CLIMATE AND DISASTER RISK FINANCING AND INSURANCE FEASIBILITY STUDY

PAPUA NEW GUINEA

This publication is brought to you by the Pacific Insurance and Climate Adaptation Programme (PICAP) in collaboration with the Australia - Papua New Guinea Economic Partnership Programme (APEP).

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Supported by:

Background and Approach

The Pacific has increasingly faced the devastating impacts of naturally induced catastrophes, disasters, and climate change. As a result, many communities have been left displaced and unable to rebuild due to the associated cost of damage. Several enablers that could help mitigate economic shocks caused by such events remain limited due to limited understanding of the insurance concept and mechanisms, and a lack of basic financial literacy, such as savings, budgeting, and pensions, among others. These further exacerbate the crisis in the region.

Significant gaps in the usage of insurance and risk finance exacerbate this global and country context. For instance, developing countries face a vast protection gap, where insurance covers less than 5% of disaster losses as against 50% in high-income countries.[1] Protection gaps also persist beyond disaster loss. Inclusive insurance and risk financing in different ways protect lives, livelihoods, and homes from the impact of disaster. They also provide coverage for loss of employment, supply chains, education, cyber-threats, and much more, to act as a significant risk management and safety net across many aspects of life and living.

The in-depth scoping and feasibility study was set in the context of the PNG market's complexities, its relatively underdeveloped insurance industry, and supply- and demand-side challenges. It attempted to develop suitable climate and disaster risk financing products and services for PNG.

The report's approach is anchored around principles that enable equal access to affordable and suitable insurance for low- and moderate-income communities . It examines the associated challenges, risks, and coping mechanisms and identifies unaddressed issues. For this country study report, the team conducted extensive secondary research, which included a review of the existing body of knowledge in inclusive insurance and disaster risk finance. The study received extensive support from key informant interviews (KIIs) and industry-level workshops with stakeholders (Annex I). This support supplemented insights and helped fill gaps in information on solutions and the overall landscape for inclusive insurance and disaster risk finance.

The study covered significant ground across interrelated areas of inclusive insurance and disaster risk finance. It articulates the recent developments, gaps, and opportunities at the policy and regulatory levels and in the supply side that comprises insurance industry players, and captures the perspective of the available products and channels. Structurally, the diagnostic covered the following three areas:

The review of insurance and disaster risk finance was undertaken from the perspective of developing micro- and meso-level interventions.

1 Guy Carpenter, 2022

PAPUA NEW GUINEA
Country Profile

(Map of Papua New Guinea) [2]

1 **PNG OCCUPIES THE EASTERN PART OF THE WORLD'S**
SECOND LARGEST ISLAND

2 **452,860**[2]
LAND AREA[3]

3 **POPULATION**
10,142,619

4 **47.85%**
OF POPULATION ARE FEMALES

5 **61.6%**
OF POPULATION ARE OVER 15 YEARS OF AGE

6 **80% OF PNG'S POPULATION RESIDE IN RURAL AREAS**[4]

2. https://www.bing.com/papuanewguinea
3 https://pngcanberra.org/about-png/
4 https://www.bbc.com/news/world-asia-pacific-15436981

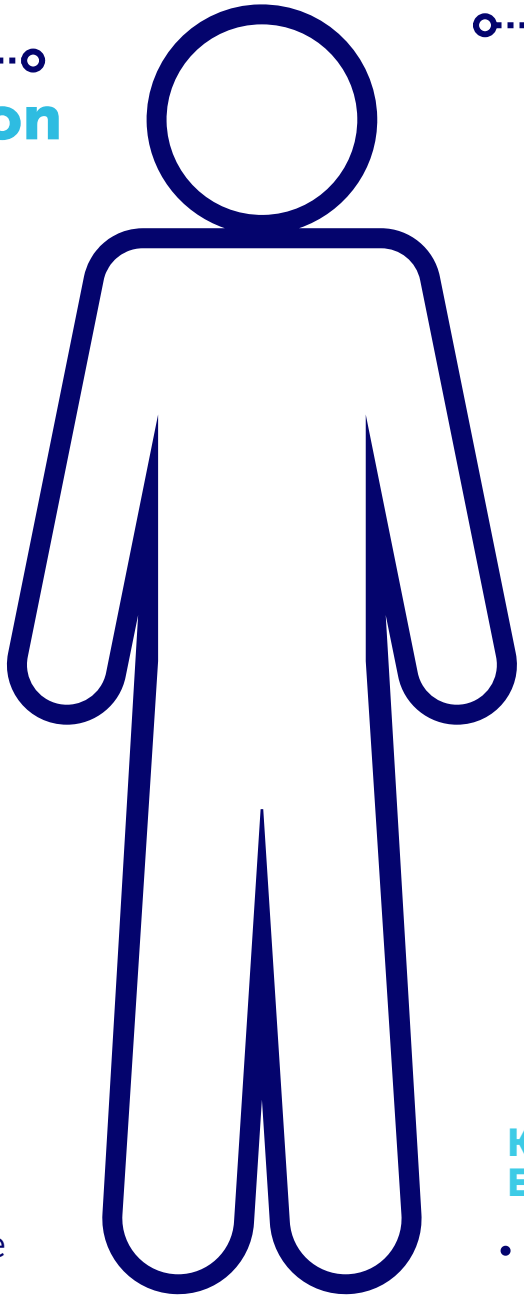
Macroeconomic and Development Indicators

US$30.63 Billion

GDP (Current Prices)[5]

US$3,020.3

GDP per capita



Average deprivation score among people living in multidimensional poverty is

46.5%[6]

Labour force participation rate:

30.93%

of population[7]

70%

of PNG households depend on subsistence agriculture

KEY CROPS:

- Sweet potato
- Banana
- Coffee
- Oil Palm
- Cocoa

KEY INDUSTRIES DRIVING ECONOMIC GROWTH

- Mining and quarrying (25%)
- Agriculture, forestry, and fishing (20%)
- Wholesale and retail trade (9%)

