**Niu Kaloka (west):**	High	Moderate	Moderate	Moderate
27	MUNDA HUB	Noro (North):	**Enogha Point**	Low	Moderate	Moderate	Moderate
26	MUNDA HUB	Vona Vona:	**Kohingo Island, Ghalughalu Point**	Moderate	Moderate	Moderate	Moderate
64	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 4**	Low	High	Low	Moderate
67	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 7**	Low	High	Low	Moderate
51	SEGHE HUB:	Marovo:	**Mbukimbuki (East)**	Low	Moderate	Low	Moderate
55	SEGHE HUB:	Marovo:	**Mahoro Island**	Moderate	Moderate	Low	Moderate
46	SEGHE HUB:	Marovo:	**Tatama & Avavasa Islands**	Moderate	Moderate	Moderate	Moderate
61	SEGHE HUB:	Marovo:	**Lalauru Point incl Islands**	Moderate	Moderate	Moderate	Moderate
5	GIZO HUB	North of Gizo:	**Varu Island (North of Gizo)**	High	Moderate	High	High
13	GIZO HUB	Gizo Island:	**Pailonge Point 2**	Moderate	High	Low	High
15	GIZO HUB	Gizo Island:	**Pailonge Point 4**	Moderate	High	Low	High
14	GIZO HUB	Gizo Island:	**Pailonge Point 5**	Moderate	Moderate	Low	High
7	GIZO HUB	Kolombangara (South):	**Kukudu**	Low	High	Moderate	High
8	GIZO HUB	Kolombangara (South):	**Kukundu**	Low	High	Moderate	High
9	GIZO HUB	Kolombangara (South):	**Jack Harbour**	Low	High	Moderate	High
24	GIZO HUB	Kolombangara (South):	**Vila Point**	Low	High	Moderate	High
32	MUNDA HUB	Vona Vona:	**Buni - Parara Island**	Moderate	High	Low	High
45	MUNDA HUB	North Rendova	**Rendova harbor**	Moderate	High	Moderate	High
60	SEGHE HUB:	Marovo:	**Tinge & Karungarao Island**	Low	High	Low	High
63	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 2 & 3**	Low	High	Low	High
65	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 5**	Low	High	Low	High
66	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 6**	Low	High	Low	High
62	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 1**	Moderate	High	Low	High
68	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 8**	Moderate	High	Low	High
69	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 9**	Moderate	High	Low	High
70	SEGHE HUB:	Gatokae:	**Timbara (Mbunikalo) 10**	Moderate	High	Low	High

Map 23: Overall Environmental, Social, and Natural-Hazard Risk Ratings at Identified Sites



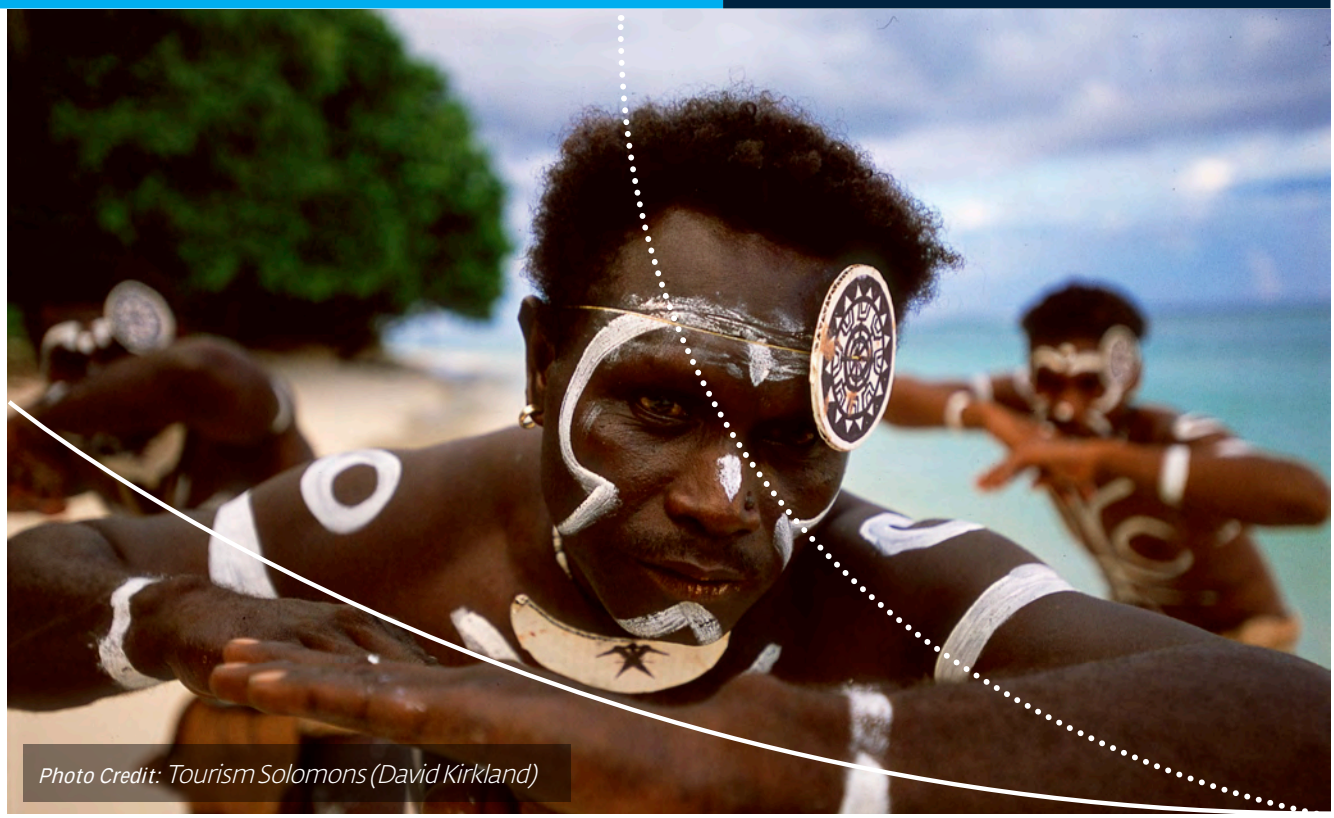


Photo Credit: Tourism Solomons (David Kirkland)

5. Summary of Risks and Recommended Actions

5.1 INTRODUCTION

Table 14 provides an overview of the key contextual and corridor-level risks applicable to and from tourism development in Western Province and recommended mitigation actions. The SIG and tourism investors and developers can integrate these recommendations in their development plans or strategies to ensure E&S safeguards and business sustainability.

The corridor-level risks are also applicable across the identified sites, with further detail included in the site profiles in appendix D. Where applicable, unique risks on the sites have been noted and recommendations for these are addressed in the profiles.

Only risks relevant to tourism development are included. The following risks have been excluded:

- Security and conflict have limited relevance to tourism development in Western Province. Petty conflict may occur among community members and this is covered under reprisal risk within the matrix.
- Biodiversity, ecosystem services, and climate change are discussed further in the corridor section of the risk matrix.

5.2 RISKS AND RECOMMENDED ACTIONS MATRIX

Table 14: Contextual Risks and Recommendations

Key Risk	Risk Description and Consequence	Recommended Actions for Government
Social cohesion	• Local communities, tourism developers, and workers need to be aware of how to operate tourism activities within the local context to ensure developments are culturally sustainable. They also need to mitigate the risk of aggravating internal tensions, discrimination, exclusion from job opportunities, cultural misunderstandings, and disrespectful behaviors, including exacerbation of gender-based violence. • Some local community members may have limited skills and/or education for tourism employment. This can limit their ability to access opportunities and result in social-cohesion issues if developments only benefit a part of the community.	• Engage and involve local communities in the development, giving them jobs where possible. Explore opportunities to develop community-based tourism. • Provide training and scholarships to local inhabitants in tourism-related activities. • Protect excluded groups and vulnerable parties, such as women, youth, elderly, and minorities, to facilitate their access to employment. • Develop and enforce policies against discrimination and gender-based violence, particularly for the workforce and communities in close proximity to any proposed development.
Labor and workforce	• Access to skilled laborers in Western Province is likely limited. They may need to be supplied from other provinces or overseas. • Patriarchal views can prevail in some communities, limiting access to tourism jobs for women. They can also be subjected to sexual exploitation and gender-based violence as a result of more tourists and construction and operation workers during development. • In Solomon Islands, children as young as 12 may be allowed to undertake some types of work under the Labour Act, which does not align with the International Labour Organization convention setting the minimum age for admission to employment or work at 15 (13 for light work) and for hazardous work at 18 (16 under certain strict conditions).(32) This may result in child laborers working in tourism.	• Support local communities and their access to tourism jobs through training. The Australian Department of Foreign Affairs, for example, has provided training and scholarships in the province through its Australia Pacific Training Coalition. Such programs can help improve the talent pool. • Establish a provincial-level Tourism Advisory Bureau to help local communities with interest, queries, or concerns regarding tourism investment. This can protect them from exploitation, encourage their participation and contribution, and create jobs and other earning opportunities for them. • Awareness programs and grievance mechanisms for workers and locals can foster trust and collaboration with tourism operators. • Recruitment for tourism jobs should support transparency, gender and ethnic diversity, and discourage gender-based violence and exploitation. • Encourage tourism operators to employ women and disabled people, and improve the legal and/or judicial systems to encourage the report of abuses to the authorities. • The government should also consider increasing the minimum working age to protect children.
Food security	• Tourism development can potentially exacerbate the lack of food security in the province, as local producers may prefer to supply to tourism operations instead of local communities, resulting in higher food prices. As a result, the most vulnerable may be forced to eat less and suffer from malnutrition, hunger, and other health problems.	• The government can lead the development of more structured agriculture and aquaculture production systems within the communities and the private sector, including provision of training to small farmers and those with gardens for food consumption. CSOs and NGOs could be involved to deploy training within communities. • Monitor hikes in food prices and provide subsidies to the most vulnerable when needed. • Create more jobs to reduce unemployment and increase household earnings.
Health epidemic/ pandemic	• Tourism can increase the vulnerability of local communities to epidemics/pandemics through the local and international movement of people, particularly during the COVID-19 pandemic.	• Strengthen health screening of tourists at the border, including responses to COVID-19. • Enhance Ministry of Health processes to address epidemics/ pandemics and the response capacity of health clinics and hospitals even in "normal times."

32 ILO, Minimum Age Convention, C138, 26 June 1973.

Key Risk	Risk Description and Consequence	Recommended Actions for Government
Political risks and governance	• Transparency and accountability issues leading to corruption are possible in Solomon Islands. This may allow investors and developers to circumnavigate requirements and/or compliance with environmental and social permitting. • Insufficient enforcement with little consequence related to the requirements of legislations such as the *Environment Act*, the *Protected Areas Act*, and the *Fisheries Management Act* can result in developments with adverse effects on the social and natural environments. There are also no requirements related to the assessment of cumulative impacts of development and no environmental guidelines for tourism development; for example, guidelines on the appropriate development type for a particular environment have yet to be developed. • Limited capacity to undertake reviews and approve submitted EIAs can lead to the overlooking of some development impacts during planning, with consequences resulting from project construction, operation, and maintenance. • Lack of consistency between legal provisions can cause confusion for developers on the management and/or protection of resources. For example, the status and designations of marine protected areas are inconsistent in the *Fisheries Management Act* and the *Protected Areas Act*, potentially leading to damages and loss of biodiversity in protected areas. • Limited protection of the marine and terrestrial environments across the study corridor may diminish natural resources and biodiversity for the communities and future tourism amenities. For example, within the corridor, there is only one fully gazetted protected area, while others have limited to no legal status. Customary fishing rights are unrestricted within the *Fisheries Management Act 2015*. • Traditional *tabu* areas are not afforded any legal weight to support their protection. This may cause frustration among community members trying to protect/manage these areas and result in the eventual loss of resources.	• Increase transparency initiatives and tighten regulations to tackle corruption. • Develop consistent, countrywide standards and requirements for the development of tourism projects and infrastructure. Provide indication for local permitting and facilitate investors in accessing business-related information on the websites of relevant ministries. • Incorporate a vetting process to grant tourism-business permits only to high-quality investors/developers. Companies should demonstrate a track record of environmentally and socially sustainable operations and their directors and associates should pass satisfactory background checks for character and integrity. • The government should develop cost-recovery policies by collecting fees—when necessary—for business permits, approvals for EIA and environmental and social impact assessment (ESIA), building permits, compliance monitoring, disbursements of vehicle/boat-running costs, communications, and staff per diems and accommodation related to such permitting and approvals. This will provide budget support and resources to enable more effective compliance monitoring and conservation. Fiduciary control should be strengthened simultaneously to ensure that the recovered fees are returned to appropriate government departments and not reallocated to other government priorities. • Strengthen policy frameworks in Western Province, particularly tourism policies and fisheries and environmental ordinances. • Improve the MECDM's E&S capacity to conduct and review EIAs/ESIAs that are in line with national legislations and international good practices. This includes building technical capacity and increasing resources for staff and equipment. • Increase the statutory obligations for compliance monitoring of EIA/ESIA mitigations and associated management plans. • Strengthen policies on the sustainable use of natural resources, including fisheries, forests, and water. • Update regulations on pesticides and fertilizers with detailed application guidelines considering the needs of different sectors; for the tourism sector, stringent regulations are required to avoid the risk of toxic-chemical runoffs into water resources or the marine environment. • Tourism-development policies and legislations should fully align with the requirements of other sectors, such as the *Fisheries Management Act*, the *Protected Areas Act*, and the *Forests Act*. • Update the legal designations of all protected/managed areas to provide clarity of requirements across all legislative options and remove inconsistencies between the *Fisheries Act* and the *Protected Areas Act*. Empower appropriate government agencies to take enforcement actions. • Registration of protected marine areas will likely improve the marine resources for local communities. Encourage sustainable fishing and harvesting of such resources in customary fishing rights under the *Fisheries Management Act* and support enforcement to ensure compliance. • Improve capacity building in local communities by working with NGOs and CSOs to increase the number and size of gazetted protected areas, which will enhance enforcement and control of activities inside the areas. • Put in place natural and social-environment safeguards when developing the Western Province Tourism Development Plan. Improve capacity building of the provincial government to ensure proper implementation of the plan.

Key Risk	Risk Description and Consequence	Recommended Actions for Government
Natural hazards	• The National Disaster Management Office (NDMO) has limited capacity and resources to implement early warning systems for natural disasters, including floods and tsunamis, and execute emergency and evacuation procedures in a timely manner to protect the community. • There is no hazard mapping across Western Province to give guidance to developers for appropriate development in hazard-prone areas. • Access to land and natural resources will be limited in the event of natural disasters, leading to potential water and food shortages.	• Improve capacity building, training, and budgetary support for the NDMO to design early warning systems and better procedures for responding to disasters. • The NDMO and private operators should prepare communities, particularly those in remote areas, and tourism facilities to cope with natural disasters through training. • Upskill staff in emergency response, preparation, scenario planning, and first aid. • Foster better coordination between departments within the MECDM to enhance planning as well as information management and dissemination. • Encourage tourism operators to develop a disaster-risk-management plan for their tourism establishments and local communities. They should work with the NDMO to put in place an emergency response and evacuation plan for their staff and customers and train them on its implementation, bearing in mind any language and cultural barriers for foreign guests. • The Western Provincial Government can work with telecommunication providers to improve the cellular network in emergencies. • Invest in scenario planning and emergency-response infrastructure, such as evacuation centers, boats, warehousing, and logistics planning. • Design buildings and structures that can withstand natural hazards and build tourism facilities that can serve as emergency shelters for tourists, workers, and local communities.

Key Risk	Risk Description and Consequence	Recommended Actions for Government
Access to land and natural resources	• Social disputes can occur because of land claims, causing delays in development. Lack of clear provisions on the management and mitigation of conflicting land claims among tribes or locals can discourage tourism developers who need long-term land lease for tourism projects. • Some tribes have not registered their marine and terrestrial land-ownership rights, so developers may have trouble identifying land that is under customary use with no claims or legacy issues. This creates uncertainties in tourism investment due to the lack of legal titles and potential disputes with local communities. • Claims on landownership or resources, including forest products, food sources, water supplies, or tourism amenities such as reef snorkeling and diving, forest hiking access, and reef surf break access anchoring, can be made even on registered land. • Perceived customary ownership of reefs may generate conflict as tourist numbers increase. Customary owners and tourism operators may reach different agreements, resulting in varying benefits. Many villagers assume they have ownership or stewardship of the reefs and some of them protect their reefs from fish poaching and spear diving. Some may request fees for anchoring, snorkeling, diving, or swimming. When tourist numbers increase, this, if left unregulated, can become a source of conflict. • The Commissioner of Lands uses paper land titles, which increases the complexity of record keeping, with the risk of loss in the event of a fire or other natural disasters and possibility of misplaced records and clerical errors. • While compensation procedures for land access are well regulated and known, the compensation rates specified in the Land & Titles Act (amended in 2016) are outdated, which means people may not be compensated properly considering replacement costs, including inflation.	• Strengthen the processes and procedures for promptly addressing land claims and land disputes. • Digitalize the land registry for registered, surveyed, and customary lands and/or customary rights holders, including rights to fishing grounds, water sources, reefs, and forests. A searchable land register managing landownership, land titles, land-use rights, and related transactions will improve transparency and management, reducing the time needed to solve potential conflict over land. • Improve the landowner identification system so that benefits from the developing projects can be shared more broadly. The strengthening of customary landowner records may allow them to benefit more, through potential lease agreements, from development. • At the planning stage, tourism developers should (i) develop better stakeholder consultation and a grievance-redress mechanism to reduce risks of project delays and negative public reaction, and (ii) avoid physical and economic displacement; when this is not possible, minimize and mitigate the impacts by considering offering compensation and assistance to both formal and informer users of the land and resources. • The uptake of registering or surveying land may speed up if there is improved access to the Ministry of Lands, Housing and Survey in Western Province providing more guidance and education. The provision of dispute resolution services may defuse tension between communities claiming ownership or user rights of the same parcel of land. • Encourage the use of negotiated settlement and align compensation rates for land and restriction to land use and/or natural resources, such as fishing ground, considering the impact on livelihood, replacement costs (for example, the market rate plus transaction costs and inflation), and alternative access to natural resources. • Enhance capacity building, training, and budgetary support for land reform in the SIG and Western Provincial Government. • Review examples of customary-land registration in other parts of the Pacific, such as Fiji, consult local communities in Solomon Islands, and tailor the process for their needs. • Develop an understanding of the community dynamics and protocols to access sites and fees for accessing them, particularly those under customary use.
Reprisals	• Reprisal is a high risk for tourism development, with historic examples affecting tourism operators in Western Province. • Some tribes have registered their land, allocating the plots among different families. Trustees representing the tribe are responsible for managing and/or coordinating the development of customary land, but tourism projects may cause conflict within the tribe if there is no consensus on how the land will be developed or how benefit will be shared.	• Community engagement and participation in any tourism development will improve the management of reprisal and associated conflict risks. Some successful examples in Western Province are job creation, cultural village-emersion experiences, community-based tourism projects that enable greater benefit-sharing, and access fees for dive sites and jungles. • The national and provincial governments should improve and implement formal dispute-resolution processes on customary land to help resolve conflicts.

Table 15: Corridor and Identified-Site Risks and Recommendations

Key Risk	Risk Description and Consequence	Recommended Actions for the SIG	Recommended Actions for Developers
Proximity to infrastructure	• Public infrastructure in Western Province, including transportation, energy production and delivery, access to water, waste management, and access to health care/health facilities, is limited. They may be inadequate for tourism development and its operations. • Pressure on fuel distribution is likely to increase with the development of tourism. • Distance from entry ports to tourism activities or/ and accommodation may increase maritime accidents/fatalities and add pressure to health facilities.	• Invest in infrastructure. Attract private sector investors and consider public-private partnerships where appropriate. • Design and enforce guidelines on water usage and conservation at tourist accommodations, taking into account water availability, water treatment infrastructure, and water usage of local communities. • Support the Solomon Islands Maritime Authority in developing minimum maritime-safety standards for both local and international tourism operators. Issue business permits only to those who meet these standards to improve the safety of boat transport. • Support the Western Province police department in developing the capacity of coast guards to enhance maritime safety and rescue capacity within the corridor. • Provide additional support to police coast guard service. An increased budget will be necessary to further improve rescue capacity, including the delivery of training to local entities involved in marine safety. • Collaborate with investors, donors, and the community to improve good practices in waste management via the Ministry of Environment. • Develop waste-management facilities at the three hubs of Gizo, Munda, and Seghe. This should include a collection service or centralized transfer location to collect and process waste. • Consider developing standby "flying-doctor" capability to enhance safety and medical treatment capacity.	• Select sites that are within the tourism corridor and in reasonable proximity to ports of entry. • Devise appropriate maritime-safety precautions and contingency plans for own operations, including training for staff. • Develop contingency plans in the event of inclement weather and/ or a safety event that requires medical treatment. • Support medical-treatment and/ or first-aid training and capacity building in local communities. • Collaborate on environmental awareness and/or waste management seminars and training for stakeholders.

Key Risk	Risk Description and Consequence	Recommended Actions for the SIG	Recommended Actions for Developers
Presence of livelihoods and people/ access to land and natural resources	• Developing land plots used by the community as a source of income/livelihood or for living purposes can increase the risk of resettlement and impact on livelihoods.	• Work with the private sector to encourage investment in Western Province to support alternative livelihoods, such as seaweed and tilapia farming (two current Ministry of Fisheries initiatives) and sea-cucumber farming, if impact on livelihood is unavoidable. • Require developers to consider E&S risks when selecting sites for tourism development and integrate the local community into the development plan to avoid or minimize resettlement (economic and physical displacement) and related impacts.	• Conduct an early and complete review of a site and engage the community to confirm its use before making development decision. Use the ESDS site profiles as a starting point to consider E&S risks and factors in site selection. • Avoid development in highly populated areas where the communities live or use as a source of income and livelihood. • Identify those impacted by the development and prioritize their access to employment opportunities. • Minimize, mitigate, or compensate all of the affected at replacement cost, addressing also impact on livelihood and providing access to natural resources used for livelihood, such as fishing ground, or identify alternative area in consultation with those affected. • Devise resettlement and livelihood-restoration planning, implementation, and monitoring in accordance with international good practices. Provide appropriate compensation and assistance to those affected before taking possession of the land and assets required for the project.
Unexploded ordnances (UXO)	• Some locations may still contain UXO, posing a potential risk for developers in term of costs of clearance and potential injuries/ fatalities.	• Ensure comprehensive mapping is in place for UXO identification and clearance; the SIG should proactively clear sites following good international industry practices. • Develop a digitized record that can be accessed online to disseminate information on UXO presence for communities, developers, and tourists.	• Hire experienced UXO specialists to conduct due diligence and detailed risk assessment on the presence of UXO at potential development sites. If the study shows a high likelihood of UXO presence, then surveys should be undertaken to identify its type, quantity, location, and clearance techniques.
Coastal vulnerability/ sea-level rise	• Some identified sites and parts of the corridor are in low-lying coastal areas. Some areas, especially those on exposed western shores, are vulnerable to coastal inundation from storm surges. • Some identified sites will be impacted by sea-level rise, which may affect their utility or amenity value.	• Increase the resilience of local communities and public and tourism infrastructures from climate-change vulnerabilities. • Undertake coastal inundation and tsunami risk mapping. • Consider designing engineering coastal protection. • Improve coordination between departments within the MECDM to enable better planning. • Collaborate with developers and NGOs to protect coastal zones, such as mangroves, salt marshes, wetlands, and sea grass, and increase coastal resilience for tourism developments and communities.	• Design tourism facilities to accommodate likely sea-level- rise projections. • Select locations that are in less exposed coastal locations. • Undertake emergency planning for severe weather events. • Support climate-change adaptation planning in the local communities. • Support the government in protecting coastal zones.

Key Risk	Risk Description and Consequence	Recommended Actions for the SIG	Recommended Actions for Developers
Biodiversity and ecosystem services (marine and terrestrial)	• Potential risks posed by tourism development to biodiversity and ecosystem services across the corridor include: - Decline in natural resources for local communities, such as reduced fish stocks, wood harvesting for fuel, and forest products - Introduction of invasive species that are detrimental to native species through tourism activities - Decline in the environment's life-supporting capacity for local communities - Influx of supporting workforces and subsequent induced impacts from use of natural resources • A loss of biodiversity can impair the aesthetic, intrinsic, or amenity value of the tourism industry. • Monitoring mechanisms for resource management and pollution prevention are not fully addressed in the policy frameworks, such as the Wildlife Protection and Management Act 1998 and (Amendment) Bill 2016 and the Protected Areas Regulations 2012.	• Improve the MECDM's capacity in EIA/ESIA reviews and support it to implement cost-recovery policies for such reviews to generate more revenue for enhancing its capacity for compliance monitoring. • Establish responsibilities and provide budgetary support to the MECDM for compliance and enforcement monitoring against EIAs/ESIAs to ensure there are consequences for poor performance. • Collaborate with NGOs and academic/research institutes to undertake additional studies, such as: - Landscape/ecosystem mapping for modified, natural, or critical habitats - Land-use classification - Detailed studies on critical habitats and the IUCN's Red List in Western Province • Require watershed and topographical mapping in the EIA robust investigations to identify at-risk species and appropriate mitigations measures. • Baseline data on local biodiversity and ecosystems will be needed for regular monitoring activities or environmental audits, which should occur during the different stages of tourism projects. • The Conservation Department should collaborate with environmental and conservation NGOs to set targets for fully protected marine and terrestrial environments covering a range of ecosystems. Support the department to conduct compliance monitoring and enforcement initiatives for protected areas. • Invite the local communities to participate in the E&S compliance of tourism projects in remote areas. Collaborate with NGOs to enhance the communities' capacity to conduct monitoring of E&S risk mitigation of project development in remote areas. • To reduce overfishing, work with the Ministry of Fisheries to establish compliance monitoring with the *Fisheries Management Act* 2015 and enforcement of coastal fisheries in the key hub areas of Western Province. • Support the Ministry of Forestry and Research in strengthening the requirements of logging permits, compliance, and enforcement monitoring. • Develop more stringent biosecurity procedures at the national and provincial levels to mitigate the spread of invasive species.	• Tourism operators can target the high-value, nature-based tourism niche market to engage in community-based conservation activities. • Avoid impact on vulnerable ecosystems, including sea-grass beds, intact reef systems (such as the Saeraghi Reef north of Gizo Island), mangrove forests, and sections of undisturbed coastal and low-land forest. • Work with local communities to support and strengthen protected areas in the marine and terrestrial environments. • High-risk marine sites should be subject to a detailed environmental and ecological assessment to protect the integrity of the sites. Such sites may support what are defined as critical habitats, which would require additional compliance requirements to meet good international industry practice. • Addressing moderate risks will require a combination of detailed EIA/ESIA-level site assessment and subsequent incorporation of findings into a project Environment Management Plan that is compliant with delivering the performance outcomes of international good practice.

Key Risk	Risk Description and Consequence	Recommended Actions for the SIG	Recommended Actions for Developers
	• Solid waste and wastewater infrastructure typically managed on a site-by-site basis will not be sustainable with further tourism growth, as it can overload the environment and alter the surrounding ecology. Risks include: - Wildlife mistaking waste materials for food, with the materials entering the food chain - Plastics degrading in the environment to form micro and nano plastics, which are shown[33] to have deleterious health effects on freshwater and marine organisms	• Provide guidance and education on good self-managed waste management and wastewater management practices for investors and landowners in Western Province. • Consider setting a tourism conservation tax at Gizo, Munda, and Seghe airports after consultation with potential investors and NGOs such as WWF, WorldFish, the Kolombangara Island Biodiversity Conservation Association, and Wildlife Conservation Society. This revenue can be used to enhance and fund conservation activities in the corridor. • Business permits should be issued to the acceptability of the EIA/ESIA and associated conditions, considering good practice. • Ensure that the marine protected areas are recognized and registered to reduce potential exploitation and damages from increased tourist visits. Local communities can be empowered to help protect and manage these areas. The registry of the protected areas should be available on the MECDM website so that investors can plan their developments without causing damages or disruption to the areas.	
Cultural heritage	• Poorly documented and managed historical and cultural sites, including *tabu* sites, have led to the damage and loss of important artefacts of interest to the indigenous people and/or other communities. • WWII relics have been lost or damaged. • The provincial government does not have a dedicated office responsible for managing or monitoring cultural-preservation activities. • While local communities are aware of the location of *tabu* sites, such sites may not be listed in the registry under the Ministry of Culture and Tourism. As such, some of the *tabu* sites have lost their significance, while others were lost to development activities, such as logging.	• Improve data collection and/or mapping of cultural and historical artefacts for preservation purposes, considering also their relevance for indigenous people and the community. • Update ordinances for culturally important sites, including *tabu* sites, cemeteries, and sites of spiritual significance to local communities. This would include surveying the communities and mapping the location and size of the sites as well as sharing such information publicly. • The provincial government can cooperate with NGOs and research institutes/academia to consult with local communities and enhance their capacity for developing their own registries of *tabu* sites, which can later be compiled into a provincial registry. • Require developers to have in place a Chance Find Procedure.[34]	• Consult with the government and other relevant parties to identify areas where *tabu* or cultural sites may be present. • Early and active engagement with local communities including indigenous people to ensure all cultural or historical sites and practices are respected and not affected by development. • Preserve cultural and historical sites and use them for tourism sightseeing if surrounding communities find it acceptable.

33 Chatterjee and Sharma 2019.

34 A Chance Find Procedure outlines what will happen if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation (IFC Performance Standard 8).


Photo Credit: David Kirkland

6. Recommendations and Conclusions

6.1 RECOMMENDATIONS

This report was developed as a high-level landscape study and site-screening tool to inform relevant government agencies in Solomon Islands and Western Province, potential and current tourism investors and developers, and other relevant stakeholders such as NGOs, CSOs, and local communities of the E&S situation and associated risks and opportunities for tourism development in province. This includes an indication of the low, moderate, and high-risk areas for tourism development from an E&S perspective.

This section outlines overarching recommendations from this assessment in growing the tourism sector in Western Province. More detailed, specific recommendations and opportunities are included the Risks and Recommended Actions Matrix in section 5.2.

6.1.1 ENHANCEMENT OF THE REGULATORY FRAMEWORK AND ENVIRONMENT

This study has provided specific recommendations for updating existing policies, taking into account the local E&S contexts, challenges, and anticipated risks to and from tourism development.

Table 16: Recommendations for Policy Frameworks

Existing Policies	Recommendations
Environment Act 1998	• Develop cost-recovery mechanisms, from project developers, for ESIA reviews and monitoring compliance with Environmental Management Plans. This approach may assist with providing more resources to strengthen E&S outcomes on projects. • Strengthen the MECDM's statutory obligations and powers to monitor projects' adherence to the *Environment Act* and environmental protection. • Include additional and/or more specific provisions on the management and disposal of hazardous materials, waste, and pesticides. Resorts or hotels may be using chemicals for their pools and gardens, which could have a negative impact on the local environment, such as contaminated water running off to beaches.
Forest Resources and Timber Utilization Act 1991	• Strengthen the Ministry of Forestry's statutory obligations and enforcement powers to monitor adherence to the *Forest Resources and Timber Utilization Act* and forestry permits.
Land and Titles Act 1968	• Decentralize powers from the Ministry of Lands, Housing and Survey to enable processing at the provincial land-titles office. This would make registering titles for customary landowners more accessible and less costly. • Digitize land records to increase efficiency and transparency.
Town and Country Planning Act 1979	• Consider special provisions to encourage an appropriate type of tourism development (to be defined by the SIG) in Western Province. • The Western Provincial Government should weigh the appropriateness of allowing casinos in the province.
Wildlife Protection and Management Act 1998 and (Amendment) Bill 2016 and *Protected Areas Act* 2010	• Strengthen the statutory obligations and powers of the MECDM's Conservation Department to monitor adherence to the *Wildlife Protection and Management Act* and improve biodiversity protection. • Align the *Protected Areas Act 2010* with the *Fisheries Act 2015* to minimize duplication/confusion of MPAs between the two acts.
Fisheries Act 2015	• Strengthen the Ministry of Fisheries and Marine Resources' capacity to monitor compliance of the *Fisheries Act* for coastal fisheries. • Impose limits on the catch size and quantity as well as fishing periods on customary fisheries to encourage sustainable harvesting practices. Currently, customary fishing rights are unfettered.
Safety at Work Act 1982	• Strengthen the statutory obligations and powers of the Ministry of Commerce, Industry, Labor and Immigration (Labor Division) to enforce the *Safety at Work Act* to drive a cultural change in the workplace.
Labour Act 1996	• Consider raising the minimum age of employment to 14 to align with the International Labour Standards on Child Labour such as ILO's C138 – Minimum Age Convention, 1973 (No. 138). • Considering that new tourism businesses may be foreign-owned, the SIG and Western Provincial Government will need to update the *Labour Act 1996* to integrate anti-discriminatory labor policies and additional provisions on the protection of local communities. • Additional provisions and/or safeguards on the protection of women, children, disabled people, and other vulnerable groups should be created and/or amended into existing policy. • Authorized provincial government personnel can conduct regular and/or spot checks on tourism establishments to evaluate if there are labor violations or if employees are being provided with a conducive work environment.
Solomon Islands Visitors Bureau Act 1996	• Support the continued development of tourism infrastructure, such as wharves, jetties, and transportation hubs, and conservation initiatives across the province.

6.1.2 CAPACITY BUILDING

Both the SIG and the Western Provincial Government have limited technical and financial capacity (in terms of staff, equipment, and vehicles) in delivering public services and goods as well as in monitoring the implementation and enforcement of policies.

To address the capacity gaps, the following actions are recommended:

- Technical training across all aspects of E&S safeguards to enable more robust reviews of ESIAs and associated management plans.
- Monitoring, compliance, and enforcement across multiple sectors, including:
  - Forestry/logging
  - Coastal and customary fisheries
  - Protected areas/biodiversity protection
  - Biosecurity
  - E&S safeguards
  - Labor
  - Work Safety
  - Maritime safety
  - First aid

In cooperation with NGOs, CSOs, and training institutions, the SIG and the Western Provincial Government could provide technical and vocational training in local communities, including:

- Small business/enterprise
- Agricultural production
- Aquaculture
- Tourism hospitality
- Guiding
- Health and safety
- Preparation and management of energy and waste facilities

6.1.3 USE OF THE ESDS

For the SIG

This report can be used by the SIG, the Western Provincial Government, and other government agencies to aid tourism-development planning. The following are key recommendations on how this study can be used:

- The SIG can refer to the analysis of risks and specific recommendations (section 5) to inform policy development priorities and strategic development plans.
- The SIG can consider incorporating the requirement for landscape studies to be included in investment regulations.

The Ministry of Fisheries and Marine Resources and the MECDM can use this study as a reference for incorporating tourism activities as a means to improve conservation and management of fishing and forestry resources, as well as key biodiversity areas. This also includes strengthening compliance monitoring and enforcement initiatives to improve biodiversity projection outcomes.

The MECDM can use the findings to inform a strategic environmental assessment framework for the tourism sector.

The findings of this report can be used to develop business cases to seek donor budget support and/or private sector investments to support initiatives for tourism development in Western Province.

Data from this study can be incorporated into tourism-mapping investment guides and materials for investors developed by relevant ministries.

The Western Provincial Government can use the study as a reference to produce a Tourism Development Plan that will develop the sector appropriately while addressing E&S safeguards and other key development risks.

For Tourism Developers and Investors

Investors and developers can use this study to plan their tourism development projects, activities, or establishments by referring to the individual site risks identified. The study sheds light on the business requirements and challenges, particularly regarding access to customary land and natural resources. It also explains the social and cultural context of operating a tourism business in Western Province, so investors can plan the size and nature of their businesses and activities accordingly.

