Disaster Risk Reduction in the Solomon Islands

Status Report

Asian Disaster Preparedness Center

UNDRR
UN Office for Disaster Risk Reduction

Disaster Risk Reduction in the Solomon Islands

Status Report

Status Update 2023

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About this report

The disaster risk reduction status report provides a snapshot of the state of disaster risk reduction in the Solomon Islands under four priorities of the Sendai Framework for Disaster Risk Reduction 2015-2030. It also highlights progress and challenges associated with ensuring coherence with key global frameworks. It also provides recommendations for strengthening disaster risk management governance by government institutions and stakeholders at national and local levels.

This report was prepared by the United Nations Office for Disaster Risk Reduction (UNDRR) with support from the Asian Disaster Preparedness Center (ADPC) and Tonkin + Taylor through country consultations and a desk review of key documents, including legal instruments and disaster risk reduction frameworks, policies, strategies, and plans.

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This report serves as a reference document for implementing and monitoring the Sendai Framework. The findings, interpretations, and conclusions expressed in this document do not necessarily reflect the views of UNDRR or the United Nations Secretariat, partners, and governments. They are based on the inputs received during consultative meetings, individual interviews, and the literature reviews conducted by the research team. The presentation of the material in this report concerning the legal status of any country or territory or its authorities or concerning the delimitations of its frontiers or boundaries, as well as the text and the tables, is intended solely for statistical or analytical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. While every effort has been made to ensure the accuracy of the information, the document remains open for any corrections in facts, figures, and visuals.

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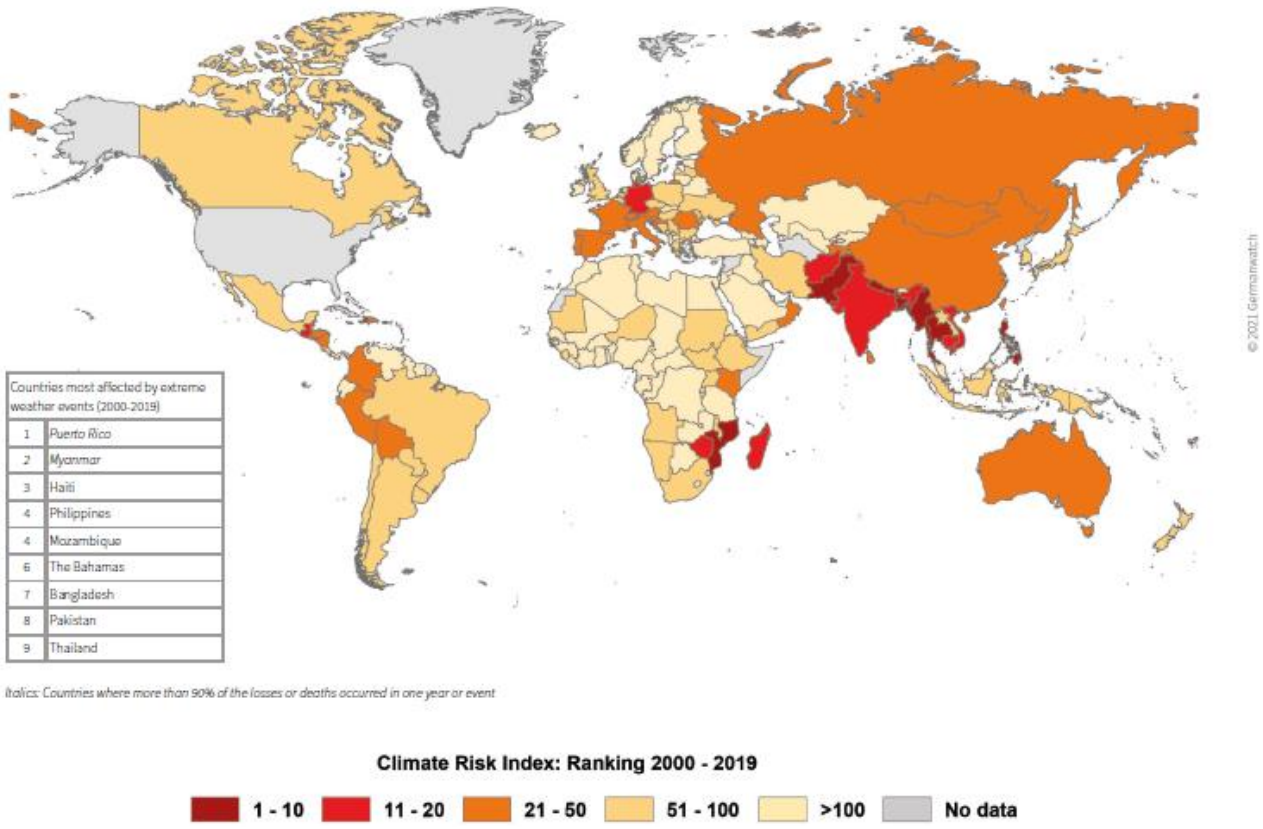

(GermanWatch, 2021)

POPULATION 2020	
Total population	686,878
Urban population	169,453 (24.7%)
Population density per km^2	25
ECONOMIC INDICATORS	
Gross Domestic Product in current $US	1.55 billion
GDP per capita ($US)	2,250.6
GDP growth (annual %)	-4.3%
HUMAN DEVELOPMENT	
Human Development Index (HDI)	0.567
HDI Rank	151
Income Level Category	Lower-middle income

[World Bank, 2020]

Climate Risk Index

–

Rank 71, Score of 73.0*

INFORM Risk Index

–

Rank 61 / Medium**

World Risk Index

–

Rank 2 / Very high***

* Climate Risk Index 2000-2019 analyses how countries have been affected by weather-related losses between 2000-2019. (GermanWatch, 2021)

** INFORM risk index is a global tool that measures the risk of humanitarian crises and disasters based on three dimensions: hazard & exposure, vulnerability, and lack of coping capacity. (INFORM, 2021)

***World Risk Index 2021 assesses the disaster risk for 181 countries based on Exposure, Vulnerability, Susceptibility, Lack of coping capacities, and Lack of adaptive capacities. (Bündnis Entwicklung Hilft, 2021)

1. Introduction

Solomon Islands is located in the south-west Pacific Ocean, northeast of Australia and southwest of Hawaii. The country comprises of an archipelago of 994 islands (including major islands, atolls, and reefs) with a total land area of 28,896 km^2 and over 4,000 km of coastline, spreading over 1.34 km of the ocean. There are six major islands: Choiseul, Guadalcanal, Malaita, Makira, New Georgia and Santa Isabel. The islands vary considerably, from tiny atolls to high mountainous and heavily dense rain forested islands, with the highest point of 2,310 m at Mount Popomanaseu on the island of Guadalcanal. Flat land is restricted to the coasts and is of limited extent, except in the north-central part of Guadalcanal, which is referred to as the Guadalcanal Plains. Approximately 80-85% of the total land area is covered by natural forest. [MFAT, 2022] [United Nations, n.d.; Solomon Islands Government, 2020] [FAO, 2016]

The Solomon Islands have a tropical monsoon climate with a relatively high and uniform temperature, high humidity, and abundant rainfall. Temperatures fluctuate between 25ºC and 32ºC during the day and some degrees less during the night. The mean annual rainfall is estimated at 3000 mm to 3500 mm, ranging from 1500 mm to 5000 mm and with a total exceeding 8000 mm on high peaks. This variation depends on topography, latitude, and orientation of the islands to prevailing winds. The dry season is from April to November and the north-west monsoon season from November to April, with a tendency of reduced rainfall during February, when the equatorial trough is furthest south.

The economy depends heavily on subsistence farming, fishing, and forestry, which together account for around 40% of Gross Domestic Product (GDP) and provide employment for the majority of population. Forest use and management are the central drivers of the economy, with logging contributing 17% to GDP (with 70% of exports), followed by fisheries (11%), agriculture (8%) and minerals (7%). Tourism plays an important role, accounting for 10.5% of GDP, employing 10.8% of the population, and generating a revenue of USD 132.8 million. In 2019, 28,907 people arrived by air in the country for leisure, cultural activities, ecotourism, and water sports.

The economy was hit hard by the COVID-19 pandemic as output from logging and fisheries fell, large construction projects were halted, and tourism was affected by the lockdowns and border closures. GDP contracted by 4.3% in 2020 and is forecasted to contract by 3% in 2022 due to the pandemic-related restrictions on mobility and transportation. The Solomon Islands is in its transition phase of graduating from the Least Developing Countries (LDC) category and is scheduled to graduate by 2024. In preparing for the graduation, the country has concluded a number of regional and bilateral trade agreements within the Pacific, with the European and the United Kingdom of Great Britain.