5 https://data.worldbank.org/indicator/PNG

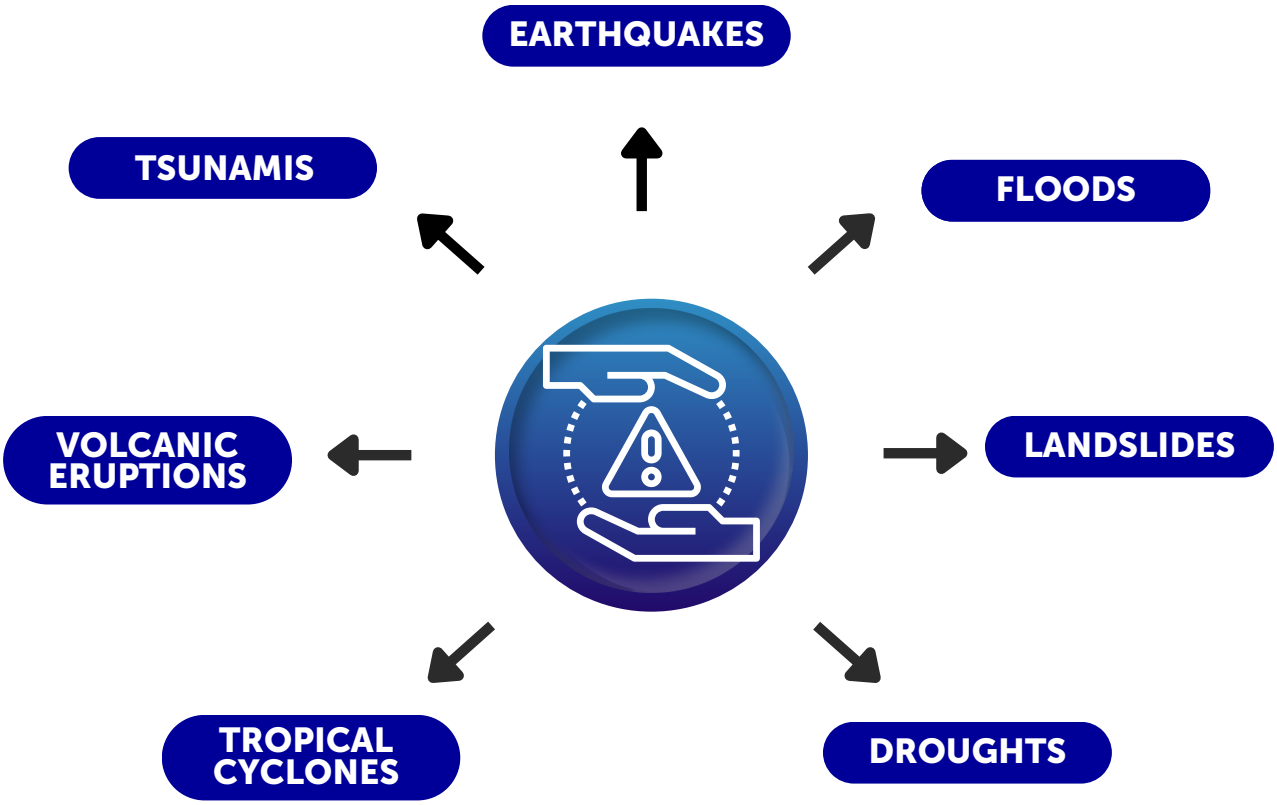
6 https://hdr.undp.org/sites/default/files/Country-Profiles/MPI/PNG.pdf

7 https://data.worldbank.org/indicator/PNG

Key Findings

Key Risks

Located in the "Pacific Ring of Fire," Papua New Guinea (PNG) is highly exposed to natural hazards and accompanying disasters. However, they are likely intensify with climate change and disproportionately affect the poorest groups.



PNG Risk Profile[8]

PNG is ranked 28th among 191 countries in the 2019 INFORM Risk Index. PNG's ranking is driven particularly by the country's lack of coping capacity, for which it ranks at the 11th lowest in the world.

Classification	WorldRiskIndex	Exposure	Vulnerability	Susceptibility	Lack of coping capacities	Lack of adaptive capacities
Very Low	0.30 - 3.25	0.85 - 9.57	22.68 - 34.21	9.03 - 16.68	38.35 - 58.92	14.22 - 24.78
Low	3.26 - 5.54	9.58 - 12.04	34.22 - 42.02	16.69 - 21.56	58.93 - 71.19	24.79 - 34.10
Medium	5.55 - 7.66	12.05 - 14.83	42.03 - 48.32	21.57 - 28.16	71.20 - 77.87	34.11 - 40.66
High	7.67 - 10.71	14.84 - 19.75	48.33 - 61.04	28.17 - 44.85	77.88 - 85.50	40.67 - 52.59
Very High	10.72 - 47.73	19.76 - 82.55	61.05 - 75.83	44.86 - 70.52	85.51 - 93.17	52.60 - 70.13

Max Value = 100, classification according to the quintile method

8 https://weltrisikobericht.de/wp-content/uploads/2021/09/WorldRiskReport_2021_Online.pdf

Financial Service Providers

COMMERCIAL BANKS

- Australia New Zealand Bank (PNG) Limited
- Bank of South Pacific Limited
- Kina Securities Limited
- Westpac Bank (PNG) Limited

SAVINGS AND LOAN SOCIETIES

- Alekano Savings & Loan Society Limited
- Air Niugini Savings & Loan Society Limited
- CBO Savings & Loan Society Limited
- Bougainville Savings & Loan Society Limited
- East New Britain Savings & Loan Society Limited
- Financial & Private Sector Savings & Loan Society Limited
- Manus Savings & Loan Society Limited
- Nasfund Contributors Savings & Loan Society Limited
- Niu Ailan Savings & Loan Society Limited
- Mining & Petroleum Savings & Loan Society Limited
- Nambawan Savings & Loan Society Limited
- PNG Power Savings & Loan Society Limited
- PNG Ports Corporation Savings & Loan Society Limited
- PNG Waterboard Staff Savings & Loan Society Limited
- Post Telecommunication & Pangtel Savings & Loan Society Limited
- Rural Development Bank Savings & Loan Society Limited
- Teachers Savings & Loan Society Limited

INVESTMENT MANAGERS

- BSP Capital Limited
- Kina Funds Management Limited
- Frontier Equities Limited (Frontier)
- Pacwealth Capital Limited

LIFE INSURANCE COMPANIES

- Capital Life Insurance Company Limited
- Kwila Insurance Corporation Limited
- Life Insurance Corporation PNG Limited
- Workers Mutual Insurance PNG Limited (Under liquidation)

NON-LIFE INSURANCE COMPANIES

- Motor Vehicle Insurance Limited
- Pacific Re Limited
- Trans Pacific Assurance Limited
- Capital Group
- QBE Insurance (PNG) Limited
- Tower Insurance (PNG) Limited
- Royal Sun Alliance
- Southern Cross Assurance Limited
- Niugini Assurance
- (PNG) Limited
- Alpha Insurers
- Kanda International
- Kina Bank
- Capital Insurance Group
- Nationwide MicroBank Limited
- Pacific MMI Insurance Limited
- PNG Boat Insurance

LICENSED FINANCIAL INSTITUTIONS

- Bank of South Pacific Finance (PNG) Limited
- Credit Corporation Finance Limited
- Finance Corporation Limited
- First Investment Finance Limited
- Heduru Moni (Moni Plus) Limited
- Kada Poroman Microfinance Limited
- Nationwide Microbank Limited
- Papua Finance Limited
- People's Micro Bank Limited
- Papua New Guinea Microfinance Limited
- Resource & Investment Finance Limited
- Women's Micro Bank Limited