Other Relevant Stakeholders

Local communities may use this study to learn about the opportunities and risks of tourism development that may affect them.

For NGOs and CSOs, the study identifies data gaps that are summarized below. This could help them update datasets to inform tourism development planning and augment their programs in Western Province.

6.1.4 ASSESSMENT TO ADDRESS INFORMATION GAPS

The following are recommendations for further environmental and social diagnostic studies or assessments to support tourism development. These investigations can be undertaken by donors, research institutes, academic organizations, or NGOs. Some examples include:

- Improving the accessibility and quality of spatial data:
  - High-resolution topographical survey (mapping 1 m contours) to assist with development planning, hazard mapping (flood and tsunami), and disaster planning
  - Bathymetric surveys to assist with navigation, maritime planning, and infrastructure development
  - Updated mapping and documenting key biodiversity areas and both marine and terrestrial habitats, including detailed species ordinances
  - Updating land surveys (site-boundary surveys) to assist with land transaction and leasing
  - Recording and registering cultural and *tabu* sites, including detailed mapping with support from local communities
- Strengthening marine-resource monitoring, such as monitoring species abundance and size to assess fish stocks, biosecurity, and invasive species.
- Assessing training needs to identify areas that should be strengthened within the SIG to better support tourism development.

6.2 Conclusions

Western Province is relatively undeveloped in terms of tourism infrastructure, and this represents an opportunity to develop a unique tourism experience.

6.2.1 GENERAL

Developers and investors with an interest in developing a tourism offering in the study corridor should be aware of the range of E&S risks. However, if identified early such as through this study, many of these risks can be mitigated through thorough planning, due diligence, sound community and regulator engagement, good site design, and the adoption of good international industry practices in project development.

6.2.2 ENVIRONMENTAL RISKS

In summary, the environmental risks mostly relate to the safeguarding of sensitive marine and terrestrial biodiversity areas and ecosystem services. While many of the areas across the corridor have been affected by human activity, some remain relatively untouched. The risk ratings for areas cover the spectrum from low to high. Subject to EIA and government approvals and permits, development could proceed in low-to-moderate-risk areas with minimal incremental impact on biodiversity or ecosystem services.

Although high-risk sites can still be developed, they will likely require detailed site characterizations to develop robust EIAs. If the EIA shows that development will not bring significant and long-term impacts on biodiversity and ecosystem services, then stringent controls and management plans will be required to manage risks. The positive aspect is that some of these locations may prove attractive for tourists to experience the pristine environment.

6.2.3 SOCIAL RISKS

The social risks of developing the tourism sector is complex and should be navigated carefully by investors and developers to ensure a successful outcome.

Some key social risks that investors may encounter include government transparency and accountability, land tenure and access, labor and workforce, and gathering support from the local communities. Managing social risks can be complicated and time-consuming. Through early and genuine engagement with stakeholders and local communities, such risks can be avoided or minimized. Current tourism operators in the province shared that a participatory approach allowing the local community to get involved in the development of the tourism establishment is best. Some locations may also be more complex to develop due to underlying community and political factors. As such, robust social due diligence is recommended.

Photo Credit: Tourism Solomons (Chris McLennan)

APPENDICES

Appendices

Appendix A: Methodology

Desktop Review

The desktop review aimed to gather secondary data, including details on the documented baseline of E&S challenges and opportunities in Western Province. Relevant legislation and policies were reviewed to identify legislative gaps with the purpose of supporting sustainable tourism development (see appendix B).

Secondary data relating to Western Province was collected from readily available sources, including:

- SIG agencies and departments
- NGO and CSO publications and research
- Council of Regional Organisations of the Pacific agencies
- News articles
- International databases including the IUCN Red List and IBAT
- GIS sources, including Google Earth, Environmental Systems Research Institute Inc., and other data sources
- Solomon Islands businesses
- Solomon Islands National Statistics Office 2009 Census
- Solomon Islands Education Management Information Systems 2014–2016

Cited sources are included in References.

GIS Mapping

This aimed to compile available spatial information into one location and map it to enable field verification.

The types of information considered for providing details on the key indicators for this study are listed below in Table 17.

Table 17: GIS Data Researched for This Study

Potential Risks to Tourism Development and Potential E&S Impacts on Development	Sought-After GIS Spatial Data
Ability to develop adequate accommodation services, taking into account natural hazards, fires, and other factors such as stability of structures (construction code) ***Effects of climate change, natural disasters (2007 earthquake and tsunami), or other factors such as coastal erosion, increased soil salinity, sea-level rise, and coral bleaching (affecting tourism attractions and fish breeding grounds)***	• Area more prone to natural hazards per type of hazards • Contour mapping, ocean/river/drainage, major watershed boundaries • Drought-prone areas • Flood-prone areas • Hydrography or hydrology • Planning zones and areas of industrial development • Potential sea-level rise (using land contours to enable mapping of inundation with climate change) • Soil salinity data • Unstable land

Potential Risks to Tourism Development and Potential E&S Impacts on Development	Sought-After GIS Spatial Data
Biodiversity, including high-conservation-value land loss, removal of mangroves, damages to coral reefs and forests, and impact on ecosystem services ***Disruption of flora and fauna*** ***Ecosystems damaged by logging, destroyed reefs from runoffs, rivers prone to flash floods or changing course, land erosion, landslides*** ***Pollution (air, water, noise, solid waste, and visual)***	• Areas of known biodiversity, protected environments, and native forests or vegetation • Any other notable high-conservation-value, significant, or sensitive sites, and well-known or widely recognized key ecosystem services • High-risk or important ecological areas • Key aquatic (marine and freshwater) species distribution and range – migratory, limited range, endemic, exotic and invasive, critically endangered, endangered, and breeding areas • Known reef locations and conditions, breeding grounds for land or sea species • Natural forest cover – existing integrity and changes over time, for example, how long ago was it subject to cyclones and forestry? • Existing and proposed protected areas, including heritage sites and precincts and key biodiversity areas; information such as boundaries, purposes, values, and jurisdictions • Known contaminated sites • General environmental data in Solomon Islands
Lack of infrastructures and services supporting the tourism development ***Inadequate sewage, wastewater, and solid-waste disposal and treatment, including waste generation and effluent discharge*** ***Increased cost of living with rising prices of goods and services*** ***Unemployment linked with seasonal tourism activities*** ***Increase in traffic***	• Available infrastructure, underground services (water, power, wastewater, storm water, gas, and petroleum), and locations of infrastructure facilities • Existing and planned infrastructure such as ports (planned extensions and docks), types of business, ferry/boats services, hotels/guesthouses, and waste management facilities including location, size, and type • Road networks and grading (motorways, collector roads, local roads, dirt roads, and tracks) • The extent of river/sea transportation
Social cohesion problem and related conflicts ***Impact of religious organizations and beliefs in some areas of Western Province*** ***Labor influx, child labor, forced labor, and sexual exploitation*** ***Lack of available land due to current land management, land-title issues, legacy issues, and community disputes*** ***Law and order issues near certain communities***	• Conflict areas • Areas of known community disputes/legacy issues • Village names and locations • Areas of high safety concerns in Western Province • The locations of religious sites and meeting places of religious organizations • Population distribution • *Kastom* and *tabu* sites • Historical and world heritage sites • Unemployment levels by region/province/locality • Moderate household income by locality • Administrative boundaries based on hubs and corridor areas above
Loss of land and fishing ground, involuntary resettlements, and impact on livelihoods	• Land use • Land-tenure and ownership types such as crown, registered, unregistered, and customary • Fishing areas and production areas for farming and forestry • Commercial and artisanal fisheries areas
UXO from WWII battles, particularly around Munda, Noro, Kolombangara and parts of Vella Lavella	• UXO locations • Cleared UXO areas

Numerous sources were interrogated for reliable data, including those listed in Table 18:

Table 18: Datasets Reviewed for Relevant Information

Organization	Website
AquaMaps	https://www.aquamaps.org/
Archi UK	https://www.archiuk.com/
Biodiversity A-Z	https://biodiversitya-z.org/content/solomon-islands
BioOne	https://bioone.org/
Bio-ORACLE	http://www.bio-oracle.org/
Blue Habitats	http://www.bluehabitats.org/
CEIC Data	https://www.ceicdata.com/en/solomon-islands/
CITES	https://www.speciesplus.net
Coral Reef Watch	https://coralreefwatch.noaa.gov/satellite/index.php
Corals of the World	http://www.coralsoftheworld.org
E Bird	https://ebird.org/
EN Climate Data	https://en.climate-data.org/
FishBase	http://www.fishbase.org/
Geoscience Australia, GRID-Arendal, and Conservation International	http://grid-arendal.maps.arcgis.com/
Global Biodiversity Information Facility	https://www.gbif.org/
Global Surface Water Explorer	https://global-surface-water.appspot.com
The Humanitarian Data Exchange	https://data.humdata.org/
IBAT Alliance	https://ibat-alliance.org/
IUCN Red List	https://www.iucnredlist.org/
International Finance Corp.	https://www.ifc.org
Invasive Species Specialist Group	http://issg.org/
MapHubs	https://www.maphubs.com/
Marine and Coastal Biodiversity Management in Pacific Island Countries	http://macbio-pacific.info/
MicroData Library	https://microdata.pacificdata.org/index.php/
Solomon Islands National Statistics Office 2009 Census	http://solomons.popgis.spc.int/
NOAA National Centers for Environmental Information	https://maps.ngdc.noaa.gov/viewers/hazards/

Organization	Website
Secretariat of the Pacific Community (SPC)	http://opac.spc.int/
Open Knowledge Repository – World Bank	https://openknowledge.worldbank.org/
ORCHA	https://data.humdata.org/
PacGeo	http://www.pacgeo.org/
Pacific Catastrophe Risk Assessment and Financing Initiative	http://pcrafi.spc.int/layers/geonode:solomon_islands_vector
Pacific Climate Science	https://www.pacificclimatechangescience.org/
Pacific Data	https://pacificdata.org/
Pacific Herbarium Database	https://serv.biokic.asu.edu/pacific/portal/collections/
Pacific Regional Data Repository Sustainable Energy For All – SPC	http://prdrse4all.spc.int/countries/solomon-islands
Reef Base	http://www.reefbase.org/gis_maps/
SafeGround	https://safeground.org.au/project/solomon-islands/
Solomon Islands Government	http://solomons.gov.sb
Solomon Islands Government – Ministry of Forestry and Research	http://mofr.gov.sb/
SPC	http://oceanportal.spc.int/
Secretariat of the Pacific Regional Environment Programme (SPREP)	https://www.sprep.org/
ThinkHazard!	http://thinkhazard.org/en/
United Nations Development Programme	https://www.undp.org/
UNEP-WCMC – Protected Planet	https://www.protectedplanet.net/country/SLB
UNEP-WCMC	https://data.unep-wcmc.org/
United Nations Databases	http://data.un.org/en/iso/sb.html
University of Auckland	https://uoa.maps.arcgis.com/apps/webappviewer/
World Data	https://www.worlddata.info/
World Health Organization	https://www.who.int/countries/slb/en/
World Nomads	https://www.worldnomads.com/
Solargis	https://solargis.com/

What was mapped in GIS (where data was considered detailed, relevant, and of use to the project) is listed below:

- Site boundaries (and details as provided by IFC) for identified sites and the study corridor
- Administrative boundaries (enumeration areas, wards, province, and Solomon Islands-wide)
- Island names, villages, and towns
- Land topography (30 m contours)
- Population distributions as at the last Solomon Islands Census taken in 2009 including:
  - Density
  - Ethnicity
  - Gender
  - Housing tenure
- Land Tenure
- Education level completed by those above the age of 15
- Basic sanitation access, such as toilets available to the household
- Type of lighting used, such as electric, battery, kerosene, and candles, in the household
- Type of drinking water, such as improved and unimproved sources, used in the household
- Existing infrastructure, such as roads, tracks, dumps, airports, and jetties
- Existing mapped buildings and uses
- Land-use cover/type of vegetation cover
- Rivers/streams
- Existing and proposed Marine and Terrestrial Protected Areas, Community-Based Marine Management Areas under the *Fisheries Act 1998* and the *Protected Areas Act 2010*
- Informal (not gazetted) Marine and Terrestrial Protected Areas and Community-Based Marine Management Areas mapped by NGOs
- Coral reefs
- Key biodiversity areas identified by external sources to the SIG
- IUCN Red List Species
- Areas of previous logging (last mapped in 2004) and logging concessions (as at 2014)
- Former WWII battle sites and presence of UXO

Tabu and historical sites within the study corridor have only been mapped with indicative locations where these have been highlighted during stakeholder consultation or in specific reports for specific areas. Very limited data is available from the Solomon Islands National Museum, site owners and occupiers, and other Internet sources. Only one site is identified (by village name with no coordinates) in the corridor in the available data.

Inception Plan

The Inception Plan outlined the data gaps during the desktop review and how these would be addressed. It also outlined the plan and logistics for maximizing the time in-country to collect data, undertake the first round of stakeholder consultations, and visit the study corridor and identified sites.

Stakeholder Consultations

The stakeholder consultations aimed to seek inputs to inform the study and support manpower and institutional capacity building to manage the identified risks and impacts of tourism development within Western Province. There were two rounds of engagement on this project: the first round, undertaken in February 2020, was to gather further data; the second round was planned for April to May 2020 but was undertaken remotely because of COVID-19 travel restrictions. Findings were reported, key E&S risks were identified, and feedback was collected on the recommended mitigation actions.

The internal Stakeholder Engagement Plan explained:

- Details of the key messaging for the study
- Detailed stakeholder identification and analysis
- Matrix of stakeholder comments from two rounds of consultation (February 2020 and June 2020)
- Defined mechanisms to monitor implementation of the study's recommendations
- Recommendations for ongoing stakeholder engagement, following finalization of the study report, to manage the identified E&S risks associated with tourism development

Field Assessments

The environmental and ecological field assessments sought to build on the information that was gathered during the desktop review.

The field assessments included:

- Observations of biophysical features, including surface water, springs, topography, geology, and natural outstanding features
- Ground verification of terrestrial and marine habitats as obtained during the desktop review
- General observations about environmental integrity and human impact
- Visual inspections of terrestrial and marine ecosystems, including documenting ecological observations on site
- Visual assessment of ecosystem health and significance of human or natural disturbance
- Elevation and risk of sea-level rise and inundation
- Evaluation of natural-hazard risk, including flooding, tsunamis, cyclones, and landslides; review of aspect, elevation, and likely development
- Identification of WWII battle sites and UXO through visual inspection and discussions with site occupiers
- Discussions with site users and owners, nearby communities, and tourism operators in accordance with the internal Stakeholder Engagement Plan

Contextual Risk Ratings

IFC's contextual-risk framework provided an indication of low, medium, and high country-level risks in a wide range of sectors. These ratings were reviewed in light of the data collected in Western Province and analyzed for this study to validate what is applicable to the tourism sector. This evaluation confirmed or altered the risk ratings and categories used to specify them for the purposes of this study.

Environmental and Social Indicators Used to Develop This Study

Tables 19 and 20 detail the indicators developed to guide collection of the background data and information for consideration and development of key risks. These tables outline the data found and its usability.

Table 19: Environmental Indicators Considered

Environmental Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Conservation areas	• Conservation areas may consist of Marine Protected Areas, Locally Managed Marine Areas, or Community- Based Management Areas. There are no nationally protected areas in the study corridor. • Existing gazettals are primarily community-managed areas, with some support from NGOs for specific areas, such as Saeraghi Reef. These community-managed conservation areas provide potential ecotourism attractions, but they are also vulnerable to impact from development and visitation. • On Kolombangara Island, the previous community consultation has marked the 400 m contour as one large conservation area/unit (WWF-Pacific Solomon Islands 2018).	• There are no official government maps online illustrating current or future proposed/nominated conservation areas. Notification is usually via gazettal in local media or village notice boards. Various NGOs, such as partners in the Marine Protection Atlas, (http://www.mpatlas.org/about/partners/) have collated data as best as available and this was used in the current assessment. The IUCN World Database on Protected Areas (https://www.iucn.org/theme/protected-areas/our-work/world-database-protected-areas) also provided valuable resources. • PDF maps in the 2018 WWF Report, *Ridges to Reef Conservation Plan: Ghizo and Kolombangara*, shows partial, indicative-only areas of these features on the two islands.

Environmental Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Fauna/flora of conservation significance	• The potential for impact on fauna/flora of conservation significance is a key indicator of potential site risk under IFC PS6. • However, addressing this aspect will rely on site-level surveys to determine whether a particular investment site may have potential impacts on fauna and flora of conservation significance. For example, lights associated with an eco-resort on an island may adversely affect turtle hatching.	• This indicator had limited application to any level of assessment (contextual, corridor, or site level), as very few to no site records were available for specific fauna and flora of conservation significance. The SIG does not maintain a regional herbarium or a research museum. Historical records at the MECDM, maintained as paper copies and individual report files, were not available for this project. Both the IUCN Red List (https://www.iucnredlist.org/) and IBAT (https://www.ibat-alliance.org/) maintain country and regional databases but are not location specific.
Terrestrial habitat condition and integrity	• While no site-specific records of flora and fauna of conservation significance were available, both the IBAT and IUCN Red List, along with numerous published reports, provide details on the habitat factors necessary to support such conservation-significant species. Habitats may include forest areas, freshwater lakes, riparian areas, and other natural functional ecosystems. • Where the condition and integrity of these is high, such as unlogged forest, then literature and databases support the assertions that such high-value habitat provides resources to flora/fauna of significance. Development that impinges on such habitats may have an adverse impact on these species. There are numerous areas where development may be undertaken. • Detailed investigations are needed for any sites where the habitat condition and integrity is noted as being of high risk.	• Both the condition and integrity of habitats were assessed via several mechanisms. In the first instance, photogrammetric interpretation of paired stereoscopic imagery (where available) was used to determine the relative floristic structure, height, and composition of vegetated communities. This indicated the relative intactness of vegetation types, such as the broad vegetation type, the degree of clearing/disturbance, and the status of the vegetation in recovering from that disturbance. Terrestrial habitats included freshwater swamps and riparian areas; they were too small to map at a corridor scale but were identified at a site scale where applicable. Reconnaissance-level site data and correlation of observed aerial mapping units with published data were used to verify the aerial signatures. Imagery accessed included ArcGIS ESRI (https://www.arcgis.com/index.html), SPOT 5 satellite imagery (2009 to 2019), and DigitalGlobe 2010. Linework was digitized into Arc and MapInfo files for use in GIS presentations. • In addition to photogrammetry, PDF maps from the Solomon Islands National Forest Resources Assessment: 2011 Update (http://www.fao.org/3/a-az336e.pdf) and the 2014 PDF map of logging concessions, location, and status (Ministry of Forestry and Research, https://solomons.gov.sb/ministry-of-forestry-research/) were used. • Most recent logging data was obtained from Global Forest Watch (https://www.globalforestwatch.org/dashboards/country/SLB), which provided digital and online map data. Coverage was at a regional and detailed island level.
Terrestrial landforms and types	• Specific biodiversity features are constrained to particular landforms and geomorphological attributes. These include montane areas (defined as being above 400 m in Solomon Islands), drainage depressions (including swamps), flood plains, steep slopes, littoral environments, and islands. Development in these areas may impose risks on specialized habitats and fauna/flora restricted to these types. Detailed surveys would be required in any area mapped as a terrestrial high-risk area to determine whether specialized habitats are represented in that locality.	• Stereoscopic photogrammetry (where paired images were available) is an accurate indicator of landform type and extent. Reconnaissance-level site data and correlation of observed aerial mapping units with published data were used to verify aerial signatures. Imagery accessed included ArcGIS ESRI maps, SPOT 5 satellite imagery (2009 to 2019), and DigitalGlobe 2010. This information was combined with the terrestrial habitat GIS line work to identify risk categories, such as swamps and montane forests above 400 m. • Topographic data was obtained (as PDF maps) from the British OS – Overseas Directorate Series, Solomon Islands, 1:50,000 scale (https://www.chartsandmaps.com/index.php?main_page=index&cPath=3_60) • Soil and geology maps accessed included the European Soil Data Centre (https://esdac.jrc.ec.europa.eu/images/Eudasm/Asia/images/maps/download/OC_SOLOMON_GEOL.jpg)

Environmental Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Marine ecosystems	• Marine ecosystems encompass a wide variety of habitat types, each of which has unique biodiversity characteristics and varying abilities to absorb direct and cumulative impacts. Various types of coral reefs, mangrove complexes, seagrass meadows, sand and mud flats, intertidal reaches, open ocean with abyssal trenches, and undersea volcanic sea mounts all contribute to one of the world's highest marine biodiversity hotspots. • Development will be a risk to the biodiversity in areas where the condition and integrity of marine ecosystems are high. Aspects to be considered are more indirect than direct, but tourism development in marine areas must have a high regard for the potential of cumulative impacts from ancillary services supporting a proposed development. This include water and sewage treatment systems, requirements for access to remote areas (such as islands requiring boat landings that may alter reef lagoon sediment patterns), lighting, and noise/sound and vibration, for example, boat engines on marine mammals and potential for increased boat strike on dugongs and turtles.	• Information on the type, locality, condition, and integrity of marine ecosystems was compiled from a number of sources to derive the marine risk assessment. The location and type of major ecosystems was derived from aerial imagery for the project. Imagery accessed included ArcGIS ESRI maps, SPOT 5 satellite imagery (2009 to 2019), and DigitalGlobe 2010. This information was combined with known published data. Other data sources included the Khaled bin Sultan Living Oceans Foundation (https://www.livingoceansfoundation.org/global-reef-expedition/pacific-ocean/solomon-islands/), the ReefBase database (http://www.reefbase.org/global_database/dbr5,22,SLB,33.aspx), and the Coral Triangle Millennium Coral Reef Mapping Project (http://imars.marine.usf.edu/millennium-coral). Data was also accessed from the Solomon Islands Marine Atlas (http://macbio-pacific.info/Resources/solomon-islands-interactive-marine-atlas/). • The Nature Conservancy provided PDF maps of seagrass and mangrove communities (https://www.sprep.org/att/IRC/eCOPIES/Countries/Solomon_Islands/39.pdf). • The seagrass data monitoring and mapping is conducted at various sites in Solomon Islands under the CMS/GEF Dugong/Seagrass project: Seagrass_data_Solomon Islands_2018 (https://www.gbif.org/dataset/fade3e7a-82c5-4652-b482-03dbd1510b18). This dataset provides only one site in Western Province that is not in the study corridor.
Coral reef types and locations	• This indicator is a structural aspect, similar to terrestrial landforms and types. The location and type of coral reef has a significant impact on the level of risk to that reef system from adjoining development or visitation. Ribbon and barrier reefs, such as Saeraghi Reef, are recognized areas of high marine biodiversity and vulnerable to development impact. These reef types are often associated with smaller, remoter outer islands. Development in such areas may require reef moorings, disturbing island beaches and affecting sediment movement patterns and nutrient loadings. • Fringing reefs adjoining larger land masses are markedly lower in known biodiversity values; they are closer to major population centers (thus heavily fished) and less vulnerable to sediment discharge from logging/land clearing. Development in these areas will be less harmful than in more remote areas on barrier- reef islands.	• Types of coral reefs were assessed using aerial imagery. The broad categories of reef type and location were used to demarcate the relative risk of development in these areas. Site visits and discussions with nearby villages were able to assess the relative intensity of resource usage in these areas. Imagery accessed included ArcGIS ESRI maps, SPOT 5 satellite imagery (2009 to 2019), and DigitalGlobe 2010. Linework was digitized into Arc and MapInfo files for use in GIS presentations. • The Khaled bin Sultan Living Oceans Foundation provided information on broad-scale coral-reef structural types and locations, which was used to reference the marine risk mapping. Similarly, other resources accessed included the ReefBase database and the Coral Triangle Millennium Coral Reef Mapping Project. Data was also accessed from the Solomon Islands Marine Atlas.

Table 20: Social Indicators Considered

Social Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Land Use		
Settlements	• Settlements can provide workforce for tourism operations and employment opportunities for locals. Settlements need to be given a level of separation to allow the local population to remain undisturbed by tourism operations, such as from noise and different cultural practices. Interactions need to be managed to respect their privacy and culture.	• Most land uses are mappable via available aerial mapping data, which varies from 2007 to 2019 and as such may not be accurate for all areas. Aerial maps used included ArcGIS ESRI maps, Google Earth, Google Maps, and historic GIS land-use shape files provided by the MECDM's GIS Department. Pacific Catastrophe Risk Assessment and Financing Initiative (PCARFI) 2017 Land Use/Land Cover shows some land use, but this is not mapped across the full study area. Mapping of land use across the corridor was undertaken using only reliable data and supplemented and updated with knowledge gained from site visits. The SIG provided a full set of locations and names of villages/ towns in 2020. This dataset, however, does not include small villages and family sites. Larger settlements are only distinguishable by aerial maps. Some schools and other community facilities are indicated in larger settlements by PacGeo. The villages as stratification units were marked in both Ghizo and Kolombangara islands by WWF in 2017. Census data has spatial resolution at an enumeration area, which may include tens to hundreds of villages and is not spatially consistent or accurate.
Area under cultivation – gardens, coconut plantations, and forestry plantations (logging and timber industry)	• Gardens and plantations can serve as a fresh produce source for tourism operators and a source of income and livelihood for communities. They may be affected by tourism development if they are located on proposed sites. Not all gardens and plantations are owned/managed by site owners. They may belong to families from surrounding settlements who use the land to cultivate gardens as a source of livelihood or subsistence. • Knowing the presence of plantations and forestry helps understand the presence of other industries and sources of livelihoods and skills in the area. Coconut plantations and mangrove (see mangroves section below) forests have been noted during previous community consultations undertaken by WWF as high-value areas and one of their important conservation areas of interest (WWF-Pacific Solomon Islands 2018).	• It is impossible to accurately map all gardens as they are an informal land use where people use available vacant land to cultivate. Using the land as a garden can also be seasonal. • Cultivation areas have been identified using aerial imagery from ArcGIS ESRI maps, Google Earth, Google Maps, and site observations for the identified sites. • PCARFI 2017 Land Use/Land Cover shows some land use, including cultivation areas, across the entire corridor, but this information has shown to be inaccurate during site visits. The WWF's 2017 report, *Ridges to Reef Conservation Plan: Ghizo and Kolombangara*, shows partial, indicative-only areas of these land-use features, but only for the two islands.
Reefs	• Reefs provide a source of livelihood (fish and shellfish) for locals and could serve as a source of fresh local catch for tourism operators to support workforce and operations. Reefs provide protection from storm surges and opportunities for tourism activities. Culturally, reefs are considered part of customary land and may pose land-title and right-of-use issues.	• The United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)'s WCMC008 Coral Reef 2018 v4 was used to identify reef locations and depth. Health of reefs (as a potential source of food) was not mapped by any external sources at a level useful to this study.

Social Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Mangroves and seagrass	• Mangroves can protect coastal edges from storm surges and coastal erosion. Mangroves and seagrass are a source of livelihood as they are nurseries and spawning sites for some marine fauna. They are also hosts to crocodiles, although crocodile attacks have also been recorded in open lagoon areas that may not be in proximity to mangroves. Some seagrass areas are of high importance to communities. In some areas, Community-Based Management Areas and Marine Protection Areas are in place to manage them.	• Aerial photos have been analyzed by environmental specialists to highlight mangrove areas. The WWF's 2017 report, *Ridges to Reef Conservation Plan: Ghizo and Kolombangara*, shows partial, indicative-only areas of these features (but only for the two islands) and are less reliable than what is already mapped. • The seagrass data monitoring and mapping is conducted at various sites in Solomon Islands under the CMS/GEF Dugong/Seagrass project: Seagrass_data_Solomon Islands_2018. This dataset provides only one site in Western Province that is not in the study corridor and was therefore not included in the mapping.
Demographic Profile		
Population density	• Provides an indication of how many people live within and around the identified sites along the corridor. Higher population density indicates areas of urbanization and higher potential for infrastructure development. Also, more populated areas can supply a tourism workforce and goods and services. • Urbanized areas indicate lesser availability of land and a lower ecological wellbeing, with increased pressure on resources, such as fish and gardens, and infrastructure including water supply and wastewater and waste disposal management.	• 2009 Census data to the enumeration level provides clarification across the study corridor. 2019 Census data is still being processed at the time of this study.
Social Vulnerabilities		
• ***Subsistence living and food security*** • ***Education levels*** • ***Health status of the community (malnutrition and disease profile)*** • ***Use of sanitation*** • ***Access to power***	• Understanding dependence on subsistence living, health status, level of education, access to power, and sanitation use provides an indication of the community's vulnerabilities and potential to contribute to tourism development. Aspects of these are also considered under access to community infrastructure.	• 2009 Census data to the enumeration level provides clarification across the study corridor. • Dengue fever and malaria occur across Solomon Islands. World Health Atlas and IFC provided data on disease profiling, but it was collated at the country level and was therefore only useful in providing contextual-level information.

Social Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Land Tenure		
• ***Customary land*** • ***Land under indigenous administration*** • ***Registered land (perpetual lease and fixed-term lease)*** • ***Land use for religious and cultural purposes, including tabu sites***	• Tourism development needs access to land for building tourism facilities and operating tourism activities. Understanding land tenure in and around the identified sites and the corridor is important, given the complex nature of land tenure in Solomon Islands and potential claims over land. It provides an indication of access to and availability of land for development. Land access process, negotiation, and compensation will vary per each land tenure. Legal advice should be sought for land access and international social safeguards should be considered in dealing with landowners and land users. • Identifying tabu sites and proximity to religious buildings, such as churches, is important to avoid adverse impact during tourism development. Many Solomon Islanders anchor their faith and trust in church organizations and church groups are often socially influential in communities.	• Because of data availability, the land tenure mapped in the corridor was limited to customary land, registered land, and land surveyed but not registered (see Map 6). An effort to map the presence of churches and tabu sites was undertaken, but a complete list is not yet available. • Data on church groups was not found at the corridor level, but background information on the presence of religious groups provides context. PacGeo indicates the locations of some churches (http://www.pacgeo.org/layers/geonode:sb_special_infrastructure 2017 and http://www.pacgeo.org/layers/geonode:sb_buildings 2017). • Data on the presence of tabu sites and other cultural heritage is limited, with no national GIS records available. The National Museum provided a copy of the *Western Province Preservation of Cultural Ordinance 1989 (under the Provincial Government Act 1981)*, which highlighted only one clear tabu site in the corridor. As such, data on historical sites and tabu sites was based on information gathered during site visits and stakeholder consultations. • The SIG produced a PDF map of land-tenure areas in 2006 as part of a wider initiative supported by Australian Aid. But this has not been updated since. • Census 2009 data provided percentages of the respondents who own, lease, or rent land and from whom. • Land-tenure data for identified sites, including customary, registered, and unregistered land, was obtained from the Commissioner of Lands and has informed this study.
UXO		
UXO	• UXOs from WWII are present in parts of Western Province. Knowing which areas are prone to UXO is useful for understanding the risks to tourism development and the required preparation to respond to them.	• Known battle grounds and military encampments and storage areas are well mapped in historical records. These have been drawn into GIS and show general areas of battles as indicated in data from SafeGround,[35] which is anticipated to be slightly inaccurate upon review. Other data sources included: United States Military, January 26, 2020, and Solomon Islands Campaign Map: Map Depicting Operation Cartwheel, June 30, 1943 to early 1944.

35 Safe Ground Inc., Pacific Islands Forum Secretariat, Golden West Humanitarian Foundation, Australian Aid, Australian Government Department of Foreign Affairs and Trade, and Solomon Islands National Museum, *WW2 Bombs in Solomon Islands: The Current Situation of Explosive Remnants of World War II*, 2015.

Social Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Social Cohesion		
Community conflict/ disputes	• It is important to understand if a tourist development can affect social cohesion, exacerbate conflicts, and benefit only a part of the community. • Solomon Islands has incurred recent national and provincial sociopolitical conflicts; however, these have largely been resolved and are no longer relevant to tourism development in Western Province. Land disputes can escalate into violence or other destructive activities such as vandalism. • Consultation identified no conflicts in the area, but some communities would have local disputes or skirmishes at a neighborhood/ family/household level often stemming from jealousy as a result of different access to opportunities.	• Information about such skirmishes was gathered through stakeholder consultations during site visits. It is appropriate to present this information at a site and community level, rather than extrapolating and generalizing it to a corridor level. Such level of assessment across all sites is outside of the scope of this study as it would require wide-scale consultation with all identified-site stakeholders to ensure such conflict is fairly recorded. As such, this has not been mapped for consideration and is only offered as background. • Census data only differentiates the races of the enumeration area, not languages spoken or religion. • Census data provides detail on the increased presence of Gilbertese people in areas of the study corridor.

Social Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Social Infrastructure		
• ***Medical and health services*** • ***Emergency response*** • ***Transport (roads, airports, jetties and ferry docks)*** • ***Waste and water treatment facilities*** • ***Potable water*** • ***Education*** • ***Telecommunications*** • ***Power*** • ***Markets for food and daily supplies***	• Understanding the availability and access to infrastructure is key when considering the feasibility of tourism development in an area.	• Medical and health services mapped by the SIG (https://solomons.gov.sb/portal_map/) • The National Disaster Management Office based in Honiara co-ordinates emergency responses to national disasters, but there is no mappable data for details at the site or corridor level • Transport data from PacGeo (http://www.pacgeo.org/layers/geonode:sb_special_infrastructure 2017 and http://www.pacgeo.org/layers/geonode:sb_buildings 2017), supplemented with site observations and consultation information • Waste management - PacGeo (http://www.pacgeo.org/layers/geonode:sb_special_infrastructure 2017 and http://www.pacgeo.org/layers/geonode:sb_buildings 2017) - Solomon Water (http://www.solomonwater.com.sb/index.php/customerservice 2020), supplemented with site observations and consultation information • Water-treatment facilities are not present in Western Province and are thus not mapped • There is reticulated supply of potable water in Gizo, as confirmed by Solomon Water • Education - Pac-Geo indicates the locations of schools: - (http://www.pacgeo.org/layers/geonode:sb_special_infrastructure 2017 and http://www.pacgeo.org/layers/geonode:sb_buildings 2017, supplemented with site information • Telecommunications - Our Telekom (https://www.ourtelekom.com.sb/contact/network-coverage/) • Power - Solomon Power - 2009 Census data to the enumeration level for clarification across the study corridor, supplemented with site information - 2019 Census data is still being processed and is due for release in July 2020 • Markets for food and daily supplies - Pac-Geo (http://www.pacgeo.org/layers/geonode:sb_special_infrastructure 2017 and http://www.pacgeo.org/layers/geonode:sb_buildings 2017), supplemented with site information

Social Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Planned Development Projects		
Physical infrastructure projects	• There are a number of planned infrastructure development projects for Western Province. These have been considered as part of the study, as they provide information on what additional infrastructure would be available in the area and which are already subject to development.	• Planned infrastructure has been manually mapped using reporting by international aid organizations supporting SIG projects. Internal governmental projects are in the process of being mapped by the Ministry of Development Planning and Aid Co-ordination however this information is not available until July 2020.
Existing Tourism Facilities and Activities		
• *Accommodation facilities* • *Other tourism activity operators* • *Sites of interest, including cultural sites, WWII wrecks, dive sites, waterfalls, caves, lakes, white- sand beaches, bird-watching sites, fishing spots, established hiking tracks, and markets*	• Knowledge of existing tourism developments and activities in the corridor would be useful to understand complementary opportunities and the cumulative risks from tourism.	• Accommodation and tourism operators provided by IFC. • Solomon Tourism's website and Solomon Travel Portal both list the locations of some activity operators, which have been manually mapped where possible by indicative location. Some sites were also provided in indicative PDF maps for Ghizo and Kolombangara islands by WWF in 2017, which were supplemented by site-visit observations.