Solomon island has various unique species of plants, animals, and marine life. The country has around 4,500 species of plants, out of which 3,200 are endemic. Out of 223 species of birds, 82% are endemic. Marine biodiversity is considered rich, with 30 species of mangrove, 10 species of seagrass, 494 species of coral, 1,159 species of reef fish, 10 species of whales and dolphins, 10 species of sharks, and five species of turtles. The count of mammals is higher than in other Pacific Island regions. [Albert, Tibbetts, & Udy, 2016]

1.1 Demographic Characteristics

According to the World Bank data, the population of Solomon Islands is 686,878 (as of 2020) with 337,616 females and 349,262 males. Majority (70% to 80%) of people live a subsistence form of life in rural areas: in villages, settlements, and islands away from the main urban locations. The urban population of the country was 169,453 (as of 2020), which is an increase of 4.49% from 2019. Solomon Islanders are migrating to urban centres at a rapid rate as they lack education and employment opportunities in rural areas. According to UN-Habitat, Solomon Islands is considered to be one of the world's fastest urbanising countries. Population of Honiara, the capital city and major area of economic activity, dramatically increased after the country's independence in 1978 with populations more than doubling within a decade between 1976 and 1986.

Solomon Islands' population is predominantly young with largest number of people from 0-5 years age group, while the lowest number is from 80 years and over age group. It is estimated that more than 60,000 people have some form of disability in the country. [The World Bank, 2022] [MECDM, 2021]

The population is made up of 80% Melanesians, 5% Polynesians, and 5% Micronesians. Nearly 95% of the population are Christians (with 25% Anglican, 19% Roman Catholic, 17% South Seas Evangelical, 11% United Church (Methodist), and 10% Seventh Day Adventist churches), and the remaining 5% is made up of Baha'i faith, Jehovah's Witness, Assemblies of God and Baptist religions. A total of 95 languages are spoken in the country including 90 Melanesian, four Polynesian and the Kiribati language [Solomon Islands Government, 2020] [MECDM, 2021]

As of 2018, the labour force participation rate was around 71% (as per the ILO), and it was increased to 85.31% in 2020 (as per the World Bank Data). The participation rate among females is 82.1% and among males is 85.5%. The female labour force participation rate remained almost same since 1990. Around 70% of boys and more than 71% of the girls complete the lower secondary school (as of 2019). [The World Bank, 2022]

Based on the data collected in 2008, 63.5% of ever-partnered women disclosed that they experienced physical and/or sexual violence by intimate partner during lifetrime, and 41.8% of women during the last twelve months. [UNFPA, 2019]

1.2 Economic Impact of Disasters

Following the heavy rainfall (associated with Tropical Cyclone Ita) in 2014, Honiara, Guadalcanal, Isabel, Malaita, and Makira-Ulawa were flooded, causing a significant damage to the economy (USD 108.9 million). It reduced GDP by 5.1%, damaged major infrastructure, fully destroyed 675 houses, and closed the Gold Ridge Mine. Small shops and market vendors across the affected regions faced disruptions to supply chain, availability of goods, and the purchasing power. Likewise, the 2012 Tropical Cyclone Evan caused extensive damages to the accommodation properties and cultural heritage sites, which were valued at USD 13.2 million. Nearly 980 jobs were lost in the tourism sector due to the impacts of the Tropical Cyclone Evan. [UNCDF, 2020] [Government of Solomon Islands, 2014]

The Solomon Islands is projected to incur average annual losses of USD 20.5 million due to earthquakes or tropical cyclones (over the long-term). In the next 50 years, the Solomon Islands has a 50% chance of enduring single event loss of more than USD 240 million, and a 10% of probability to experience a loss exceeding USD 527 million. Logging, fishing, and gold mining can be impacted by a disaster, which reduces the limited sources of government revenue. [PCRAFI, 2015] [Government of Solomon Islands, 2014]

The Solomon Islands has restricted sources of domestic revenue and thus limited budget flexibility. In 2013, domestic revenue grew by 8% (SBD, Solomon Islands Dollar, 202 million or USD28 million), which reflects growth in the national economy, ongoing improvement in revenue administration, and compliance efforts [Solomon Islands Government 2013].

1.3 Social Impact of Disasters

Around 89% of the people in the Solomon Islands grow their own food, and about 60% of the people are involved in fishing activities (for their own consumption and selling). People living from subsistence livelihoods suffered the most due to reduced income and food sources following disaster events. Following the flood event in 2014, the impacts on agriculture sector affected food availability and cost. Most women engaged in agriculture faced disproportionate effects on earning capacities. The floods affected approximately 52,000 people and internally displaced around 10,000 people. [PCRAFI, 2015] [Government of Solomon Islands, 2014]

Following the earthquake in 2016, many households left their damaged houses to stay in the bush. The seasonal rainfall made their living even worst. People living from subsistence livelihoods

suffered the most due to reduced income and food sources following disaster events. Vulnerable groups, such as the elderly, children, and people with disabilities, were hit the hardest from the flooding and faced challenges in recovery. Saltwater intrusion and soil erosion nearby agriculture lands are reducing the availability of arable land. Around 20% of the people with disabilities in Solomon Islands are disproportionately affected by the impacts of cyclone, flooding, and sea level rise. The impacts of COVID-19 has reduced the remittance from international sources [PCRAFI, 2015] [Government of Solomon Islands, 2014] [UNICEF, 2021]

2. Disaster Risk Profile

2.1 Governance and Institutional Mechanism

Solomon Islands Ministry of Environment Climate Change Disaster Management and Meteorology (MECDM) is responsible for sustainable environmental management, climate change adaptation and mitigation, disaster risk management and meteorological services. MECDM has four divisions (Climate Change Division, Corporate Service Division, Environment and Conservation Division, Meteorological Services Division and National Disaster Management Office). [MECDM, 2022] [IFRC, 2022]

National Disaster Council Act 1989 is the legal mechanism governing disaster risk management. The NDC Act establishes the National Disaster Council to provide advice to the government through the Minister responsible for disasters on the issues related to disasters and provide oversight in implementation of disaster risk management activities for reducing disaster risk, preparedness for, response to, and recovery from disasters. The National Disaster Management Office (NDMO) also establish under NDC Act 1989 is responsible for implementation of National Disaster Plan and other disaster support plans providing timely and accurate information to assist in decision making of the NDC and Cabinet for resourcing and direction for dealing with disaster related issues. The NDMO provides the secretary role to the NDC and hosts the National Emergency Operations Centre (NEOC) which is responsible for the implementation of coordination on the whole of government management of disaster operations for the National Disaster Operations Committee. The NDMO has four units, namely Operations Unit (responsible for disseminating warnings, communication, coordination of humanitarian response), Corporate Service Unit, Programme Unit (preparing awareness materials, conducting disaster risk reduction awareness programmes), and Logistics Unit (managing emergency resources).The current organisation structure of the NDMO is set to ensure that functions of the NEOC is immediately capacitated on its activation while in peace time supports the functions of NDMO as provided for under the NDC Act 1989 and elaborated under the NDM Plan 2018. [MECDM, 2022] [IFRC, 2022]

National Emergency Operation Centre (NEOC) is a multi-agency operation hosted and managed by the NDMO is responsible for preparedness and response arrangements and coordinates the response activities alongside provincial and local representatives. National Disaster Operation Committee (N-DOC) chaired by Director NDMO is responsible for the activation of the NEOC,managing the coordination of disaster events and providing support to provincial and local level. [MECDM, 2022] [IFRC, 2022]

Recovery Coordination Committee (RCC) is established under Section 43 of Part 2. It has both a policy and preparedness function in non-disaster times and recovery operations function following a disaster. It is responsible to the NDC. Social, economic/livelihood, and infrastructure committees are established under the RCC. These Committees are set to follow the organisational structure of the Ministry of Development Planning and Aid Coordination (MDPAC) which is responsible for coordinating the recovery and rehabilitation function. (MECDM, 2022; IFRC, 2022)

While NDMO is the key institution for managing disaster risk management activities, Provincial Disaster Committees (PDCs) play a key role. They are chaired by the Provincial Secretary and operate through sub-committees mirroring the national structure. PDCs are responsible for overseeing and coordinating disaster response operations of the Provincial Disaster Operation Committee (P-DOC) in the province and providing advice to Provincial Executives. P-DOC has the similar responsibilities as N-DOC but at the provincial level. Local level (ward) and village level committees are established to operate alongside the provincial organisations. These committees are responsible for managing disaster events with PDCs, who take directions of N-DOC. [MECDM, 2022] [IFRC, 2022]

Climate Change Division (CCD) under the MECDM is responsible for monitoring vulnerabilities to the impacts of climate change, mobilising resources for adaptation and mitigation initiatives, and other activities. The mission statement of CCD is to “enhance adaptation, disaster risk reduction and mitigation capacity throughout the Solomon Islands that contributes to increased resilience and

achievement of sustainable development goals". [MECDM, Climate Change Division, 2022]

The Solomon Islands Meteorological Service Division (SIMS) is a National Meteorological and Hydrological Service which provides multi-hazard early warning and climate services. It is responsible for providing meteorological information to the government, private sector and public.

Partners, Red Cross, non-governmental organisations (NGOs), and civil society agencies usually undertake disaster risk management activities, including the provision of relief and recovery support during and after a disaster event. Multilateral partners including Asian Development Bank (ADB), European Union, the International Monetary Fund (IMF), USAID, and the World Bank Group; bilateral partners such as Australia, Japan, New Zealand, the People's Republic of China; and various agencies of the United Nations provide development assistance.