SUPERANNUATION FUNDS

- Aon Master Trust PNG
- Defence Force Retirement Benefit Fund
- Nambawan Super
- National Superannuation Fund

REINSURANCE COMPANY

Pacific Reinsurance Limited

INSURANCE BROKERS

- AON Risk Services Limited
- Kanda International Insurance Brokers & Risk Consultants Limited
- Marsh (PNG) Limited
- Niugini Islands Insurance Limited
- Sunrise Assurance Brokers Limited
- Anitua Insurance Brokers

MONEY CHANGER

- Betta Rates Limited
- Best Nation Investment Limited
- HTS Holdings Limited
- JNI Limited
- Marino Exchange Limited
- MH Money Express (PNG) Limited
- Money Exchange PNG Limited
- Paivu Tours Limited
- RSC Forex Limited

MOBILE NETWORK OPERATORS

- Digicel
- Bmobile - Vodafone
- Telikom PNG

Insurance Landscape

GLOBAL INSURANCE

PNG is ranked the **129th** largest insurance market in the world in 2018.

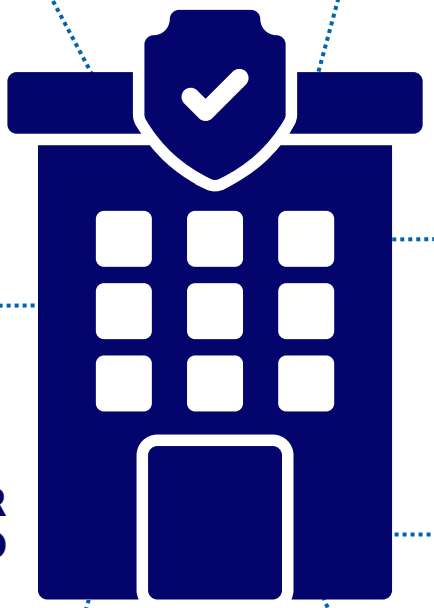
INSURANCE COMPANIES

PNG has **21** insurance companies

LIFE AND NON-LIFE SEGMENTS

4 Life insurance companies

17 Non-Life companies



INSURANCE BROKERS

PNG has **5** insurance brokers

REINSURANCE

1 Reinsurance company

CLIMATE & DISASTER RISK FINANCING AND INCLUSIVE INSURANCE

Programs addressing climate and disaster risk financing instruments or inclusive insurance are necessary in PNG. Although, attempts have been made, they have never reached scale.

INDIVIDUAL AGENTS

several

Individual Insurance agent

Recommendations

This study highlights recommendations to enable the market development of insurance-based solutions to bridge the protection gap for low- and medium-income segments. Thematic areas for recommendations are categorized below:

ECOSYSTEM:

- Consolidate the regulation with one institution, which is independent of any conflict of interest
- Set up country-level guidelines for inclusive insurance and parametric insurance against natural hazards

INSTITUTION:

- Support value chain players with technical capacity and identify human resources to build a sustainable business model around inclusive insurance
- Foster technology-driven partnerships to maximize outreach and improve the customer journey

PRODUCT:

- Research and development to understand the customer perspective
- Seek support from international markets to develop fairly priced insurance products
- Facilitate innovation in financial and insurance literacy through scalable digital financial literacy tools

Contents

List of Abbreviations

ACAPS	Assessment Capacities Project
BPNG	Bank of Papua New Guinea
CEFI	Centre for Excellence in Financial Inclusion
DoT	Department of Treasury
ENSO	El Nino South Oscillation
ESCAP	Economic and Social Commission for Asia and the Pacific
GFDRR	Global Facility for Disaster Reduction and Recovery
GRI	Global Risk Index
IPCC	Intergovernmental Panel on Climate Change
MSME	Ministry of Micro, Small and Medium Enterprises
MTDP	Mid Term Development Plan
MVIL	Motor Vehicles Insurance Ltd
NDC	National Disaster Centre
OIC	Office of Insurance Commissioner
PCRAFI	Pacific: Catastrophe Risk Assessment and Financing Initiative
PGK	Papua New Guinean Kina
PNG	Papua New Guinea
SPEI	Standardized Precipitation Evapotranspiration Index
UHI	Urban Heat Islands
UNDRR	United Nations Office for Disaster Risk Reduction
USD	United States Dollar
USGS	United States Geological Survey

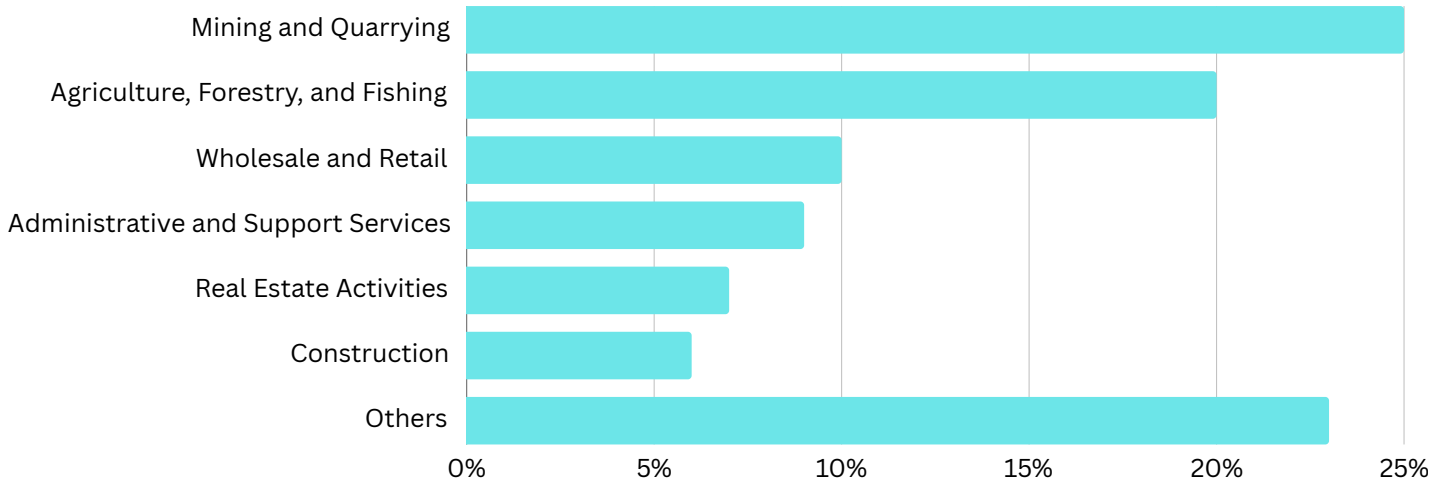
Introduction

Papua New Guinea (PNG) is a lower-middle income country[9], a fragile and conflict-affected society, and a Small Island Developing State)SIDS). PNG has a dual economy that comprises both the formal and informal sectors[10]. The formal economy is made up of the large-scale extractive mining and petroleum sector and the primary industries sector that comprises forestry, fishing, and commercial agriculture. The formal economy employs only about 15% of the total workforce. Conversely, the informal economy employs 85% of the labor force, mostly in subsistence agriculture dominated by women.[11]

The country's economy has been on an ascending trend with the growth in global demand due to the diversity and availability of natural resources, including oil, gas, and minerals. Since the early 2000s, GDP per capita growth has averaged 4% despite fluctuations in export revenues from global commodity prices.[12] The World Bank expects economic growth to slow to 3.7% in 2023 due to lower global demand and supply constraints.