Table 21: Natural-Hazards Indicators Considered

Natural Hazards Variables/ Indicators	Implications for Tourism Development	Data Source and Mapping
Natural Hazards		
• *Tsunamis* • *Earthquakes* • *Landslides* • *Extreme weather events* • *Cyclones and storms*	• Knowing which areas are prone to natural hazards is useful to understanding the risks to tourism development and the required preparation to respond to them.	• A combination of various sources of data was used to develop an understanding of the previous occurrences of natural hazards in the corridor and specific sites at the country level (with no finer details at the provincial level or lower). • WorldData.info (https://www.worlddata.info/oceania/solomon-islands/tsunamis.php) shows past occurrences of tsunamis and earthquakes in Solomon Islands and the damage recorded by public observations. • ThinkHazard! data shows Solomon Islands as susceptible to earthquakes, but it does not have publicly available information where or when the next earthquake may occur. • Landslides as a result of earthquakes or heavy rain require higher levels of accuracy of contours and soil types to confirm their susceptibility at a local level. This data is not available in Solomon Islands. • Cyclones are assessed based on the fact that areas along the coast and adjacent to waterways are more susceptible to damages from storms with limited protection from the surroundings. It is also recognized that larger reef systems and extensive lagoon areas may provide a buffer for storm surges. Storm data at the provincial level was not available, so sites were assessed based on their coastal vulnerability during site visits. This information was reviewed to determine if there was any pattern that could be used to assess wider areas of the corridor for coastal vulnerability.

Appendix B: Policy and Legislative Review

Table 22: Review of Policy Frameworks Related to Tourism Development

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Land and Titles Act 1968	• The act includes provisions for preservation and/or conservation of land of "historic, architectural, traditional, artistic, archaeological, botanical or religious interest" (McDonald 2006).	• Use and/or lease of land for tourism projects and/or establishments
Customary Land Records Act 1994	• The act is a legal mechanism for recording tribal land boundaries and customary rights and interests. Under the act, a group can apply to have their right to control customary land (primary rights) recorded, along with the name of the person who is authorized to represent the customary-land-holding group. Other groups or individuals may also have their use rights, such as the right to use land for food gardens or access to timber arising from customary practices such as gift, reward, and marriage, recorded over the same land (referred to as "secondary rights"). • The act prescribes that the recording of customary land includes: a) the recognized name of the customary-land-holding group claiming the primary rights; b) the genealogy of the group; c) method by which membership of the land-holding group may be granted to others; d) name of person(s) who will represent the land-holding group and who is responsible for any dealings affecting such customary land; e) method by which such person(s) are appointed, dismissed, and substituted; f) and names of groups of persons claiming secondary rights and the extent of such claims. In cases where the determination of primary rights constitutes a dispute, the act provides for the dispute to be settled by negotiation. Section 13 (2) further provides that in determining a dispute the leaders of the customary groups must consider relevant genealogy and secondary rights. If no agreement is reached, the recording officer should refer the dispute to the traditional chiefs. Their decision will be final.	• Use and/or lease of land for tourism projects and/or establishments • Use of natural resources in customary land or marine areas
Town and Country Planning Act 1979	• The act is a framework for planning schemes and development control, particularly at the provincial level. However, it cannot be applied or used in the context of customary land.	• Designation of development areas for tourism purposes • Several areas, including Honiara, Gizo Town, Tulagi, Munda, and Noro, have been declared local planning areas

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Environment Act 1998	• The act serves as a framework for regulating activities and/ or developments that require an EIA prior to the approval of a project. The act covers activities perceived to generate significant environmental impacts, including forestry, mining, tourism resorts, large-scale agriculture, infrastructure development, and waste management systems. • Under the act, the developer is required to produce an EIA report, which will be evaluated by the Director of Environment and Conservation. When the director finds the EIA report satisfactorily meets the environmental standards/guidelines as per the act, an Environmental Impact Statement is required to be gazetted for 30 days so that persons whose interests or rights may be affected by the development project may issue an objection. The director may issue or refuse consent for the development project based on the grounds of objections. In cases where the director does not allow the development to proceed, developers may appeal to an Advisory Committee and the appeal will also be gazetted and heard in public.	• Tourism resorts • Construction of water and waste infrastructures to support tourism development • Construction and/or rehabilitation of roads, bridges, ports, and other transportation infrastructures
Forest Resources and Timber Utilization Act 1991	• The act is based on the *Forest and Timber Act 1969*, which was introduced to Solomon Islands during the colonial period to regulate logging on crown or government land.	• Use of forest resources and/or trees for construction of tourism accommodations or boats • If forest clearance is required for site development, it should be in accordance with the provisions of the act
Wildlife Protection and Management Act 1998 and (Amendment) Bill 2016	• The act aims to regulate the export of Convention on International Trade in Endangered Species in Wild Fauna and Flora (CITES) listed wildlife species. • In order to comply with CITES, the act was amended in 2016. Additional clauses on the trade, captivity, and propagation of CITES specimen were added into the original act. However, there are exceptions to the provisions, permits, or penalties under the *(Amendment) Bill 2016*, as follows: - Section 3ZD: Personal and household effects – a requirement to hold a permit under subdivision 3 or 4 does not apply in relation to a CITES specimen that is a personal or household effect. - Section 12A: Exemption for specimens used for traditional activities – the minister may, on the advice of the director, declare by gazette notice a class of specimens to be exempt from the requirement of this part if the class of specimens: (a) is used for a traditional activity; and (b) is not part of an approved management program in the area within which the traditional activity takes place. • Unfortunately, the act only prohibits the trade of listed wildlife species. It is still legal for listed species, such as turtles, to be consumed for subsistence, including as food or for family and community events (The Nature Conservancy 2019).	• Nature-based tourism activities that can cause disturbances to local biodiversity • Controlling the trade of wildlife species, particularly the ones listed by CITES • Local communities still consume endangered species for subsistence or traditional purposes, but the control of this consumption is subject to the Ministry of Environment's discretion • Tourism developers may exploit the lack of enforcement or control of wildlife consumption by adding it as a cultural experience to their tourism packages • Nature-based activities should not encourage the capture or export of protected species

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Protected Areas Act 2010	• The act, implemented in 2012 with the creation of the *Protected Areas Regulations* (see details in the next entry), provides a framework for the declaration of protected areas and protection of biodiversity. The act includes provisions for classifying declared protected areas, preparing and implementing plans covering the management of the biodiversity and/or ecosystems in such areas, and consultations with customary landowners and/or tribes. • Prior to the declaration of a protected area, the Director of the Environment and Conservation is tasked with: - Conducting meetings and consultation with the owners of the area or other persons who may be affected by the proposed declaration - Undertaking consultation with the relevant ministries and provincial government - Carrying out field appraisal, assessing, and evaluating the biodiversity significance of the area - Verifying the rights and interests in the area - Identifying, assessing, and evaluating the conservation, protection, and management options for the area - Publishing a public notice setting out the area to be declared and its biodiversity significance • The establishment and maintenance of a register of protected areas are the responsibilities of the director. The Protected Areas Advisory Committee is tasked with appointing a management committee for each protected area comprising persons residing in the vicinity of the area or persons responsible for its administration/management.	• Nature-based tourism activities may include visits to protected areas • Protected areas provide protection and generation of further biodiversity and areas of interest to tourists

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Protected Areas Regulations 2012	• The prescribed classes of protected areas with their primary objectives and/or descriptions are as follows: - **Nature reserve:** designated for scientific research, environmental monitoring, and education; and maintaining habitat conditions necessary for wildlife management, including protecting and meeting the natural requirements of significant species and biotic communities. - **National park:** designated to protect a major region of national significance and its biological and environmental features; protect the habitat and aesthetic qualities of an otherwise large area of natural and unique scenery; or promote education, research, and tourism opportunities. - **Natural monument:** a specific monument of outstanding natural features and its associated biodiversity and habitat; or an important landscape or seascape created by the interaction (through traditional practices) between humans and nature over time. - **Resource management area:** designated for the promotion of ecologically sustainable uses of natural ecosystems and resources for the benefit of customary owners and dependent local communities - **Closed area:** designated to allow and facilitate natural process of recovery, rehabilitation, regeneration, replenishment, and repopulation due to factors such as excessive human exploitation and environmental degradation in the past. • The regulations also empower the minister to revoke and change protected areas. - **Protected Areas Map:** Where a protected area is under customary ownership, the map to be filed under this regulation must be signed by at least one leader of customary owners of land or marine areas sharing a common boundary with that of the protected area. If the boundary of the protected area is a disputed area, no declaration shall be made by the minister unless the matter has been settled, subject to the approval/satisfaction of the minister. - **Certificate of Registration of Protected Areas:** The certificate should specify the official name of the protected area, classified category, actual or estimated area, size, location, and the parties (customary owners, tribes, agencies, or organizations) vested with management responsibility over the area. - The SIG, in cooperation with international donors, NGOs, community, and other stakeholders, developed a Protected Areas Toolkit to guide the process of applying for and/or designating a protected area.	• No formally declared protected areas in Western Province under the *Protected Areas Act* and regulations to date. • However, community groups and NGOs have created and managed many areas as protected areas, as detailed in Section 3 of this report; considering the communal efforts devoted to the creation of a protected or managed area, developers should treat these areas, whether formally gazetted or not, as having ecological status when planning their projects. • A registry of protected areas is unavailable on the MECDM website. However, the Secretariat of the Pacific Regional Environment Programme (SPREP) has an online portal with a list and status of protected areas in the Pacific countries, including Solomon Islands; this information has been used for risk evaluation of potential tourism development (SREP 2020).

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Safety at Work Act 1982	• Under the act, employers are legally required to ensure the health, safety, and welfare of all employees (full-time, temporary workers, and volunteers). They should also provide relevant information and safety training to employees. In addition, employers should ensure that plants, machineries, and work premises are safe and that hazardous processes are eliminated or adequately controlled.	• Prior to the construction or development of a tourism project, developers should ensure that a hazard and/or risk assessment was conducted in accordance with the provisions of this act • Developers should comply with occupational health and safety requirements and systems at all stages of the tourism project • Adequate occupational health and safety training and manuals should be provided for all employees
Labour Act 1996	• The act includes provisions for the protection of worker rights through the creation of the Office of the Commissioner of Labour. The act includes sections on employees, casual workers, working hours, payment of wages and remuneration, and terminations. The act includes provisions for the employment of foreign workers, women, and children. • Women are generally prohibited from work during the night, with exemptions for specific sectors such as nursing or healthcare, cinema or theaters, hotels, guesthouses, or bars. • For child labor, work is allowed from the age of 15 with approval from the Ministry of Labour. Notably, provisions are more focused on the employment of male youth from the age of 16, particularly on ships. However, it should be emphasized that young persons under the age of 18 are required to have work permits from the Ministry of Labour and are not allowed to be employed during the night.	• Employees or workers in the tourism industry • Employment of women and children in tourism establishments and/or activities
The Solomon Islands Visitors Bureau Act 1996	• The act covers the creation of the *Visitors Bureau Regulations 1999*, which aims to regulate the tourism industry through the provision of a license allowing a person to engage in an enterprise or tourist-related service and/or facility (SIG 1996).	• Licensing of tourism establishments, activities, or owners
Fisheries Act 2015	• Under the *Fisheries Act*, the government has the authority to impose strict controls on the harvesting of species located in customary waters. Provincial governments are primarily responsible for ensuring the management of fishing practices, tools (nets and gear), and vessels in provincial waters are sustainable and not exploitative. Provincial governments can also establish and manage marine reserves as well as regulate and protect mangroves. • Commercial fishing is subject to customary rights. In cases where customary fishing rights are violated due to commercial fishing, customary rights will take precedence and the court may order compensation to be paid to the customary rights holders. • In 2009, there was an amendment on the penalty fees/fines for violating the provisions of the act.	• Tourism activities, such as game fishing • Developers should be aware of marine protected areas in the vicinity of their operations as they may restrict activities such as fishing

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Gaming and Lotteries Act 1996 and (Amendment) Bill 2004	• The *2004 Bill* is an amendment to the *Gaming and Lotteries Act 1996*. Both legislations include provisions on commercial gambling related to the tourism industry: - Commercial gaming shall only be permitted in areas of a hotel-casino complex identified in a permit issued by the board. - No person shall permit or cause commercial gaming to take place in any premises unless such person is a holder of a permit issued by the board. - No person other than foreign or overseas guests or visitors to Solomon Islands or approved persons have a right to enter, remain, or participate in commercial gaming. - The board shall not in respect of the city of Honiara grant commercial gaming permits in excess of two. • In granting a permit (license) to operate commercial gambling, the following criteria should be evaluated and/or satisfied: - The lay-out, character, condition, and location of the relevant premises, or any premises to be altered or erected, should be suitable for the purpose of commercial gaming. - The applicant is in all respects a fit and proper person and of appropriate financial standing to be the holder of a permit. - If a permit is granted and the premises are not managed personally by the applicant, the appointed manager should be a fit and proper person to be the holder of a permit and should have agreed to be ordinarily resident in Solomon Islands when managing such premises.	• Casinos and/or commercial gaming establishments only cater for tourists (Solomon Islanders are not allowed to participate in commercial gaming) • Development of a casino in Western Province has the potential to attract a certain type of tourists and may impair other development opportunities
Solomon Islands National Policy Framework blong KALSA 2012 (SPC 2012)	• The policy framework highlights the importance of protecting, preserving, and promoting Solomon Islands' culture. The framework includes cross-cutting themes and indicates the roles and participation of various stakeholders in protecting and promoting the country's culture, heritage, and arts. One policy component is cultural tourism, recognizing culture as an asset that can be further developed, marketed, and promoted as a key attraction. Policy goals for cultural tourism are: - Developing it as the flagship of the country's tourism industry - Encouraging community participation in order to achieve decentralization of the tourism industry and the spread of activities and benefits across the provinces and rural areas - Reinvesting economic benefits from tourism in rural areas and hosting cultural tourism enterprises and activities • Another component of the framework is the hospitality industry. Establishments are encouraged to provide high-quality cultural goods and services and to integrate Solomon Islands' indigenous culture and arts into hospitality services, recognizing their value-add to enhance the authenticity of products and services offered to visitors.	• Local culture • Culture-based tourist activities or business establishments • Hospitality industry
Solomon Islands National Climate-Change Policy 2012-2017	• The policy aims to prioritize climate-change considerations and integrate adaptation strategies and disaster risk management into various sectors and institutions in Solomon Islands. • Tourism was identified as a sector vulnerable to climate change and disaster risks, so the policy allows for relevant strategies and measures to be integrated into tourism planning and development.	• Integrate disaster risk management planning in infrastructures and planned tourist-development areas. • Emergency plans for tourism activities, projects, and establishments

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Solomon Islands National Ocean Policy (SINOP) 2018	• The policy aims to protect and increase the value of ocean resources, marine ecosystems, and its species. As a governance framework to ensure a consistent and coordinated approach to governing the ocean, the policy aims to formalize the sustainable management of marine and terrestrial protected areas while developing responsible tourism (SIG 2018).	• Tourism activities which may affect or be affected by the sustainable management and conservation of marine resources
Solomon Islands Financial Strategy 2020	• The SIG publishes its financial strategy and budget annually. For 2020, the country aims to focus on structural and sectoral reforms to facilitate private and public investment projects. For tourism, the total appropriated budget for development expenditure is $6.3 million, focusing on tourism development and institutional strengthening (SIG 2020).	• Transportation infrastructure • Tourism marketing
National Development Strategy 2011–2020	• The National Development Strategy 2011–2020 is a framework for the implementation of national priorities, highlighting the need to mainstream good governance and public-sector reforms across different industries. Tourism was identified as a small and growing industry hindered by low levels of capabilities, poor marketing, and limited infrastructures. The national strategy aims to increase tourism yields by improving infrastructures and marketing strategies (SIG 2011).	• Transportation infrastructure • High-quality tourism products and/or services • Tourism marketing
Solomon Islands National Infrastructure Investment Plan (NIIP) 2013–2023	• The plan maps Solomon Islands' infrastructure priorities, taking into account its economic priorities and strategic investments highlighted in the 2011 National Development Strategy. To develop tourism, the plan highlights that infrastructure planning should include spatial development plans to ensure the protection of tourism zones and valuable ecological areas. It also stresses the need to upgrade transportation and water infrastructures as well as promote local participation and investment in the tourism industry (SIG 2013).	• Gizo in Western Province was identified as a popular tourist destination, but the availability of fresh water supply remains a challenge because of human and climate change-related factors
Solomon Islands National Tourism Development Strategy (SINTDS) 2015–2019	• The strategy focuses on five interrelated areas: marketing and research, transport and infrastructure, cruise shipping and yachting, human resource development, and product development and investment. The strategy assigns government agencies with key actions, indicative budgets, and timelines to boost development in the five areas. • Key actions and strategies include the following: - Provide tax and tourism-investment incentives. - Develop minimum standards, grading, and accreditation for tourist activities and business establishments, such as hotels and lodgings. - Develop integrated tourism trails in Western, Guadalcanal, and Central provinces. - Develop marketing programs. - Design and adopt stringent anti-corruption policies and practices to improve the business-enabling environment. - Upgrade and redevelop existing airport and port structures. - Provide capacity building and training in hospitality and tourism. - Expand cruise shipping and yachting.	• The five focal areas are investment opportunities and entry points not only for tourist developers but also for other businesses that could contribute to the development of the focal areas

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
National Development Strategy 2016–2035	• The strategy serves as the national economic and social development framework for the SIG. It is aligned with the United Nations' Sustainable Development Goals and should be mainstreamed into the country's various sectors. The SIG aims to sustainably increase the tourism industry's economic development, taking into account the local culture and environmental values (SIG 2016a).	• Transportation sector (ports and airports) • Water and waste infrastructures and services • Local capacity building in tourism • Employment in rural areas • Local culture and products
Solomon Islands Medium-Term Development Plan 2016–2020	• The plan provides a framework of development programs and/or projects with five-year targets—derived from the country's overarching and long-term strategies. • The country's medium-term development plan aims to increase tourism's contribution to the Gross Domestic Product (GDP) by 2 percent per year. Other expected outcomes are: - Improved distribution of visitors and tourism activities across the country's tourist destinations - Increased visitors and users of the National Museum and National Archives - Improved facilitation of visitor dispersal - Improve Solomon Islands' appeal as a cruise ship destination (SIG 2016b)	• Tourism infrastructure • Tourism pilot projects • Small-scale ecotourism projects led by local communities • Increased visitor arrivals • Increased employment opportunities for locals • Increased cruise ships and yachting activities
Western Province Tourism and Culture Policy 2019-2021	• The Western Provincial Government aims to develop sustainable tourism practices that encourage the preservation of Solomon Islands' culture and environment while providing economic benefits to the local communities. The Provincial Assembly already accepted the policy and set a budget, with the policy scheduled to be gazetted on April 1, 2020.	• Tourism establishments and/or activities • Tourism marketing • Nature-based and cultural tourism activities
Western Province Preservation of Culture Ordinance 1989	• The ordinance includes provisions for the protection of traditional artefacts. It also covers the regulation of development activities, requiring developers to survey land to identify, locate, mark, and record all places of historical, cultural, or archaeological significance prior to development.	• Culture-based tourism activities • Historical site visits and/or tours
Western Province Public Nuisance Ordinance 1991	• The ordinance regulates liquor consumption in public places and includes a provision on pollution, making it an offence to litter any public place with a fine of up to $100 or imprisonment for up to one month.	• Recreational tourist activities • Tourist accommodations and restaurants • Signage or notices on liquor consumption in public places and littering should be visible in and around business establishments
Western Province Coastal and Lagoon Shipping Ordinance 1991	• The ordinance regulates marine pollution and is designed to protect the coastal waters and lagoons of Western Province. Dropping, throwing overboard, or discharging in coastal waters any form of garbage and useless or unwanted materials, equipment, oil, and hazardous products or chemicals, including petrol and bilge water, will likely cause marine pollution.	• Cruise and/or yachting tourist activities • Waste and/or wastewater infrastructures in tourist establishments
Western Province Resource Management Ordinance 1994	• This provincial law serves to protect and prohibit the harvest of specific marine and forest resources. It is an extension of the Customary Land Management Orders, which prohibit the harvesting of resources on customary land (WWF 2013).	• Nature-based tourist activities • Construction of eco-lodges

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Western Province Fisheries Ordinance 2011	• The ordinance provides a statutory framework so that the management of fishing and marine resources in the province would: (1) remain consistent with national policy and legislation, (2) acknowledge the economic significance of fishing to the national and provincial economies, (3) acknowledge the importance of managing the fisheries resource to promote sustainability and other important environmental practices, and (4) acknowledge and uphold customary fisheries rights and practices.	• Tourist activities in marine areas such as game fishing, scuba diving, and snorkeling
Western Province Business License Ordinance 2012 and (Amendment) Ordinance 2015	• The ordinance was established to regulate and license businesses in Western Province. It also aims to ensure businesses are compliant with environmental, economic, health and safety, cultural, and labor standards and requirements based on the ordinance or by any other order of the Western Province Provincial Assembly. • The 2015 amendment included provisions for application of a business license by overseas operators, who are required to gain approval from provincial executives before applying for a business license.	• Business licenses for tourist establishments or activities
Simbo Megapode Management Area Ordinance 1990	• The ordinance was established at the request of the people of Simbo to conserve and manage the population of megapodes, their habitat, and the sustainable harvesting of their eggs.	• Tourist activities associated with the Simbo Megapode Management Area • Tourist operators may apply in writing for a permit to bring tourists to or across areas within the *Simbo Megapode* Management Area

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Solomon Islands Code of Practice for the Tourism Industry 2018	• The Code of Practice was developed based on the lack of quality and professionalism in Solomon Islands' tourism industry. The following are the standards or items listed in the code to guide tourist personnel, operators, and developers: - Provide consistent and efficient services to every guest. - Be honest and fair with guests at all times. - Marketing materials should be accurate and truthful about prices and services provided. - Complaints are dealt with courteously and issues are attended to promptly. - Staff are treated fairly and given proper training and instruction in their area of work. - Support free and fair competition and promote cooperation within the tourism sector. - The business and its staff comply with all local laws and regulations. - High standards of cleanliness and hygiene are observed in all aspects of the business. - Maintain facilities, equipment, and transport used by guests to the highest standards. - Care is taken in the operation and maintenance of facilities to ensure a safe environment for guests and staff (SIG: Ministry of Culture and Tourism 2018). - Staff and management are trained and equipped to deal with potential emergencies. - Appropriate security is provided for customers and their possessions, including secure accommodation and storage. - Tourism activities must not harm the environment or wildlife of Solomon Islands. - Tourism businesses are respectful of local cultural protocol and tourists are informed about local customs where necessary. - Efforts are made to increase the efficiency of resource and utility usage. - Care is taken to reduce waste to a minimum and dispose of it responsibly.	• Tourist activities and services • Professionalization of tourism industry • Tourism marketing • Capacity building of personnel • Tourist facilities and/or infrastructures • Efficient and sustainable resource management • Health and safety of tourists, personnel, and local communities • Local culture • Water and sanitation in business establishments

Policy/ Legislation/ Guideline	Description	Relevant Sections/Clauses for Tourism Development
Minimum Standards and Classification for Tourism Accommodation 2018	• Solomon Islands has minimum standards criteria to assess accommodation establishments in the country and maintain quality. Accommodation categories are classified based on their key features and target clientele as follows: (1) hotel, (2) resort, (3) motel, (4) budget accommodation, (5) tourist bungalow, (6) eco-lodge accommodation, (7) serviced apartment, and (8) homestay accommodation (SIG: Ministry of Culture and Tourism 2018). Each accommodation category has its respective minimum standards criteria, which should be met by accommodation establishments.	• The location of a tourist accommodation establishment often defines its category. Accommodations such as resorts, tourist bungalows, and eco- lodges would be located in scenic locations and offer nature-based activities; thus, developers would need to ensure the accommodations have minimal environmental impacts while maintaining the aesthetic values in their respective locations. • Accommodations located in scenic locations may be more prone to natural hazards and climate-change vulnerabilities. Infrastructures should be fortified to mitigate the vulnerabilities. • In the case of eco-lodges, developers should ensure that they are constructed with materials that are locally and sustainably sourced. • Budget accommodations, motels, and homestays should ensure that there are proper water and waste management facilities in the property. • In accommodations that allow the immersion of tourists in local cultures, developers and operators should ensure that local communities have been oriented and/or received proper advice on the arrival and management of tourists. Tourists should also familiarize themselves with Solomon Islands' culture before visiting to remain respectful to the local communities' culture, practices, and heritage. • Solomon Islands' culture and art should be integrated into the design or architecture of accommodation establishments.

Appendix C: Conservation Species

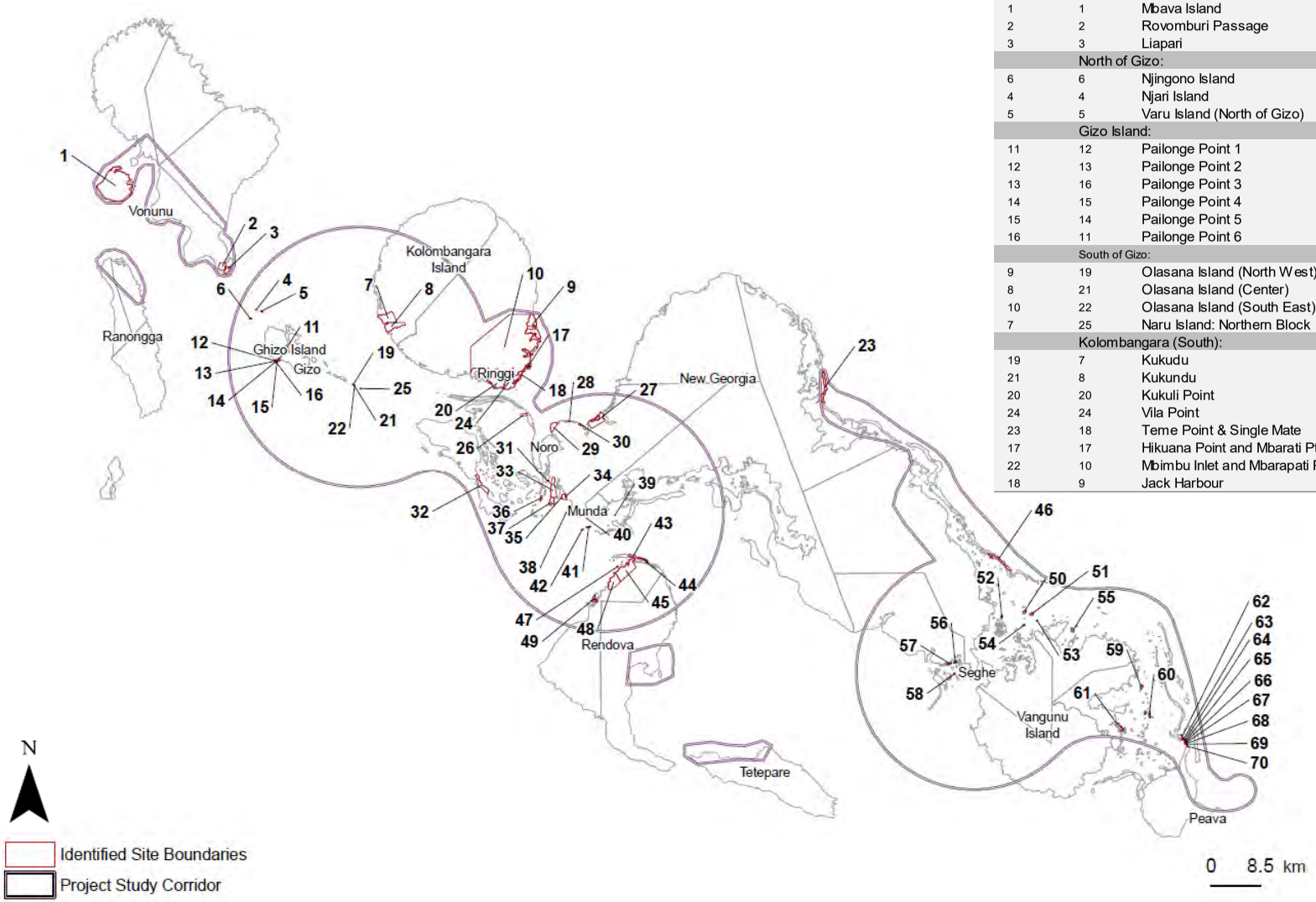
Table 23: Conservation-Significant Species Known to Occur in the Study Corridor (IUCN 2020)

Species	Common Name	IUCN Status	Notes on Occurrence in the Study Corridor
Mammals			
Uromys vika	Vangunu Giant Rat	Critically endangered	This species, known only from the holotype, was captured from a felled tree in a logged lowland forest on southern Vangunu (Lavery 2017). The species possibly occurs in lowland forests with a range at sea level to 400 m on New Georgia, Kolombangara, and Nggatokae as these islands were interconnected during the Pleistocene, but this requires confirmation.
Pteralopex atrata	Guadalcanal Monkey-Faced Bat	Endangered	May occur on Arundel Island within the study corridor
Pteralopex taki	New Georgia Monkey-Faced Bat	Vulnerable	Rediscovered in 2015 after being presumed extinct, this highly mobile species has been confirmed to widely occur throughout the study corridor
Reptiles and Amphibians			
Litoria lutea	Faro Island Treefrog	Vulnerable	Found in coastal forest on New Georgia Island within the study corridor
Loveridgelaps elapoides	Solomons Black-Banded Krait	Vulnerable	Venomous snake species found widely throughout the study corridor in most habitats
Birds			
Aplonis brunneicapillus	White-Eyed Starling	Vulnerable	Resident on Rendova Island but believed to be widespread in Western Province
Columba pallidiceps	Yellow-Legged Pigeon	Vulnerable	Possibly present in any intact forest system but known to be resident on Kolombangara Island
Haliaeetus sanfordi	Sanford's Sea-Eagle	Vulnerable	May be found in any coastal area with suitable tall trees for nesting
Eurostopodus nigripennis	Solomons Nightjar	Vulnerable	Widespread resident throughout the study corridor
Numenius tahitiensis	Bristle-Thighed Curlew	Vulnerable	Resident non-breeding migratory species relying on foreshores, mud, and sand flats for foraging areas
Pitta anerythra	Black-Faced Pitta	Vulnerable	Resident on Kolombangara and Vangunu islands
Pterodroma brevipes	Collared Petrel	Vulnerable	Associated with offshore islands and sand cays
Pterodroma solandri	Providence Petrel	Vulnerable	Associated with offshore islands and sand cays
Zosterops luteirostris	Gizo White-Eye	Endangered	Known throughout Ghizo Island but appears restricted to that island
Zosterops splendidus	Ranongga White-Eye	Vulnerable	Small endemic bird species known only from Ranongga Island west of Gizo
Plants			
Aglaia brassii		Vulnerable	Understory tree fairly common in lowland primary and secondary forest up to 500 m
Aglaia rubrivenia		Vulnerable	Understory tree of coastal lowland and hill forest

Species	Common Name	IUCN Status	Notes on Occurrence in the Study Corridor
Aglaia saltatorum		Vulnerable	Small tree occurring in lowland forest up to 520 m, possibly present in any lowland forest on the larger islands
Archidendron oblongum		Vulnerable	Understory tree in primary forest vulnerable to logging in these areas
Calophyllum confusum		Vulnerable	Commercial species of coastal lowland primary forest
Dillenia crenatifolia		Vulnerable	Commercial swamp forest species found on nearby major islands
Dillenia salomonensis		Vulnerable	Commercial swamp forest species found on nearby major islands
Diospyros insularis		Vulnerable	Found only on Tetepare Island within the study corridor
Endospermum medullosum	Whitewood	Vulnerable	Known to occur in the study corridor in five locations, including Gizo, Kukuli Point on Kolombangara Island, and Viru Harbor on New Georgia
Gmelina salomonesnis		Endangered	Restricted in the study corridor to lowland and hill forests on Kolombangara Island
Intsia bijuga	Merbau (Kwila)	Vulnerable	Large commercially valuable tree of the coastal lowlands once forming important almost monotypic communities in the near coastal and littoral zone
Livistona woodfordii		Vulnerable	Palm tree of lowland rainforest and swamp forest known only to occur on Nggela Islands but may have possible populations within the study corridor
Mangifera altissima		Vulnerable	Smaller tree of the coastal lowlands at risk from habitat destruction via logging
Mastixiodendron stoddardii		Vulnerable	Smaller tree of the coastal lowlands at risk from habitat destruction via logging
Phylloscopus amoenus	Kolombangara Leaf-Warbler	Vulnerable	Small bird of the upper montane cloud forests on Mount Veve
Pleuranthodium peekelii	Giant Ginger	Endangered	Understory species of relatively intact lowland forest on Kolombangara Island
Invertebrates			
Tirumala euploemorpha		Vulnerable	Butterfly known from collections throughout the study corridor associated with primary forest
Fish			
Neopomacentrus aquadulcis	Sweetwater Demoiselle	Endangered	Freshwater fish known only from Tetepare Island in clear streams and wetlands

Appendix D: Identified Sites

Identified Site Profile Index



Page number	Site ID	Site Name
	GIZO HUB	
	Vela Le Vella Island (South):	
1	1	Mbava Island
2	2	Rovomburi Passage
3	3	Liapari
	North of Gizo:	
6	6	Njingono Island
4	4	Njari Island
5	5	Varu Island (North of Gizo)
	Gizo Island:	
11	12	Pailonge Point 1
12	13	Pailonge Point 2
13	16	Pailonge Point 3
14	15	Pailonge Point 4
15	14	Pailonge Point 5
16	11	Pailonge Point 6
	South of Gizo:	
9	19	Olasana Island (North West)
8	21	Olasana Island (Center)
10	22	Olasana Island (South East)
7	25	Naru Island: Northern Block
	Kolombangara (South):	
19	7	Kukudu
21	8	Kukundu
20	20	Kukuli Point
24	24	Vila Point
23	18	Teme Point & Single Mate
17	17	Hikuana Point and Mbarati Pt
22	10	Mbimbu Inlet and Mbarapati Pt
18	9	Jack Harbour

Page number	Site ID	Site Name
	MUNDA HUB	
	Noro (North):	
36	26	Kohingo Island, Ghalughalu Point
28	29	Tunguivili Point (East)
26	28	Lambete Kopi
27	30	Niu Kaloka (west):
25	27	Enogha Point
	Vona Vona:	
34	32	Buni - Parara Island
37	36	Kolohite Island
35	31	Karapata Islands
39	33	Mbanga Island - Tabaka
38	37	Kuri Point
41	35	Mbarikihi Islands: west
40	34	Mbarikihi Islands: east
	In front of Munda:	
33	38	Nusa Zonga Island
31	40	Hombupeka Island
32	42	Hopei Island
30	41	Hombu Hombu Island
29	39	Himbi Island
	North Rendova	
42	49	Agana & Vangoro Islets
44	48	Mandali Point
47	47	Tambusolo Island
46	45	Rendova harbor
43	43	Kukurana Island
45	44	Mbarambuni Island
	SEGHE HUB:	
	Seghe and Surrounds:	
51	57	Tinovili Island
50	56	Mbatubosi Island
49	58	Lloro Island
	Ramata:	
48	23	Rovana Island
	Marovo:	
59	46	Tatama & Avavasa Islands
58	52	Gharamana Island
57	50	Mbukimbuki (West)
56	51	Mbukimbuki (East)
52	54	Karunohu Island
61	53	Veuru
54	55	Mahoro Island
55	59	Mbareho Island
60	60	Tinge & Karungarao Island
53	61	Lalauru Point incl Islands
	Gatokae:	
62	62	Timbara (Mbunikalo) 1
63	63	Timbara (Mbunikalo) 2 & 3
64	64	Timbara (Mbunikalo) 4
65	65	Timbara (Mbunikalo) 5
66	66	Timbara (Mbunikalo) 6
67	67	Timbara (Mbunikalo) 7
68	68	Timbara (Mbunikalo) 8
69	69	Timbara (Mbunikalo) 9
70	70	Timbara (Mbunikalo) 10

Key to Identified Site Profiles

Ranking determined by combining all site ratings (see the methodology for more details)
Rankings:
Low risk (Green) = Limited environmental or social impacts anticipated Moderate Risk (Orange) = Some management of social and environmental impacts required.
High risk (Red) = Most management of social and environmental impacts required.