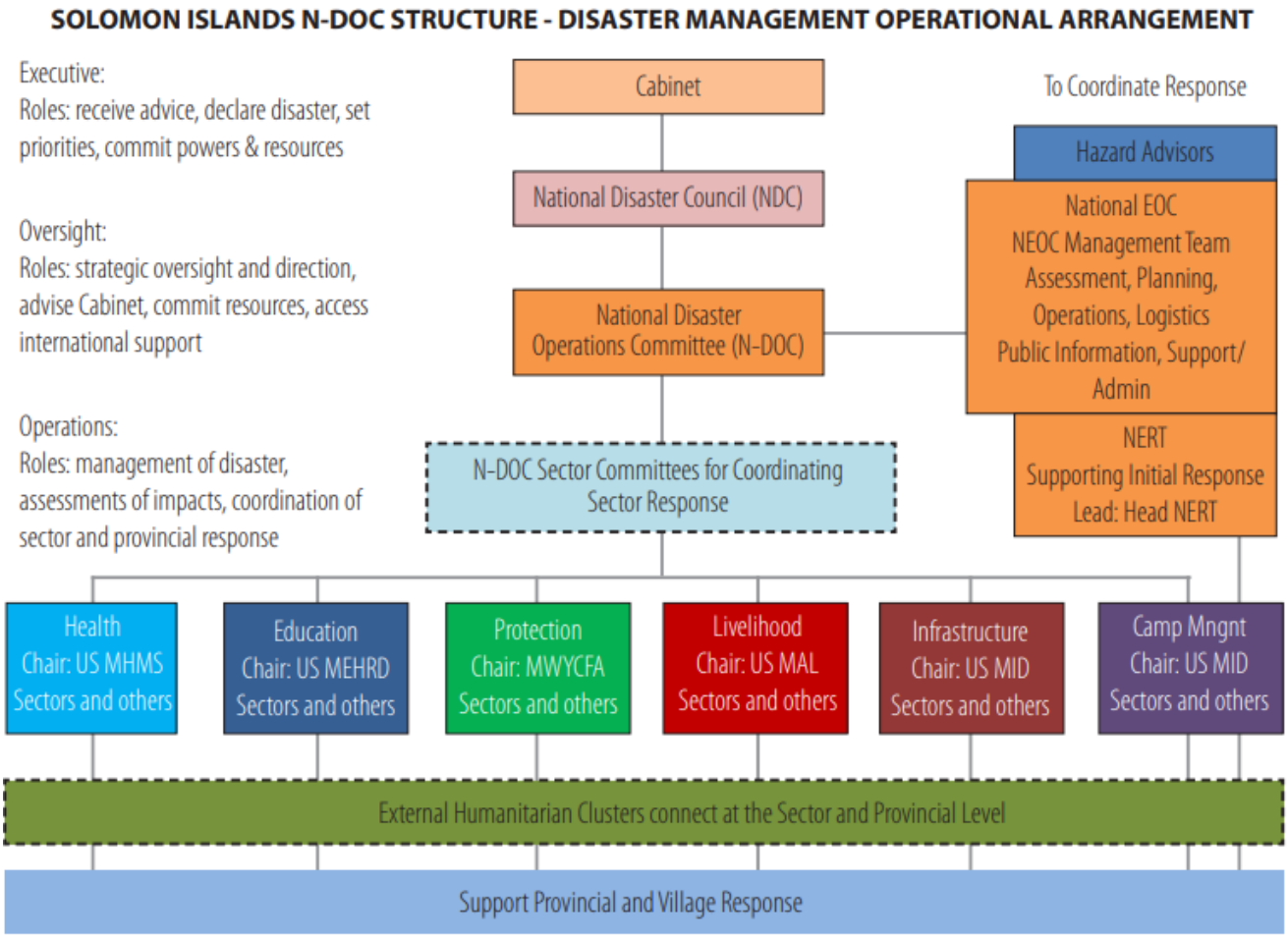

Figure 1: Solomon Islands Disaster Management Structure [NDMP,2018]

National Disaster Council Act was published in 1989 to support in establishing the National Disaster Council to deal with disasters. The Act was supplemented by National Disaster Management Plan (NDMP) 2018 which was developed to provide a comprehensive arrangement for disaster management.

Legislation/Policy	Scope	Purpose
National Disaster Council Act 1989	National	Supports in the creation of the National Disaster Council and the National Disaster Management Office

Legislation/Policy	Scope	Purpose
National Disaster Management Plan 2018	National, local	Provides comprehensive arrangements for disaster management, with an emphasis on a whole-of-government, national, provincial and local level approach to disaster planning, preparedness, response and recovery
Implementation and Monitoring Plan for the National Disaster Management Plan 2018	National, local	Supports effective implementation of Solomon Islands' National Disaster Management Plan 2018. It is developed to improve governance, collaboration accountability; promote coordinated planning and monitoring of disaster management sector priorities; and support collaborative action to progress priorities
Corporate Plan 2015-2017	National, local	Promotes the MECDM as a "safeguards" ministry to enable sustainable socio-economic development in the Solomon Islands
National Development Strategy 2016-2035	National, local	Provides a longer-term framework for planning that lays the foundations for recovery and long-term sustainable development.
National Climate Change Policy 2012-2017	National, local	Promotes to improve the adaptation, disaster risk reduction and mitigation capacity throughout the Solomon Islands that contributes to increased resilience and achievement of sustainable development goals.

Table 1. National disaster and climate risk reduction policies, plans and legislation in Solomon Islands

2.2 Hazard and Exposure

Solomon Islands is considered as one of the riskiest countries (second riskiest as per the WorldRiskIndex) in the world based on its high exposure to natural hazards and limited coping capacity. The geographical location makes it prone to different types of natural hazards. The islands are mainly volcanic and consist of many low-lying coral atoll islands. It is closer to the Inter Tropical Convergence Zone, making it prone to tropical cyclones, and is also part of the so-called 'Pacific Ring of Fire' or 'Volcanic Belt'. Between 1940-2020, Solomon Islands have experienced 36 devastating disasters as shown in the following figure [EM-DAT, 2022] [Aleksandrova, et al., 2021].

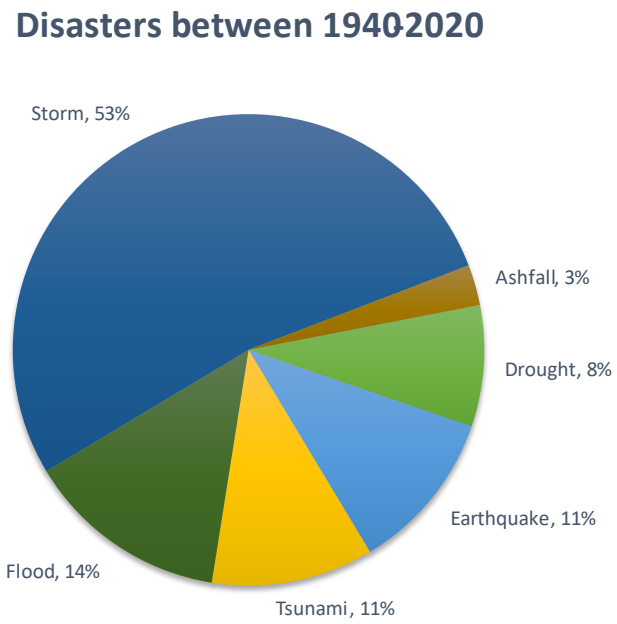

Figure 2: Number of disasters in Solomon Islands between 1940 and 2020 [EM-DAT, 2022]

The Solomon Islands are located on the boundary between the Australian and Pacific Tectonic Plates (one of the most seismically active zones on the globe). In past earthquake events, (such as that of December 2016), thousands of people have been affected, with hundreds of homes and buildings damaged or destroyed. The Solomon Islands have a 40% chance in the next 50 years of experiencing, at least once very strong to severe ground shaking, which are expected to cause moderate to heavy damage to well-engineered buildings and even more severe damage to structures built with less stringent criteria. [World vision, 2018] [T+T, 2020] [Heidarzadeh, Harada, Satake, Ishibe, & Gusman, 2016] [ThinkHazard, 2022]

As the Solomon Islands are less than 20 km away from the subduction zone, tsunami have been, and will continue to be, a significant threat to the islands. Many settlements and critical infrastructure (ports and airports) are located near the coast, with high exposure and risk to tsunami inundation. Between 1926 and 2016, there were a total of 22 tsunami events, and at least four events had wave heights of above 3 m. Most tsunamis were caused by earthquakes, and a few were caused by landslides (on a volcano). In 2007, a MW (moment magnitude) 8.1 megathrust earthquake generated a tsunami with a wave height of 12 m in some locations. The islands have a 40% chance of facing a potentially damaging tsunami in the next 50 years. [T+T, 2020] [ThinkHazard, 2022]