As of 2020[13], the key industries that drove the growth were mining and quarrying (25%), agriculture, forestry and fishing (20%), and wholesale and retail trade (9%)[14]. Figure 1 highlights the country-level distribution of major industries

Figure 1: PNG Industry Share (2020)



Yet, the economy and the infrastructure are at constant risk due to the high prevalence of multiple natural hazards, especially now that the rate of development is increasing. ADB estimates that PNG's economy will likely suffer the biggest losses in the Pacific region due to climate change. The most significant losses would be felt in agriculture due to severe failures in sweet potato crops and other agricultural products. Along with a temperature spike of nearly 3°C, PNG will likely see more frequent and heavy rains, with the sea level potentially rising by up to 1.45 meters by 2100. The increased economic burdens of frost, mortality, and land depletion could trigger losses of up to 15.2% of its GDP by 2100, the highest in the Pacific region.[15]

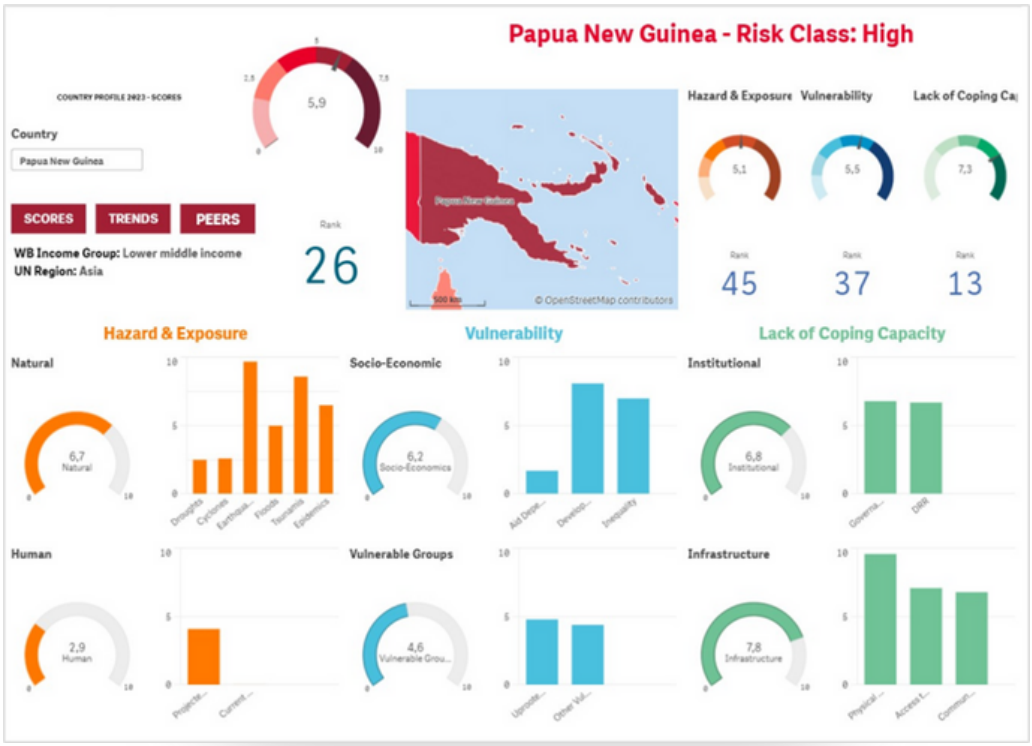
9 (UNDRR, 2019)
10 (ADB, 2022)
11 (PNGNRI , 2017)
12 (International Trade Administration, 2022)
13 (CFE-DM, 2022)
14 (National Statistics Office, 2022)
15 Vanuatu: 6.2%, Solomon Islands: 4.7%, Fiji: 4.0% and Samoa: 3.8%

Country-Level Risk Profile

PNG ranks among the world's most disaster-prone countries due to its geophysical conditions and inadequate coping mechanisms. PNG ranks highest in terms of the population exposed to severe volcanic risks and is among the top six countries for the highest percentage of the population exposed to earthquakes.

Moreover, climate-induced disasters, such as cyclones, flooding, landslides, droughts, and frost, are also on the rise. The high levels of disaster risk faced in PNG reflect in its ranking in the 2019 INFORM Risk Index[16] (refer to Figure 2 below), ranking 26th out of 191 countries. PNG's ranking stems from moderate exposure to flood, drought, and cyclone, particularly by its lack of coping capacity. PNG ranks as the country with the 11th lowest coping capacity globally.

Figure 2: INFORM (2019) Risk Profile, Papua New Guinea



Natural Hazards

Papua New Guinea is vulnerable to several hazards, including floods, droughts, earthquakes, volcanic activity, tsunamis, and sea-level rise. Climate change is expected to increase the frequency, magnitude, and intensity of some of these hazards. The El Niño Southern Oscillation (ENSO) phenomenon has already been observed to have an increasingly negative effect on PNG's climate as it triggers more intense drought and flood events.

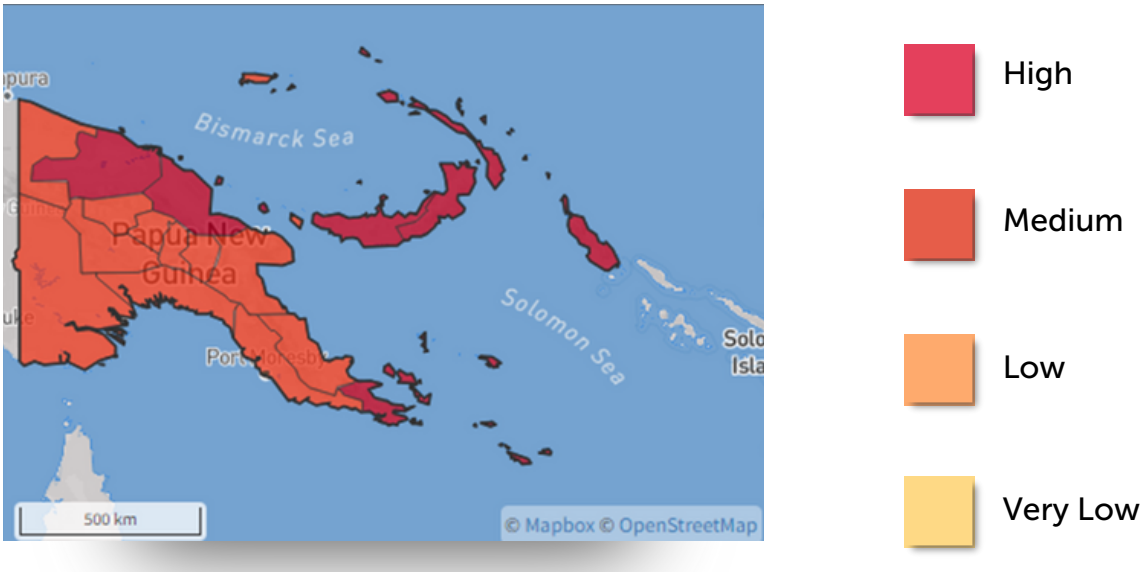
This section summarizes key natural hazards and climate change's impacts on these hazards.