Site ID used for referencing and data management (listed from north to south). Site Profiles are ordered from Site 1 -71. Please see Indicator map on next page for site locations within the Western Province. Please refer to previous pages for list of site ordered by cluster location.

Parcel ID is provided by Commissioner of Lands, SIG as indicated on Site title. (Where title details are not provided, a copy of the title has not been acquired to date by IFC)

Site Name and the regional airport hub that the site is closest to

Indicative location of the site within the Western Province

Site photos: These photos were taken during site visits. In order to respect the privacy of site occupiers we have not included photos of houses or people without their permission. Credit: Wijnand Udema and Allenie Smith, GHD

Overall Risk Ranking: Low

Njingono Island

Gizo Hub

Site Identifier #: 6
Parcel Identifier: 097-016-0002

Site Description:

Njingono island is a site off the north west tip of Ghizo island. The island is only 0.77 ha and is low lying (max 1.5m asl). The island contains portions of coastal forest. The area surrounding the island is used for fishing by local villages from Ghizo Island. The marine area surrounding the island forms part of the community managed marine protected areas of Njari Reef, Varu North Reef and Saeraghi Reef. Saeragi Reef Protected area is managed by Saeragi Village, who monitor fish stocks, but are not currently restricting fishing, but are managing harvesting of seaweed. The whole of Ghizo Island and surrounding reef, including this island are identified by the KBA Partnership as being a Key Biodiversity Area. UXO is unlikely to be encountered and no one appears to live on the island.

Site Location

Beach

Coastal Vegetation

Coastal Vegetation

Natural Hazard Risks	
Coastal Vulnerability	9
Sea Level Rise	9
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrustructure	6
Presence of Cultural heritage	2
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	6

Co-ordinates	-8.028187, 156.747301	**Services available**	Limited mobile telecommunications
Title type	097-016-0002	**Site access**	Jetty
Site area	0.77 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 17 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Gizo Hospital - 17 km	**Protected / Managed areas**	Locally managed Saeraghi Reef Marine Protected Area of 24.57 km2 > 1 km E. Locally managed () Varu North Reef Marine Protected Area 0.23 km2 > 1 km.
Current occupation of site	Caretaker (1 building)	**Adjacent Land use**	Ocean
Current land use	Forest, residential, gardens	**Other Site Hazards**	Coastal erosion

Social and Environmental Risks:
These are rated from
1 – Low (Dark Green) to
10 – High (Dark Red)
Site ratings are based on several assessment methodologies. Please refer to the next page for details of the ratings. Site ratings consider the whole of site, the attached site map indicates areas within the site that are of particular relevance and may contribute to the site ratings.

Services Available: Any services noted on site are listed including: telecommunication reception, grid power, reticulated water, on-site water sources or public transport to the site (ferry dock nearby or known bus routes).

Site Access: Provides details of any access options to the site, either by land or sea. If no access is provided, access is currently only available by boat to shore, either on a beach or area clear of coastal vegetation (mangroves).
Road/track access is established using aerial photographs and limited mapped roads and tracks provided by the Solomon Islands Government.

Co-ordinates: geographic coordinate system expressed in Latitude and Longitude decimal degrees

Cultural Heritage/Tabu sites:
This is generated from interviews with site occupiers/owners, previous studies and limited data from the Western Province Preservation of Culture Ordinance 1989

Title type:
PE: Perpetual estate = a permanent right of ownership of the land, which continues indefinitely and without termination
FTE: Fixed term estate = any right or interest in respect of land that will expire after the passing of a specified period of time, or upon the happening of a specified event (typically no more than 75 years in the case of privately leased land from the Commissioner of Lands)
LR: Leased Register = a lease that is registered against the title to the property.

Potential for UXO:
Unexploded Ordinance (UXO) are present throughout various parts of the Solomon Islands due to it being a battleground in WWII. Mapping of UXO areas of is limited, however details of battle areas and military encampments are well documented. These areas have the potential to contain UXO. Cleared sites are not documented as clearing has been undertaken by other parties for specific purposes and may not be exhaustive.

Current Land use and Current Occupation of site:
Based on site observations, aerial photos and interviews with occupiers. Where possible buildings used for purposes other than residential have been excluded and noted separately. Buildings included are of reasonable size to be considered for residential dwelling purposes (outhouses and small utility buildings are not included). (Head counts of site occupants were not undertaken).

Site maps call outs are color coded to show areas of the site that may be higher risk for development for environmental or social reasons.
Lower risk areas = green
Moderate risk areas = orange
Higher risk areas = red

Distance to nearest Airports:
* Distance includes the required boat ride of 2.2km from Gizo Airport to Gizo Town, with the remainder of the distance to this site measure overland (on roads)
** Distance includes/excludes the potential overland road journey (XXX km) from Munda Airport to Noro town before using a boat to travel the remainder of the journey.

Distance to nearest Hospital or Clinic:
Measured from public hospitals and clinics and well established private facilities. Nurses stations have not been included (due to their limited available services), only hospitals, rural health clinics and area health clinics.

Site visit not completed to some sites. Assessments are based on secondary data only. These sites are indicated on the site map.

Weighting and Measurement of Social and Environmental Risks

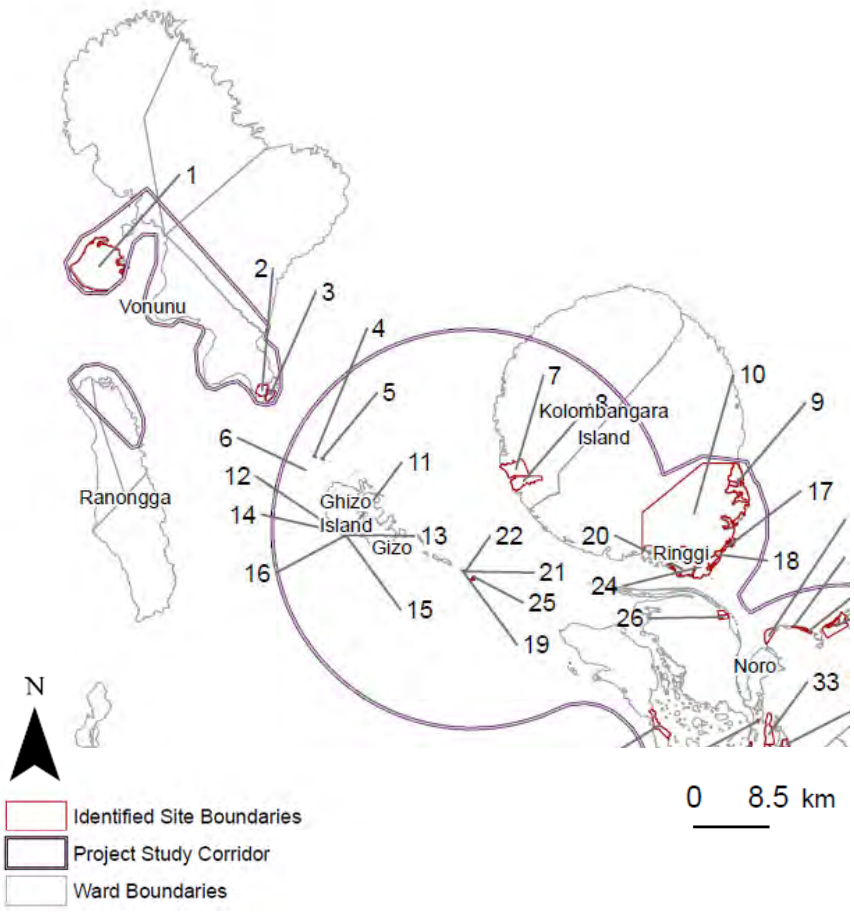
Natural Hazards	Weighting	Measurement technique	Rating		
	20%		Low 1-3	Moderate 4-6	High 7-10
Coastal Vulnerability	50	Site observations Evidence of erosion from site observations Percentage of site within 50m of shallow to medium depth reef IUCN / IBAT Reef Mapping Aerial photos	Sheltered locations, within lagoon or island group. Unlikely to be affected by storm surge. No evidence of erosion 60% or more of site perimeter surrounded by shallow or medium depth reef	Somewhat sheltered from storm surge. Exposed location within lagoon environment. No evidence of erosion 30% to 60% of site perimeter surrounded by shallow or medium depth reef	Reef fringe islands, exposed to weather events, low elevation above sea level. Evidence of erosion Less than 30% of site perimeter surrounded by shallow or medium depth reef
Sea Level Rise	50	Semi-quantitative: Percentage of site over 1m above sea level based upon site observations Aerial photos	70% or more of site area over 1m above sea level	30% to 70% of site area over 1m above sea level	30% to 70%of site area less than 1m above sea level
	100				

Social Risks	Weighting	Measurement technique	Rating		
	40%		Low 1-3	Moderate 4-6	High 7-10
Presence of People	40	Households on site (site observation, notes from owners and aerial photos) / Area of site = Houses per hectare on site. Households that are known to be occupied by rangers were not included in this count and will be graded as 1.	No known communities, families or individuals occupying or using the land parcel for living purposes.	1-3 building or house per hectare occupying the land parcel.	3+ buildings or houses per hectare of the land parcel.
Presence of Livelihood	40	Presence of gardens or crops on site: On site observations and review of aerial photos for used or unused gardens/crops. Estimate area based on aerial and Land Use Pac Geo layer.	No crops or gardens on site	Abandoned cropping, plantation or gardening land or less than 30% if site occupied by crops or gardens.	Crops / Gardens present on site and occupying 30% of site or more. Presence of villages.
Proximity to Infrastructure	10	Measurement from known points	0-15 km from an airport and 0-10 km from a health clinic	15-30km from Airport and 10-15 from a health clinic	30-50km from airport and 15-20km from a health clinic
Presence of Cultural heritage	10	Data from site visits / area of site that are used for Family graves, WW2 relic or battle sites, cultural sites, Tambu or Kastom sites, Animist sites that are considered important by the local community. Includes traditional resource collection areas.	No historical or cultural sites confirmed (3 if no person on site to confirm)	Less than 1 site identified on the site	More than 1 site identified / HA
	100				

Environmental Risks	Weighting	Measurement technique	Rating		
	40%		Low 1-3	Moderate 4-6	High 7-10
Terrestrial biodiversity	50	Site observations IUCN / IBAT databases where relevant Information based on discussions with communities.	Highly disturbed / modified environment. Represents low ecological value. Examples include active coconut plantations, residential / or housing areas, agricultural land.	Moderately disturbed environment. Examples may include former / abandoned coconut plantations with heavy secondary growth forest or former logged areas with strong secondary growth present. Relatively healthy reef ecosystem – some sign of human impact. Endangered or threatened species may be present.	Relatively undisturbed environment, such as primary forest, and healthy and intact reef ecosystems, relatively limited impact from human activities. Endangered or threatened species likely to be present.
Marine biodiversity	50	Site observations of reef directly adjacent to site Presence of informal marine management areas, such as community based Marine Protected areas. Information based on discussions with communities IUCN / IBAT databases where relevant	Marine areas close to urban centers. Ecosystem health compromised through pollution, and over fishing. Shallow reef areas with no adjacent deep water. Visually stressed marine environment. Low ecological diversity and health.	Marine ecosystems that are relatively intact. Some evidence of human impact. Areas <5km from nearest village. Moderate extent of reef, mangroves or sea grass with visible indicators or stress or impact. Areas where adjacent land use (e.g. logging) will likely impact marine ecosystem health.	Extensive sea grass beds in good health. Well established and healthy mangrove areas. Healthy and reef ecosystems with wide fish diversity (little impact from fishing). Extensive reef systems with documented rich biodiversity. Rare or endangered species likely to be present. Sea turtle feeding or nesting areas. Sea bird roosting or nesting areas.
	100				

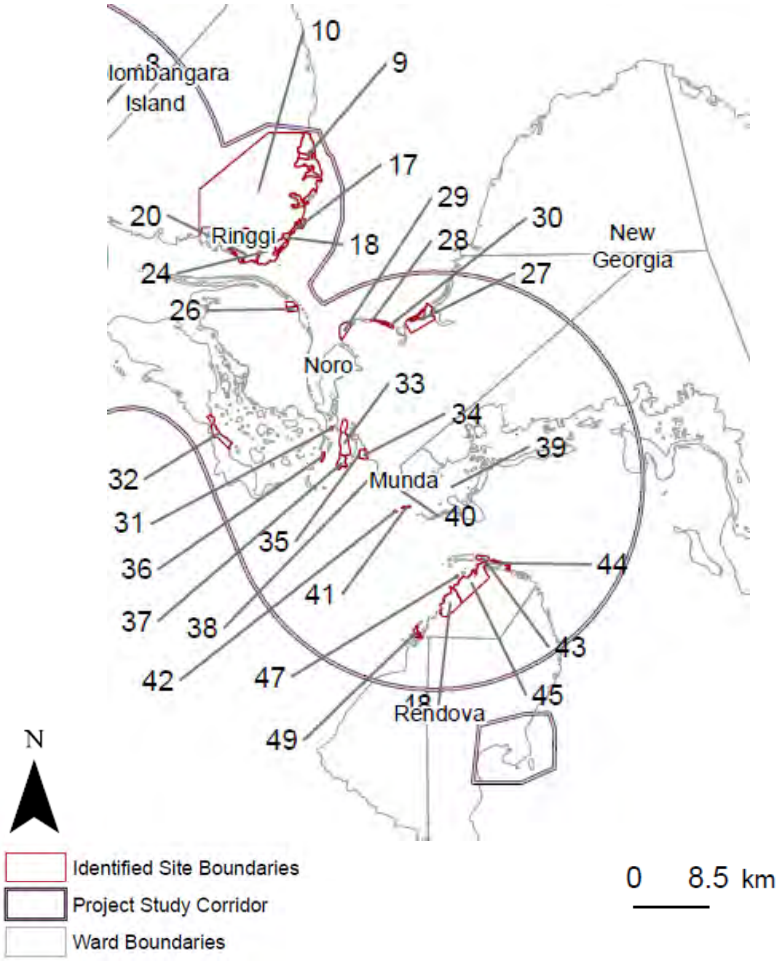
Overall	100%

Summary of Identified Sites Ratings by Hub - Gizo



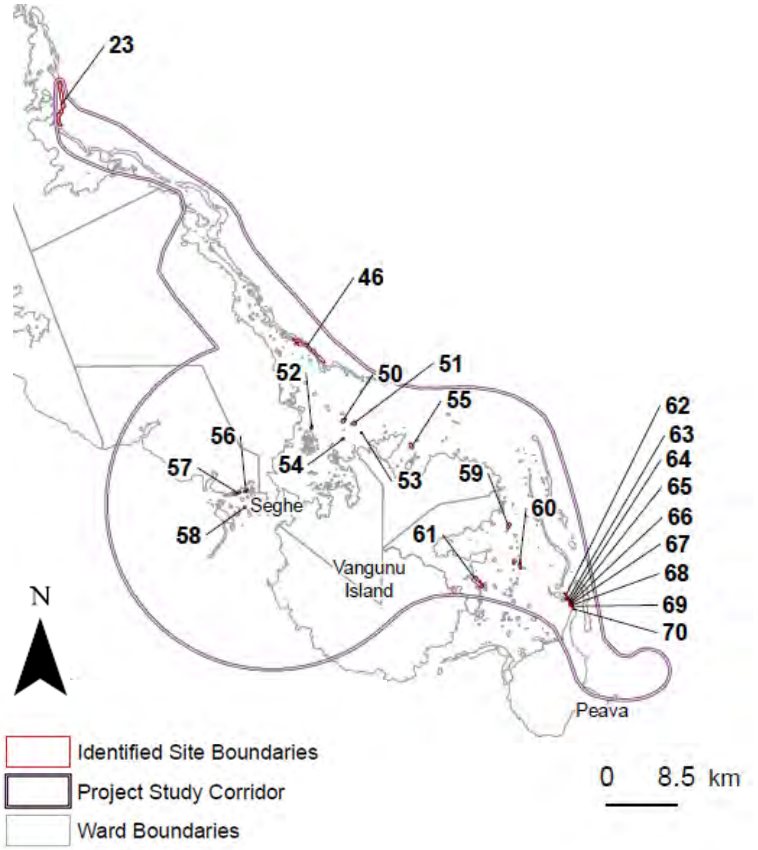
Page number	Site ID	Site Name	Coastal Vulnerability	Sea Level Rise	Natural Hazard Risk Rating	Presence of People	Presence of Livelihood	Proximity to Infrustructure	Presence of Cultural heritage	Social Risk Rating	Terrestrial biodiversity	Marine biodiversity	Environmental Risk Rating	Overall Site Risk Rating
		GIZO HUB												
		Vela Le Vella Island (South):												
1	1	Mbava Island	5	3	Low	1	3	8	3	Moderate	5	6	Moderate	Moderate
2	2	Rovomburi Passage	3	6	Low	1	1	7	3	Low	3	2	Low	Low
3	3	Liapari	5	5	Moderate	4	4	7	3	Moderate	3	3	Low	Moderate
		North of Gizo:												
6	6	Njingono Island	9	9	High	1	1	6	2	Low	6	6	Moderate	Moderate
4	4	Njari Island	9	9	High	1	1	6	3	Low	6	10	High	Moderate
5	5	Varu Island (North of Gizo)	9	9	High	3	2	6	6	Moderate	6	8	High	High
		Gizo Island:												
11	12	Pailonge Point 1	7	6	Moderate	1	5	3	5	Moderate	1	5	Low	Moderate
12	13	Pailonge Point 2	7	6	Moderate	7	6	3	5	High	1	5	Low	High
13	16	Pailonge Point 3	7	6	Moderate	1	6	3	5	Moderate	1	5	Low	Moderate
14	15	Pailonge Point 4	7	6	Moderate	9	6	3	5	High	2	5	Low	High
15	14	Pailonge Point 5	7	6	Moderate	5	6	3	5	Moderate	2	5	Low	High
16	11	Pailonge Point 6	7	6	Moderate	6	5	3	5	Moderate	1	5	Low	Moderate
		South of Gizo:												
9	19	Olasana Island (North West)	7	8	High	1	1	2	3	Low	8	6	High	Low
8	21	Olasana Island (Center)	7	7	High	1	1	2	3	Low	7	6	Moderate	Low
10	22	Olasana Island (South East)	7	7	High	1	1	2	3	Low	7	6	Moderate	Low
7	25	Naru Island: Northern Block	9	9	High	1	1	2	1	Low	8	6	High	Low
		Kolombangara (South):												
19	7	Kukudu	5	3	Low	4	7	3	7	High	6	5	Moderate	High
21	8	Kukundu	5	3	Low	4	6	3	7	High	6	5	Moderate	High
20	20	Kukuli Point	5	4	Low	4	5	5	3	Moderate	6	5	Moderate	Moderate
24	24	Vila Point	5	4	Low	4	7	5	5	High	4	5	Moderate	High
23	18	Teme Point & Single Mate	5	4	Low	4	5	5	3	Moderate	4	5	Moderate	Moderate
17	17	Hikuana Point and Mbarati Pt	5	4	Low	4	6	5	5	High	4	5	Moderate	Moderate
22	10	Mbimbu Inlet and Mbarapati Pt	5	4	Low	4	6	5	5	High	4	5	Moderate	Moderate
18	9	Jack Harbour	5	3	Low	4	6	6	5	High	5	5	Moderate	High

Summary of Identified Sites Ratings by Hub - Munda



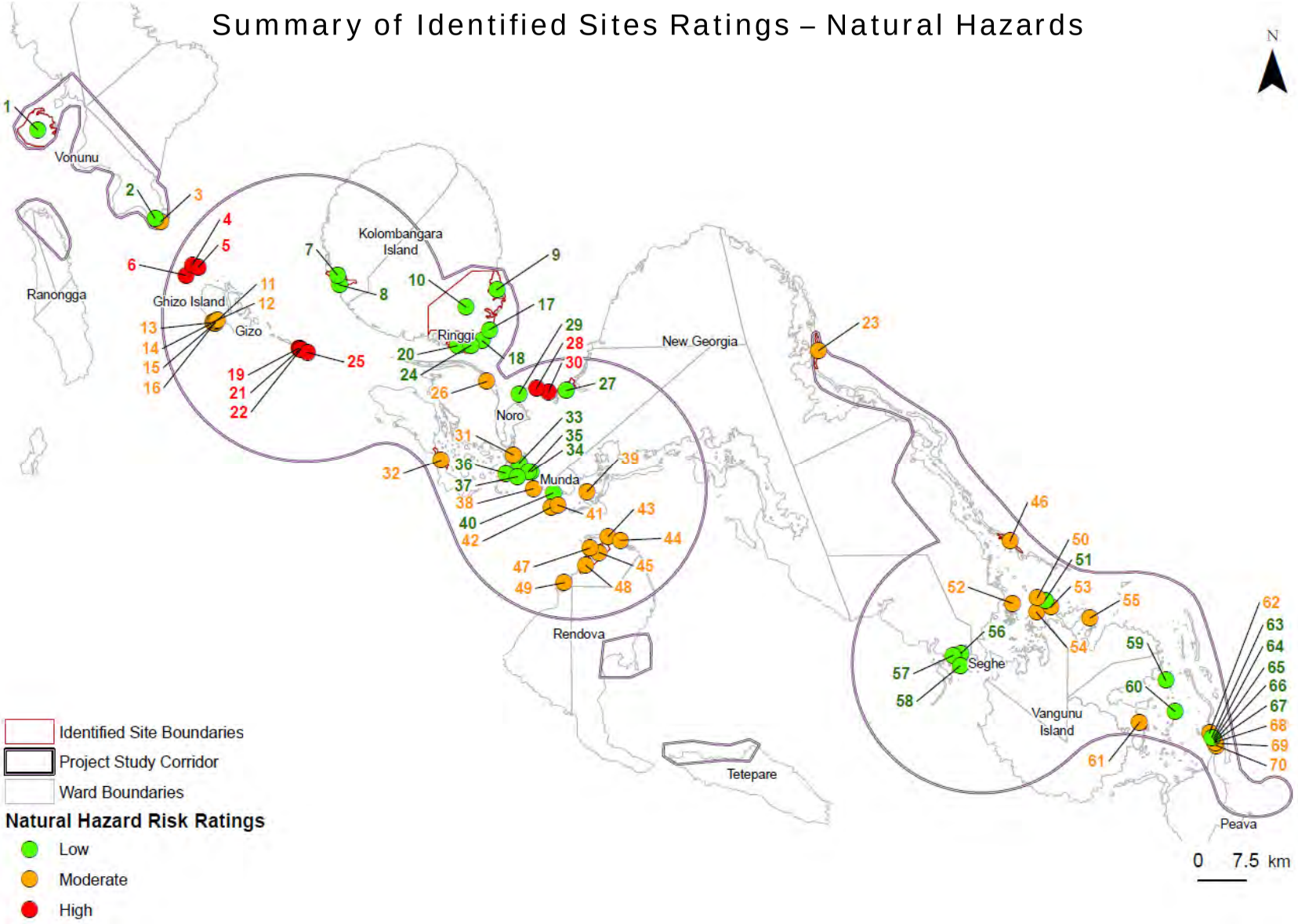
Page number	Site ID	Site Name	Coastal Vulnerability	Sea Level Rise	Natural Hazard Risk Rating	Presence of People	Presence of Livelihood	Proximity to Infrustructure	Presence of Cultural heritage	Social Risk Rating	Terrestrial biodiversity	Marine biodiversity	Environmental Risk Rating	Overall Site Risk Rating
	MUNDA HUB													
	Noro (North):													
36	26	Kohingo Island, Ghalughalu Point	4	6	Moderate	4	5	4	3	Moderate	5	8	Moderate	Moderate
28	29	Tunguivili Point (East)	5	4	Low	5	5	5	3	Moderate	3	3	Low	Moderate
26	28	Lambete Kopi	7	9	High	1	2	5	2	Low	5	5	Moderate	Moderate
27	30	Niu Kaloka (west):	7	9	High	4	3	5	3	Moderate	5	6	Moderate	Moderate
25	27	Enogha Point	5	4	Low	1	2	7	6	Moderate	7	6	Moderate	Moderate
	Vona Vona:													
34	32	Buni - Parara Island	5	5	Moderate	10	7	4	5	High	1	5	Low	High
37	36	Kolohite Island	4	3	Low	1	2	2	1	Low	3	6	Moderate	Low
35	31	Karapata Islands	3	7	Moderate	1	1	4	3	Low	9	5	High	Low
39	33	Mbanga Island - Tabaka	3	5	Low	4	7	3	6	High	4	3	Low	Moderate
38	37	Kuri Point	3	5	Low	1	4	2	7	Moderate	3	3	Low	Low
41	35	Mbarikihi Islands: west	3	4	Low	1	1	2	2	Low	5	5	Moderate	Low
40	34	Mbarikihi Islands: east	3	6	Low	1	1	2	2	Low	6	7	Moderate	Low
	In front of Munda:													
33	38	Nusa Zonga Island	4	7	Moderate	1	2	1	7	Low	6	5	Moderate	Low
31	40	Hombupeka Island	3	6	Low	9	5	1	2	Moderate	2	3	Low	Moderate
32	42	Hopei Island	5	6	Moderate	1	3	1	2	Low	4	7	Moderate	Low
30	41	Hombu Hombu Island	5	6	Moderate	4	3	1	2	Low	2	5	Low	Low
29	39	Himbi Island	3	7	Moderate	1	1	2	3	Low	7	6	Moderate	Low
	North Rendova													
42	49	Agana & Vangoro Islets	5	5	Moderate	1	1	5	1	Low	5	6	Moderate	Low
44	48	Mandali Point	5	5	Moderate	4	5	4	3	Moderate	1	2	Low	Moderate
47	47	Tambusolo Island	5	7	Moderate	1	1	4	3	Low	8	4	Moderate	Low
46	45	Rendova harbor	5	6	Moderate	4	7	4	5	High	4	5	Moderate	High
43	43	Kukurana Island	5	5	Moderate	1	1	4	2	Low	4	5	Moderate	Low
45	44	Mbarambuni Island	5	7	Moderate	1	4	4	2	Low	3	5	Low	Low

Summary of Identified Sites Ratings by Hub - Seghe

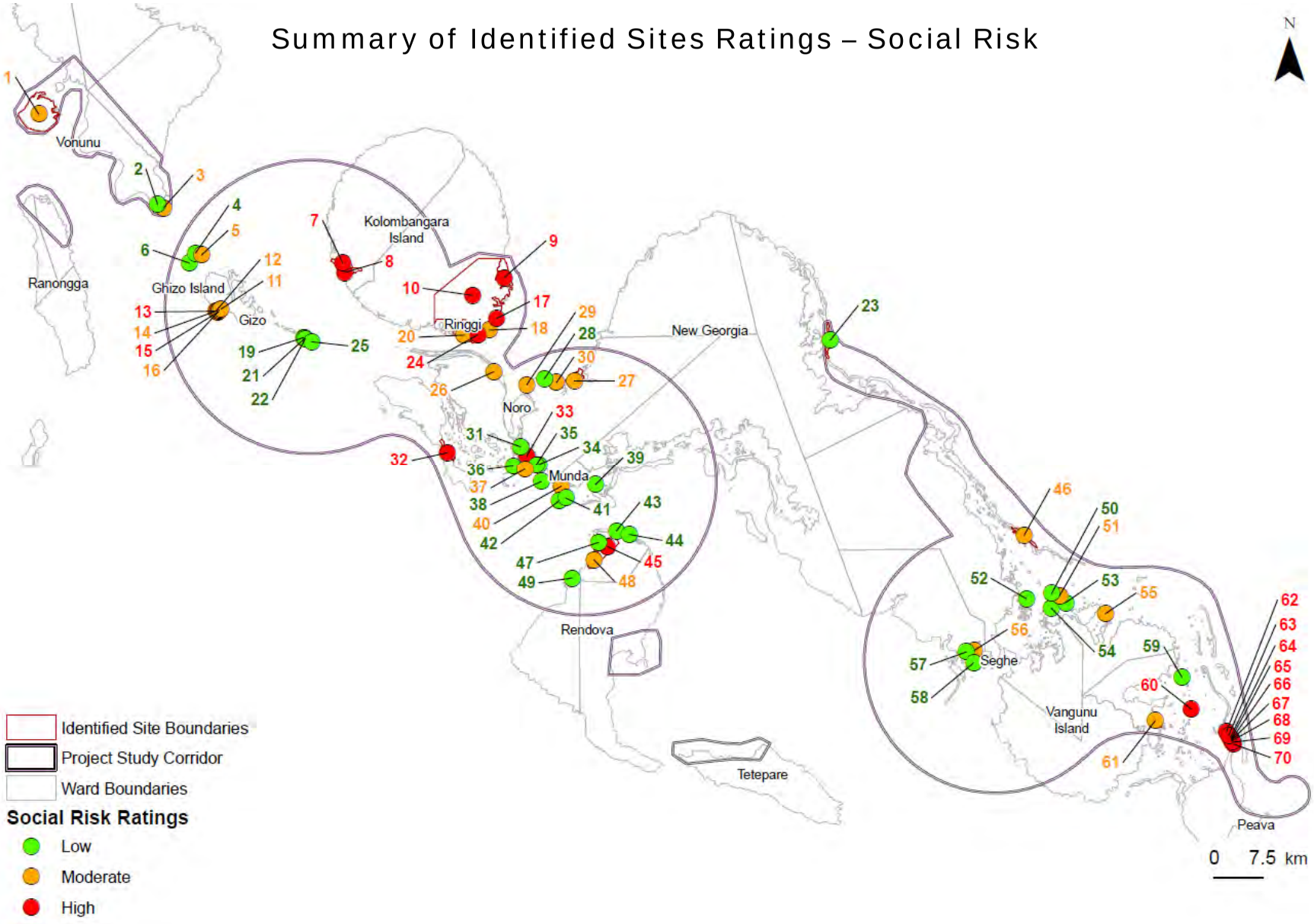


Page number	Site ID	Site Name	Coastal Vulnerability	Sea Level Rise	Natural Hazard Risk Rating	Presence of People	Presence of Livelihood	Proximity to Infrustructure	Presence of Cultural heritage	Social Risk Rating	Terrestrial biodiversity	Marine biodiversity	Environmental Risk Rating	Overall Site Risk Rating
	SEGHE HUB:													
	Seghe and Surrounds:													
51	57	Tinovili Island	3	5	Low	1	1	2	3	Low	3	3	Low	Low
50	56	Mbatubosi Island	3	5	Low	1	6	2	2	Moderate	3	5	Low	Low
49	58	Lloro Island	3	5	Low	1	5	2	3	Low	5	5	Moderate	Low
	Ramata:													
48	23	Rovana Island	6	7	Moderate	1	1	3	3	Low	5	6	Moderate	Low
	Marovo:													
59	46	Tatama & Avavasa Islands	6	7	Moderate	1	3	6	3	Moderate	5	6	Moderate	Moderate
58	52	Gharamana Island	4	6	Moderate	1	4	4	2	Low	2	5	Low	Low
57	50	Mbukimbuki (West)	5	6	Moderate	1	2	2	2	Low	6	5	Moderate	Low
56	51	Mbukimbuki (East)	5	4	Low	5	3	4	3	Moderate	3	5	Low	Moderate
52	54	Karunohu Island	4	7	Moderate	1	3	3	3	Low	5	5	Moderate	Low
61	53	Veuru	5	7	Moderate	1	1	3	2	Low	9	5	High	Low
54	55	Mahoro Island	4	7	Moderate	4	6	4	2	Moderate	3	5	Low	Moderate
55	59	Mbareho Island	4	4	Low	1	2	6	3	Low	3	6	Moderate	Low
60	60	Tinge & Karungarao Island	4	5	Low	4	7	7	5	High	1	4	Low	High
53	61	Lalauru Point incl Islands	4	7	Moderate	1	5	7	3	Moderate	5	5	Moderate	Moderate
	Gatokae:													
62	62	Timbara (Mbunikalo) 1	4	6	Moderate	5	6	7	3	High	4	4	Low	High
63	63	Timbara (Mbunikalo) 2 & 3	4	5	Low	5	6	7	3	High	4	4	Low	High
64	64	Timbara (Mbunikalo) 4	4	5	Low	5	6	7	3	High	2	4	Low	Moderate
65	65	Timbara (Mbunikalo) 5	4	5	Low	5	6	7	3	High	4	4	Low	High
66	66	Timbara (Mbunikalo) 6	4	5	Low	5	6	7	3	High	3	4	Low	High
67	67	Timbara (Mbunikalo) 7	4	5	Low	5	6	7	3	High	1	4	Low	Moderate
68	68	Timbara (Mbunikalo) 8	4	6	Moderate	5	6	7	3	High	3	4	Low	High
69	69	Timbara (Mbunikalo) 9	4	6	Moderate	5	6	7	3	High	3	4	Low	High
70	70	Timbara (Mbunikalo) 10	4	7	Moderate	6	7	7	3	High	1	4	Low	High

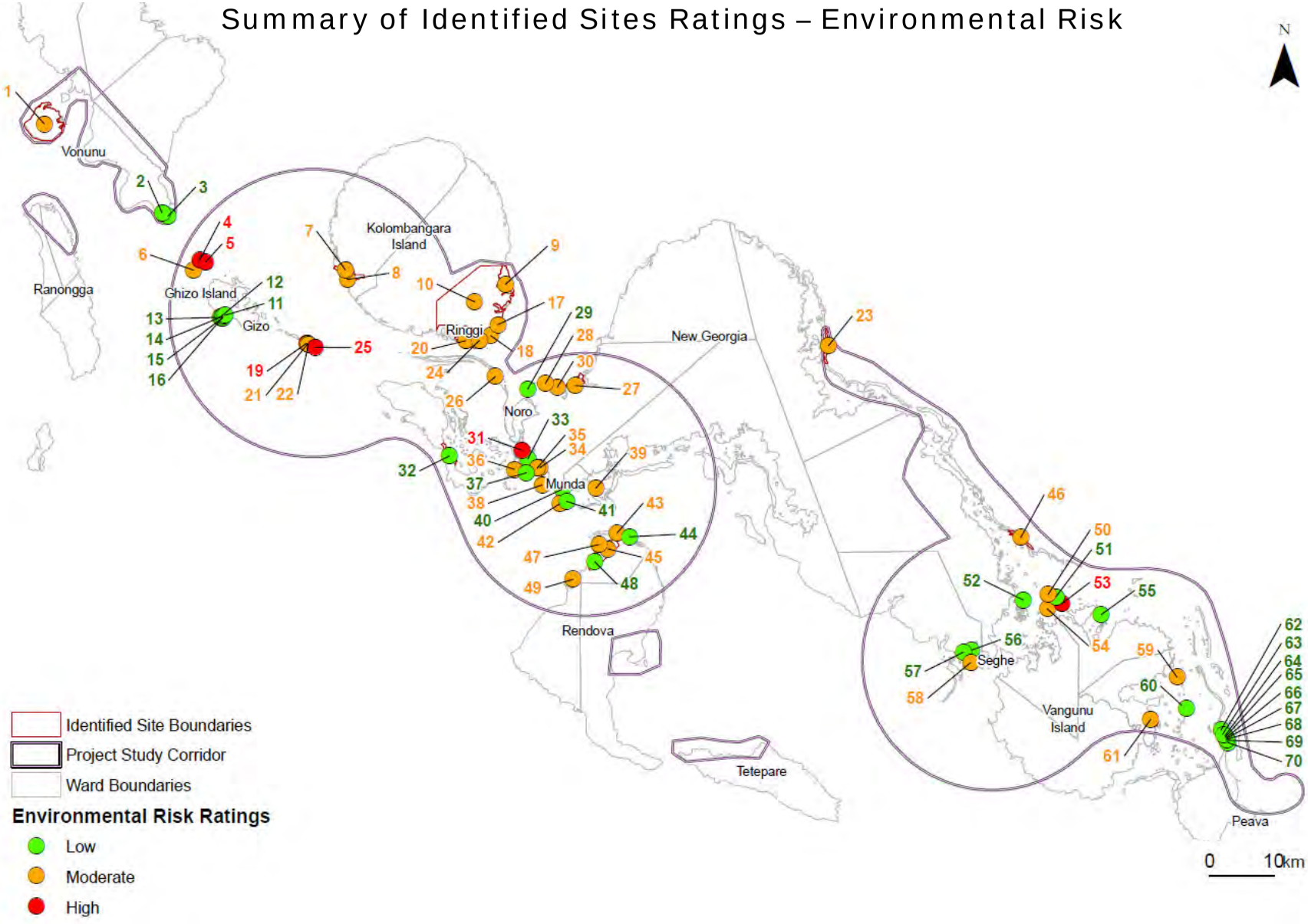
Summary of Identified Sites Ratings – Natural Hazards