Records and observations suggested that some parts of the country are already experiencing more frequent and intensified tropical cyclones, and this will have a devastating impact on the coastal and atoll dwellers on the islands like Ontong Java, Sikaiana, the artificial islands in the northern region (Lau) of Malaita, Tikopia, Rennel and Bellona and Islands in Temotu, Makira and Guadalcanal Provinces. Tropical cyclones that result in flooding and wind damage have an average frequency of between one and two events per year. In 2020, Tropical Cyclone Harold caused significant destructions to agricultural crops, homes, buildings, and roads across Honiara, Western Province, Guadalcanal, Makire, Rennell and Bellona, and killed 27 people. Many models predict a decline in the number of tropical cyclones in the south-west Pacific Ocean. [DAFT, 2020] [T+T, 2020] [PCCS, 2014]

Landslides are often considered as secondary disasters triggered by primary disaster events such as earthquakes, floods, or typhoons. In 2020, a landslide due to heavy rain have killed two people, affected eight people, and caused disruption to transportation (damaged roads and bridges) in a village in West Guadalcanal. (RNZ, 2020)

Droughts have impacted Solomon Islands several times in the past. They are usually associated

with the El Niño phenomenon. In 1997, many locations in Solomon Islands have received less than average rainfall in the month of June. Water shortages, effects on crops, and essential services were impacted by 1991 drought. The drought during 2015 El Niño caused disruptions to food and water supplies in several parts of the country. [UNDHA, 1997] [Australian Government, 2022]

Climate change is a significant challenge facing the Solomon Islands. By 2030, annual temperatures are projected to increase by approximately 0.7 °C, irrespective of the emissions trajectory over the next decade and a half, while by 2090, a high emissions scenario could result in as much as a 4.0 °C annual temperature increase. Annual and seasonal mean rainfall is projected to increase slightly (low confidence). The intensity and frequency of days of extreme rainfall are projected to increase (high confidence). [PCCS, 2014] [T+T, 2020]

The sea level rise near Solomon Islands is about 8 mm per year since 1993, which is higher than the global average. Under a high emissions scenario, there could be a rise in sea level of 8-10 cm by 2030. The sea level is projected to continue to rise to a range of 19-31cm by 2060 and a range of 35-90 cm by the end of the century (Figure 3) under all emission scenarios. An increase in sea level rise will impact the risk of storm surges and coastal flooding [NASA, 2022] [PCCS, 2014].

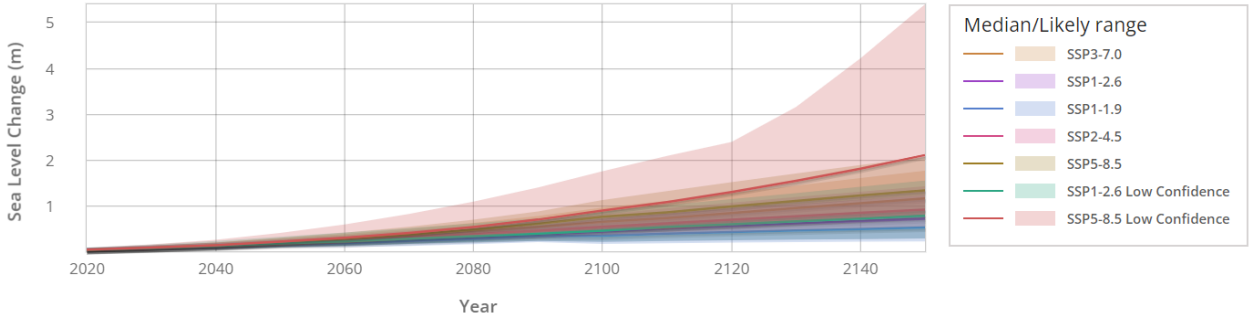

Figure 3: Observed and projected relative sea level change near Solomon Islands [NASA, 2022]

In 2016, a dengue fever outbreak was declared in the country, and 12,329 people were considered suspected cases of the dengue fever with 16 deaths reported. Besides, there have been more than 21,544 confirmed cases of COVID-19 with 153 deaths (as of June 2022) since January 2020. (Craig, et al., 2018) (WHO, 2022).

2.3 Physical Vulnerability

Around 60% of the population live within 1 km of the coast, exposing them to sea level rise, storm surges, saltwater intrusion, tsunamis and tropical cyclones. More than five reef islands (remote islands) are lost to sea level rise and coastal erosion, and at least five islands have been severely eroded. Informal settlements in rural areas, internally displaced people, and those living in marginal areas face a higher degree of risk. As the higher ground are volcanic and mountainous, relocating the vulnerable communities to the higher ground is not possible. [Andrew, Bright, Rua, Teoh, & Vickers, 2019] [T+T, 2020] [UNFCCC, 2018]

Housing sector is vulnerable to the impacts of climate change and natural hazards, as around 70% of the houses in the country are constructed using corrugated iron, timber, or traditional or makeshift materials. Only 21% of the houses in Honiara and 8% of houses in Guadalcanal are constructed with a concrete, cement, or brick floor. The Solomon Islands National Building Code are applied only to permanent structures, and the traditionally built houses/structures are not built to any standard. The built environment in Honiara is highly exposed to flooding. There are an estimated 8,011 buildings in Honiara exposed to floods from the Matakino, Lungga, and White rivers, and this includes houses, roads, and critical infrastructure. [Government of Solomon Islands, 2014] [T+T, 2019]

The logging industry's dominance in economy poses risks in terms of environmental sustainability. Global Forest Watch estimates that between 2022 and 2024, "Solomon Islands lost 193 kha of tree cover, equivalent to a 7.0% decrease in tree cover since 2000, and 150 Mt of CO_2 emissions". Although Sustainable Logging Policy (2018) and National Forestry Policy (2020) are developed and being implemented to support sustainable management of forest resources, the rate of logging is still unsustainable. [RNZ, 2019] [Global Forest Watch, 2022]

A growing urban population implies a growing need for services and requires an increase in social infrastructure and services, both of which are limited in Honiara's current contexts. Demand for water, power, health services, and communication services is expected to increase with the urban population growth. [Solomon Islands Government, 2020] [UNHABITAT, 2021]

Only 16% of the households living in rural areas have access to sanitation, and below 5% of the households living in remote islands have access to electricity. The impacts of COVID-19 increased the demand for services and food security in the rural areas. The impacts from future natural hazards and climate change events are likely to cause large-scale damage to physical infrastructure, due to urbanisation and building new infrastructure to carter the growing population). [The World Bank, 2022] [The World Bank, 2022]

2.4 Socio-economic Vulnerability

Solomon Islands vulnerability to hazards is exacerbated by its socio-economic conditions. The country has a small but developing economy that relies on forestry, agriculture, fishing and tourism sectors, which are highly vulnerable to natural hazards, climate change impacts, and global crisis. (IFC, Aid, & MFAT, 2021)

Low income, lack of employment opportunities, geographical isolation, limited natural resources, and narrow production and export base adds to the socio-economic vulnerability. Around 75% to 85% population of Solomon Islands are engaged in subsistence farming. A lack of employment and education opportunities in rural areas has resulted in significant urban movement. According to Asian Development Bank (ADB), 23.5% of employed population were below USD 1.90 purchasing power parity/day in 2021. Around 12% of the people are living in poverty, and more than 25,000 people have limited food to eat daily. Disaster events, ethnic tension, lack of employment for youth, and displaced people have increased the poverty in the country. [ADB, 2021] [The Borgen Project, 2016] [Australian High Commission, 2016]

Many Solomon Islanders are migrating to foreign countries due to the limited full-time opportunities in the country. Majority of the people visit Australia under Seasonal Worker Programme (SWP)/ Pacific Australia Labour Mobility (PALM)/ Pacific Labour Scheme (PLS) to work in horticulture, agriculture, or tourism sectors. As of December 2021, there were around 2,500 workers in the Australian programmes. There is a growing reliance on remittances from Solomon Islanders living abroad accounting for 1.8% of Solomon Islands' GDP in 2020. COVID-19 has severely affected the remittance income due to the international border closure, where a 67.5% drop in remittances was recorded in 2020 compared to 2019. Also, majority of the seasonal workers lost their jobs due to the impacts of COVID-19. [Solomon Islands Government, 2021][SPC, 2022][The World Bank, 2022]

2.5 Cultural Vulnerability

Solomon Islanders share a diverse cultural background. "Kastom" represents the traditional ways and culture that is integral to life in villages, which are passed down from generation to generation. Kinship and clan ties are strong due to Wantok (i.e., "one talk- the way Islanders feel a duty to those who speak the same language or come from the same village or area"). Even though the culture is diverse, patriarchy is mostly followed, which has a complex set of gender norms that maintain stringent social hierarchies, dominated by men. The women undergo significant and persistent gender inequality in the country. [Homan, 2019] [Solomon Airline, 2022]

Men are usually responsible for making decisions and are expected to fulfil their role as a leader at

home and in the community, while women are responsible for managing finances (control over household finances), caregiving children, ageing parents, grandparents, and mostly restricted to home and family activities (domestic chores, cooking, washing, laundry, gardening, and livestock rearing). Girls are taught and trained from very young age to respect males in their families and communities, and not to disagree or loud with their brothers and male cousins. [Tavola, Billy, & Kama, 2016] [Homan, 2019]

Churches play a crucial role in the country's social fabric, where women are actively engaged in the services such as cooking and catering; Sunday school teachers; fundraising and entertainment. Women rarely achieve leadership positions within the church hierarchies due to church doctrine. There was only one female school principal in a national secondary school. The limited representation of women in decision making roles at local and national level increases their vulnerability during disaster and emergency events. (Homan, 2019)

Traditional knowledge is very rich across health treatments, farming, fishing, building, and many other areas of life. If traditional skills and knowledge are not recorded or transferred, they can be lost. Loss of respect towards traditional values in younger generations, and western influence and value systems that override traditional systems are other contributing factors for the loss of traditional knowledge and skills. [NDMO, n.d.; SIMS, 2022] [Lui, et al., 2016] [Philip Malsale, 2018]

3. Disaster Risk Reduction and Climate Action Interventions

The following sections shed light on Solomon Islands process and capacity in disaster risk reduction and climate change adaptation as guided by the global policy frameworks such as Sustainable Development Goals (SDGs), the Paris Agreement, and Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR). The sections are organised by four priority areas of SFDRR, in which focused actions are required within and across sectors by states at local, national, regional, and global levels.