16 (INFORM , 2019)

Earthquakes

PNG is exposed to frequent earthquakes, and has experienced 10 earthquakes of magnitude 7.0 and above between 2014 and 2018.[17] PNG sees frequent earthquakes due to its location on the complex fault systems of the Pacific Ring of Fire. The last major seismic event occurred in 2018 when a 7.5-magnitude earthquake devastated remote communities in the Southern Highlands. Earthquakes are most likely to trigger landslides when they occur alongside heavy rainfall, which saturates the soil. The 2018 Highland earthquake impacted more than 544,000 people, with almost 20,000 people displaced.[18] The initial damage from the earthquake in Papua New Guinea's Hela Province alone is worth more than USD 61 million. The figure below presents the hazard level for the country.

Figure 3: Hazard Level - Earthquake[19]

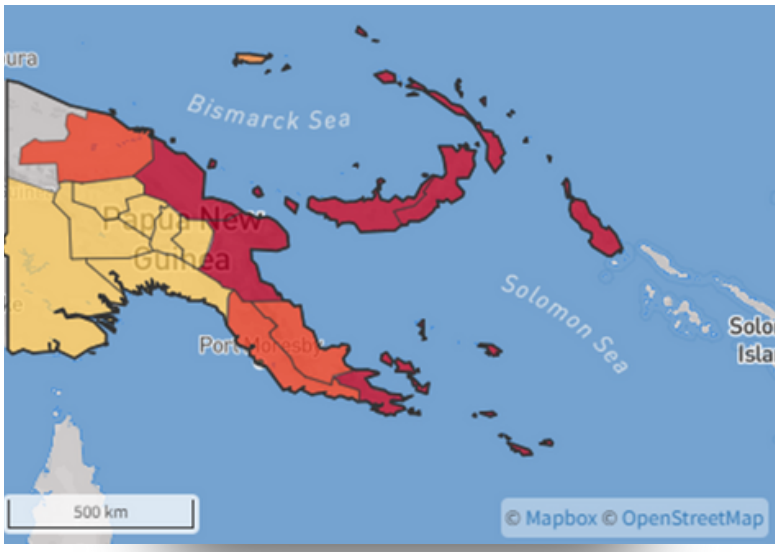


Volcanic Eruptions

PNG ranks highest in the world in terms of population exposed to severe volcanic risk. The island country has 56 volcanoes[20] and 16 active volcanos, six of which are classified as high-risk. Estimates indicate that 17% of the population live within 30 km of the volcano.[21] Lava and ash affected nine of 13 villages on the island with a population of about 7,000 people. The most recent eruption was the Manam volcano in Madang province in August 2018. The lava, thick mud, and ash affected many villages and forced two villages to relocate to the island's unaffected areas. Despite no loss of life, the eruption destroyed houses and harmed food gardens and vegetation.[22]
Figure 4 highlights the province-wise exposure.

17 (USGS, 2019)
18 (AP Climate Partnership, 2021)
19 (GFDRR, 2020)
20 (UNDRR, 2019)
21 (AP Climate Partnership, 2021)
22 (ACAPS, 2018)

Figure 4: Hazard Level - Volcano[23]



High

Medium

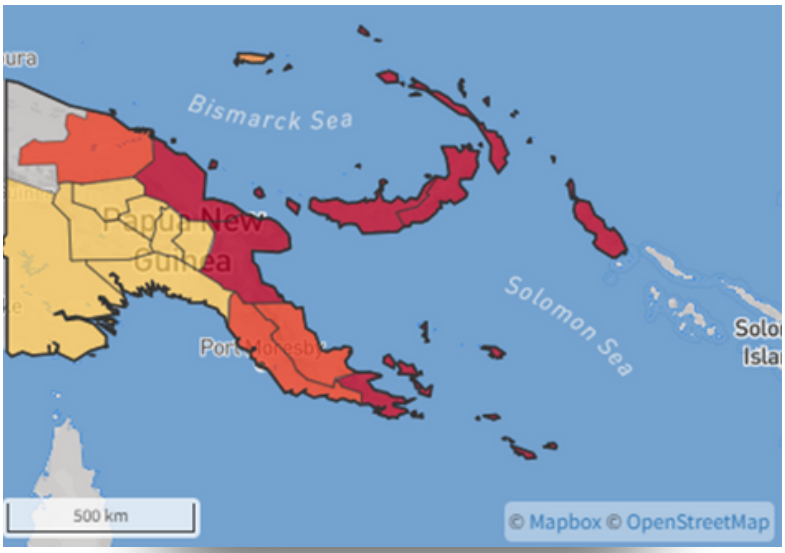
Low

Very Low

Tsunamis

Given PNG's high earthquake exposure, tsunamis pose a major hazard risk for the country. Three major tsunamis have occurred , with the last on 17th July 1998. The tsunami struck the west coast of Aitape and swept a 14 km sector with waves between 10 and 15 m high. It destroyed two populous villages and damaged two nearby villages. The tsunami led to the deaths of 1,636 people and displaced more than 10,000 people.