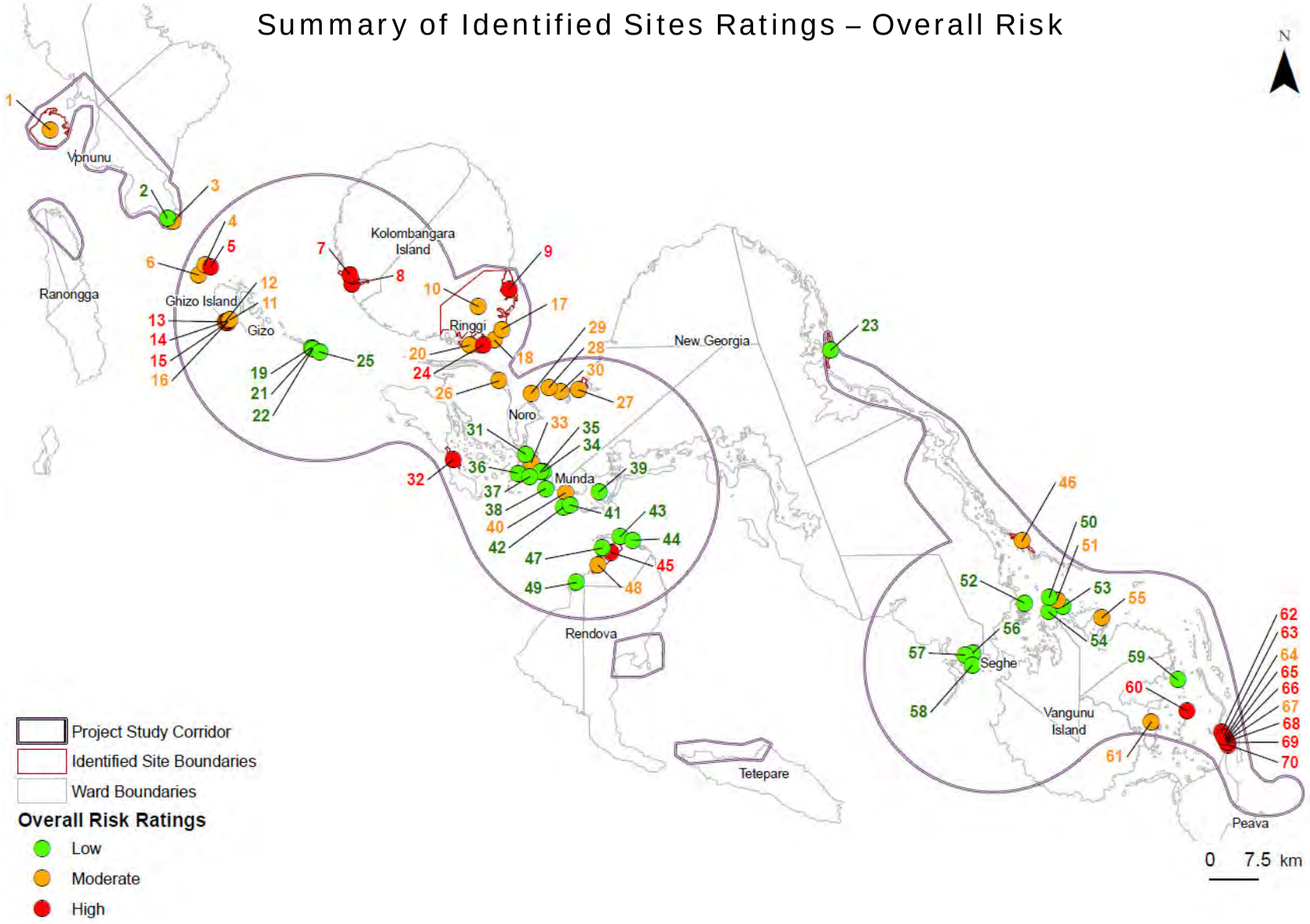
Summary of Identified Sites Ratings – Social Risk



Summary of Identified Sites Ratings – Environmental Risk



Summary of Identified Sites Ratings – Overall Risk



Overall Risk Ranking: **Moderate**

Mbava Island

Site Identifier #: 1
Parcel Identifier: 079-006-0004

Gizo Hub

Site Description:

A remote island site off the south west coast of Vella Lavella Island. The center of the island rises to over 150m asl. The site is dominated by vegetation such as secondary regrowth forest which is approximately 10 to 20 years old. The site has a fringing coral reef running around the island with pockets of white sand beaches and mangroves. The island has incurred extensive fishing and anthropogenic impact can be seen on the coral. UXO may potentially be encountered as troop movements were recorded here during WW2. Tribe members live on the nearby Vella La Vella Island and the site is occupied by a caretaker and family. The land title does not include the full island, the eastern coast is under a separate title where two villages are present. Access to the site via boat is possible through breaks in the reef and into lagoons, however this is restricted during bad weather due to the distance from the main ports across large areas of open water. The site is very remote to social infrastructure.

Site Location

Coastal vegetation

Beach

*Site not visited

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	3
Social Risks	
Presence of People	1
Presence of Livelihood	3
Proximity to Infrastructure	8
Presence of Cultural heritage	3
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	6

Co-ordinates	.-7.819508, 156.539452	**Services available**	No services available
Title type	079-006-0004	**Site access**	One forestry road around the island
Site area	2084 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 50 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Koriovuku Area Health Clinic: 11 km	**Protected / Managed areas**	None
Current occupation of site	Caretaker and family (6 households)	**Adjacent Land use**	Ocean and 2 Villages on east of island (Somolo and Sunfly) in neighbouring land parcel
Current land use	Forest, residential, gardens	**Other Site Hazards**	Remote, travel may not be safe in rough weather

Overall Risk Ranking: **Low**

Rovomburi Passage

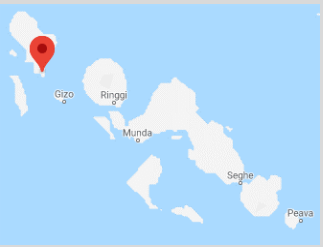
Site Identifier #: 2
Parcel Identifier: 079-004-0002

Gizo Hub

Site Description:

Rovomburi Passage is a coastal site on the southern tip of Vella Lavella Island that drops from 90m to the sea. The site is surrounded on the coastal edge by a visually beautiful low lying intertidal passage. Vegetation on the site includes mangroves and mangrove associated forest on the seafront with secondary regrowth forest of approximately 30 to 50 years of age inland. There are massive coral heads on a shallow coral reef along the edges of the lagoon. The Liapari marina and lagoon provide some shelter for boats. Interviews and previous research note that there is evidence of anthropogenic impact on the coral and the area is heavily fished, with low fish stocks noted. Villagers also mentioned that there are the significant presence of crocodiles at the nearby Lake Singuatopa (to the north west). There are two villages nearby (approximately 1-2 km south of site boundary, totalling approximately 500+ people (includes Esorlando Village), one of which includes a secondary school. Interviews noted that villagers sell food to the school for lunches and to the Marina workers once a fortnight. UXO may be present.

Site Location



Nearby Esorlando village

Nearby Esorlando village

Nearby Esorlando village

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	2
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-7.944931, 156.702924	**Services available**	Limited mobile telecommunication, potential for surrounding infrastructure.
Title type	079-004-0002	**Site access**	Road access
Site area	131.16 ha	**Sites of Cultural Heritage**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 24.6 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Koriovuku Area Health Clinic: 16 km	**Protected / Managed areas**	None
Current occupation of site	None confirmed. Villages nearby.	**Adjacent Land use**	Forest, school and village to north
Current land use	Forest	**Other Site Hazards**	Crocodiles

Overall Risk Ranking: **Moderate**

Liapari

Site Identifier #: 3
Parcel Identifier: 079-004-0003

Gizo Hub

Site Description:

Liapari island is a site off the southern tip of Vella Lavella Island. There is a protected lagoon to north of the site. The site has terrestrial ecology consisting of approximately 50% coconut plantation and Noni fruit plantation and 50% secondary regrowth forest (<30 years old) with some mangroves. There is a diverse collection of bird species in the area. The island is already home to an existing marina and slipway on the north east point of the site. Coastal fringes, especially on the lagoon side are disturbed and are utilized by the boat yard and associated workshops. There is a beachfront near the marina with an extended coral reef acting as a barrier to the channel. One of the current landowners employs staff to ward off overfishing in the immediate vicinity. The marina area could be further developed without much disturbance to the high biodiversity value on the inner island. The bridge to the island is destroyed and requires extensive repairs. The water source is predominantly rain due to saltwater intrusion into the groundwater well and wastewater is managed via septic pits. UXO have been noted in the lagoon by occupiers and are potentially present on this site. WW2 troop movements were also recorded in this area and WW2 relics have been found on neighboring sites including a bulldozer, but no relics have been found on site. A historic airstrip from WW2 was located 4 km north of Liapari. Workers cottages are also present near the marina and these provide full time accommodation for marina workers.

Site Location

Broken Liapari bridge

Marina slipway

Noni Farm

Apari marina

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	3
Social Risks	
Presence of People	4
Presence of Livelihood	4
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-7.951440, 156.712012	**Services available**	Limited mobile telecommunication, potential for surrounding infrastructure.
Title type	079-004-0003	**Site access**	Broken bridge, wharf and slipway
Site area	83.03 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 24 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Koriovuku Area Health Clinic: 16 km	**Protected / Managed areas**	None
Current occupation of site	Owner and marina staff, (20 buildings)	**Adjacent Land use**	Coconut plantation, forestry and residential
Current land use	Coconut plantation, noni plantation, forest, industrial workshops, residential, gardens and a marina	**Other Site Hazards**	Crocodiles

Overall Risk Ranking: **Moderate**

Njingono Island

Site Identifier #: 6
Parcel Identifier: 097-016-0002

Gizo Hub

Site Description:

Njingono island is a site off the north west tip of Ghizo Island. The island is only 0.77 ha and is low lying (max 1.5m asl). The island contains portions of coastal forest. The area surrounding the island is used for fishing by local villages from Ghizo Island. The marine area surrounding the island forms part of the community managed marine protected areas of Njari Reef, Varu North Reef and Saeraghi Reef. Saeragi Reef Protected area is managed by Saeragi Village, who monitor fish stocks, but are not currently restricting fishing, but are managing harvesting of seaweed. The whole of Ghizo Island and surrounding reef, including this island are identified by the KBA Partnership as being a Key Biodiversity Area. UXO is unlikely to be encountered and no one appears to live on the island.

Site Location

Beach

Coastal Vegetation

Coastal Vegetation

Natural Hazard Risks	
Coastal Vulnerability	9
Sea Level Rise	9
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	6
Presence of Cultural heritage	2

Co-ordinates	.-8.028187, 156.747301	**Services available**	Limited mobile telecommunications
Title type	097-016-0002	**Site access**	Jetty
Site area	0.77 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 17 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Gizo Hospital - 17 km	**Protected / Managed areas**	Locally managed Saeraghi Reef Marine Protected Area of 24.57 km2 > 1 km E. Locally managed () Varu North Reef Marine Protected Area 0.23 km2 > 1 km.
Current occupation of site	Caretaker (1 building)	**Adjacent Land use**	Ocean
Current land use	Forest, residential, gardens	**Other Site Hazards**	Coastal erosion

Overall Risk Ranking: **Moderate**

Njari Island

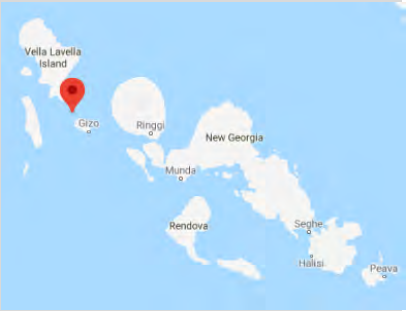
Site Identifier #: 4
Parcel Identifier: 097-016-0001

Gizo Hub

Site Description:

Njari Island is a low-lying island site (with a max height of approximately 1.5m asl) north west of Ghizo Island. The site is dominated by secondary regrowth forest (<50 years old) with some skinks and birds present. Mangroves on the main island of Ghizo nearby provide a nursery for fish in this area. The site has a fringing reef running along the northern, and western coast with diverse coral and fish and pockets of white sand beaches. The reef to the north has very high value marine biodiversity (recorded by the Nature Conservancy in 2004 as having the fourth highest fish count ever recorded for a single dive, surpassed only by three sites in the Raja Ampat Islands) that the current owners are trying to protect (rangers role) from spearfishing and fishermen. The owner is also working towards Marine Protected Area status for this reef. The site is partially covered by the Njari Island Marine Protected Area and is in proximity to the Saeraghi Reef Marine Protected Area which is managed by the nearby local village who monitor fish stocks and also manage harvesting of seagrass for eating and selling at the Ghizo Market. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The island is low-lying prone to storm surges and flooding during king tides. The island is currently used for day trips and picnics permitted by the owner and managed by the rangers on site. The Rangers are on a weekly rotation and live on site year-round in a self-contained building. The building includes a rainwater tank water supply and compostable toilet. There is a separate shelter for visitors to use, however no public toilets were noted on site for visitor use. Rangers manage waste on site by burning most rubbish. There is a reasonably well-maintained jetty to the edge of the reef on the southern coast and a cleared channel through the coral on the north side to land boats on the beach. UXO is unlikely to be encountered in this area.

Site Location



Coastal erosion

Rangers dwelling

Tourist Hut

Regenerating bush

Natural Hazard Risks	
Coastal Vulnerability	9
Sea Level Rise	9
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	10
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	6
Presence of Cultural heritage	3

Co-ordinates	.-8.014598, 156.757086	**Services available**	Mobile telecoms and data available
Title type	097-016-0001	**Site access**	Jetty
Site area	2.19 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 16 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Gizo Hospital - 16 km	**Protected / Managed areas**	Locally managed Saeraghi Reef Marine Protected Area of 24.57 km2 and Njari Island Marine Protected Area of 1.07km2 surround the site. Locally managed Varu North Reef Marine Protected Area 0.23 km2 > 1km.
Current occupation of site	Full time Rangers (1 building)	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	Liable to storm surges and flooding

Overall Risk Ranking: **High**

Varu Island (North of Gizo)

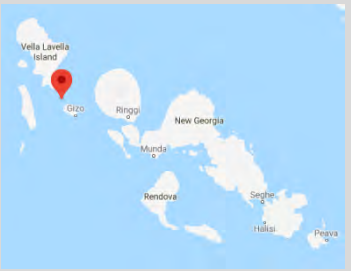
Site Identifier #: 5
Parcel Identifier: 097-016-0003

Gizo Hub

Site Description:

Varu Island is situated off the north west tip of Ghizo Island. The site has beach forest on the east and west ends of the island and a dwelling present in the center of the island occupied by the owner and family. Approximately 10 people were occupying the site during the site visit however they were not interested in engaging with the research team. A family grave site is present near the dwelling with three people buried. A water well was noted on site and is presumed to be used by the family for water supply. The site is adjacent to an important bird nesting site (sand bar) and is a known breeding site for green turtles. There is a shallow fringing reef around the island and pockets of white sand beaches. Neighboring Njari island has high marine biodiversity, that is globally important, and this site is also covered by the Njari Island Marine Protected Area. The site is also in proximity to the Saeraghi Reef Marine Protected Area which is managed by the nearby local village who monitor fish stocks and also manage harvesting of seagrass for eating and selling at the Ghizo Market and the Varu North Marine Protected Area. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The island has limited elevation and is prone to storm surges and flooding during king tides with an approximate height asl of 2m max. UXO is unlikely to be encountered.

Site Location



Beach

Beach

Grave site

Dwelling on site

Natural Hazard Risks	
Coastal Vulnerability	9
Sea Level Rise	9
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	8
Social Risks	
Presence of People	3
Presence of Livelihood	2
Proximity to Infrastructure	6
Presence of Cultural heritage	6

Co-ordinates	.-8.016724, 156.765213	**Services available**	Mobile telecoms and data available
Title type	097-016-0003	**Site access**	None
Site area	3.04 ha	**Sites of Cultural Heritage/Tabu**	Owners grave site
Distance to nearest Airport/Port	Gizo: 15 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Gizo Hospital - 15 km	**Protected / Managed areas**	Locally managed Saeraghi Reef Marine Protected Area of 24.57 km2 and Njari Island Marine Protected Area of 1.07km2 surround the site. Locally managed Varu North Reef Marine Protected Area 0.23 km2 and Njari Island Marine Protected Area of 1.07km2 both >1km.
Current occupation of site	Caretaker family on site full time (1 building)	**Adjacent Land use**	Ocean
Current land use	Forest, residential, cattle	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Pailonge Point 1

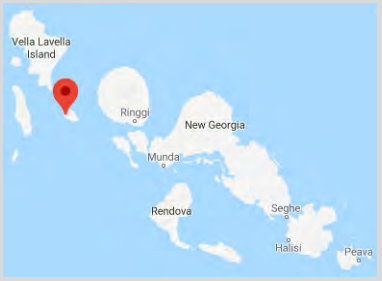
Site Identifier #: 12
Parcel Identifier: 097-019-0089

Gizo Hub

Site Description:

Pailonge Point 1 is the smallest and northern most site of a cluster of sites on the western side of Ghizo Island. It is a low-lying thin coastal site with a steeply rising hill approximately 200m from the shore. An old coconut plantation is located on and adjacent to the site. The Pailonge and Siboro communities are situated around the site however the site itself appears to be unoccupied. The site has limited space for development around the public road which runs through the middle of the site. A white sand beach runs the length of the site. A shallow reef is situated off the coast with a surf break which is used by tourists and locals. Two marine protected areas (reefs) are within 2km of site which may provide tourism wildlife opportunities, if permitted by the managers of the areas. It is currently unclear who is managing these areas and for what purpose they are being protected. The area is heavily fished and the impact on the coral is notable. The Saeragi Reef Marine Protected Area wraps around the north coast of Ghizo Islands within 3km of the site, which is managed by the Saeragi Village who monitor fish stocks and manage harvesting. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The coconut plantation is anticipated to be used by local villagers as a source of livelihood. Pailonge Point was badly impacted by the 2007 Tsunami. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict.

Site Location



Beach front

Surface break off shore

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	5
Proximity to Infrastructure	3
Presence of Cultural heritage	5

Co-ordinates	.-8.093531, 156.784474	**Services available**	Piped water, possibility of grid power, telecoms and mobile data available.
Title type	097-019-0089	**Site access**	Public road from Gizo
Site area	0.89 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 10.8 km*	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 6.4 km	**Protected / Managed areas**	Suvania Reef Marine Protected Area of 0.25 km2 < 2 km S and Kogulavata Reef Marine Managed Area of 2.46 km2 < 2 km NE. Saeraghi Reef Marine Protected Area of 24.57 km2 3 km NW. Key Biodiversity Area.
Current occupation of site	None confirmed.	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, road, forest,	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Pailonge Point 2

Site Identifier #: 13

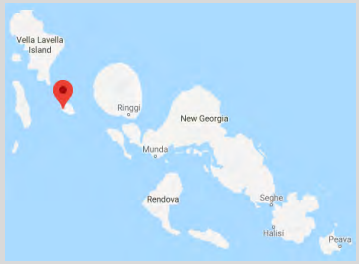
Parcel Identifier: 097-019-0090

Gizo Hub

Site Description:

Pailonge Point 2 is a small coastal site on the western side of Gizo Island. It is a low-lying coastal site with a steeply rising hill approximately 200m from the shore. The site is a former coconut plantation and is modified with cleared areas for residential buildings and associated gardens scattered around the site (both inland and on the coast). The site itself is on the outskirts of the Pailonge/Siboro villages. A public road cuts through the site, close to the coastal edge. There are pockets of coastal land within the site that affront the white sand beach that are currently undeveloped, but which are likely to be used to supplement the occupier's livelihoods (either by gardens or coconut harvesting). A shallow reef is situated off the coast with a surf break used by tourists and locals. Two marine protected areas within 2km of site may provide tourism wildlife opportunities however it is currently unclear who is managing these areas and for what purpose they are being protected. The area is heavily fished and the anthropogenic impact on the coral is notable. The Saeragi Reef Marine Protected Area also wraps around the north coast of Ghizo Island, within 3km of the site, which is managed by the Saeragi Village who monitor fish stocks and manage harvesting. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. The coastal areas of the site and buildings were damaged during the 2007 tsunami, but most buildings have now been reinstated however interviewees noted that some villagers have chosen to resettle further inland.

Site Location



Beach front

Surface break off shore

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	5
Social Risks	
Presence of People	7
Presence of Livelihood	6
Proximity to Infrastructure	3
Presence of Cultural heritage	5

Co-ordinates	.-8.094386, 156.785659	**Services available**	Piped water, possibility of grid power, telecoms and mobile data available.
Title type	097-019-0090	**Site access**	Public road from Gizo
Site area	4.45 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 10.7 km*	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 6.4 km	**Protected / Managed areas**	Suvania Reef Marine Protected Area of 0.25 km2 < 2 km S and Kogulavata Reef Marine Managed Area of 2.46 km2 < 2 km NE. Saeraghi Reef Marine Protected Area of 24.57 km2 3 km NW. Key Biodiversity Area.
Current occupation of site	Pailonge village (10 buildings)	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, road, residential, gardens	**Other Site Hazards**	None

Ranking: **Moderate**

Pailonge Point 3

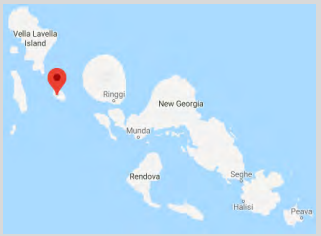
Site Identifier #: 16
Parcel Identifier: 097-019-0091

Gizo Hub

Site Description:

Pailonge Point 3 is a coastal site on the western side of Ghizo Island. It is a low-lying coastal site with a steeply rising hill approximately 200m from the shore. The site is a former coconut plantation and is modified with a local community presence and dwellings and gardens on site. A shallow reef is situated off the coast with a surf break used by tourists and locals. Two marine protected areas within 2km of site may provide tourism wildlife opportunities however it is currently unclear who is managing these areas and for what purpose they are being protected. The area is heavily fished and the impact on the coral is notable. The Saeragi Reef Marine Protected Area wraps around the north coast of Ghizo Island, within 3km of the site, which is managed by the Saeragi Village who monitor fish stocks and manage harvesting. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. A public road cuts through the middle of the site with dwellings on the inland side. Occupants of the site generally maintain gardens and coconut plantations to supplement livelihoods. The coastal edge of the site is not occupied by dwellings, but the coconut plantation is considered to be maintained by an occupier nearby. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Pailonge point was badly impacted by the 2007 Tsunami.

Site Location



Beach front

Surface break off shore

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	6
Proximity to Infrastructure	3
Presence of Cultural heritage	5

Co-ordinates	.-8.095813, 156.786449	**Services available**	Piped water, possibility of grid power, telecoms and mobile data available.
Title type	097-019-0091	**Site access**	Public road from Gizo
Site area	2.35 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 10.5 km*	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 6.4 km	**Protected / Managed areas**	Suvania Reef Marine Protected Area of 0.25 km2 < 2 km S and Kogulavata Reef Marine Managed Area of 2.46 km2 < 2 km NE. Saeraghi Reef Marine Protected Area of 24.57 km2 3 km NW. Key Biodiversity Area.
Current occupation of site	Pailonge village (5 buildings)	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Pailonge Point 4

Ranking: **High**

Site Identifier #: 15
Parcel Identifier: 097-019-0092

Gizo Hub

Site Description:

Pailonge Point 4 is a coastal site on the western side of Ghizo Island. It is a low-lying coastal site with a steeply rising hill approximately 200m from the shore. The site is a former coconut plantation and is modified with a local community presence and several dwellings and gardens on site. A shallow reef is situated off the coast with a surf break used by tourists and locals. Two marine protected areas within 2km of site may provide tourism wildlife opportunities however it is currently unclear who is managing these areas and for what purpose they are being protected. The area is heavily fished and the impact on the coral is notable. The Saeragi Reef Marine Protected Area wraps around the north coast of Ghizo Island, within 3km of the site, which is managed by the Saeragi Village who monitor fish stocks and manage harvesting. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. A public road cuts through the middle of the site with dwellings on either side. Occupants of the site generally maintain gardens and coconut plantations to supplement livelihoods. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Pailonge point was badly impacted by the 2007 Tsunami.

Site Location

Beach front

Surface break off shore

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	2
Marine biodiversity	5
Social Risks	
Presence of People	9
Presence of Livelihood	6
Proximity to Infrastructure	3
Presence of Cultural heritage	5

Co-ordinates	.-8.095275, 156.788127	**Services available**	Piped water, possibility of grid power, telecoms and mobile data available.
Title type	097-019-0092	**Site access**	Public road from Gizo
Site area	2.35 ha	**Sites of Cultural Heritage**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 10.4 km*	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 6.4 km	**Protected / Managed areas**	Suvania Reef Marine Protected Area of 0.25 km2 < 2 km S and Kogulavata Reef Marine Managed Area of 2.46 km2 < 2 km NE. Saeraghi Reef Marine Protected Area of 24.57 km2 3 km NW. Key Biodiversity Area.
Current occupation of site	Pailonge village (11 buildings)	**Adjacent Land use**	Forest, residential
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: High

Pailonge Point 5

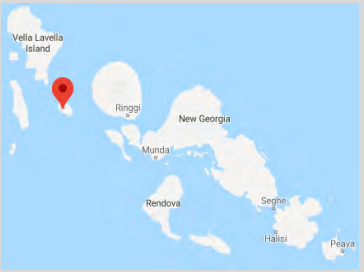
Site Identifier #: 14
Parcel Identifier: 097-019-0094

Gizo Hub

Site Description:

Pailonge Point 5 is a coastal site on the western side of Ghizo Island. It is a low-lying coastal site with a steeply rising hill approximately 200m from the shore. The site is a former coconut plantation and is modified with scattered dwellings and gardens both inland and along the coastal edge of the site. A shallow reef is situated off the coast with a surf break used by tourists and locals. Two marine protected areas within 2km of site may provide tourism wildlife opportunities however it is currently unclear who is managing these areas and for what purpose they are being protected. The area is heavily fished and the impact on the coral is notable. The Saeragi Reef Marine Protected Area wraps around the north coast of Ghizo Island, within 3km of the site, which is managed by the Saeragi Village who monitor fish stocks and manage harvesting. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. A community church used by the Siboro and Pailonge communities and water capture building (with rainwater tanks) are on this site as well as several dwellings. Family graves where observed adjacent to some residential buildings. A public road cuts through the middle of the site and a white sand beach runs along the coastal edge. This site is considered to be a more challenging site for development due to the proximity to the community center of the church, however there is an area of coconut plantation along the coast that, if managed sensitively, could be considered for tourism operations. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Pailonge Point was badly impacted by the 2007 Tsunami, including the church on site, which, while currently in use by the community, is still in need of substantial repairs.

Site Location



Church on the site

Water capture building

Beach front

Surf break off shore

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	2
Marine biodiversity	5
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	3
Presence of Cultural heritage	5

Co-ordinates	.-8.094586, 156.789805	**Services available**	Piped water, possibility of grid power, telecoms and mobile data available.
Title type	097-019-0094	**Site access**	Public road from Gizo
Site area	10.04 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 10.2 km*	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 6.4 km	**Protected / Managed areas**	Suvania Reef Marine Protected Area of 0.25 km2 < 2 km S and Kogulavata Reef Marine Managed Area of 2.46 km2 < 2 km NE. Saeraghi Reef Marine Protected Area of 24.57 km2 3 km NW. Key Biodiversity Area.
Current occupation of site	Pailonge village (30 buildings)	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Pailonge Point 6

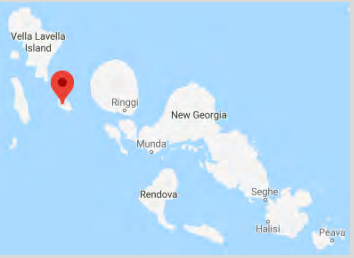
Site Identifier #: 11
Parcel Identifier: 097-019-0095

Gizo Hub

Site Description:

Pailonge 6 is the southernmost coastal site, in a group of 6 sites, on the western side of Ghizo Island. It has a low-lying area along the coast, with a steeply rising hill approximately 200m from the shore, beyond the public road that runs through the site. A shallow reef is situated off the coast with a surf break used by tourists and locals. The area is heavily fished and the anthropogenic impact on the coral is notable. The site is a former coconut plantation and is highly modified along the coastal edge which has been cleared and used by the Siboro community. The road delineates the more developed coastal area from the remainder of the site where only a few residential buildings are spread out amongst the coconut plantation. There are two marine protected areas within 2km of site which may provide tourism wildlife opportunities if permitted by the managers of the areas. The Saeragi Reef Marine Protected Area wraps around the north coast of Ghizo Island, within 3km of the site, which is managed by the Saeragi Village who monitor fish stocks and manage harvesting. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The site is occupied by a community, including a church, community and residential buildings, and a home stay for international tourists which caters for up to 4 guests at a time and is used infrequently. Bookings are made through a website managed offshore, who communicates with the homestay owner via mobile phone. The coastal areas of the site and buildings were damaged during the 2007 tsunami, but most buildings have now been reinstated however interviewees noted that some villagers have chosen to resettle further inland. Pailonge point is a collection of villages which are focused along the shoreline, and as such the perceived resettlement risk, and potential impacts to livelihoods (gardens, coconut plantations) is considered relatively high. Water sources are both community managed rainwater tanks and public piped water (source unconfirmed). Interviewees noted that piped water is sporadic as gardeners frequently break into the pipes for water upstream, damaging the pipes. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict.

Site Location



Homestay on site

Surf break off shore

Beach front

Water tap on site

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	5
Social Risks	
Presence of People	6
Presence of Livelihood	5
Proximity to Infrastructure	3
Presence of Cultural heritage	5

Co-ordinates	.-8.093155, 156.792335	**Services available**	Piped water, possibility of grid power, telecoms and mobile data available.
Title type	097-019-0095	**Site access**	Public road from Gizo
Site area	10.78 ha	**Sites of Cultural**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 10 km*	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 6.4 km	**Protected / Managed areas**	Suvania Reef Marine Protected Area of 0.25 km2 < 2 km S and Kogulavata Reef Marine Managed Area of 2.46 km2 < 2 km NE. Saeraghi Reef Marine Protected Area of 24.57 km2 3 km NW. Key Biodiversity Area.
Current occupation of site	Homestay and church in Pailonge village (20 buildings)	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, road, forest, gardens, residential	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Olasana Island (North West)

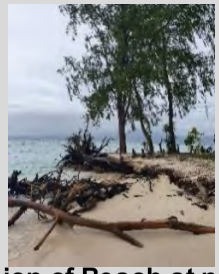
Site Identifier #: 19
Parcel Identifier: 097-009-0014

Gizo Hub

Site Description:

Olasana Island is split into three sites off the south eastern coast of Ghizo Island. The site has approximately 4 to 5 m of elevation above sea level and is showing signs of coastal erosion in some areas. The site is relatively unsheltered with limited reef systems surrounding the site and a distance of 5km or more to more significant landscapes that can provide some shelter from stronger swells and winds. The site has white sand beaches and a reasonable beach forest. Megapodes and Solomon Islands sea eagles were present during the site visit. A shallow fringing reef is present around the island with healthy coral but there is evidence of overfishing. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Three marine managed areas are located within 5km of the site - Naru Reef, Babanga Reef, and Grant Island. The site is used informally as a picnic spot by tourists and locals alike but is otherwise uninhabited.

Site Location



Erosion of Beach at northern end

Forest

Rubbish on the site

Possible Megapode nest

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	8
Environmental Risks	
Terrestrial biodiversity	8
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	3

Co-ordinates	.-8.130161, 156.906368	**Services available**	Limited mobile telecoms
Title type	097-009-0014	**Site access**	No
Site area	2.14 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 6.6 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 7.4 km	**Protected / Managed areas**	Naru Reef Marine Managed Area of 1.21 km2 2km W. Babanga Reef Marine Managed Area of 0.9 km2 - 2.5 km W. Grant Island Marine Protected Area 14.84 km2 - 4 km SE. Key Biodiversity Area
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Olasana Island (Center)

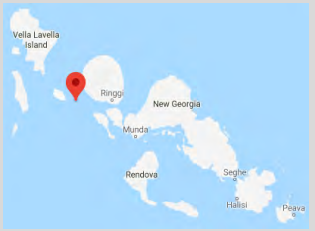
Site Identifier #: 21
Parcel Identifier: 097-009-0013

Gizo Hub

Site Description:

Olasana Island is split into three sites off the south eastern coast of Ghizo Island. The site has approximately 4 to 5 m of elevation above sea level and is showing signs of coastal erosion in some areas. The site is relatively unsheltered with limited reef systems surrounding the site and a distance of 5km or more to more significant landscapes that can provide some shelter from stronger swells and winds. The site has white sand beaches and a reasonable beach forest. Megapodes and Solomon Islands sea eagles were present during the site visit. A shallow fringing reef is present around the island with healthy coral but there is evidence of overfishing. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Three marine managed areas are located within 5km of the site - Naru Reef, Babanga Reef, and Grant Island. The site is used informally as a picnic spot by tourists and locals alike but is otherwise uninhabited.