Priority 1. Understanding Disaster Risk. Understanding disaster risks requires a thorough understanding of the hazard, vulnerability, exposure, and adaptive capacity of the country. The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI), supported by World Bank, ADB and the Pacific Community (SPC)/SOPAC, provided technical assistance to develop Pacific risk modelling and assessment tools for assessing earthquake and tropical cyclone risks, with detailed exposure information. The project consolidated eight national databases developed for the Cook Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu into a regional database, now known as Pacific Data Hub, hosted and maintained by the Applied Geoscience and Technology Division of SPC. Currently, SPC holds 736 datasets relevant to Solomon Islands in the Pacific Data Hub. [PCRAFI, 2013] [Pacific Data Hub, 2022]

In 2014, vulnerability and adaptation assessment of Honiara provided the national and local government decision makers and community leaders with information to define their adaptation priorities and plans and provided guidance in identifying actions to manage the impacts of the climate change. Solomon Islands Integrated Vulnerability and Adaptation Assessment (SIIVA) is a nationwide comprehensive approach to conduct climate vulnerability assessment and planning for improving multi-sector coordination, aligning support, and optimising the selection of climate change interventions and assessing their likely and actual impact. It covers forest, health, watershed health, coastal health, water security, security of place, energy security, income security, community health, and food security. In 2020, a weeklong Integrated Vulnerability and Adaptation Assessment (IVA) on the remote Sikaiana Island in Malaita Province was conducted to collect baseline data to develop national and provincial strategic planning, climate finance access, informing regional, international meetings and other activities. [Solomon Islands IVA, 2022] [Solomon Islands Government, 2020] [UNHABITAT, 2014]

Priority 2. Strengthening Disaster Risk Governance to Manage Disaster Risk. The government of Solomon Islands acknowledges that disaster risk reduction must be aligned with climate change adaptation, as they are both developmental in their outlook for implementation. National Disaster Management Plan 2018 is a practical, sector-based, and explicit framework for preparing for, and managing, disaster events, and supporting resilience in provinces and villages. It is supported by national level arrangements coordinated through the NEOC. It recognises the fundamental role of Government to establish and sustain arrangements for resilient development and disaster management across the sectors and communities of the Solomon Islands. Implementation and Monitoring Plan for the National Disaster Management Plan 2018 was developed to improve governance, collaboration, and accountability, promote coordinated planning and monitoring of disaster management sector priorities, and support the collaborative action to progress the priorities.

Priority 3. Investing in Disaster Risk Reduction for Resilience. Investing in disaster risk reduction for resilience is an important component in effectively implementing policies, frameworks, legislation, and strategies. Investing in structural and non-structural measures to reduce or prevent disaster risks are critical to improve the resilience of the built infrastructure and the communities.

Solomon Islands is the second highest official development assistance (ODA) recipient among the Pacific Island Countries. However, net ODA has decreased steadily during 2010–2016 because the security situation had improved and the Regional Assistance Mission to Solomon Islands concluded in June 2017. In 2010, ODA was equal to 68.6% of Solomon Islands' gross national income, but this declined to 15.6% in 2016, and in 2019, it was around USD 224 million (14.4% of GDP). Figure below presents the top ten donors of Gross ODA for Solomon Islands between 2018-2019. (OECD, 2022)

Figure 4: Top ten donors of Gross ODA for Solomon Islands, 2018-2019, in USD Million (OECD, 2022)

Australia is the main development partner for Solomon Islands, which focuses on supporting stability, enabling economic growth, and improving human development. In 2020, Australia has supported with AUD 200 million (USD 137.95 million) in laying submarine fibre optic telecommunication cable linking Honiara to Sydney to improve the internet connectivity in the Solomon Islands. Australia is investing around AUD 250 million (USD 172.44 million) to implement Solomon Islands Infrastructure Programme (SIIP), which will assist in boosting the economy of the county. [SIIP, 2021] [Australia Government, 2022]

Since 1973, ADB has been supporting the country with loans, grants, and technical assistance totalling around USD 406 million (loans and grants – USD 209.5 million). In 2020, ADB supported Solomon Islands with USD 20 million in response to the impacts of COVID-19 on the economy. In 2021, ABD committed to support the Solomon Islands Government with a concessional loan of USD 21 million to rehabilitate the critical transport infrastructure in the country. (ADB, 2021)

Priority 4. Enhancing disaster preparedness for effective response to "Build Back Better" in recovery, rehabilitation and reconstruction. Disaster recovery, rehabilitation, and reconstruction phase are an opportunity to "build back better" through integrating disaster risk reduction measures. Following the 2014 Tropical Cyclone Ita, ADB Transport Sector Flood Recovery Project supported the recovery plan of Solomon Islands Government. It involved 12 subprojects comprising construction and rehabilitation of infrastructure, which re-established the connectivity between east and west of Guadalcanal province through Honiara. A few bridges were constructed over river crossings, improving the connectivity between the towns. The water level markers on the bridge assists the locals in taking necessary actions in the instances where the water level rises above a certain point. (ADB, 2015)

In 2014, Community Resilience to Climate and Disaster Risk Project was launched in Solomon Islands by ACP-EU Natural Disaster Risk Reduction Programme to improve the resilience of selected communities in Guadalcanal, Temotu, Malaita, Central Islands and Bellona provinces to the impacts of natural hazards and climate change. It strengthened the capacity of government in disaster and climate risk management by implementing disaster risk reduction and climate change adaptation investments. (ACP-EU, GFDRR, & Group, 2017)

The provision of early warning systems is also key for achieving enhanced disaster preparedness and mitigation of economic losses. Solomon Islands Government has installed rain and tide gauges, various staffed weather stations, and automatic weather stations to improve early warnings systems in the country. SIMS is responsible for providing early warnings in Solomon Islands. To predict the arrival of disaster events, SIMS is working with the communities to gather traditional knowledge used by the locals under the Traditional Knowledge Project to improve the early warnings. The SIMS conducted a two-day workshop on Climate Early Warning System (CLEWS) with farmers and the Ministry of Agriculture and Livestock to understand the needs of agriculture sector to provide tailored climate services (especially for farmers). (Solomon Islands Government, 2022)

4. Coherence with Sustainable Development Goals and The Paris Agreement

4.1 Strategic Coherence

Strategic coherence explores whether disaster risk reduction and climate change adaptation are explicitly addressed jointly or if there is an aim to strengthen the relationship and linkages between the two fields (UNDRR, 2020).

Solomon Islands developed the National Development Strategy (NDS) (2016-2035) that maps out a strategic direction for the future development of Solomon Islands. It presents a visionary strategy for the next twenty years, setting out a long-term vision, mission and objectives that reflect the aspirations of all Solomon Islanders. Past NDS and Plans have covered five to 10 years. This NDS covers a twenty-year period to provide a longer-term framework for planning that lays the foundations for recovery and long-term sustainable development. The strategic vision through to 2035 will provide greater stability and durability. The NDS also identifies linkages and alignment of individual objectives, medium-term strategies and sector goals with the SDGs. (Solomon Islands Government, 2016)

The National Climate Change Policy (NCCP) (2012-2017) recognises climate change as a sustainable development issue that presents opportunities and challenges. The policy aims to improve the adaptive capacity of the country to the impacts of climate change while following a path of low-carbon development. As it was published in 2012, there are no clear references to the SDGs and Paris Agreement. However, the recently published Nationally Determined Contributions (NDC) clearly reflects the goals of SDG and Paris Agreement (MECDM, 2012; MECDM, 2021)

Sectoral Aim	Policies with linkages to Sendai Framework for Disaster Risk Reduction	Policies with linkagesto Sustainable Development Goals	Policies with linkagesto the Paris Climate Agreement for Environment
National Development		National Development Strategy (2016-2035)	
Environmental protection		National Climate Change Policy (2012-2017)	
Disaster and Climate Risk Reduction	National Climate Change Policy (2012-2017) National Disaster Management Plan (2018)	National Development Strategy (2016-2035) National Disaster Management Plan (2018)	Nationally Determined Contributions (updated-2021)
Vulnerability Reduction	National Climate Change Policy (2012-2017) National Disaster Management Plan (2018)	National Development Strategy (2016-2035) National Rural Land-use policy (2015)	
Land Use Planning		National Development Strategy (2016-2035) National Rural Land-use policy (2015)	

Table 2:Synergies between the national policies, plans and frameworks by sector, and international frameworks

4.2 Conceptual Coherence

Conceptual coherence explores how countries link disaster risk reduction and climate change adaptation conceptually, through risk and resilience [UNDRR, 2020].