Figure 5: Hazard Level - Tsunami[24]



High

Medium

Low

Very Low

23 (GFDRR, 2020)
24 (GFDRR, 2020)

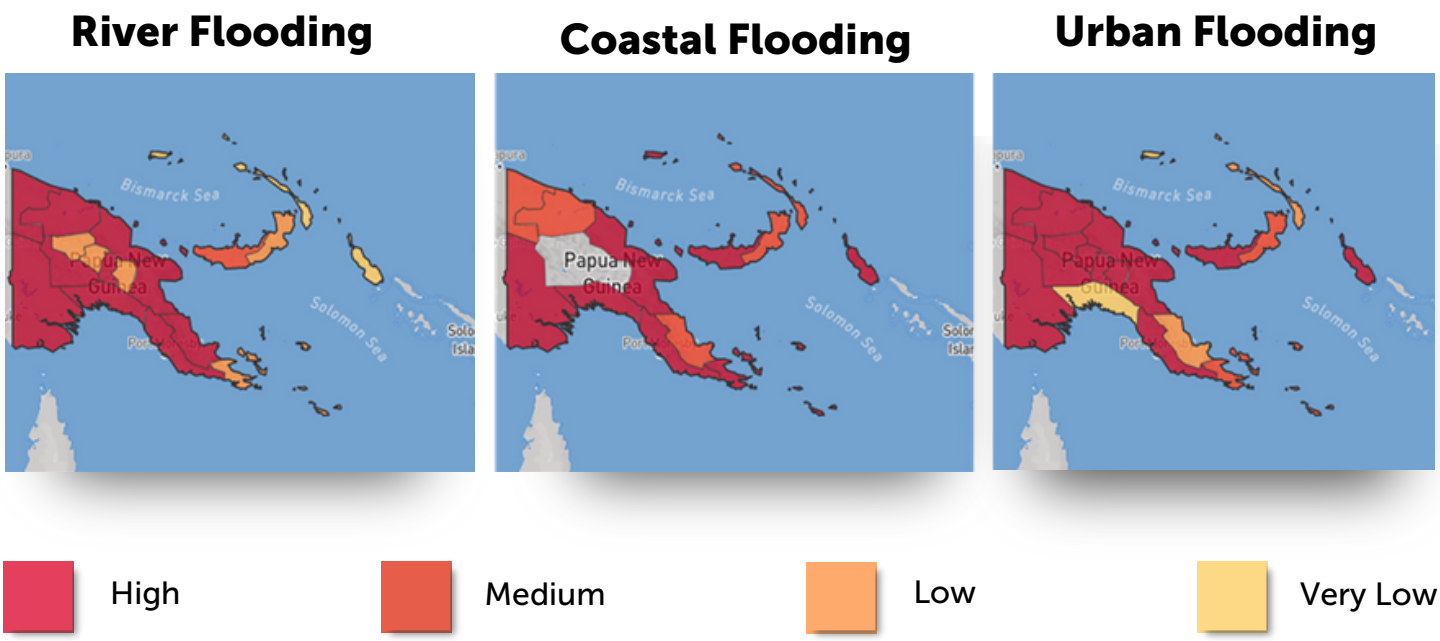
With climate change, the areas at risk of tsunamis will increase with the rise in the global mean sea levels. As per the IPCC (2013), global mean sea level rise estimates for 2100 range from around 20 cm to nearly 1 m. Assets and populations in low-lying coastal areas, such as deltas or island states, will have the maximum exposure due to projected increases in global sea levels.

Floods

Floods represent a significant risk in PNG. PNG experiences coastal, river (fluvial), and surface (pluvial) flooding. Most of PNG experiences flooding during the monsoons. 18% of PNG's landmass is inundated either permanently or regularly.[25] The Highlands region, in particular, has a rich history of severe floods. Flooding on the coastal plains leads to erosion and heavy sedimentation, which devastates agricultural productivity and downstream settlements. In the lowlands, coastal ecosystems, such as mangroves, estuaries, and coral reefs, endure damage due to heavy silt loads and debris brought in by flood events.[26]

As per the 2014 (National Communication II) estimates, river flooding affects at least 22,000 people annually, which leads to average damages of more than USD 8 million.[27] The United Nations Office for Disaster Risk Reduction (UNDRR) estimates a total average annual loss to flooding in the region amounts to 0.5% of PNG's annual GDP.[28] Figure 6 highlights the country-level exposure to river flooding, coastal flooding, and urban flooding.

Figure 6: Hazard Level - Flooding[29]



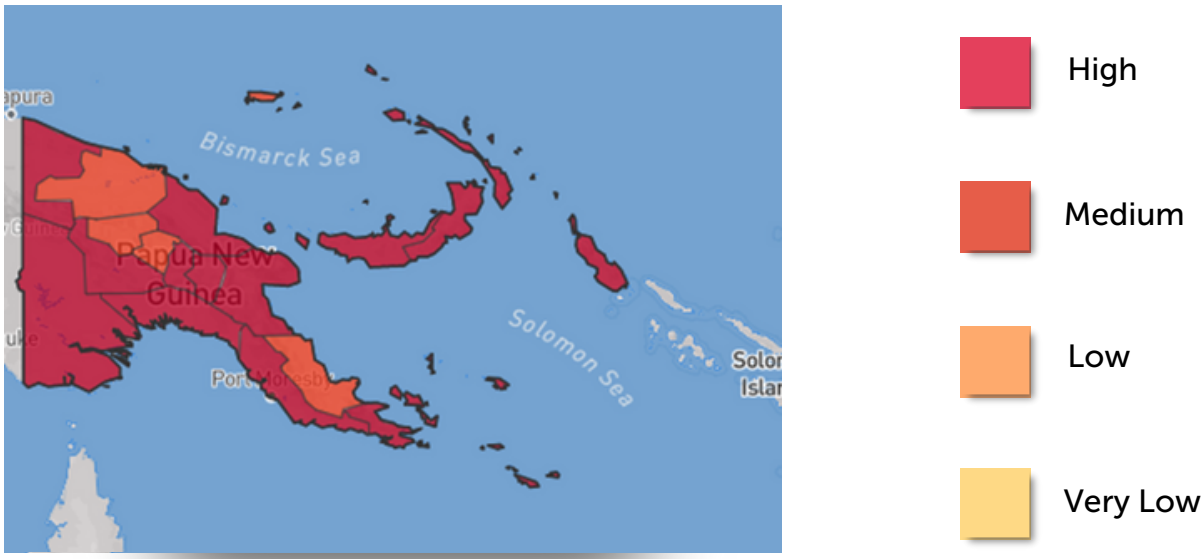
Since the Industrial Revolution, economic growth has generally been tied to increasing greenhouse gas emissions. Economic and population growth coupled with climate change are both likely to worsen the situation. Forecasts with medium confidence indicate frequent and intense heavy precipitation days and increased extreme rainfall events. The high-confidence models also predict climate change's effects could increase the present hazard level. These risks call for planners to It would be prudent to design projects in this area to be robust to river flood hazards in the long term. The flow considered as a one-in-100-year flow could become a one-in-50-year or one-in-25-year event.[30]

25 (UNDP, 2018)
26 (World Bank , 2021)
27 (UNFCCC, 2014)
28 (UNISDR, 2014)
29 (GFDRR, 2020)
30 (Paltan, et al., 2018)

Landslides

Landslides occur commonly in PNG's high mountainous regions and frequently damage vital infrastructure, upland forests, and the homes and gardens of thousands of residents. As per a World Bank Hotspot study, PNG ranks first in landslide hazard profiles due to its steep mountain ranges, high seismicity, and high annual rainfall.[31] Landslides and slope failures in PNG are associated with heavy precipitation and earthquakes, and they occur regularly in the Highlands and mountainous regions.[32] Flash floods lead to nearly 60% of landslides[33], especially when ecosystems and soils are degraded[34].