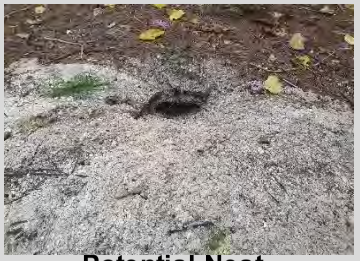
Site Location



Forest

Potential Megapode nest

Seashore



Potential Nest

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	7
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	3

Co-ordinates	.-8.131465, 156.908218	**Services available**	Limited mobile telecoms
Title type	097-009-0013	**Site access**	No
Site area	2 ha Approximately	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 6.8 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 7.4 km	**Protected / Managed areas**	Naru Reef Marine Managed Area of 1.21 km2 2km W. Babanga Reef Marine Managed Area of 0.9 km2 - 2.5 km W. Grant Island Marine Protected Area 14.84 km2 - 4 km SE. Key Biodiversity Area
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Olasana Island (South East)

Overall Risk Ranking: **Low**

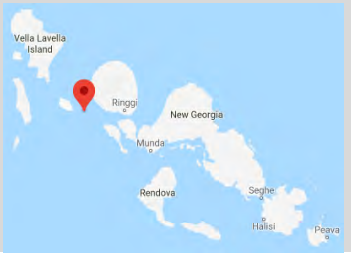
Site Identifier #: 22
Parcel Identifier: 097-009-0012

Gizo Hub

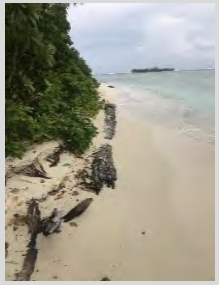
Site Description:

Olasana Island is split into three sites off the south eastern coast of Ghizo Island. The site has approximately 4 to 5 m of elevation above sea level and is showing signs of coastal erosion in some areas. The site is relatively unsheltered with limited reef systems surrounding the site and a distance of 5km or more to more significant landscapes that can provide some shelter from stronger swells and winds. The site has white sand beaches and a reasonable beach forest. Megapodes and Solomon Islands sea eagles were present during the site visit. A shallow fringing reef is present around the island with healthy coral but there is evidence of overfishing. The whole of Ghizo Island and surrounding reefs is identified by the KBA Partnership as being a Key Biodiversity Area. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Three marine managed areas are located within 5km of the site - Naru Reef, Babanga Reef, and Grant Island. The site is used informally as a picnic spot by tourists and locals alike but is otherwise uninhabited.

Site Location



Picnic hut



Seashore and beach

Forest

Forest

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	7
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	3

Co-ordinates	.-8.132720, 156.909699	**Services available**	Limited mobile telecoms
Title type	097-009-0012	**Site access**	No
Site area	2.18 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 7.1 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 7.4 km	**Protected / Managed areas**	Naru Reef Marine Managed Area of 1.21 km2 2km W. Babanga Reef Marine Managed Area of 0.9 km2 - 2.5 km W. Grant Island Marine Protected Area 14.84 km2 - 4 km SE. Key
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Naru Island: Northern Block

Overall Risk Ranking: **Low**

Site Identifier #: 25
Parcel Identifier: 0097-009-0006

Gizo Hub

Site Description:

Northern Block is an island site off the south eastern coast of Ghizo Island. The site has intact beach forest and is a known breeding site for green turtles. A shallow fringing reef is present around the island with healthy coral but there is evidence of overfishing. The site is quite exposed to natural hazards and sea level rise with limited height above sea level (max 3m) and limited shelter from surrounding land masses and reefs. The area is identified in research as potentially having UXO but is not thought to have been a significant area of conflict. Naru Reef Marine Managed Area is listed on site. Two further marine managed areas are located within 5km - Babanga Reef, and Grant Island. The site is currently being developed by the leaseholder.

Site Location

*Site not inspected

Natural Hazard Risks	
Coastal Vulnerability	9
Sea Level Rise	9
Environmental Risks	
Terrestrial biodiversity	8
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	1

Co-ordinates	.-8.136861, 156.918324	**Services available**	Mobile telecoms and data available
Title type	0097-009-0006	**Site access**	No
Site area	2.02 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Gizo: 8 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Gizo Hospital - 8.7 km	**Protected / Managed areas**	On the border of Naru Reef Marine Managed Area 1.21 km2. Babanga Reef 0.9 km2 - 2.5 km W. Grant Island 14.84 km2 - 4 km SE. Key Biodiversity Area adjacent to site.
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Overall Risk Ranking: High

Kukudu

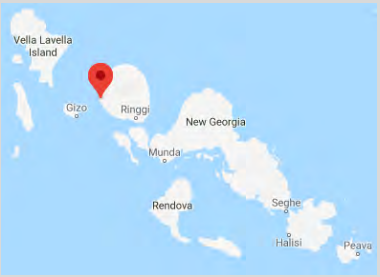
Site Identifier #: 7
Parcel Identifier: 097-020-0006

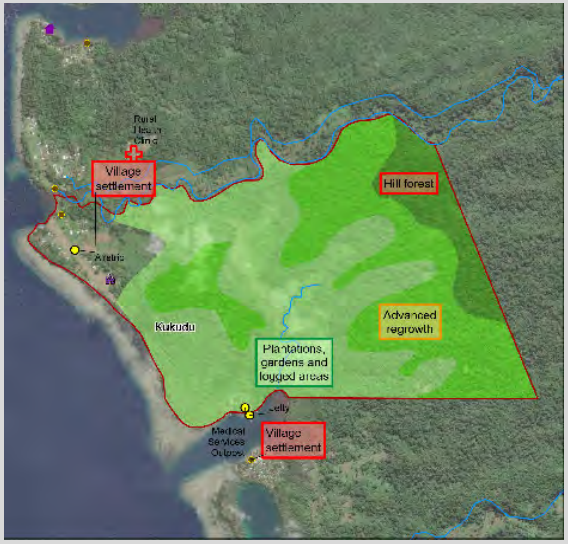
Gizo Hub

Site Description:

Kukudu is a coastal site on the western side of Kolombangara Island with a shallow harbor/estuary on each end of the site that provide access by boat to the site. The site is covered in old growth coconut plantation, cropping, secondary growth lowland forest and mangrove forests along parts of the coast. Coral reef flats extend approximately 250 m from shore. The area is heavily fished by the local community and the reef shows signs of anthropogenic impact. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. The site is occupied in the northern coastal area by the Kukudu Village (approximately 120 people), which is a Seventh Day Adventist village, as well as associated church facilities, an unused airstrip and a homestay building used sporadically by international guests of the church. Weekly church activities occur on site, including a bi-annual church conference, which involves building of huts for lodging attendees. A Theological college is also present further inland on site and a primary school is located on the adjacent site. The local and surrounding community sustains itself via coconut plantations managed by the local school, gardening, church events, small village businesses and the homestay on site. The village uses rainwater tanks for water supply. Tabu sites have been noted by interviewees and are located further inland on site along the ridges and there are also historical plaques and monuments on the church grounds. The southern end of the site is occupied by MediSea, a charitable organization offering medical services to remote villages by boat. They more their boats on existing jetties within the southern harbor. UXO is unlikely to be encountered as the area appears to be far enough away from Vila Point to have been unaffected by WW2 conflict.

Site Location





Coconut plantation

Conference grounds

Small slipway and wharf

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	3
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	7
Proximity to Infrastructure	3
Presence of Cultural heritage	7

Co-ordinates	.-8.030195, 156.953348	**Services available**	Limited mobile telecommunications
Title type	097-020-0006	**Site access**	Jetty in estuary, ex-airfield
Site area	458 ha	**Sites of Cultural Heritage**	Tabu sites present on or near site, church presence with monuments
Distance to nearest Airport/Port	Gizo: 13.9 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Kukundu Rural Health Clinic - 1.3 km	**Protected / Managed areas**	None. Marine Key Biodiversity Area adjacent to site.
Current occupation of site	Kukudu Village (60 buildings), Church camp, huts, and medical office.	**Adjacent Land use**	School and village, medical centre, Coconut plantations and forestry
Current land use	Coconut plantation, forest, church camp, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Kukundu

Site Identifier #: 8
Parcel Identifier: 097-020-0001

Gizo Hub

Site Description:

Kukundu is a coastal site, (adjacent to Kukudu site) on the western side of Kolombangara Island, accessed by boat into the shallow harbor at the north end of the site where a wharf is located. The site is vegetated with coconut plantation, sparse mangrove forest on the seashore and garden areas. Lowland forest was cleared by a recent logging operation. Fringing coral reefs extend about 100 m from the shore and these show signs of anthropogenic impacts from overfishing. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. There is a local community (Iriri Village) on the northern part of the site next to the harbor which includes a school, gardens and meeting buildings. Vilu Lake is situated on site close to the coastal edge of the site near the Iriri Village. Village members have reportedly suffered violence, loss of crops, and other social disturbances from loggers in the past including logging unlawfully on private land, removal of tree crops replanted by the village women and stealing of vegetables from the gardens by logging workers. Iriri Village is a Seventh Day Adventist Village and interviewees noted the need for tourism operators to respect local customs. Interviewees noted that the villagers are proposing to develop a homestay building at the southern end of Lake Vilu and are keen for technical tourism support to undertake this. The village uses rainwater tanks for water supply. Tabu sites have been generally identified during interviews, situated along the ridge/internal areas of the site. UXO is unlikely to be encountered as the area appears to be far enough away from WW2 conflict and troop movements around Vila Point.

Site Location

Air strip

Beach front

Sweet potatoes and eggplant

Kukundu village

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	3
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	6
Proximity to Infrastructure	3
Presence of Cultural heritage	7

Co-ordinates	.-8.042253, 156.960900	**Services available**	Freshwater spring provides water to 300-400 people. Limited mobile telecommunications
Title type	097-020-0001	**Site access**	Jetty in estuary
Site area	320 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites present on or near site
Distance to nearest Airport/Port	Gizo: 13.6 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Kukundu Rural Health Clinic - 2.8 km	**Protected / Managed areas**	None. Marine Key Biodiversity Area adjacent to site
Current occupation of site	Local community at Iriri Village (150 Buildings)	**Adjacent Land use**	Coconut plantation, forestry and residential
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Logging nearby

Overall Risk Ranking: Moderate

Kukuli Point

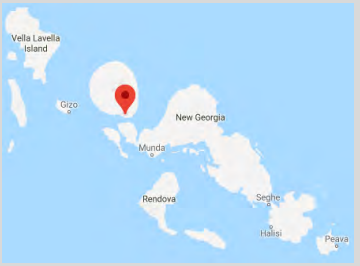
Site Identifier #: 20
Parcel Identifier: 098-007-0004

Gizo Hub

Site Description:

Kukuli Point is a coastal site on the southern tip of Kolombangara Island. The area is an old coconut plantation that has secondary regrowth coastal forest of more than 50 years old. Mangrove forest is positioned along the seashore and inland there is a large cleared area for gardening and settlements. A fringing reef is associated with the mangrove forest including massive coral heads. The coral reef system provides an important breeding area for fish. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. Interviewees noted that there is a WWII plane wreck in the water nearby which is a popular dive site. The neighboring sites include an airstrip and Ringgi Station settlement with a school, health center, canteens and forestry processing base. As such this site is reasonably well connected to local services and some infrastructure, including tracks to parts of the site from the Ringgi wharf. There is a potential UXO presence on the site as this area is identified in research as having been a major conflict area and the site visit found multiple WW2 relics in the area. Settlement areas are located along the tracks and livelihoods are derived from forestry as well as typical gardening and fishing. A basic homestay building is present in one of the settlements which is used infrequently by-passing forestry workers and tourists which provides one occupier with a supplementary income.

Site Location



Seashore

Vegetation

plantation

Occupied dwellings

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	5
Proximity to Infrastructure	5
Presence of Cultural heritage	3

Co-ordinates	.-8.130566, 157.128685	**Services available**	Likely power and mobile telecoms and data available
Title type	098-007-0004	**Site access**	Roads and tracks
Site area	302 ha Aprroximately	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered, WWII relics likely
Distance to nearest Airport/Port	Gizo: 30 km / Munda: 34 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 1.6 km	**Protected / Managed areas**	Grant Island Marine Protected Area of 14.84 km2 - 5 km W. Bakiha Reef Marine Protected Area of 0.32 km2 - 5 km W. Niumala Marine Managed Area of Unknown size - 5 km W. Alale Marine Managed Area of Unknown size - 5 km W. Marine Key Biodiversity Area adjacent to site.
Current occupation of site	One village on site (20 buildings)	**Adjacent Land use**	Ringgi Station forestry production site, airstrip
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: High

Vila Point

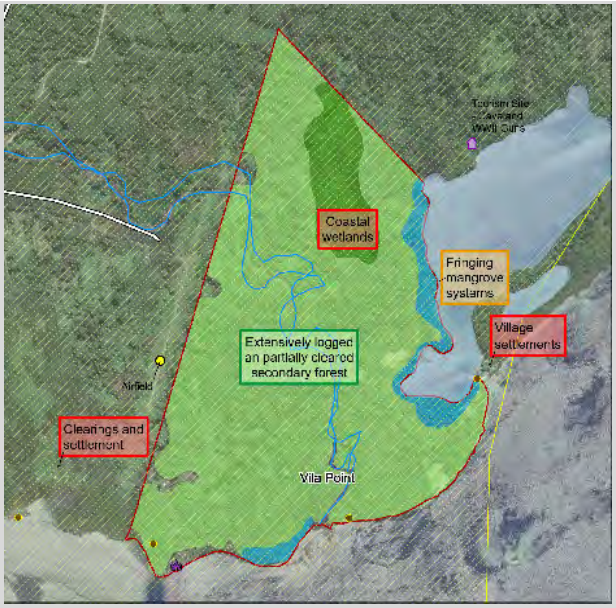
Site Identifier #: 24
Parcel Identifier: 098-007-0010

Gizo Hub

Site Description:

Vila Point is a coastal site on the southern tip of Kolombangara Island. The area is an old coconut plantation that is currently secondary regrowth coastal forest of more than 50 years old. Mangrove forest is positioned along the seashore and inland there is a large cleared area for gardening. A fringing reef shows evidence of human impacts and the area is heavily fished. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. An internal lagoon area on north side of the site is accessed by boat over a destroyed bridge. Three villages are noted on the coastal edge of the site, including a Seventh Day Adventist village in the southern most corner of the site which contains a village church. Two villages collect fees from diving operations to a nearby plane wreck and donations from visitors to this site supplement the income made by villagers which mainly consist of gardening, forestry and fishing and selling of goods at the Noro Market. The site is approximately 300 m from a WW2 airfield which is currently unused. There is a potential UXO presence on the site as this area is identified in research as having been a major conflict area and the site visit found multiple WW2 relics in the area. The Australian navy conducted some UXO clearance in 2016 but gardening activities have since uncovered more.

Site Location



WW2 relics nearby site

Homestay on site

Forestry track

Occupied dwellings

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	7
Proximity to Infrastructure	5
Presence of Cultural heritage	5

Co-ordinates	.-8.133932, 157.150709	**Services available**	Likely power and mobile telecoms and data available
Title type	098-007-0010	**Site access**	Roads and tracks
Site area	341.61 ha	**Sites of Cultural Heritage**	Tabu sites not discovered, WWII relics
Distance to nearest Airport/Port	Gizo: 33 km / Munda: 32 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 3.2 km	**Protected / Managed areas**	None. Marine Key Biodiversity Area adjacent to site.
Current occupation of site	Vila Village (50 buildings) incl Homestay	**Adjacent Land use**	Coconut plantation, forest, airstrip
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Teme Point & Single Mate

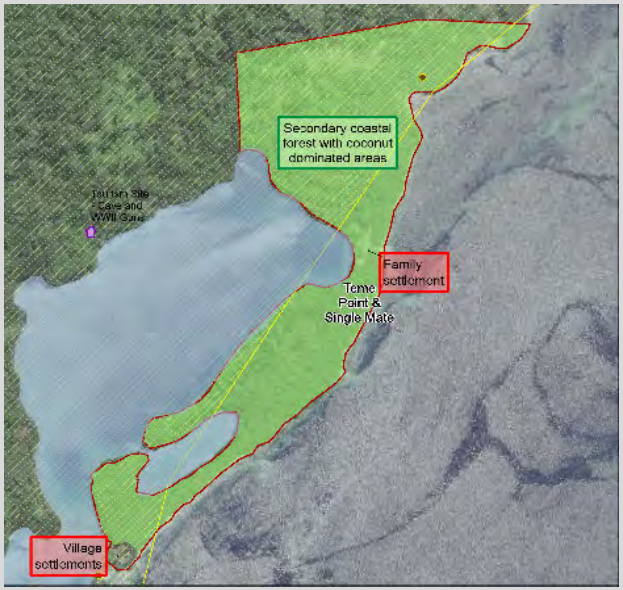
Site Identifier #: 18
Parcel Identifier: 098-007-0011

Gizo Hub

Site Description:

Teme Point & Single Mate is coastal site on the south eastern side of Kolombangara Island. The site is vegetated with coconut plantation and secondary forestry regrowth of approximately 30 to 50 years of age. A large lagoon and attached smaller lagoon on northern side of site are accessed over destroyed bridge at southern end of the site. Mangrove associated forest is positioned along the seashore and lagoon shores. A fringing coral reef is situated along the coast and shows evidence of anthropogenic impact. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. There is a village at southern tip of the site, and further small settlements along the site (one to two families). Interviewees indicated that there are crocodiles in the lagoon and the site was identified as having a potential UXO risk. There is evidence in the area of previous military occupation. Caves (with significant bat population) and cliffs are located in proximity to the site and may provide a tourism feature if accepted by the adjacent landowners and occupiers.

Site Location



Locals living in the area

Vegetation along seashore

Vegetation along seashore

Seashore

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	5
Proximity to Infrastructure	5
Presence of Cultural heritage	3

Co-ordinates	.-8.119535, 157.167181	**Services available**	Limited mobile telecoms
Title type	098-007-0011	**Site access**	No
Site area	78.12 ha	**Sites of Cultural Heritage**	Tabu sites not discovered, WWII relics likely
Distance to nearest Airport/Port	Gizo: 36 km / Munda: 33 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 4.3 km	**Protected / Managed areas**	None. Marine Key Biodiversity Area adjacent to site.
Current occupation of site	Two villages (30 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Crocodiles likely

Overall Risk Ranking: **Moderate**

Hikuana Point and Mbarati Pt

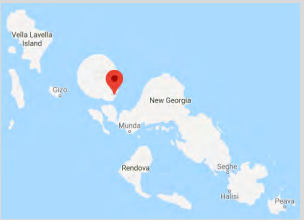
Site Identifier #: 17
Parcel Identifier: 098-007-0012

Gizo Hub

Site Description:

Hikuana Point and Mbarati Pt is a coastal site on the south eastern side of Kolombangara Island. The site is vegetated with coconut plantation and secondary forestry regrowth of approximately 30 to 50 years of age. Part of the site affronts an inshore lagoon with mangrove associated forest along the lagoon shore. A fringing coral reef is situated along the coast and shows evidence of anthropogenic impact and appears to be heavily fished. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. The site was identified as having a potential UXO risk during stakeholder consultation and there is evidence in the area of previous military occupation. Caves (with significant bat population) and cliffs are located in proximity to the site and may provide a tourism feature if accepted by the adjacent landowners and occupiers.

Site Location



Vegetation

Site view from the sea

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	6
Proximity to Infrastructure	5
Presence of Cultural heritage	5

Co-ordinates	.-8.106127, 157.175018	**Services available**	Mobile telecoms and data available
Title type	098-007-0012	**Site access**	No
Site area	39.2 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites, WW2 Relics
Distance to nearest Airport/Port	Gizo: 38 km / Munda: 34 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 5.3 km	**Protected / Managed areas**	None. Marine Key Biodiversity Area adjacent to site.
Current occupation of site	Occupied dwellings along shoreline (3 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Crocodiles likely

Overall Risk Ranking: **Moderate**

Mbimbu Inlet and Mbarapati Pt

Site Identifier #: 10

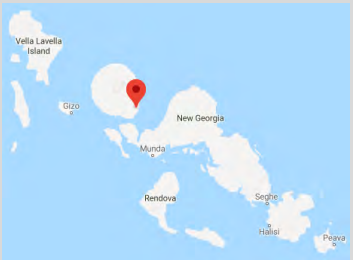
Parcel Identifier: 098-007-0036

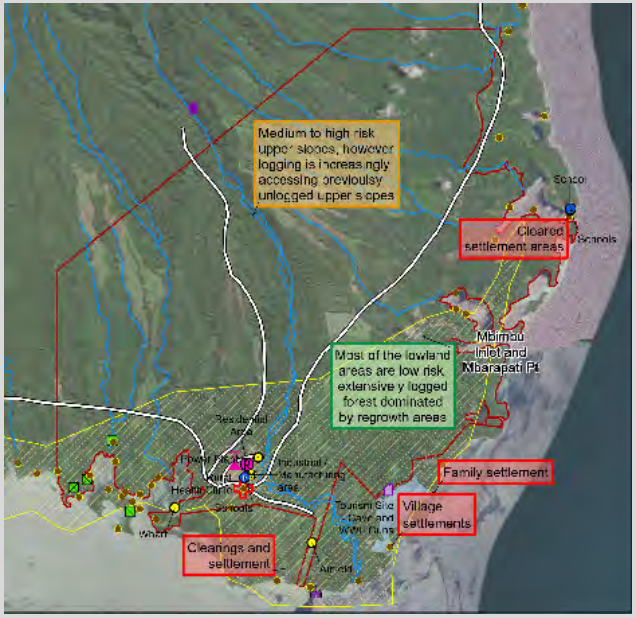
Gizo Hub

Site Description:

Mbimbu Inlet and Mbarapati Pt is a very large coastal site on the south eastern side of Kolombangara Island. The site is vegetated with coconut plantation and secondary forestry regrowth of approximately 30 to 50 years of age. Mangrove associated forest is positioned along the seashore. A fringing coral reef is situated along the coast and shows evidence of anthropogenic impact and appears to be heavily fished. Part of the site is identified by the KBA Partnership as a terrestrial key biodiversity area. There are 3 harbors along site boundaries with villages dotted along sheltered coastal areas. The site appears to rise to approximately 100 m of elevation above sea level. The site has various roads and tracks through and around it, developed for logging, that link to Ringi Station, a township in the south of Kolombungara Island. Ringi Station is the main center for Kolombangara Forest Products Limited - the main forestry and plantation company on the island. It also provides employment for local people, with a school, market, canteens and an Area Medical Centre. The site was identified as having a potential UXO risk during stakeholder consultation and nearby sites contained significant relics. Some villagers have already begun informal tours to some of the relics in the area and are protective of their claim to these.

Site Location





Vegetation

Vegetation

Coconut plantation

Seashore

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	6
Proximity to Infrastructure	5
Presence of Cultural heritage	5

Co-ordinates	.-8.088541, 157.181361	**Services available**	No services available
Title type	098-007-0036	**Site access**	Roads and tracks
Site area	7880 ha	**Sites of Cultural Heritage**	Tabu sites not discovered, WW2 relics may be present
Distance to nearest Airport/Port	Gizo: 40 km / Munda: 36 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 6.8 km	**Protected / Managed areas**	None. Key Biodiversity Area.
Current occupation of site	Seven villages on site (+300 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Logging nearby

Overall Risk Ranking: **High**

Jack Harbour

Site Identifier #: 9

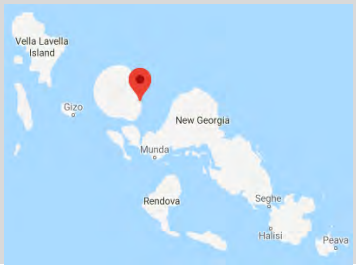
Parcel Identifier: 098-007-0034

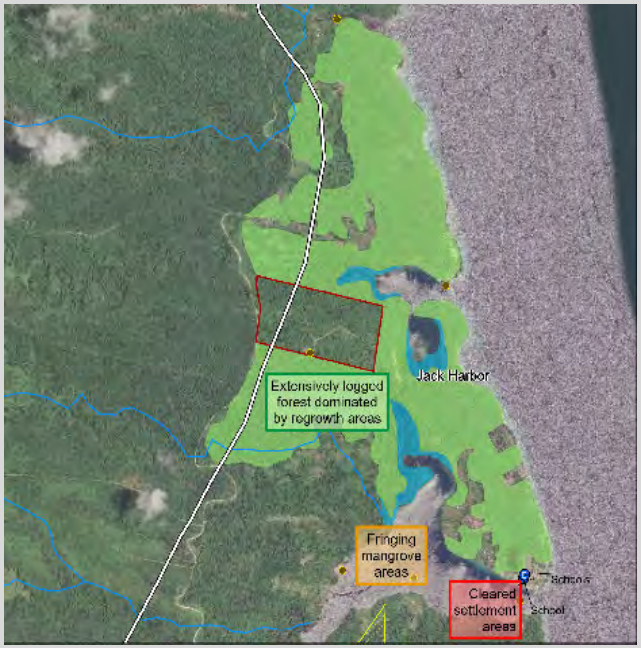
Gizo Hub

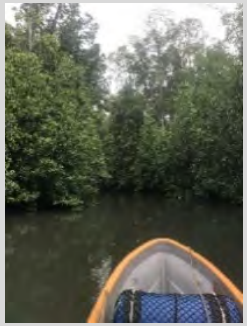
Site Description:

Jack Harbor is a coastal site on the eastern side of Kolombangara Island. The site consists of a coconut plantation area with an intact secondary forest regrowth of between 30 and 50 years of age further inland. Healthy mangrove forests are present along the seashore and river edge. Fringing coral reefs extend along the shoreline and these show evidence of anthropogenic impact and heavy fishing. The site is identified by the KBA Partnership as a terrestrial key biodiversity area. Jack Harbor is a sheltered deep harbor on the south side of the site, sometimes used by passing yachts for anchorage. The site contains 4 villages, with more than 200 buildings estimated on site and large areas of undeveloped/uninhabited land between these villages. The villager's livelihoods revolve around coconut plantations, forestry/logging, gardening and fishing, with the occasional village visit by passing yachts. Jack Harbor Village is a Seventh Day Adventist village and contains church buildings, a community meeting building, a school and a small homestay building that is rented to local guests sporadically. The village has recently developed a "pour flush" septic toilet for guests and most buildings share several rainwater tanks that are scattered around the village for water supply. It is likely that development can occur away from these villages so that resettlement risks can be managed. Forestry tracks/roads link part of the site. The site was identified as having a potential UXO risk during stakeholder consultation and is close to know battleground areas.

Site Location







Vegetation

Coconut plantation

Vegetation

Mangrove Forest

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	3
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	6
Proximity to Infrastructure	6
Presence of Cultural heritage	5

Co-ordinates	.-8.045704, 157.190896	**Services available**	No services available
Title type	098-007-0034	**Site access**	Roads and tracks
Site area	492 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered, graves on family lots.
Distance to nearest Airport/Port	Gizo: 45 km / Munda: 41 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 10.7 km	**Protected / Managed areas**	None. Key Biodiversity Area.
Current occupation of site	Four villages on site (+200 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Logging nearby

Overall Risk Ranking: **Moderate**

Kohingo Island, Ghalughalu Point

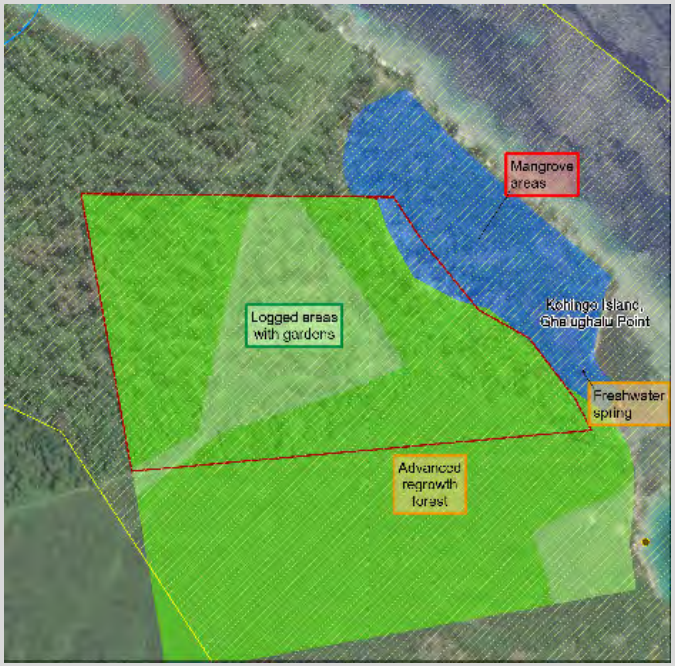
Site Identifier #: 26
Parcel Identifier: 098-006-0021

Munda Hub

Site Description:

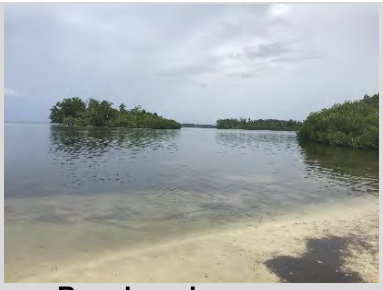
Kohingo Island and Ghalughalu Point is a coastal site on the north west side of Kohingo Island (west of Noro). The site has white sand beaches and mangrove forest along the seashore. There is a natural freshwater spring feature on site noted during site visits. A secondary regrowth forest of approximately 30 to 40 years of age is present and shows evidence of recent timber milling. There is a healthy bird population. Seagrass is present along the coast up to 100 m offshore leading to a healthy coral reef with a very low fish population due to overfishing. The marine area adjacent to the site is identified by the KBA Partnership as a key biodiversity area. Some scattered dwellings are present on site, some on the shore front facing into the protected lagoon, and some scattered inland. These dwellings have gardens associated with them. A road cuts through part of the site giving access to settlements along the eastern edge of Kohinggo Island (in proximity to Noro). The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present.

Site Location



Forest

Mangroves



Beach and seagrass

Freshwater spring

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	8
Social Risks	
Presence of People	4
Presence of Livelihood	5
Proximity to Infrastructure	4
Presence of Cultural heritage	3

Co-ordinates	.-8.173111, 157.175941	**Services available**	Mobile telecoms and data available
Title type	098-006-0021	**Site access**	Tracks/Roads to coastal villages
Site area	49.6 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 26.7 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Ringgi Rural Health Clinic: 8.2 km	**Protected / Managed areas**	None. Marine Key Biodiversity Area adjacent to site.
Current occupation of site	6 Dwellings and gardens	**Adjacent Land use**	Forest
Current land use	Forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Tunguivili Point (East)

Site Identifier #: 29
Parcel Identifier: 098-005-0071

Munda Hub

Site Description:

Tunguivili Point is a coastal site on the north western side of New Georgia Island. The vegetation consists of an old coconut plantation that has become secondary forest regrowth of > 50 years of age. The seashore is dominated by mangrove species. A fringing reef runs along the coast with very low fish numbers due to overfishing. A local village occupies approximately a fifth of the coastal edge of the site, and further land inland for gardens. Villagers are sustained by gardens, fishing and some work in Noro. There is still space along the seashore for other development. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location

Seashore

Seashore

Seashore

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	3
Social Risks	
Presence of People	5
Presence of Livelihood	5
Proximity to Infrastructure	5
Presence of Cultural heritage	3

Co-ordinates	.-8.189300, 157.221951	**Services available**	Mobile telecoms and data available
Title type	098-005-0071	**Site access**	Tracks
Site area	123.45 ha	**Sites of Cultural Heritage**	Potential tabu sites
Distance to nearest Airport/Port	Munda: 25.5 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Noro Hospital (Private): 7km	**Protected / Managed areas**	None
Current occupation of site	Village on western coast (70 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Ex-logging site

Overall Risk Ranking: **Moderate**

Lambete Kopi

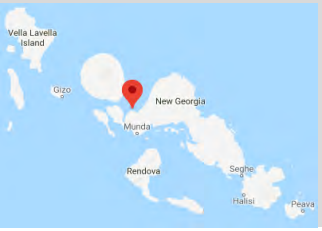
Site Identifier #: 28
Parcel Identifier: 098-005-0051

Munda Hub

Site Description:

Lambete Kopi is a peninsular coastal site on the north western side of New Georgia Island. The vegetation is predominantly coconut plantation with mangrove forest along the seashore and internal lagoon shore. A fringing reef runs along the coast with very low fish numbers due to overfishing and run off from upstream logging. The site has a limited level above sea level (max 2m) but is afforded limited protection from New Georgia Island and Kolombangara Islands from some weather directions. The lagoon on the inland site of the site is accessible by small boat over an inlet. Inland from the site, a CFC church community is present, who use the site as a shortcut to the coast for fishing, skidding canoes across the land to the coast. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Coconut plantation

Coconut plantation

Mangroves

Mangroves

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	9
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	5
Presence of Cultural heritage	2

Co-ordinates	.-8.186802, 157.243527	**Services available**	No services available
Title type	098-005-0051	**Site access**	Tracks
Site area	2 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 28 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Noro Hospital (Private): 11km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest	**Other Site Hazards**	Ex-logging site

Overall Risk Ranking: **Moderate**

Niu Kaloka (west)

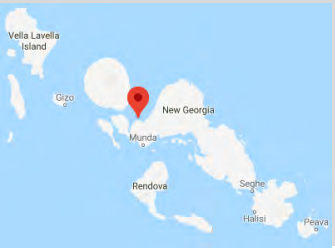
Site Identifier #: 30
Parcel Identifier: 098-005-0008

Munda Hub

Site Description:

A peninsular coastal site on the north western side of New Georgia Island. The vegetation on the site consists of beach forest which appears to have been recently logged from approximately 400 m from the seashore. A healthy fringing reef runs along the coast with very low fish numbers due to over fishing. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. There is some evidence of new tourism operations nearby and on site.

Site Location



Forest

Forest

Intact primary forest

Natural Hazard Risks	
Coastal Vulnerability	7
Sea Level Rise	9
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	6
Social Risks	
Presence of People	4
Presence of Livelihood	3
Proximity to Infrastructure	5
Presence of Cultural heritage	3

Co-ordinates	.-8.189881, 157.257233	**Services available**	No services available
Title type	098-005-0008	**Site access**	Road
Site area	11 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites, WW2 Relics
Distance to nearest Airport/Port	Munda: 29.6 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Noro Hospital (Private): 13km	**Protected / Managed areas**	None
Current occupation of site	Caretaker and resort staff (5 buildings approx)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Forest, residential, resort nearby	**Other Site Hazards**	Ex-logging site, resort

Enogha Point

Munda Hub

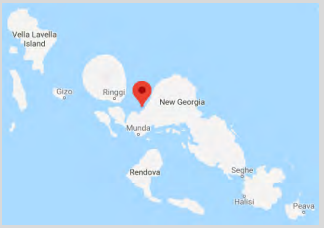
Overall Risk Ranking: **Moderate**

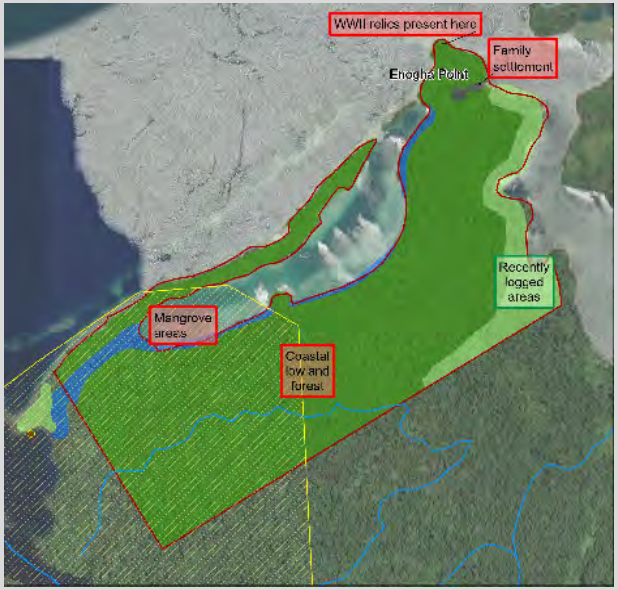
Site Identifier #: 27
Parcel Identifier: 098-005-0070

Site Description:

A coastal site on the north western side of New Georgia Island. Primary jungle extends up the ridge from the coastal margin. The coastal margin is dominated by coconut plantation and with mangrove forest. The adjacent site was illegally logged 2018, with encroachment across the site boundary. A fringing coral reef runs along the coast and has very low fish numbers due to overfishing. The site has a protected lagoon; however, the pass is very shallow and may not be passable by larger boats looking to access the more sheltered areas of the coastal edge. The area was identified during research as likely to have been a major battleground in WW2 and UXO and WW2 relics are present on the site including 4 Japanese guns and a plane wreck in the water in front of the site. The site contains a single-family dwelling, occupied by relatives of the owner who act as rangers for the site and sustain themselves with gardens (including coconut harvesting) and fishing to sell at the Noro market. Interviewees noted that bones from WW2 soldiers have been discovered inland on site, some have been sold illegally, and others buried/left in place. Tabu sites are also noted inland to the site. The site is reasonably remote to Noro, with no road access to the coastal edges of the site

Site Location

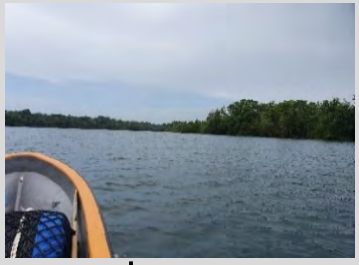





WW2 relic


Forest


Logging


Lagoon

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	7
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	7
Presence of Cultural heritage	6

Co-ordinates	.-8.174550, 157.290603	**Services available**	No services available
Title type	098-005-0070	**Site access**	No
Site area	305.5 ha	**Sites of Cultural Heritage/Tabu**	Graves on the ridge, 5 WWII guns on coast
Distance to nearest Airport/Port	Munda: 33.4 km**	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Noro Hospital (Private): 14km	**Protected / Managed areas**	None
Current occupation of site	1 family house (1 building)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Logging nearby

Buni - Parara Island

Munda Hub

Overall Risk Ranking: **High**

Site Identifier #: 32
Parcel Identifier: 120-002-17

Site Description:

Buni-Parara Island is a coastal site on the south eastern side of Vonavona Island. The site was an old coconut plantation and is now mostly occupied by the Buni Village (more than 100 buildings on site) along the coastal edges of the site, with gardens further inland. A fringing coral reef runs along the coast and shows evidence of anthropogenic impacts and overfishing. The site is close to Saika, Kinamara, Nazareti, Kida, Buni, Barasipo and Barivut Community Marine Managed Areas however interviewees noted these are no longer maintained by the communities. The whole of the Vonovono Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. There are limited areas of the site left unused by the village and village gardens. Development of the site would therefore be likely to disturb people or their livelihoods or both. UXO is unlikely to be encountered on the site as research indicates that the site was not a WW2 battleground.