These concepts are strongly addressed in the NDMP (2018), NCCP (2012-2017), NDC (2021), and the NDS (2016-2035). For example, the fourth objective of long-term and medium-term strategies of NDS (2016-2035) is to have an “resilient and environmentally sustainable development with effective disaster risk management, response and recovery”. It also describes the vulnerabilities of population in rural areas towards sea level rise, storm surges, and eroding coastal areas; effects and impacts of earthquakes, tsunamis and landslips; challenges for women and children, the disabled and other vulnerable groups. Other policies and plans in the Solomon Islands also focus on embedding resilience into the nation and attempted to integrate disaster risk reduction and climate change adaptation. Overall, a strong conceptual coherence is observed in Solomon Islands. [MECDM, 2021] [Solomon Islands Government, 2016] [MECDM, 2012]

4.3 Operational Coherence

Operational coherence looks at measures and activities which bring together disaster risk reduction and climate change adaptation practices and to which extent planning is cross-sectoral (UNDRR, 2020).

Solomon Islands have established dedicated entities (Climate Change Division and NDMO) to implement climate change and disaster risk reduction activities. Also, the NCCP 2012-2017 includes a range of disaster risk reduction activities under various policy outcomes, directives, and strategies. Similarly, the NDS (2016-2035) includes a few disaster risk reduction and climate change adaptation activities under its long-term and medium-term strategies. However, there are no sector specific measures outlined in any of the climate change and disaster management policies or plans. [MECDM, 2021] [Solomon Islands Government, 2016] [MECDM, 2012]

4.4 Institutional Coherence

Institutional coherence assesses whether coordination between disaster risk reduction and climate change adaptation is achieved, and if and how institutional arrangements support coherence [UNDRR, 2020].

At the institutional level, MECDM integrates these, as it manages sustainable environment, climate change adaptation and mitigation, disaster risk management and meteorological services.

Nevertheless, the coherence at institutional level is partial, as the country does not have a joint policy for disaster risk reduction and climate change adaptation. (Solomon Islands Government, 2017)

4.5 Financial Coherence

Financial coherence explores whether and how funding strategies and investments bring together disaster risk reduction and climate change adaptation (UNDRR, 2020).

NCCP (2012-2017), NDS (2016-2035), and the NDC (2021) do not include detailed financial cost for implementing each strategy/objective. [MECDM, 2021] [MECDM, 2012] [Solomon Islands Government, 2016]

5. Challenges and Priorities

5.1 Challenges for Disaster Risk Reduction Implementation

Solomon Islands is facing a variety of challenges ranging from limited technical and institutional capacities and financial resources, to competing national and partner priorities. The remoteness of the islands, limited communication infrastructure, and the frequency and intensity of the impacts of climate change and natural hazards adds another layer of complexity to plan and implement disaster risk reduction priorities.

Provincial governments are generally hindered with financial and human resource constraints to implement these priorities and rely on external funding and support from NGOs, which poses a challenge associated with the lack of ownership. Also, while international NGOs are adequately resourced, local NGOs and faith-based organisations are not, and this is not a sustainable model for financing disaster risk reduction activities.

The Solomon Islands has restricted options for securing liquidity following disasters without compromising their long-term fiscal balance. It is constrained by its size, borrowing capacity, and limited access to international insurance markets. In the absence of easy access to debt and well-functioning insurance markets, a large portion of the economic losses stemming from adverse natural events is borne by governments and households.

Although national strategies and provincial plans were formulated, the national government lacks adequate financial and technical support to successfully implement the activities of the strategies and plans.

There is a lack of institutional coordination and integration between national and local level institutions (including Honiara City Council (HCC) and Guadalcanal Provincial Government (GPG)) on flood risk management. This is seen in both translating policies from the national to local levels, as well as reflecting community and provincial level priorities in policymaking. National government decisions on flood risk management can therefore be misaligned to the priorities of the Greater Honiara Area, HCC and GPG. SIMS provides early warnings for severe weather, climate and ocean forecasting. SIMS has lack of capacity on flood forecasting. The overall water management belongs to the Water Resources Department under the Ministry of Mines and Energy (MME) and there is lack of coordination with SIMS and MME. Greater coordination between agencies is needed to avoid overlapping mandates, improve service delivery, and increase efficiencies. [T+T, 2019]

The increase in frequency and intensity of extreme weather events requires significant improvement in the capacities for weather forecast and early warnings. Early warning system exists in Solomon Islands, but there are no Standard Operating Procedures for implementing the response actions upon providing the warnings. Challenges remain in terms of getting warnings to remote communities in a timely and appropriate manner.

Despite the efforts taken by the Solomon Islands Government, NGOs, and development partners, the level of disaster preparedness is considered low at the community level. The insufficient communication between the authorities and communities often lead to the instances where communities fail to understand the development issues recommended in these strategies and plans. Rural villages and communities living in remote islands are less prepared when compared to the people living in urban areas. The limited capacity of the provincial and local governments limits the capacity building activities. There are several challenges in making hazard information available to the public. These include limited ownership of high frequency radio and TVs in rural communities; limited access to the Internet throughout the country except in urban areas; pamphlets that are not translated into Pidgin and provincial dialects, and low levels of literacy. Community access to radio technology needs to be improved, particularly in remote parts of the country. [T+T, 2019]

5.2 Priority Areas of Work

Priority areas are suggested based on the vulnerabilities, challenges, and other contributing factors that are identified in this report. Priority areas of work to be carried out by Solomon Islands Government with support from stakeholders (such as NGOs, faith-based organisations, development partners, and relevant government organisations) are:

Improve community preparedness: Conduct community awareness programmes, annual emergency drills, and enhance disaster risk reduction and climate change adaptation education in the curriculum; provide training and capacity building programmes for disaster risk preparedness in isolated communities to equip communities with skills and systems to face the emergency and disaster events. Strengthening the capacity of local level (ward) and village level committees and preparing "emergency response plan" is also important. Consulting with vulnerable groups is important for facilitating their evacuation.

Enhance multi-hazard early warning system: Improving key components of the early warning system such as risk knowledge (risk informed early warning systems), monitoring (hydrological monitoring systems), forecasting, and warning and cross-cutting theme of governance (risk informed policies and plans, financing, and sustainability) are important for multi-hazard early warning systems. Introduce an impact-based forecast and warning system for all-natural hazards, which would evolve the focus from information about the hazard to information about the impact of the hazard. This would help the public more readily understand what actions to take to reduce the risk to lives and livelihoods. Clearly define the roles and responsibilities of SIMS and provide platforms for SIMS and the Water Resources Department to improve coordination and to avoid duplication. There is a need to increase the early warning system coverage across the country.

Develop Standard Operating Procedures (SOPs): SOPs are essential to carry out step by step procedures for emergency response actions. With the ongoing pandemic and the possibility of complex event occurrence, such as 2022 Hunga Tonga–Hunga Ha'apai volcanic eruption, tsunami and ashfall events in Tonga, SOPs shall include actions for dealing with the cascading, compounding, and complex impacts.

Enable access to funding: Constantly looking for opportunities to forge partnerships with government projects and activities will assist in addressing this issue, while exploring potential sources of small grants, including the Global Environment Facility (GEF)/UNDP Small Grants Programme, the USAID PACAM (Pacific American Climate Fund), the EU/PIFS NSA Small Grants and so forth.

Enhance technical capacity: Conduct a capacity needs assessment to analyse the current capacity and gaps from the national level to the community level. Based on the assessment, a development plan can be developed with necessary skillsets and competencies required to implement disaster risk reduction and climate change adaptation activities.

Improve critical infrastructure: Enhance resilience of new and existing critical infrastructure, including water, transportation and telecommunications infrastructure, educational facilities such as schools, hospitals, and other facilities, to ensure that they remain safe, effective, and operational during and after disasters in order to provide life-saving and essential services. In particular, increase the availability, quality, and accessibility of healthcare to tackle the challenges posed by climate change, overcrowding urban centres, and poor hygiene. Provide incentives to recruit more qualified doctors and nurses to improve the capacity of hospitals and health care.

Conduct comprehensive risk assessment: In Solomon Islands, there is a lack of detailed information and analysis of active volcanoes and therefore, a detailed assessment of active volcanoes, which are exposed to assets and populations may be needed**.** Accelerating and supporting the SIIVA is important, as there is a dire need for a comprehensive risk assessment for all islands in Solomon Islands, including assessment of hazard, vulnerability, exposure, and adaptive capacity.