Figure 7: Hazard Level - Landslides[35]



Climate change is likely to alter slope and bedrock stability through changes in precipitation, temperature, or both. Research has linked short-duration, high-intensity rainfall to an increased likelihood of moderate- to high-impact landslide events,[36] which signifies the potential for climate change to exacerbate landslide risk. High-intensity deluges that lead to river flooding, coastal flooding, and landslides are projected to intensify, with the economic cost and the number of people affected both expected to double by 2030.[37]

Droughts

Two types of drought affect PNG—meteorological, associated with a precipitation deficit and hydrological, associated with a deficit in surface and subsurface water flow that potentially originates in the region's wider river basins. PNG faces an annual median probability of severe meteorological drought of around 4% (severe), as defined by a standardized precipitation evapotranspiration index (SPEI) of less than –2.[38] [39]

31 (World Bank, 2005)
32 (UNDRR, 2019)
33 (Willner, et al., 2018)
34 (Robbins, et al., 2015)
35 (GFDRR, 2020)
36 (Robbins, 2016)
37 AQUEDUCT Scenario B, under an RCP 8.5 scenario for 2030.
38 (World Bank, 2021)
39 The SPEI is a multiscalar drought index based on climatic data. It can be used to determine the onset, duration and magnitude of drought conditions with respect to normal conditions in a variety of natural and managed systems, such as crops, ecosystems, rivers, and water resources, etc.

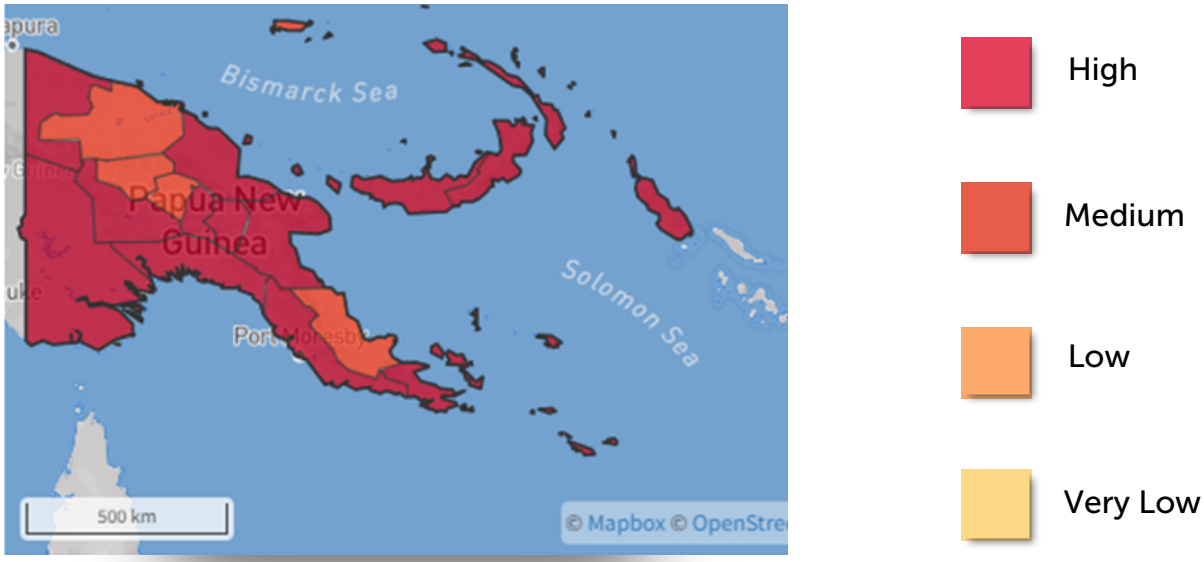
Drought incidents in the region have been historically linked to La Niña and are known to cause serious food shortages through their impact on crop productivity.[40] A major drought associated with ENSO (El Niño South Oscillation) in 1997 highlighted the nation's food insecurity, and led to food shortages for more than a million people, or around 20% of the population. The ENSO phenomenon has already been observed to have an increasingly negative effect on PNG's climate, as it triggers more intense drought and flood events. In 2015-2016, ENSO-related drought affected about 40% of the population, with almost half a million people impacted by food shortages.[41]

The high uncertainty around future precipitation trends, particularly future ENSO and drought occurrence, is unhelpful to plan future water resources management and highlights the need for measures to reduce disaster risk.

Cyclonic Disturbances

Around 15 tropical cyclones pass through PNG's exclusive economic zone every decade, around a quarter of which are category 3 or stronger (severe events).[42] A one-in-100-year cyclone landfall was estimated to cost around 8.4% of the GDP as of 2011.[43] However, even cyclones passing a long way from PNG's landmass can have a significant local impact and lead to flooding and inundation of low-lying islands because of elevated water levels.[44] Figure 8 illustrates the hazard level of cyclones in PNG's different provinces.

Figure 8: Hazard Level - Cyclone[45]



Bougainville Island has the highest exposure to the severe impacts of storms. The proximity of the northern parts of PNG to the equator reduces the risk of tropical cyclones.

As per the World Bank[46], "modeling of climate change impacts on cyclone intensity and frequency conducted across the globe points to a general trend of reduced cyclone frequency but increased intensity and frequency of the most extreme events." Modelling conducted by the Australian government's aid program supports this analysis for PNG.

40 (World Bank , 2021)
41 (CFE-DM, 2022)
42 (World Bank , 2021)
43 (World Bank , 2021)
44 (Lafale, et al., 2018)
45 (GFDRR, 2020)
46 (World Bank, 2021)

The Australian Aid-funded study found that PNG had the largest exposure to average annual loss (AAL) compared to other countries modeled, such as Fiji and Vanuatu. Yet its tropical cyclone risk is reduced due to its proximity to the equator.[47]

History of Natural Disasters in PNG

The table lists major natural disasters in PNG in recent years.