Site Location

*Site not inspected

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	5
Social Risks	
Presence of People	10
Presence of Livelihood	7
Proximity to Infrastructure	4
Presence of Cultural heritage	5

Co-ordinates	.-8.294860, 157.115712 (est.)	**Services available**	Mobile telecoms and data available
Title type	120-002-17	**Site access**	No
Site area	183 ha Approximately	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Munda: 11.7 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Munda Hospital: 15.4 km	**Protected / Managed areas**	Saika, Kinamara, Nazareti, Kida, Buni, Barasipo and Barivuto Community Managed Marine Areas 0 to 4 km NE. Key Biodiversity Area.
Current occupation of site	A village (100 buildings)	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: Low

Kolohite Island

Site Identifier #: 36
Parcel Identifier: 120-003-0001

Munda Hub

Site Description:

Kolohite Island is a site west of Munda in the Vonavona Lagoon off New Georgia Island. The islands vegetation consists of coconut plantation with secondary regrowth forest. There is a shallow fringing coral reef around the island with patches of sea grass. The coral is healthy, but the fish numbers are low. The site is close to Kida, Saika and Beta Community Marine Managed Areas however interviewees noted these are no longer maintained by the communities. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The southern end of the island is developed into a camping and picnic site frequented by the public and managed by an on-site ranger (who lives on the site year-round). The site owner confirmed that there are no cultural artefacts on site.

Site Location

Beach and picnic area

Picnic area

Coconut plantation and forest

Beach and seagrass

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	3
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	2
Presence of Cultural heritage	1

Co-ordinates	.-8.307852, 157.198652	**Services available**	Mobile telecoms and data available
Title type	120-003-0001	**Site access**	No
Site area	16.19 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 9.5 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 6.2 km	**Protected / Managed areas**	Kida, Saika and Beta Community Marine Managed Areas all > 5 km. Key Biodiversity Area.
Current occupation of site	Caretaker (1 building)	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Karapata Islands

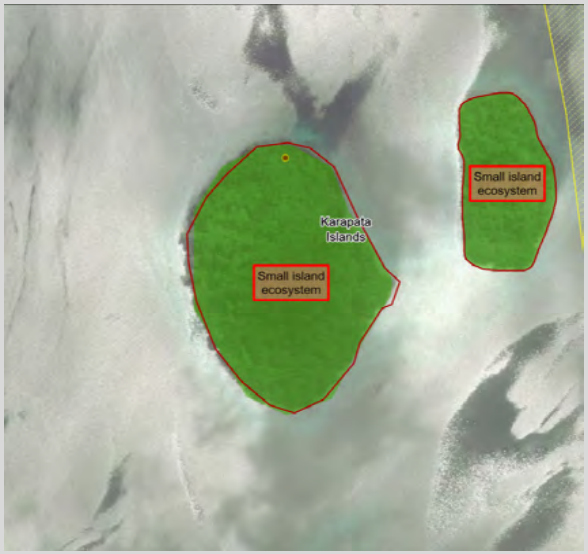
Site Identifier #: 31
Parcel Identifier: 120-010-0001

Munda Hub

Site Description:

An island site in the western coast of New Georgia Island in the VonaVona Lagoon. The island is surrounded with patches of mangroves and coastal trees. The forest on the island is an intact primary forest with clear understory stratification of matured trees, young trees, sapling and under growth such as ferns, ginger and pandanus. Birds like Willie Wagtail, Coconut Lorikeet and Island Imperial-Pigeon are present on the island. A fringing coral reef is present around the island with very low fish numbers due to overfishing. The site is close to Beta, Kida and Saika Community Marine Managed Areas however interviewees noted these are no longer maintained by the communities. The site is within a marine and terrestrial Key Biodiversity Area that covers the Vonavona Lagoon, identified by the KBP Partnership. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. The site shows minor evidence of previous habitation (a man-made wall) and was highlighted in Solomon Islands data as having a village on site however no other occupation of the site was recorded (village settlement is expected to have moved on/incorrectly placed).

Site Location



Vegetation

Vegetation

Forest

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	9
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	4
Presence of Cultural heritage	3

Co-ordinates	.-8.281983, 157.206933	**Services available**	Mobile telecoms and data available
Title type	120-010-0001	**Site access**	No
Site area	9.5 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 18 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 7.2 km	**Protected / Managed areas**	Beta, Kida and Saika Community Marine Managed Areas all > 5 km. Key Biodiversity Area. Key Biodiversity Area.
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Mbanga Island - Tabaka

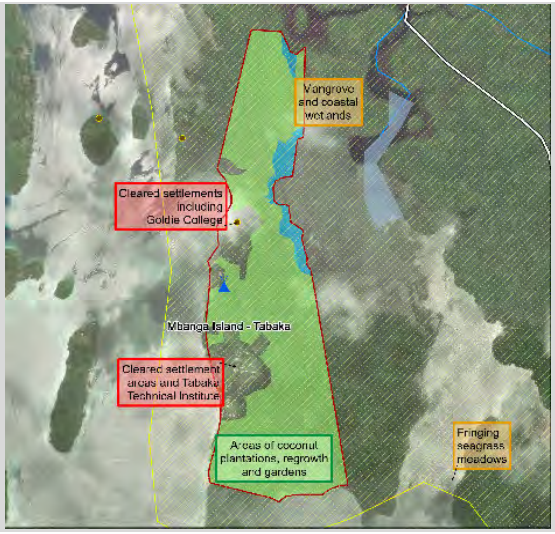
Site Identifier #: 33
Parcel Identifier: 120-008-0002

Munda Hub

Site Description:

Mbanga Island Tabaka is a peninsular site south of Noro and north west of Munda, off the north western coast of New Georgia Island in the Vonavona Lagoon. The site is vegetated with coconut plantation and secondary regrowth forest and cleared in many areas for settlements. The area is surrounded by a fringing coral reef with patches of sea grass. Fish levels are low due to overfishing. The site is close to Kekehe and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine managed area is unclear. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The site is occupied by two secondary schools (one being the Goldie College) attended by at least 200 people and associated village settlements. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Seashore and village

Seashore and village

Seashore and village

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	3
Social Risks	
Presence of People	4
Presence of Livelihood	7
Proximity to Infrastructure	3
Presence of Cultural heritage	6

Co-ordinates	.-8.295272, 157.214974	**Services available**	Potential power and water supply, mobile telecoms and data
Title type	120-008-0002	**Site access**	Tracks and small wharves
Site area	234 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites, WW2 Relics, church sites and tribal presence
Distance to nearest Airport/Port	Munda: 10.2 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 5.5 km	**Protected / Managed areas**	Kekehe and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site all > 4 km. Key Biodiversity Area.
Current occupation of site	Two schools and occupied coast (70 buildings+)	**Adjacent Land use**	Coconut plantation, forest, residential, schools
Current land use	Coconut plantation, forest, residential, gardens, school	**Other Site Hazards**	None

Kuri Point

Munda Hub

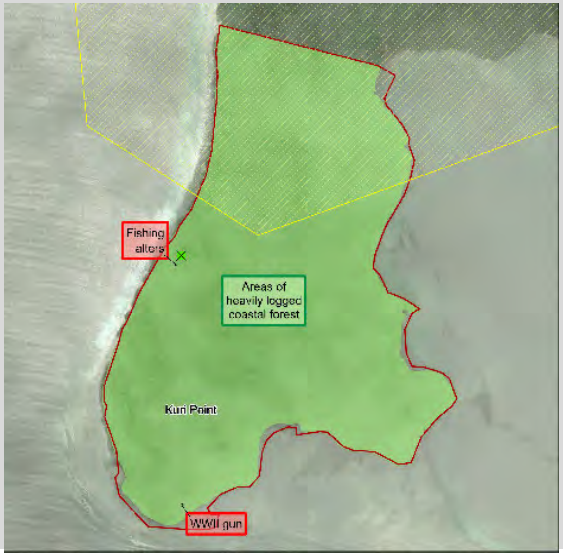
Overall Risk Ranking: **Low**

Site Identifier #: 37
Parcel Identifier: 120-008-0006

Site Description:

An island site in the Vonavona Lagoon off New Georgia Island, close to Munda. Vegetation on the island consists of coastal trees and undergrowth such as ferns. Parts of the site show signs of heavy logging. A healthy shallow fringing reef with patches of massive coral and plate coral are present but the fish population appears to be low. Sea grass beds on the western shore appear to be stressed and disturbed and covered in silt (from recent heavy rainfall and logging inland on New Georgia Island). The site is close to Kekehe, Dunde and Beta Community Marine Managed Areas however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine managed area is unclear. It is home to sea dugong. The whole of the Vonovono Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The area was identified during research, site visits and interviews as likely to have been a major battleground in WW2 and UXO and WW2 relics were noted on site, including a gun. The site is owned by a group associated with the Kindu Tribe and it is expected that members of this tribe visit the site as it adjoins the Mbanga Island site where two schools (Tabak Technical Institute and Goldie College) are present which are also associated with the Kindu Tribe. Income from logging is managed by the tribe representatives. Tribe representatives are in early negotiations with developers for development of tourism development site, however, interviewees highlight the potential internal conflict with tribe members which may occur if not sensitively managed. Interviewees noted that there are tabu sites (fishing alters) on site, both on land and in the water.

Site Location



Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	3
Social Risks	
Presence of People	1
Presence of Livelihood	4
Proximity to Infrastructure	2
Presence of Cultural heritage	7

Co-ordinates	.-8.316046, 157.212885	**Services available**	Mobile telecoms and data available
Title type	120-008-0006	**Site access**	No
Site area	80 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites - fishing altars, WW2 relic on the point, and tribal presence
Distance to nearest Airport/Port	Munda: 7.8 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 4.4 km	**Protected / Managed areas**	Kekehe and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site all > 4 km. Key Biodiversity Area.
Current occupation of site	None - tribe visits site	**Adjacent Land use**	Forest
Current land use	Forest - logged	**Other Site Hazards**	Crocodiles

Overall Risk Ranking: **Low**

Mbarikihi Islands: west

Site Identifier #: 35
Parcel Identifier: 120-006-0002

Munda Hub

Site Description:

Mbarihiki Island is an island in the Vonavona Lagoon, west of Munda that is split into two uneven sized sites. The vegetation consists of 40-year-old secondary regrowth forest and coastal mangrove species. The area is surrounded by sea grass meadows that connect to the seagrass meadows along the western end of Munda township. The site is close to Kekehe and Beta Community Marine Managed Areas however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine Managed area is unclear. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The area is home to sea Dugong. The island provides a potential habitat for saltwater crocodiles. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location

Forest and seashore

Forest and seashore

Forest and seashore

Forest and seashore

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	2

Co-ordinates	.-8.306156, 157.231159	**Services available**	Mobile telecoms and data available
Title type	120-006-0002	**Site access**	No
Site area	4 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 6.4 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 3.4 km	**Protected / Managed areas**	Kekehe and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site all > 4 km. Key Biodiversity Area.
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	Crocodiles. Sea Dugong.

Overall Risk Ranking: **Low**

Mbarikihi Islands: east

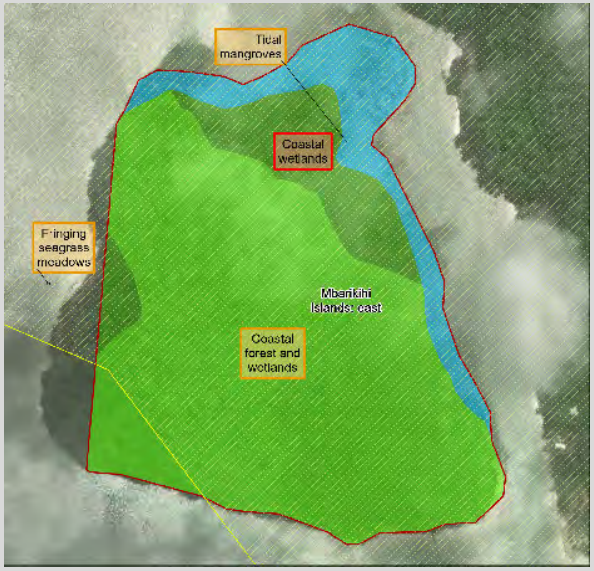
Site Identifier #: 34
Parcel Identifier: 120-006-0003

Munda Hub

Site Description:

Mbarihiki Island is an island in the Vonavona Lagoon, west of Munda that is split into two uneven sized sites. The vegetation consists of 40-year-old secondary regrowth forest and coastal mangrove species. The area is surrounded by sea grass meadows that connect to the seagrass meadows along the western end of Munda township. The site is close to Kekehe and Beta Community Marine Managed Areas however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine Managed area is unclear. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The area is home to sea Dugong. The island provides a potential habitat for saltwater crocodiles. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Forest and seashore

Forest and seashore

Forest and seashore

Forest and seashore

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	7
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	2

Co-ordinates	.-8.306061, 157.235461	**Services available**	Mobile telecoms and data available
Title type	120-006-0003	**Site access**	No
Site area	49.9 ha	**Sites of Cultural Heritage**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 6 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 3.1 km	**Protected / Managed areas**	Kekehe and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site all > 4 km. Key Biodiversity Area.
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	Crocodiles. Sea Dugong.

Overall Risk Ranking: **Low**

Nusa Zonga Island

Site Identifier #: 38

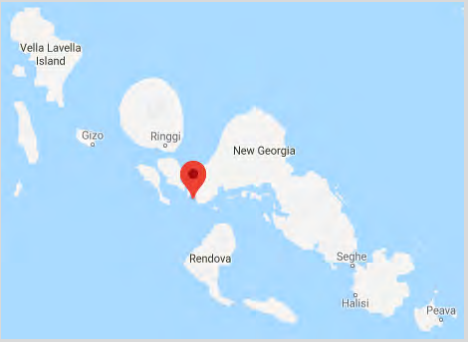
Parcel Identifier: 120-009-0001

Munda Hub

Site Description:

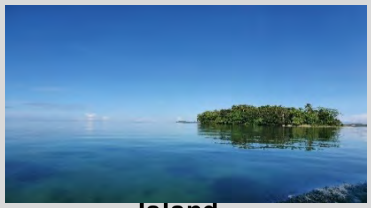
Nusa Zonga is an island site west of Munda Airport off the north western coast of New Georgia Island. The island has a mixture of white sandy beaches and limestone rock. The vegetation consists of secondary forest growth and coastal trees. The island has a shallow fringing coral reef surrounding it with seagrass at the southern end of the island connecting to the sea grass meadows towards the end of Munda Airport. The site is close to Kekehe and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine managed area is unclear. It is home to sea dugong. The coral appears to be healthy, but the fish population is low and shows signs of overfishing. The whole of the Vonovono Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The island has an elevation of 3 m above sea level at the southern end and 1.5 m above sea level at the northern end but is sheltered from stronger storm surge by the outer reefs of the lagoon. The island is under the Munda Airport flight path. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. The day the Methodists first arrived in Solomon Islands is acknowledged in a tribute on the Island, and graves of some missionaries are located on the island however no buildings remain. The site is used as a picnic site by people in the surrounding Munda area who come to enjoy the white sand beaches and nearby snorkeling areas.

Site Location



Beach

Vegetation



Island

Grave and monument

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	6
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	1
Presence of Cultural heritage	7

Co-ordinates	.-8.329851, 157.238024	**Services available**	Mobile telecoms and data available
Title type	120-009-0001	**Site access**	No
Site area	2 ha	**Sites of Cultural Heritage/Tabu**	Grave site and monument
Distance to nearest Airport/Port	Munda: 4.1 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 1.4 km	**Protected / Managed areas**	Kekehe, Dunde and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site > 2km. Key Biodiversity Area.
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest, pinic spot	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Hombupeka Island

Site Identifier #: 40
Parcel Identifier: 121-003-0001

Munda Hub

Site Description:

Hombupeka Island is an island site south of Munda Airport off New Georgia Island. The site is a former coconut plantation and is highly disturbed. Mangroves are present at the southern end of the island. A shallow coral reef surrounds the island and there are patches of massive corals and branching coral reef. There is also evidence of harvesting of massive coral around the island for building the wharf on the island. The fish population is declining due to harvesting of the corals for wharf and overfishing. The site is close to Kekehe, Dunde, Nusa Roviana and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine managed area is unclear. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. The site is occupied by families associated with the owner on one side and development is being undertaken on the other half of the island for the Castaway resort. Further development beyond this proposed resort is unlikely to be supported by all landowners due to competition, but if amenable there are no other communities on site that would be impacted. The existing jetty/wharf provides access for small boats to the site across the coral reef.

Site Location

Wharf

Dwelling

Dwelling

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	2
Marine biodiversity	3
Social Risks	
Presence of People	9
Presence of Livelihood	5
Proximity to Infrastructure	1
Presence of Cultural heritage	2

Co-ordinates	.-8.335520, 157.266115	**Services available**	Mobile telecoms and data available
Title type	121-003-0001	**Site access**	No
Site area	3.88 ha	**Sites of Cultural Heritage**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 1 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 1.7 km	**Protected / Managed areas**	Kekehe, Dunde, Nusa Roviana and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site > 5km. Key Biodiversity Area
Current occupation of site	Two families and resort development (15 buildings)	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Hopei Island

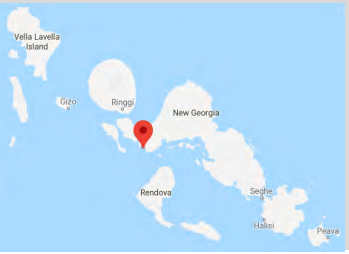
Site Identifier #: 42
Parcel Identifier: 121-009-0002

Munda Hub

Site Description:

Hopei Island is an island site south of Munda Airport off New Georgia Island. The eastern part of the island has coconut trees and the center and western ends have secondary forest. Coastal trees are present along the seashore. The island has a shallow fringing reef surrounding it with small patches of sea grass and some intact coral gardens on the outskirts of the reef. The fish population is low due to overfishing of the wider area. The site is close to Kekehe, Dunde, Nusa Roviana and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine managed area is unclear. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The island is a popular picnic site with white sandy beaches and good snorkeling. Picnic shelters and a cleared area are maintained by the owner and access by the public is at their discretion. There is a damaged long drop toilet on site that was provided by the owner but since destroyed by visitors. There is no full-time ranger on this site. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Cleared vegetation

Beach

Vegetation

Picnic area

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	7
Social Risks	
Presence of People	1
Presence of Livelihood	3
Proximity to Infrastructure	1
Presence of Cultural heritage	2

Co-ordinates	.-8.356038, 157.262942	**Services available**	Mobile telecoms and data available
Title type	121-009-0002	**Site access**	No
Site area	4.7 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 3.2 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 3.4 km	**Protected / Managed areas**	Kekehe, Dunde, Nusa Roviana and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site > 5km.
Current occupation of site	Part time ranger/owner visits frequently (no dwellings)	**Adjacent Land use**	Ocean
Current land use	Forest, coconut plantation, picnic site and shelters	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Hombu Hombu Island

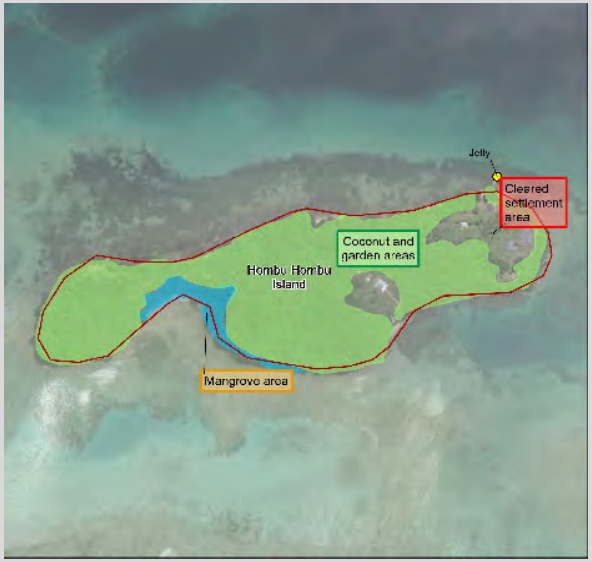
Site Identifier #: 41
Parcel Identifier: 121-009-0001

Munda Hub

Site Description:

Hombu Hombu is an island site south of Munda Airport off New Georgia Island. The island is surrounded with mangrove and coastal trees with secondary forest in the center of the island. A shallow fringing coral reef runs around the island and shows signs of massive coral harvesting. Areas of sea grass beds are present. The fish population is also declining due to coral harvesting and overfishing. The site is close to Kekehe, Dunde, Nusa Roviana and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu however interviewees noted these are no longer maintained by the communities. Dunde (Shark Point) is still frequented by local dive companies, the status of this Marine managed area is unclear. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The current landowners who live on the island are retired Solomon Islands businesspeople who do not appear to be interested in selling or developing the site. There is a jetty/wharf that provides access for small boats to the site over the reefs. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Landowners dwelling

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	2
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	3
Proximity to Infrastructure	1
Presence of Cultural heritage	2

Co-ordinates	.-8.352404, 157.272592	**Services available**	Mobile telecoms and data available
Title type	121-009-0001	**Site access**	No
Site area	13.6 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 2.8 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 3.4 km	**Protected / Managed areas**	Kekehe, Dunde, Nusa Roviana and Beta Community Marine Managed Areas and Dunde (Shark Point) Marine Managed Area/Tabu site > 5km.
Current occupation of site	Landowners and extended families (6 buildings)	**Adjacent Land use**	Ocean
Current land use	Forest, residential, wharf, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Himbi Island

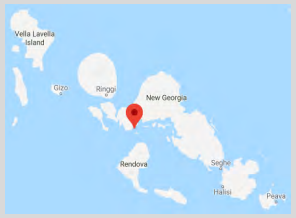
Site Identifier #: 39
Parcel Identifier: 121-008-0001

Munda Hub

Site Description:

Himbi Island is an island site south east of Munda Airport, New Georgia Island. The island is mostly comprised of coconut trees and ornamental plants with patches of mangrove forest. A shallow coral reef surrounds the island with evidence of harvesting of massive coral. The fish population is also declining due to harvesting of the corals and overfishing. The site is close to Nusa Roviana Community Marine Managed Area however interviewees noted these are no longer maintained by the communities. The whole of the Vonavona Lagoon and islands is identified by the KBA Partnership as a Key Biodiversity Area. The wider area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Vegetation

Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	7
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	3

Co-ordinates	.-8.334114, 157.313338	**Services available**	Mobile telecoms and data available
Title type	121-008-0001	**Site access**	No
Site area	1.5 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 5.3 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 6.9 km	**Protected / Managed areas**	Nusa Roviana Community Marine Managed Area > 4 km. Key Biodiversity Area
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest, coconut plantation	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Agana & Vangoro Islets

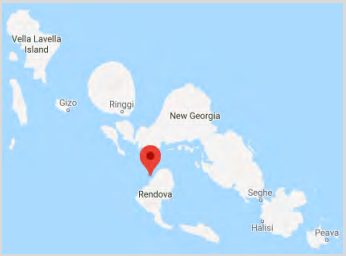
Site Identifier #: 49
Parcel Identifier: 121-002-0001

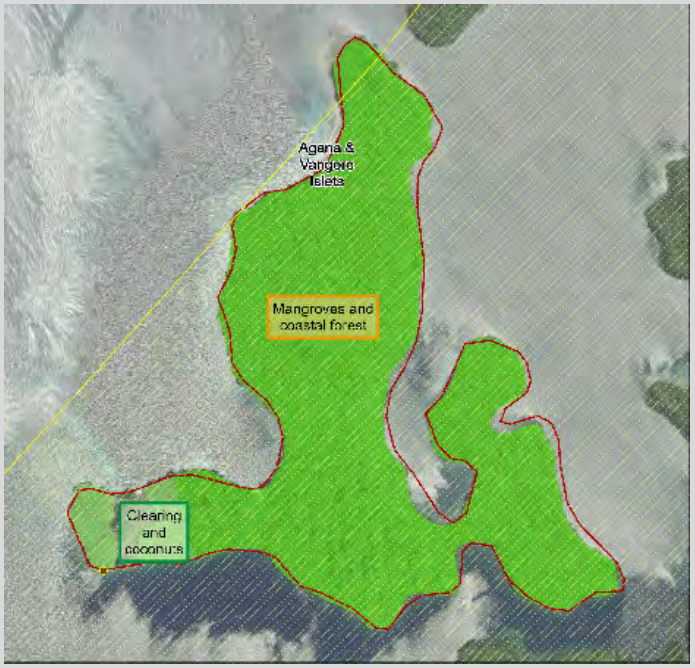
Munda Hub

Site Description:

Agana & Vangoro Islets are two islands site off the north western coast of Rendova Island. Approximately 70% of the island is covered in mangrove species and coconut plantations. There is some secondary forest regrowth, but the site is considered to have a high landscape value. Logging was noted on surrounding land during interviews. A fringing coral reef runs around the island and shows evidence of coral harvesting to build the wharf and coastal protection. Fish numbers are low due to coral harvesting and overfishing. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. Dwellings are present on the island, along with associated gardens and family graves. Interviews noted that the gardens on site are hobby gardens rather than created for subsistence.

Site Location





Coconut plantation

Dwelling

Beach

Beach

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	5
Presence of Cultural heritage	1

Co-ordinates	.-8.459881, 157.280758	**Services available**	No services available
Title type	121-002-0001	**Site access**	No
Site area	78.96 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 22.2 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 14.7 km	**Protected / Managed areas**	None
Current occupation of site	Extended family of owner (15 buildings)	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Mandali Point

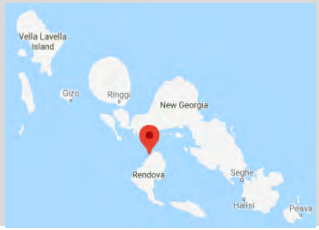
Site Identifier #: 48
Parcel Identifier: 121-004-0006

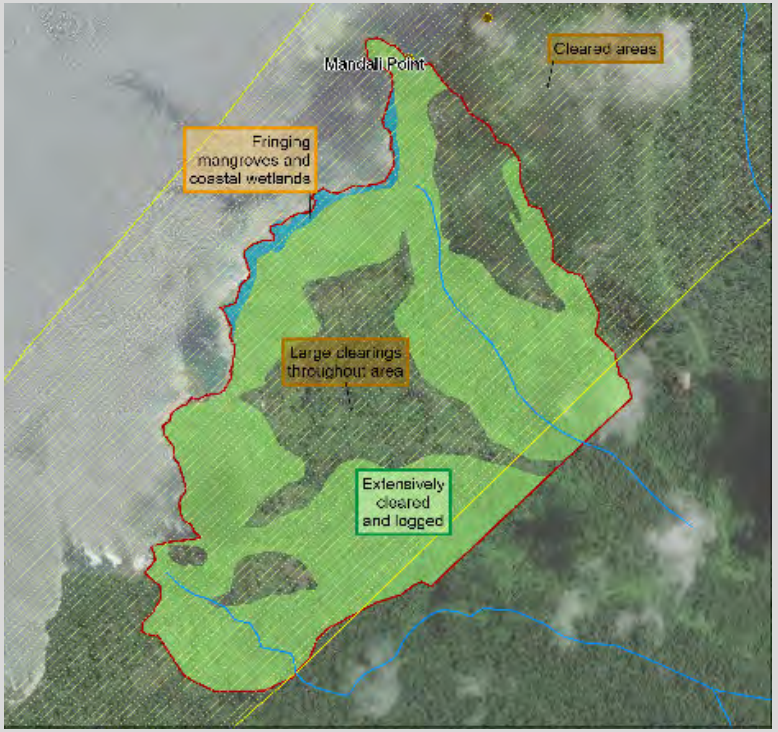
Munda Hub

Site Description:

Mandali Point is a coastal site on the northern side of Rendova Island. The site is partially sheltered from storm surges and weather as it is internal to the Rendova Lagoon. The vegetation is an old coconut plantation that has secondary forest regrowth of approximately 30 to 50 years of age. The seafront is dominated by mangroves and coastal trees. A fringing coral reef runs along the coast and shows evidence of overfishing. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. The site shows signs of use for supplementing of livelihoods with areas of clearance that are attributed to logging. There are three settlements on site with associated gardens, however there is a lot of space between these settlements for further development.

Site Location





Vegetation

Vegetation

Mangroves

Seashore

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	2
Social Risks	
Presence of People	4
Presence of Livelihood	5
Proximity to Infrastructure	4
Presence of Cultural heritage	3

Co-ordinates	.-8.424273, 157.311773	**Services available**	No services available
Title type	121-004-0006	**Site access**	Yes
Site area	335 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 14 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 12.5 km	**Protected / Managed areas**	None
Current occupation of site	Community dwellings (10 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Tambusolo Island

Site Identifier #: 47
Parcel Identifier: 121-004-0002

Munda Hub

Site Description:

Tambusolo Island is an island site off the northern coast of Rendova Island. The island is a former coconut plantation that has patches of mangroves and coastal trees around it with a well-established regrowth and distinctive forest undergrowth. The island is surrounded by a fringing reef with massive and branching corals. Any biodiversity loss is likely to have a significant impact on the Island. The fish population is low due to overfishing. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. The Island is uninhabited.

Site Location

Vegetation

Vegetation

Vegetation

Mangroves

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	8
Marine biodiversity	4
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	4
Presence of Cultural heritage	3

Co-ordinates	.-8.414007, 157.317214	**Services available**	No services available
Title type	121-004-0002	**Site access**	No
Site area	2 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 12.2 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 12 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Rendova harbor

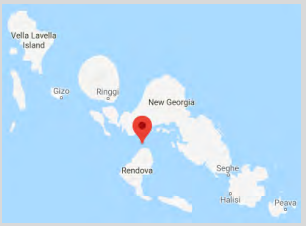
Site Identifier #: 45
Parcel Identifier: 121-004-0005

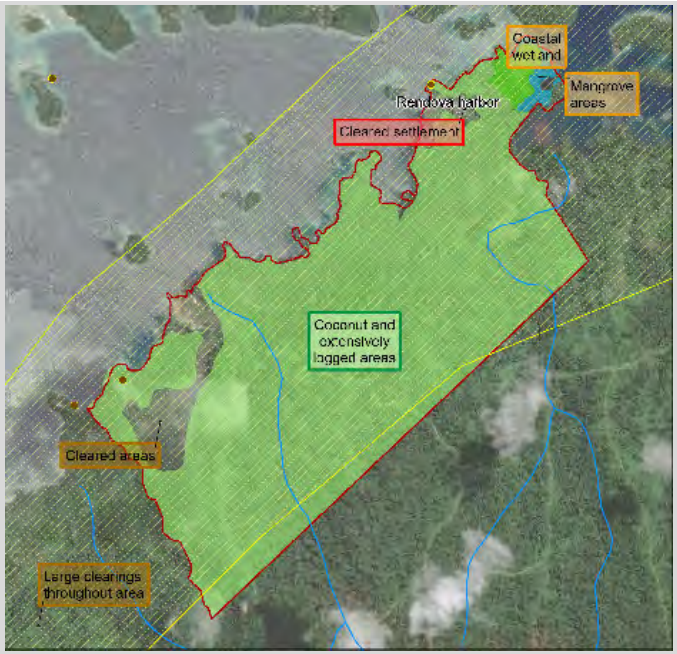
Munda Hub

Site Description:

Rendova harbor is a coastal site on the northern side of Rendova Island situated inside the Rendova Lagoon. The site is vegetated with an old coconut plantation and secondary forest of approximately 50 years of age. The seafront is dominated by mangrove species and coastal trees. There is evidence of fairly recent logging activities. A fringing coral reef runs along the coast with evidence of overfishing. The area was identified during research as likely to have been a major battleground in WW2 and UXO and WW2 relics were noted in the area during the site visit. There are two villages on site, with associated gardens, situated on the coast, with space between these for further development.

Site Location





Vegetation

Seashore

Seashore

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	7
Proximity to Infrastructure	4
Presence of Cultural heritage	5

Co-ordinates	.-8.404467, 157.337155	**Services available**	Mobile telecoms and data available
Title type	121-004-0005	**Site access**	No
Site area	587 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Munda: 12 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 12.6 km	**Protected / Managed areas**	None
Current occupation of site	Two villages (80 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Kukurana Island

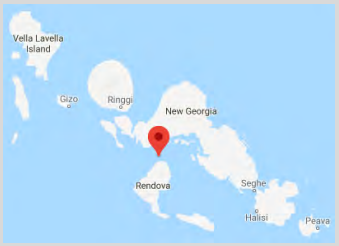
Site Identifier #: 43
Parcel Identifier: 121-004-0004

Munda Hub

Site Description:

Kukurana Island is an island site off the north coast of Rendova Island. The island is approximately 2-3m asl at its highest point and acts as a buffer providing protection to an inner lagoon and Rendova Island. As the site faces the island of New Georgia (<10km away) it is afforded a small amount of protection from strong weather on its outer coast. The vegetation on the site consists of an old coconut plantation that is now secondary forest and coastal trees and mangroves along the seashore. There is a thin fringing coral reef around the island and sea grass on the lagoon side of the island. Fish species are limited due to overfishing. The site has been recently logged. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site. At the western end of the island are a few houses and a garden, including cattle, which were observed during site visits and these are understood to be occupied by a caretaker.