Increase Infrastructure Capability: This is specific to the current priority need for the NDMO, Met Service and Geological Hazard Agencies. What we are currently driving now is to have a National Joint Early Warning - National Emergency Operations Centre (NJEW-NEOC) Building that would accommodate all the EW Agencies and the NDMO in a central location making coordination in issuing EW and disaster response much more coordinated and effective.

Disaster Risk Reduction Mapping: This is one of the areas identified by the NDMO and will implement as of next year. The idea is to map out the all organisation that are currently implementing DRR in the country (agency, location of implementation, type of activity). This is to provide the NDMO the baseline on who's doing what where, and that it can also help SIG report to the NDS, Sendai Framework, and other appropriate reporting protocols.

References

ACP-EU, GFDRR, & Group, T. W. (2017). *Solomon Islands: Community Resilience to Climate and Disaster Risk Project*. Retrieved from GFDRR: https://www.gfdrr.org/en/solomon-islands-community-resilience-climate-and-disaster-risk-project

ADB. (2015). *Restoring Connectivity and Flood Resiliency of Roads in Solomon Islands*. Retrieved from ADB: https://www.adb.org/multimedia/kns/restoring-connectivity-and-flood-resiliency-of-roads-in-solomon-islands-35.html

ADB. (2021). *Solomon Islands and ADB*. Retrieved from ADB: https://www.adb.org/offices/pacific/poverty/solomon-islands#:~:text=Poverty%20Data%3A%20Solomon%20Islands&text=In%20Solomon%20Islands%2C%20the%20proportion,day%20in%202021%20was%2023.5%25

Albert, S., Tibbetts, I., & Udy, J. (2016). *Solomon Islands Marine Life: Information on biology and management of marine resources.* Brisbane: The University of Queensland.

Aleksandrova, M., Balasko, S., Kaltenborn, M., Malerba, D., Mucke, P., Neuschäfer, O.,... Wiebe, N. (2021). *World Risk Report.* Bündnis Entwicklung Hilft, Ruhr University Bochum – Institute for International Law ofPeace and Armed Conflict (IFHV). Retrieved from https://www.welthungerhilfe.org/news/publications/detail/worldriskreport-2021/#:~:text=The%20WorldRiskIndex%202021%20indicates%20the,impacted%20by%20the%20Corona%20pandemic

Andrew, N. L., Bright, P., Rua, L. d., Teoh, S. J., & Vickers, M. (2019). Coastal proximity of populations in 22 Pacific Island Countries and Territories. *PubMed Central*. doi:10.1371/journal.pone.0223249

Australia Government. (2022). *Australia's development partnership with Solomon Islands*. Retrieved from Australia Government: https://www.dfat.gov.au/geo/solomon-islands/development-assistance/development-assistance-in-solomon-islands

Australian Government. (2022). *Solomon Islands - Australia's commitment to strengthening climate and disaster resilience in the Pacific*. Retrieved from Australian Government: https://www.dfat.gov.au/about-us/publications/solomon-islands-australias-commitment-to-strengthening-climate-and-disaster-resilience-in-the-pacific

Australian High Commission. (2016). *Australian aid: fighting poverty in Solomon Islands*. Retrieved from Australian High Commission,: https://solomonislands.embassy.gov.au/honi/220416.html

Craig, A. T., Heywood, A. E., & Worth, H. (2020). Measles epidemic in Samoa and other Pacific islands. *The Lancet Discovery Science*, 273-275. doi:https://doi.org/10.1016/S1473-3099(20)30053-0

Craig, A. T., Joshua, C. A., Sio, A. R., Teobasi, B., Dofai, A., Dalipanda, T.,... Kolbe, A. (2018). Enhanced surveillance during a public health emergency in a resource-limited setting: Experience from a large dengue outbreak in Solomon Islands, 2016-17. *National Library of Medicine*. doi:10.1371/journal.pone.0198487

DAFT. (2020). *Tropical Cyclone Harold*. Retrieved from Australian Government: Department of Foreign Affairs and Trade: https://www.dfat.gov.au/crisis-hub/tropical-cyclone-harold#:~:text=Tropical%20Cyclone%20Harold%20passed%20through,a%20ferry%20during%20the%20storm

DFAT. (2021). *Solomon Islands-Business Conditoons Snapshot.* DFAT. Retrieved from https://www.dfat.gov.au/sites/default/files/solomon-islands-market-insights-2021.pdf

EM-DAT. (2022). *Database*. Retrieved from EM-DAT- The International Disaster Database: https://www.emdat.be/database

FAO. (2016). *AQUASAT Country Profile – Solomon Islands.* Rome, Italy: Food and Agriculture Organization.

Global Forest Watch. (2022). *Solomon Islands*. Retrieved from Global Forest Watch,: https://www.globalforestwatch.org/dashboards/country/SLB/?category=summary&location=WyJjb3VudHJ5IiwiU0xCIl0%3D&map=eyJkYXRhc2V0cyI6W3sib3BhY2l0eSI6MC43LCJ2aXNpYmlsaXR5Ijp0cnVlLCJkYXRhc2V0IjoicHJpbWFyeS1mb3Jlc3RzIiwibGF5ZXJzIjpbInByaW1hcnktZm9yZXN0cy0yMDAx

Government of Solomon Islands. (2014). *Rapid Assessment of the Macro and Sectoral Impacts of Flash Floods in the Solomon Islands.* ADB, FAO, UNICEF, ACP-EU Natural Disaster Risk Reduction Program, World Bank Group, SPC. Retrieved from https://www.gfdrr.org/sites/default/files/publication/pda-2014-solomonislands.pdf

Heidarzadeh, M., Harada, T., Satake, K., Ishibe, T., & Gusman, A. R. (2016). Comparative study of two tsunamigenic earthquakes in the Solomon Islands: 2015 Mw 7.0 normal-fault and 2013 Santa Cruz Mw 8.0 megathrust earthquakes. *Geophysical Research Letters*, 4340-4349. doi:10.1002/2016GL068601

Homan, S. H. (2019). *Transforming Harmful Gender Norms in Solomon Islands: A study of the Oxfam Safe Families Program.* Melbourne: The Equality Institute, Monash University and Oxfam Australia. Retrieved from https://www.oxfam.org.au/wp-content/uploads/2019/10/Transforming-Gender-Norms-Report-FINAL.pdf

IFC, Aid, A., & MFAT. (2021). *Solomon Islands Tourism: Investor Guide-A guide to investing in land for tourism development.* International Finance Corporation. Retrieved from https://www.ifc.org/wps/wcm/connect/662722ea-ad33-4a34-b2d8-66dfedf1c8ab/IFC_SI+Tourism_Investor+Guide_ONLINE.pdf?MOD=AJPERES&CVID=nPE-L6i

IFRC. (2022). *Solomon Islands – Overview*. Retrieved from IFRC Resilience Library.

Lui, S., Mitiepo, R., Sanau, N., Tofaeono, T., Malsale, P., Plotz, R. D., & Chambers, L. E. (2016). *Combining Traditional Knowledge and Meteorological Forecasts in the Pacific to Increase Community Resilience to Extreme Climatic Events.* Climate and Oceans Support Progam in the Pacific, Australian Aid, DFAT, SPREP,. Retrieved from UNFCCC: https://unfccc.int/files/adaptation/application/pdf/1.25_sprep_ronneberg.pdf

MECDM. (2012). *Solomon Islands' National Climate Change Policy (2012-2017).* Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM). Retrieved from https://www.adaptation-undp.org/sites/default/files/downloads/solomon_islands-national_climate_change_policy.pdf

MECDM. (2021). *National Determined Contributions (NDC).* Solomon Islands Government. Retrieved from https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Solomon%20Islands%20First/NDC%20Report%202021%20Final%20Solomon%20Islands%20(1).pdf

MECDM. (2022). *Climate Change Division*. Retrieved from Solomon Islands Government: http://www.mecdm.gov.sb/about-us/divisions/climate-change.html

MECDM. (2022). *National Disaster Management Office*. Retrieved from Solomon Islands Government: Ministry of Environment, Climate Change, Disaster Management and Meteorology.

MFAT. (2022, 06). *About Solomon Islands*. Retrieved from New Zealand Foreign Affairs and Trade: https://www.mfat.govt.nz/en/countries-and-regions/australia-and-pacific/solomon-islands/new-zealand-high-commission-to-the-solomon-islands/about-solomon-islands/

Ministry of Environment Climate Change Disaster Management and Meteorology. (2021). *National Determined Contributions (NDC).* Solomon Islands Government. Retrieved from https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Solomon%20Islands%20First/NDC%20Report%202021%20Final%20Solomon%20Islands%20(1).pdf

NASA. (2022). *Sea Level Projection Tool*. Retrieved from Sea Level Change Observations from Space-Earth Data: https://sealevel.nasa.gov/ipcc-ar6-sea-level-projection-tool?psmsl_id=1840

NDMO. (n.d.). *Traditional knowledge*. Retrieved from National Disaster Management Office: http://www.ndmo.gov.sb/index.php/custom-stor-home-page/44-traditional-knowledge-climate-disaster-and-weather#:~:text=Solomon%20Islands%20is%20a%20country,culture%20are%20also%20changing%20fast

OECD. (2022). *Aid at a glance charts*. Retrieved from OECD: Better Policies for Better Lives: https://www.oecd.org/countries/solomonislands/aid-at-a-glance.htm#recipients

Pacific Data Hub. (2022). *Pacific Data Hub,.* SPC. Retrieved from https://pacificdata.org/data//dataset?q=&member_countries=sb

PCCS. (2014). *Solomon Islands: Country Report.* Pacific Climate Change Science. Retrieved from https://www.pacificclimatechangescience.org/wp-content/uploads/2014/07/PACCSAP_CountryReports2014_Ch13SolomonIs_WEB_140710.pdf

PCRAFI. (2013). *Catastrophe risk assessment methodology.* The World Bank, SPC, ADB. Retrieved from https://reliefweb.int/report/world/pacific-catastrophe-risk-assessment-and-financing-initiative-pcrafi-risk-assessment

PCRAFI. (2015). *Country Note: Solomon Islands.* GFDRR, SPC, World Bank Group. Retrieved from https://www.gfdrr.org/sites/default/files/publication/country-note-2015-pcrafi-solomon-islands.pdf

Philip Malsale, N. S. (2018). Protocols and Partnerships for Engaging Pacific Island Communities in the Collection and Use of Traditional Climate Knowledge. *Bulletin of the American Meteorological Society*, 2471-2489. Retrieved from https://doi.org/10.1175/BAMS-D-17-0163.1

PWIP. (2022). *Solomon Islands*. Retrieved from Pacific Women in Politics: https://www.pacwip.org/country-profiles/solomon-islands/

RNZ. (2019). *Logging rate unsustainable in Solomons, admits official*. Retrieved from Radio New Zealand: https://www.rnz.co.nz/international/pacific-news/391264/logging-rate-unsustainable-in-solomons-admits-official

RNZ. (2020). *Deadly landslide in Solomon Islands*. Retrieved from Radio New Zealand: https://www.rnz.co.nz/international/pacific-news/411720/deadly-landslide-in-solomon-islands

SIIP. (2021). *Solomon Islands Infrastructure Program*. Retrieved from Australia Aid and Solomon Islands Infrastructure Program: https://siip.com.sb/

SIMS. (2022). *Traditional Knowledge Project Overview - English*. Retrieved from Meteorological Services Division-Ministry of Environment Climate Change Disaster Management and Meteorology: https://www.met.gov.sb/traditional-knowledge

Solomon Airline. (2022). *Local Culture*. Retrieved from Solomon Airlines: https://www.flysolomons.com/destination-guide/culture#:~:text=Local%20Culture,live%20in%20the%20capital%20%E2%80%93%20Honiara

Solomon Islands Government. (2016). *National Development Strategy 2016-2035: Improving the Social and Economic Livelihoods of all Solomon Islanders.* Honiara: Ministry of Development Planning and Coordination. Retrieved from https://www.adb.org/sites/default/files/linked-documents/cobp-sol-2017-2019-ld-01.pdf

Solomon Islands Government. (2017). *Solomon Islands Second National Communication.* Solomon Islands Government, GEF, UNDP. Retrieved from https://unfccc.int/sites/default/files/resource/SI%20SNC%20FINAL_1-1.pdf

Solomon Islands Government. (2020). *About Solomon Islands*. Retrieved from Solomon Islands Government: https://solomons.gov.sb/about-solomon-islands/

Solomon Islands Government. (2020). *Remote Sikaiana Completes Integrated Vulnerability and Adaptation Assessment*. Retrieved from Solomon Islands Government: https://solomons.gov.sb/remote-sikaiana-completes-integrated-vulnerability-and-adaptation-assessment/

Solomon Islands Government. (2020). *Solomon Islands urban population increases by 5.3 per cent*. Retrieved from Solomon Islands Government: https://solomons.gov.sb/solomon-islands-urban-population-increases-by-5-3-per-cent/#:~:text=The%20urban%20population%20in%20Solomon,to%20approximately%20184%2C832%20in%202019

Solomon Islands Government. (2021). *Government cautions seasonal worker candidates*. Retrieved from Solomon Islands Government: https://solomons.gov.sb/government-cautions-seasonal-worker-candidates/

Solomon Islands Government. (2022). *Climate Early Warning System Workshop underway in Honiara*. Retrieved from Solomon Islands Government,: https://solomons.gov.sb/climate-early-warning-system-workshop-underway-in-honiara/

Solomon Islands IVA. (2022). *Solomon Islands National Integrated Vulnerability Assessment (SIIVA) Database*. Retrieved from Solomon Islands IVA: https://www.solomonislandsiva.net/#:~:text=What%20is%20SIIVA%3F,by%20climate%20change%20and%20disaster

SPC. (2022). *Stat of the week: Remittances in the Solomon Islands*. Retrieved from Pacific Community: https://www.spc.int/updates/blog/did-you-know/2021/03/stat-of-the-week-remittances-in-the-solomon-islands

Tavola, H., Billy, A., & Kama, J. (2016). *Advancing Australia's Work on Leadership and Decision-making: The Next Level Scoping Study on Women in Leadership and Decision Making.* DAFT. Retrieved from https://www.dfat.gov.au/sites/default/files/solomon-islands-scoping-study-womens-leadership-decision-making.pdf

The Borgen Project. (2016). *Girls Education in the Solomon Islands*. Retrieved from The Borgen Project,: https://borgenproject.org/tag/poverty-in-the-solomon-islands/

The World Bank. (2022). *Second Aviation and Roads Project to Boost Economic Development in Solomon Islands*. Retrieved from The World Bank,: https://www.worldbank.org/en/news/press-release/2022/06/01/second-aviation-and-roads-project-to-boost-economic-development-in-solomon-islands

The World Bank. (2022). *Solomom Islands*. Retrieved from The World Bank: https://genderdata.worldbank.org/countries/solomon-islands/

The World Bank. (2022). *Solomon Islands*. Retrieved from The World Bank Data: https://data.worldbank.org/country/solomon-islands

The World Bank. (2022, June 14). *World Bank Bolsters Community Participation in Climate-Resilient Rural Projects in Solomon Islands*. Retrieved from The World Bank, : https://www.worldbank.org/en/news/press-release/2022/06/14/world-bank-bolsters-community-participation-in-climate-resilient-rural-projects-in-solomon-islands

ThinkHazard. (2022). *Solomon Islands*. Retrieved from Think Hazard: https://thinkhazard.org/en/report/225-solomon-islands/TS

Tonkin+Taylor International. (2019). *Honiara Flood Risk Assessment and Climate Change.* Honiara: World Bank.

Tonkin+Taylor International. (2020). *Solomon Islands TSPDF: Climate Risk and Vulnerability Assessment for the Port of Honiara.*

UNCDF. (2020). *Economic Impacts of Natural Hazards on Vulnerable Populations in Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu.* United Nations Capital Development Fund (UNCDF), United Nations University, Institute for Environment and Human Security (UNU-EHS), United Nations Development Programme (UNDP). Retrieved from https://www.uncdf.org/Download/AdminFileWithFilename?id=14103&cultureId=127&filename=economic-impact-of-natural-hazards-on-vulnerable-populations-reportpdf

United Nations Population Fund. (2019). *kNOwVAWdata*.

UNDHA. (1997). *Solomon Islands Drought Situation Report No.1*. Retrieved from Relief Web: https://reliefweb.int/report/solomon-islands/solomon-islands-drought-situation-report-no1

UNDRR. (2020). *Disaster Risk Reduction and Climate Change Adaptation: Pathways for policy coherence in Sub-Saharan Africa.* UNDRR.

UNFCCC. (2018). *Solomon Islands*. Retrieved from COP23 UN Climate Change Conference: Bonn 2017-2018:

https://cop23.com.fj/solomonislands/

UNHABITAT. (2014). *Honiara, Solomon Islands: Climate Change Vulnerability Assessment.* UNHABITAT. Retrieved from https://unhabitat.org/honiara-solomon-islands-climate-change-vulnerability-assessment

UNHABITAT. (2021). *Solomon Islands: Overview*. Retrieved from UNHABITAT For a Better Urban Future: https://unhabitat.org/solomon-islands

UNICEF. (2021). *Solomon Islands High Frequency Phone Survey on COVID 19: Results From Rount Two.* UNICEF, World Bank Group. Retrieved from https://openknowledge.worldbank.org/bitstream/handle/10986/37194/P1772220f0a7cb0470a33d03299f1103958.pdf?sequence=5&isAllowed=y

United Nations. (n.d.). *The Permanent Mission of Solomon Islands to the United Nations*. Retrieved from United Nations: https://www.un.int/solomonislands/solomonislands/country-facts

WHO. (2022). *COVID-19.* Retrieved from World Health Organisation: https://covid19.who.int/region/wpro/country/Sb

World vision. (2018). *Solomon Islands: Earthquakes, tsunamis, volcanoes, and floods*. Retrieved from World Vision: https://www.worldvision.org/disaster-relief-news-stories/solomon-islands-earthquakes-tsunamis-volcanoes-floods-facts


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