Site Location



Vegetation

Cleared vegetation

Vegetation

Cleared vegetation

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	4
Presence of Cultural heritage	2

Co-ordinates	.-8.396442, 157.338937	**Services available**	Mobile telecoms and data available
Title type	121-004-0004	**Site access**	No
Site area	37 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 11.1 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 12.1 km	**Protected / Managed areas**	None
Current occupation of site	3 dwellings for caretaker and family	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens, cattle	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Mbarambuni Island

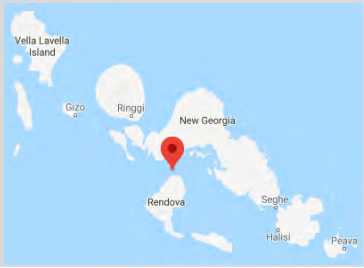
Site Identifier #: 44
Parcel Identifier: 121-004-0001

Munda Hub

Site Description:

Mbarambuni Island is an island site off the north coast of Rendova Island. The island is approximately 2-3m asl at its highest point and acts as a buffer providing protection to an inner lagoon and Rendova Island. As the site faces the island of New Georgia (<10km away) it is afforded a small amount of protection from strong weather on its outer coast. The site vegetation consists of an old coconut plantation with extensive secondary forest and mangrove and coastal trees on the seashore. The island is surrounded by a fringing coral reef with sea grass on the lagoon side of the island. Fish numbers are low due to overfishing. The area was identified during research as likely to have been a major battleground in WW2 and UXO is potentially present on the site.

Site Location



Vegetation

Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	4
Proximity to Infrastructure	4
Presence of Cultural heritage	2

Co-ordinates	.-8.401316, 157.356828	**Services available**	Mobile telecoms and data available
Title type	121-004-0001	**Site access**	No
Site area	40 ha Approximately	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Munda: 12.2 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Munda Hospital: 14 km	**Protected / Managed areas**	None
Current occupation of site	None confirmed.	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Tinovili Island

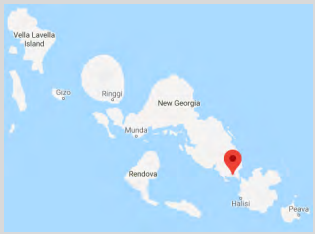
Site Identifier #: 57
Parcel Identifier: 143-004-0001

Seghe Hub

Site Description:

Tinavili is an island site situated north west of Seghe on the southern end of New Georgia Island. The site is tucked into a lagoon to the south of Seghe and well protected by surrounding reefs and tall island masses. Mangrove vegetation is present along the seafront with part of the island covered with 20 to 30-year-old secondary forest regrowth, and part covered by a coconut plantation. Massive coral heads and seagrass is present around the island, but a jetty made of massive coral heads indicates that the site has suffered coral harvesting. Overfishing and coral harvesting has led to a low fish population. Research shows there is potential for UXO to be found in this area. There are two abandoned residential dwellings and some gardens present that look to be maintained. Site ratings are based on the site being un-occupied but with the impact of the gardens being considered in use.

Site Location



Coconut plantation

Coconut plantation

Vegetation

Abandoned dwellings

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	3
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	2
Presence of Cultural heritage	3

Co-ordinates	.-8.564341, 157.832546	**Services available**	Mobile telecoms and data available
Title type	143-004-0001	**Site access**	Jetty
Site area	18 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 7.3 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Seghe Hospital: 5 km	**Protected / Managed areas**	None
Current occupation of site	None - Three Abandoned dwellings	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Crocodiles likely

Overall Risk Ranking: **Low**

Mbatubosi Island

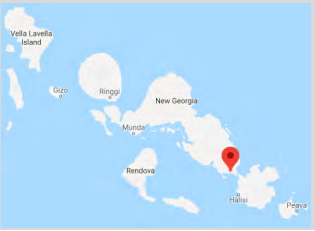
Site Identifier #: 56
Parcel Identifier: 143-005-0001

Seghe Hub

Site Description:

Mbatubosi Island is an island site situated north west of Seghe on the southern end of New Georgia Island. The island is a former coconut plantation island and has secondary regrowth forest and mangrove forest. The vegetation is entirely young trees. The island is surrounded by a fringing reef with healthy coral but a very low fish population indicating overfishing. Interviewees suggest crocodiles are present in the area. Sea grass is close to the shore. Research shows there is potential for UXO to be found in this area. There is one abandoned dwelling on the island that will require confirmation of use. The site rating has considered no people on site, however if this situation alters the outcome for the site rating will not change.

Site Location



Vegetation

Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	6
Proximity to Infrastructure	2
Presence of Cultural heritage	2

Co-ordinates	.-8.562573, 157.842340	**Services available**	Mobile telecoms and data available
Title type	143-005-0001	**Site access**	No
Site area	10 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 5.6 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Seghe Hospital: 5 km	**Protected / Managed areas**	None
Current occupation of site	None - Two Abandoned dwellings	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	Crocodiles

Overall Risk Ranking: **Low**

Lloro Island

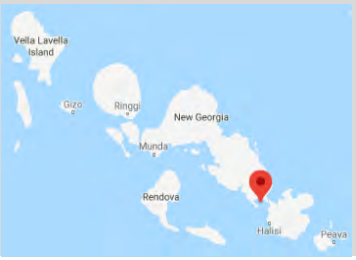
Site Identifier #: 58
Parcel Identifier: 143-007-0001

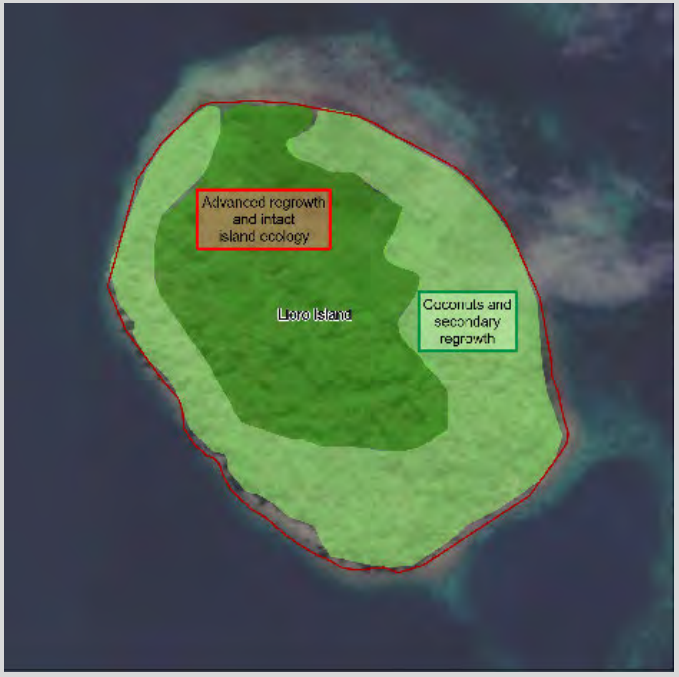
Seghe Hub

Site Description:

Lloro is an island site situated north west of Seghe on the southern end of New Georgia Island. The site has an elevation of 3-4m asl in the center of the island and is tucked into a lagoon to the south of Seghe and well protected by surrounding reefs and tall island masses. This is a coconut plantation island with an intact 30 to 50-year-old secondary regrowth forest and patches of mangrove forest. Massive coral heads form a fringing reef system around the island and show evidence of human impacts and overfishing. There is plenty of bird life. Any biodiversity loss is likely to have a significant impact on the island ecology. Research shows there is potential for UXO to be found in this area. There was one abandoned dwelling and a cemetery on the island. Site ratings are based on the site being un-occupied but with the impact of the gardens and potential for tabu sites being considered.

Site Location





Coconut plantation

Mangroves

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	3
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	5
Proximity to Infrastructure	2
Presence of Cultural heritage	3

Co-ordinates	.-8.579465, 157.840756	**Services available**	Mobile telecoms and data available
Title type	143-007-0001	**Site access**	No
Site area	7.7 ha	**Sites of Cultural Heritage/Tabu**	Two graves
Distance to nearest Airport/Port	Seghe: 5.1 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Seghe Hospital: 6 km	**Protected / Managed areas**	None
Current occupation of site	None - One Abandoned dwelling	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Rovana Island

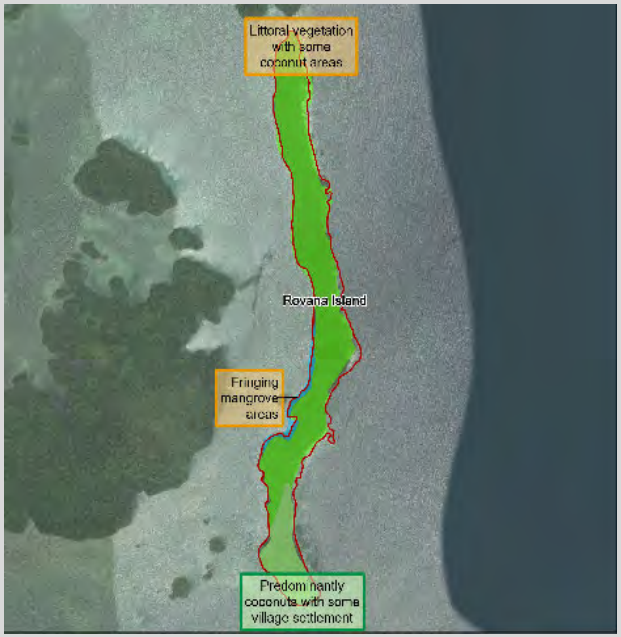
Site Identifier #: 23
Parcel Identifier: 100-002-0001

Seghe Hub

Site Description:

Rovana Island is an island site on the north east coast of New Georgia Island, that creates a protracted edge to an internal lagoon. A site visit was not undertaken to the site due to the remoteness of the location. Aerial photos indicate fringing mangroves along the inner coastal edge (facing into the lagoon) and littoral vegetation and coconut palms. A settlement is located on the northern tip of the island, with the remainder of the site, seemingly uninhabited. UXO is unlikely to be encountered as no troop movements or conflicts were recorded here during WW2.

Site Location



*Site not inspected

Natural Hazard Risks	
Coastal Vulnerability	6
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	3
Presence of Cultural heritage	3

Co-ordinates	.-8.133163, 157.639959	**Services available**	No services available
Title type	100-002-0001	**Site access**	No
Site area	170.13 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Ramata: 1.5-6 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Keru Rural Health Clinic: 7.3 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Forest
Current land use	Forest	**Other Site Hazards**	Very remote location

Overall Risk Ranking: **Moderate**

Tatama & Avavasa Islands

Site Identifier #: 46
Parcel Identifier: 123-001-0001

Seghe Hub

Site Description:

Tamata and Avavasa Islands are joined island sites on the north eastern side of New Georgia Island. Coconut plantations and secondary forest occupy the center of the island with coastal trees along the seashore. The northern end of the island is limestone rock with the white sandy beaches at the southern end. A coral reef extends along the northern side of the island. The island appears to have been subject to logging and harvesting of fruit and coconut crabs. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. The site is approximately 1-3m asl and is situated on the exterior edge of the Vangunu Lagoon. The site is unoccupied.

Site Location

Seashore

Seashore

Vegetation

Historic logging

Natural Hazard Risks	
Coastal Vulnerability	6
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	3
Proximity to Infrastructure	6
Presence of Cultural heritage	3

Co-ordinates	.-8.407408, 157.914215	**Services available**	No services available
Title type	123-001-0001	**Site access**	No
Site area	413 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 20 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Cheara Rural Health Clinic: 15 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Gharamana Island

Site Identifier #: 52
Parcel Identifier: 123-007-0002

Seghe Hub

Site Description:

Gharamana Island is an Island site on the south eastern side of New Georgia Island in the Vangunu Lagoon. There is a current coconut plantation on the island with planting of new coconut trees taking place. Inland is a secondary regrowth forest that is greater than 30 years of age. A shallow reef surrounds the island and there are also patches of white sandy beaches. The coral reef shows evidence of anthropogenic impacts and fish numbers appear to be very low due to overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. There are no people occupying the site however it is likely that the coconut plantation is managed by a nearby village. Fishermen fish in small canoes throughout the lagoon to sustain their families.

Site Location

Vegetation

Vegetation

Vegetation

Coconut plantation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	2
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	4
Proximity to Infrastructure	4
Presence of Cultural heritage	2

Co-ordinates	.-8.491144, 157.913994	**Services available**	No services available
Title type	123-007-0002	**Site access**	No
Site area	7.87 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 10.9 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Seghe Hospital: 10.9 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Mbukimbuki (West)

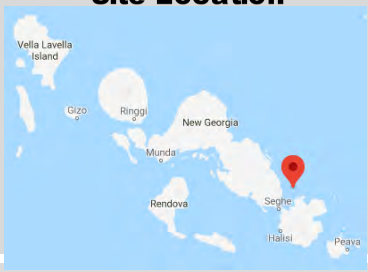
Site Identifier #: 50
Parcel Identifier: 123-003-0003

Seghe Hub

Site Description:

Mbukimbuki West is an island site on the south eastern side of New Georgia Island in the Vangunu Lagoon. The island is sheltered by surrounding land masses and the outer edge of the Vangunu Lagoon. The island has a distinction of both primary and secondary forest areas with a former coconut plantation in the center. There are areas of mangrove forests and a natural coastal swimming pool created by a shallow reef that also surrounds the island. The fish population is very low due to overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. There are no occupiers of the site, however locals were observed fishing around the island as is typical across the whole Lagoon.

Site Location



Seashore

Seashore

Vegetation

Vegetation

Natural Hazard Risks

Coastal Vulnerability	5
Sea Level Rise	6

Environmental Risks

Terrestrial biodiversity	6
Marine biodiversity	5

Social Risks

Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	2
Presence of Cultural heritage	2

Co-ordinates	.-8.483950, 157.949622	**Services available**	No services available
Title type	123-003-0003	**Site access**	No
Site area	20 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 14 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Cheara Rural Health Clinic: 13.5 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Mbukimbuki (East)

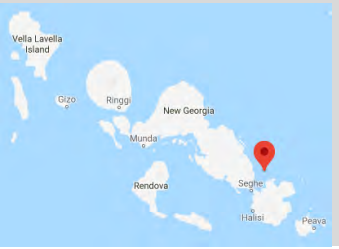
Site Identifier #: 51
Parcel Identifier: 123-003-0001

Seghe Hub

Site Description:

Mbukimbuki East is an island site on the south eastern side of New Georgia Island in the Vangunu Lagoon. The site has approximately 30 to 50 m of elevation across the island and is uplifted from coral limestone and covered in secondary forest regrowth from an old coconut plantation. A shallow reef is around the island and the fish population is very low due to overfishing. There is a number of houses and buildings at the eastern end of the island including jetties to wealthy private dwellings. Agreement to access these jetties would require occupier approval as they are built to access the dwellings only. There are no gardens noted on site. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO.

Site Location



Vegetation

Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	5
Social Risks	
Presence of People	5
Presence of Livelihood	3
Proximity to Infrastructure	4
Presence of Cultural heritage	3

Co-ordinates	.-8.486787, 157.960925	**Services available**	No services available
Title type	123-003-0001	**Site access**	Private Jetties
Site area	23 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 14.7 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Cheara Rural Health Clinic: 11.7 km	**Protected / Managed areas**	None
Current occupation of site	Dwellings (15 buildings)	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Karunohu Island

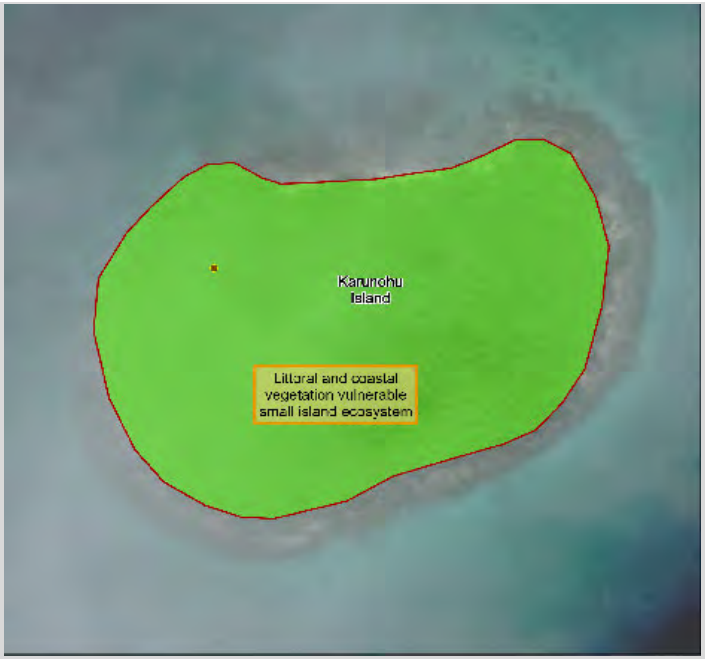
Site Identifier #: 54
Parcel Identifier: 123-005-0001

Seghe Hub

Site Description:

Karunohu Island is an island site on the south eastern side of New Georgia Island. It contains a coconut plantation island with secondary regrowth forest growth that's less than 15 years of age. There is a long white sandy beach forming around the island and coastal trees along the seashore. The island is surrounded by extended shallow reef flats with coral patches, sand and brown algae near the seashore. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. A change to ratings to include consideration of a single occupier (with no gardens observed for sustenance) will not significantly alter the rating of this site. Coconut plantations have been considered for their potential livelihood opportunity.

Site Location



Vegetation

Seashore

Seashore

Seashore

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	3
Proximity to Infrastructure	3
Presence of Cultural heritage	3

Co-ordinates	.-8.504404, 157.948821	**Services available**	No services available
Title type	123-005-0001	**Site access**	No
Site area	8 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 12 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Cheara Rural Health Clinic: 9.9 km	**Protected / Managed areas**	None
Current occupation of site	None - Potentially abandoned dwelling	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Veuru

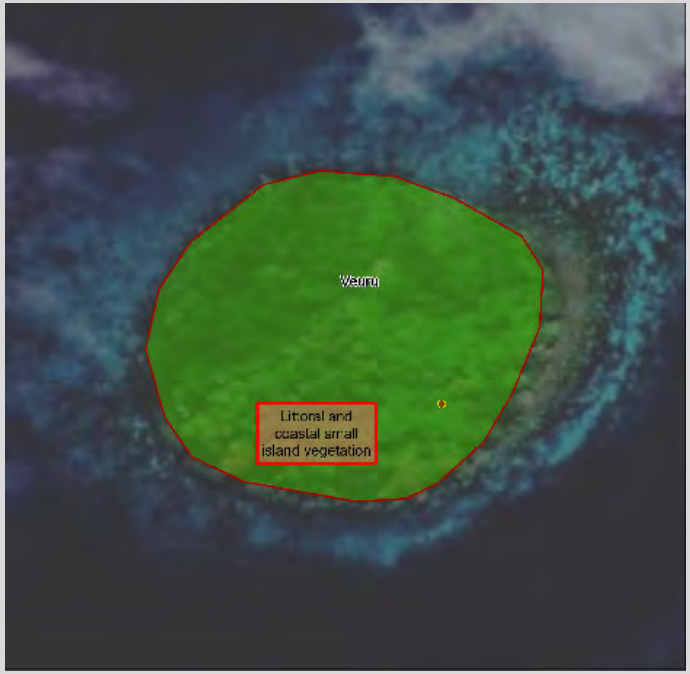
Site Identifier #: 53
Parcel Identifier: 123-003-0002

Seghe Hub

Site Description:

Veuru is an island site on the south eastern side of New Georgia Island in the Vangunu Lagoon. The site is Vegetation on the island consists of primary forest of more than 50 years of age and patches of mangrove forest. There are no coconut trees on the island. The island is surrounded by a fringing reef that appears to be providing a healthy habitat for reef fish. The island and surrounding reef appear to have minimal disturbance and a notable level of bird life. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. No people occupy or use this site currently.

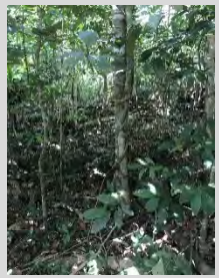
Site Location



Vegetation

Vegetation

Vegetation



Vegetation

Natural Hazard Risks	
Coastal Vulnerability	5
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	9
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	1
Proximity to Infrastructure	3
Presence of Cultural heritage	2

Co-ordinates	.-8.497108, 157.969022	**Services available**	No services available
Title type	123-003-0002	**Site access**	No
Site area	2 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 14.5 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Cheara Rural Health Clinic: 8.5 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Forest	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Mahoro Island

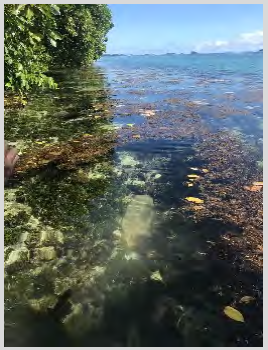
Site Identifier #: 55
Parcel Identifier: 144-008-0001

Seghe Hub

Site Description:

Mahoro Island is an island site off the northern coast of Vangunu Island in the Vangunu Lagoon. The island is vegetated with a coconut plantation and secondary forest regrowth of between 30 and 50 years of age. There are mangroves and coastal trees alone the seashore and some areas have been cleared for gardening. The island is surrounded by a fringing shallow reef and the massive coral has been heavily harvested for wharfs and shoreline protection. There are patches of sea grass and brown and green algae. The fish population is very small due to coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. Two areas on the south of the island are occupied by families across multiple dwellings and there are cleared areas for use by those families. Occupiers access their sites via the wharf at the south end of the site.

Site Location



Seashore

Seashore

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	5
Social Risks	
Presence of People	4
Presence of Livelihood	6
Proximity to Infrastructure	4
Presence of Cultural heritage	2

Co-ordinates	.-8.511799, 158.023356	**Services available**	Mobile telecoms and data available
Title type	144-008-0001	**Site access**	Private Jetties
Site area	20.5 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 23 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Cheara Rural Health Clinic: 4 km	**Protected / Managed areas**	None
Current occupation of site	Five occupied dwellings	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Low**

Mbareho Island

Site Identifier #: 59
Parcel Identifier: 144-001-0001

Seghe Hub

Site Description:

Mbareho is an island site situated on the eastern side of Vangunu Island, inside the Marovo Lagoon. The island is an old coconut plantation with 50-year-old secondary forest regrowth and mangrove forests along some coastal areas. The island is surrounded by fringing coral which appears to be healthy but over fished. Stone walls and an old garden are present on site and there are cattle grazing, which indicate that the site may be occupied on a part time basis, as no dwellings were recorded. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO.

Site Location

Vegetation

Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	4
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	6
Social Risks	
Presence of People	1
Presence of Livelihood	2
Proximity to Infrastructure	6
Presence of Cultural heritage	3

Co-ordinates	.-8.599698, 158.130829	**Services available**	No services available
Title type	144-001-0001	**Site access**	No
Site area	22 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 38.7 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Batuna Rural Health Clinic: 4.5 km	**Protected / Managed areas**	None
Current occupation of site	None	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, old gardens, cattle on site	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Tinge & Karungarao Island

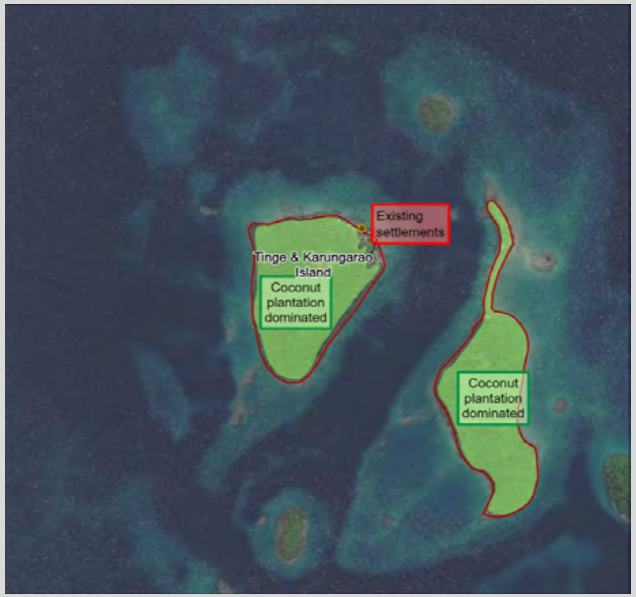
Site Identifier #: 60
Parcel Identifier: 144-003-0001

Seghe Hub

Site Description:

Tinge and Karungarao is an island site situated on the eastern side of Vangunu Island inside the Vangunu Lagoon. The elevation across the island is between 30 and 40 m above sea level. The island is covered by mangrove forests, active coconut plantations, fruit trees, food gardens and dwellings. The island is surrounded by a shallow reef with evidence of coral harvesting and previous giant clams. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. Western Province Preservation of Cultural Ordinance 1989 (under the Provincial Government Act 1981 noted that there were skull deposits on Tinge Island however no further details have been uncovered. As such a higher rating for Cultural Heritage has been given in the likelihood that some cultural significance may be afforded to the site. The island contains 10 residential dwellings. Occupiers include extended family of the owner how are sustained by gardens and timber milling. Occupiers were noted, during interviews to be protective of the giant clams that have been found around the site. Access to the site includes a jetty near the dwellings.

Site Location



Residential dwellings

Residential dwellings

Coconut plantation

Coconut plantation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	4
Social Risks	
Presence of People	4
Presence of Livelihood	7
Proximity to Infrastructure	7
Presence of Cultural heritage	5

Co-ordinates	.-8.639095, 158.137374	**Services available**	Mobile telecoms and data available
Title type	144-003-0001	**Site access**	Jetty
Site area	37 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites, Skull deposits reported on Tinge Tinge in 1989
Distance to nearest Airport/Port	Seghe: 43 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Batuna Rural Health Clinic: 9 km	**Protected / Managed areas**	None
Current occupation of site	Small village (10 dwellings)	**Adjacent Land use**	Ocean
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Lalauru Point incl Islands

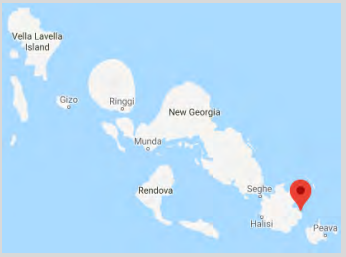
Site Identifier #: 61
Parcel Identifier: 144-004-0003

Seghe Hub

Site Description:

Lalauru Point is a coastal site situated on the south eastern side of Vangunu Island tucked into the lagoon and sheltered by surrounding island masses. Along the seashore are mangroves and coastal trees with an active coconut plantation and secondary forest regrowth area further inland. There is a shallow reef flat along the coast with evidence of anthropogenic impact and very low fish numbers due to overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 and as such is unlikely to have UXO. There is evidence of logging activities taking place near the site within the last ten years. The site contains two abandoned dwellings and clear space where gardens once existed. Occupation of the site needs to be reconfirmed. As such the site has been measured as if un-occupied. A change to ratings to include consideration of two dwellings will not significantly alter the rating of this site. Coconut plantations have been considered for their potential livelihood opportunity. As the gardens are not active these have not been included in the rating for livelihood.

Site Location



Abandoned dwelling

Seashore

Coconut plantation

Mangroves

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	5
Marine biodiversity	5
Social Risks	
Presence of People	1
Presence of Livelihood	5
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.666115, 158.099372	**Services available**	No services available
Title type	144-004-0003	**Site access**	No
Site area	96.61 ha	**Sites of Cultural Heritage/Tabu**	Tabu sites not discovered
Distance to nearest Airport/Port	Seghe: 46.6 km	**Potential for UXO**	Unlikely to encounter UXO
Distance to nearest Hospital/Clinic	Batuna Rural Health Clinic: 12.2 km	**Protected / Managed areas**	None
Current occupation of site	None - Two abandoned dwellings	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 1

Site Identifier #: 62
Parcel Identifier: 144-006-0001

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with an old coconut plantation and secondary regrowth forest further inland. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Site observations included coral gardening to the north of site. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. The site is occupied by a family that associates with the nearby Billy Village (on an island to the east). Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 2km walk south from the site.

Site Location

Vegetation

Vegetation

Vegetation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.676065, 158.193626	**Services available**	Limited mobile telecoms available
Title type	144-006-0001	**Site access**	Tracks
Site area	6.4 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites, WW2 Relics
Distance to nearest Airport/Port	Seghe: 49.5 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 12 km	**Protected / Managed areas**	None
Current occupation of site	Five occupied dwellings	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 2 & 3

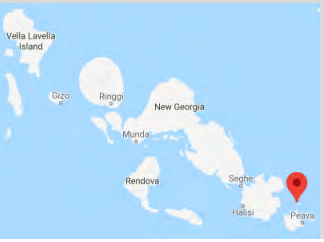
Site Identifier #: 63
Parcel Identifier: 144-006-0002

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with an old coconut plantation and secondary regrowth forest further inland. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Site observations included coral gardening to the north of site. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. The site is occupied by a family that associates with the nearby Billy Village (on an island to the east). Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 2km walk south from the site. This site was previously in two titles that have since been combined to create a larger site in February 2020.

Site Location



Vegetation

Vegetation

Vegetation

Coconut Plantation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.680390, 158.196075	**Services available**	Limited mobile telecoms available
Title type	144-006-0002	**Site access**	Tracks
Site area	13.27 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites, WW2 Relics
Distance to nearest Airport/Port	Seghe: 50.3 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 12 km	**Protected / Managed areas**	None
Current occupation of site	10 dwellings of owners and families	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Timbara (Mbunikalo) 4

Site Identifier #: 64
Parcel Identifier: 144-006-0003

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with an old coconut plantation and secondary regrowth forest further inland. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 2km walk south from the site. Currently a house being built on an approximately 800 square meter cleared area.

Site Location

Coconut plantation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	2
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.682206, 158.198162	**Services available**	Limited mobile telecoms available
Title type	144-006-0003	**Site access**	Yes
Site area	5.08 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 50.8 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 12 km	**Protected / Managed areas**	None
Current occupation of site	Small family site (5 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 5

Site Identifier #: 65
Parcel Identifier: 144-006-0004

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with an old coconut plantation and secondary regrowth forest further inland. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 1km walk south from the site.

Site Location

Coconut plantation

Coconut plantation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	4
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.682855, 158.198677	**Services available**	Limited mobile telecoms available
Title type	144-006-0004	**Site access**	Yes
Site area	5.8 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 51 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 12 km	**Protected / Managed areas**	None
Current occupation of site	Small family site (5 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 6

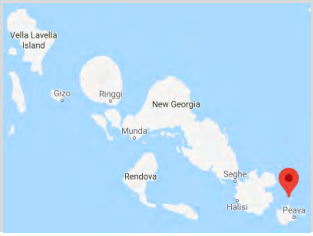
Site Identifier #: 66
Parcel Identifier: 144-006-0005

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with a working coconut plantation on this site. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 1 km walk south from the site.

Site Location



Coconut plantation

Coconut plantation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.684294, 158.199432	**Services available**	Limited mobile telecoms available
Title type	144-006-0005	**Site access**	Yes
Site area	5.8 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 51.1 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 12 km	**Protected / Managed areas**	None
Current occupation of site	Small family site (5 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **Moderate**

Timbara (Mbunikalo) 7

Site Identifier #: 67
Parcel Identifier: 144-006-0006

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with a working coconut plantation on this site. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. Occupiers have built a new family house and maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 1 km walk south from the site. A total of three houses are present on the site.

Site Location

Dwelling under construction

Coconut plantation

Coconut plantation

Vegetation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	5
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.686127, 158.200187	**Services available**	Limited mobile telecoms available
Title type	144-006-0006	**Site access**	Tracks
Site area	5.84 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 51.2 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 11 km	**Protected / Managed areas**	None
Current occupation of site	Three occupied dwellings	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 8

Site Identifier #: 68
Parcel Identifier: 144-006-0007

Seghe Hub

Site Description:

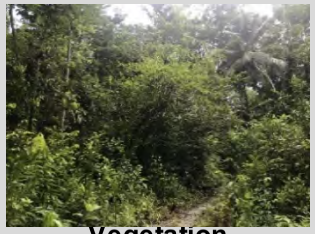
Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with 15-year-old secondary growth present across the site. There is an outcrop of coral limestone approximately 50 m in height on the western portion of the site which indicates seismic uplift and there is a cliff in the center of this site. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 1 km walk south from the site. A total of five houses are present on the site.

Site Location

Coral limestone outcrop

Coral limestone outcrop

Vegetation



Vegetation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.687618, 158.200854	**Services available**	Limited mobile telecoms available
Title type	144-006-0007	**Site access**	Tracks
Site area	5.17 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 51.3 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 11 km	**Protected / Managed areas**	None
Current occupation of site	Small family site (5 buildings)	**Adjacent Land use**	Coconut plantation, forest
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 9

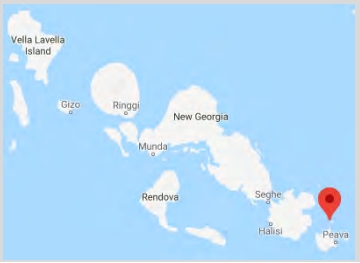
Site Identifier #: 69
Parcel Identifier: 144-006-0008

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore of the peninsular with a working coconut plantation and fencing for livestock on this site. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. There is a cliff in the center of this site. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. A new church has been built by the block owner and a total of four permanent houses are built on the site. Occupiers maintain gardens and fish for sustenance and selling at the local Mbunikalo Market approx. 1 km walk south from the site.

Site Location



Coconut plantation

Coconut plantation

Coral limestone outcrop

Coconut plantation

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	6
Environmental Risks	
Terrestrial biodiversity	3
Marine biodiversity	4
Social Risks	
Presence of People	5
Presence of Livelihood	6
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.689930, 158.201446	**Services available**	Limited mobile telecoms available
Title type	144-006-0008	**Site access**	Tracks
Site area	6.41 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 51.6 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 11 km	**Protected / Managed areas**	None
Current occupation of site	Four occupied dwellings	**Adjacent Land use**	Coconut plantation, forest, residential
Current land use	Coconut plantation, forest, residential, gardens	**Other Site Hazards**	None

Overall Risk Ranking: **High**

Timbara (Mbunikalo) 10

Site Identifier #: 70
Parcel Identifier: 144-006-0009

Seghe Hub

Site Description:

Mbunikalo is a peninsular off the northern tip of Nggatokae Island where a group of adjacent sites have been identified (Timbara 1-10). Mangrove forests cover the foreshore and there is an active coconut plantation. A narrow (<10 m wide) shallow reef runs parallel with the foreshore and shows evidence of coral harvesting and overfishing. Research suggests that the area is unlikely to have been involved in conflict during WW2 however there is a WW2 plane in the area so UXO could potentially be present. There is a total of ten permanent dwellings and a church on the site. The neighboring site accommodates a ferry wharf and market stall building which are used by villagers to sell goods to passing ferries.

Site Location

Primary forest

Ex-coconut plantation

WWII Gun

Natural Hazard Risks	
Coastal Vulnerability	4
Sea Level Rise	7
Environmental Risks	
Terrestrial biodiversity	1
Marine biodiversity	4
Social Risks	
Presence of People	6
Presence of Livelihood	7
Proximity to Infrastructure	7
Presence of Cultural heritage	3

Co-ordinates	.-8.692256, 158.202654	**Services available**	Limited mobile telecoms available
Title type	144-006-0009	**Site access**	Tracks
Site area	5.4 ha	**Sites of Cultural Heritage/Tabu**	Potential tabu sites
Distance to nearest Airport/Port	Seghe: 52 km	**Potential for UXO**	Potential UXO presence
Distance to nearest Hospital/Clinic	Penjuku Rural Health Clinic: 11 km	**Protected / Managed areas**	None
Current occupation of site	Ten occupied dwellings and a church	**Adjacent Land use**	Village and ferry wharf
Current land use	Coconut plantation, forest, residential, gardens church	**Other Site Hazards**	None

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Contact

International Finance Corporation
1st Floor, Heritage Park
Commercial Building
Mendana Avenue
Honiara, Solomon Islands
+ (677) 21444

International Finance Corporation
Level 18, CML Building
14 Martin Place
Sydney, NSW 2000
Tel: (+61) 2 9235 6519

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