Date	Location	Hazard	Impact
April 2022	Manam Island	Volcano	The ash plumes reached an estimated height of 13.7 km (8.5 mi). No casualties were reported. However, the three communities of Baliau, Kuluguma, and Yassa (Manam Island) were covered by smoke, ash, and volcanic products, which affected many houses, food gardens, coconut palms, wells, and water catchment facilities.
December 2021	East New Britain, Manus, and New Ireland	Flooding (due to tides)	Flooding led to the displacement of nearly 53,000 people. In terms of loss of physical assets, flooding led to submerged schools, homes, gardens, water catchments, and cemeteries. Some homes were completely washed away.[48]
March 2020	Tambul-Nebilyer (Western Highlands Province)	Landslide	The landslide led to the death of 10 people, and two people went missing. At least 1,000 people were affected as houses and crops were destroyed.[49]
June 2019	Ulawum (East New Britain)	Volcano	The eruption affected about 12,000 people in West New Britain and 4,000 people in East New Britain provinces. About 6,800 people were evacuated to two care centers in West New Britain.
December 2018	Manam	Volcano	The eruption affected Manam Island's northeastern part, with lava flow affecting Bokure (Bokuri) and Kolang (in northeastern Manam)

47 (PCRAFI, 2013)

48 (IFRC, 2022)

49 (ADRC, 2020)

February 2018	Enga, Gulf, Hela, Southern Highlands, and Western provinces	Earthquake	A 7.5-magnitude earthquake followed by hundreds of aftershocks, including a 6.7-magnitude earthquake, affected more than 544,000 people and damaged around 54,000 houses. The earthquake forced 18,200 people to seek shelter in informal care centers or with host families. Early recovery efforts were estimated at USD 62 million.[50]
November 2016	Southern Highlands	Landslide	Heavy rains in the area and a possible blast at a nearby quarry led to landslides and killed at least 40 people. Of all the villagers, only three or four people could reportedly escape due to the landslide's remote location and lack of aid available to perform rescues.

Table 1: Impact of Natural Disasters (Number of Persons Affected)

	Earthquake	Flood	Volcanic Activity	Landslide	Storm	Drought
2012		200,000				
2013		35,000				
2014		27,000	1,380		12,346	
2015		20,000			9,199	2,520,00
2016		6600				
2018	544,300		736			
2019	651	350	15,800			
2020		60,900		100		

50 (IFRC, 2018)

Table 2: Economic damage (in USD million) due to past disasters (1970-2021)[51]

	Earthquake	Flood	Tropical Cyclone	Landslide	Drought	Total
Number of Events	16	20	7	-	3	
Damage	96.9	84.6	1.5	-	60.0	**243.0**

Impact of Climate Change on Socioeconomic Activities

Global climate change affects the economic activities and daily lives of PNG's population. The trend will likely to increase in the coming decades. The next section summarizes the evidence for climate change in PNG. It notes climate change has impacted various economic and noneconomic activities and how a lack of coping mechanisms exacerbates the impact of climate-induced natural disasters.

Agriculture

More than 80% of PNG's population lives in rural areas, and more than 70% of households depend on subsistence agriculture. This accounts for nearly 30% of the GDP.[52] These communities are highly vulnerable to climate-related hazards. Direct effects include changes in carbon dioxide availability, precipitation, and temperatures. Indirect effects include impacts on water resource availability and seasonality, soil organic matter transformation, soil erosion, changes in pest and disease profiles, the arrival of invasive species, and a decline in precipitation due to the submergence of coastal lands[53].

The following table captures climate change's projected impact on some key crops[54] in PNG.

51 (ESCAP, 2021)

52 (UNDP, 2018)

53 (World Bank, 2021)

54 (Australia National University, 2018)

Table 3: Impact of Climate Change on Agriculture in PNG

Crop	Impacts of Climate Change
Sweet Potato	An increase in mean annual rainfall could cause some reductions in the tuber's yield, particularly on heavy clay soils. An increase in rainfall of 34 percent from October to March (and 25 percent for the entire year) will likely lead to reduced yield in many locations. Given that tuber yield is already vulnerable to periods of very high rainfall, most sweet potato farmers would struggle to counter a significant rainfall increase.
Banana	Bananas are a particularly versatile crop in PNG. An increase in temperature of about 1°C or an increase in rainfall of up to 8 percent is not likely to result in a significant reduction in banana yields. However, an increase in annual rainfall of up to 25 percent may reduce bunch yield.
Coffee	Future increases in temperature and rainfall, even small increases, increase the risk that coffee leaf rust will become more severe in the main coffee-producing areas. Given the difficulty of controlling coffee leaf rust without chemicals, a greater incidence of the disease would reduce production in the main producing zone.
Cocoa	A predicted increase in temperature of 1°C is unlikely to adversely affect cocoa production. However, even a modest increase in rainfall of 8 percent per year could reduce production to some degree because of a greater incidence of black pod disease. A higher increase of 25 percent in annual rainfall would almost certainly increase the incidence of black pod disease and have a significant negative impact on cocoa production.
Oil Palm	Predicted increases in temperature and rainfall of 1 °C and 8 percent respectively by 2030 are unlikely to significantly affect fresh fruit bunch production. An increase in annual rainfall of 25 percent is likely to reduce production somewhat given that rainfall is already high in the main producing areas (about 3500 mm/year in the West New Britain producing zone).

The above climate will likely affect national food consumption patterns, both through direct impacts on internal agricultural operations and through impacts on the global supply chain.

Infrastructure

Informal settlements in the coastal urban locations dominate PNG's urbanized areas.[55] These areas often lack basic infrastructure and often develop into hazard-prone areas due to low enforcement of spatial planning. PNG is increasingly experiencing what is often termed the "coastal squeeze." Coastal areas face overdevelopment and remain vulnerable, particularly to flood and storm damage, includes much of PNG's service and industrial sectors, which as of 2017, contributed almost 80% of GDP.[56]

The increased likelihood of river flooding and coastal flooding, both of which threaten human lives, livelihoods, and infrastructure, is likely to degrade water quality and spread salt contamination and waterborne diseases. Climate change could increase the population affected by extreme river flooding by 35,000–56,000 people by 2035–2044.

Health

Climate change pressures, such as increased incidence of extreme rainfall, drought, flood, and higher temperatures, represent environmental drivers of vector- and waterborne diseases. Both flood and drought can increase the incidence of diarrheal disease in the country.[57] Projections also suggest that PNG will face approximately 28.3 annual climate-related deaths per million that can be linked to a lack of food availability by 2050.[58]

Increased temperatures will almost certainly reduce productivity and living standards. The population of Port Moresby is expected to surpass 1 million by 2050.[59] The effects of heat stress in PNG's urban centers may amplify if the phenomenon of urban heat island (UHI) develops with the growth of built-up areas.

55 (Connell, 2018)

56 (National Statistics Office, 2022)

57 (World Bank , 2021)

58 (The Lancet, 2016)

59 (Dunne, et al., 2013)

Need for Financial Resilience

Climate change is likely to increase hazards. Without adaptation, it will affect the poorest groups in PNG disproportionately.[60] People engaged in jobs, such as heavy manual labor, are commonly among the lowest paid while also being most at risk of productivity losses due to heat stress.[61] Poorer farmers and communities are least able to afford local water storage, irrigation infrastructure, and technologies for adaptation. In PNG, key concerns relate to the potential increase in flood and landslide hazards associated with more intense rainfall events.

Besides the devastating humanitarian impact, natural disasters are also a growing challenge to fiscal account management. The Economic and Social Commission for Asia and the Pacific (ESCAP) places the average annual economic losses to disaster at around 1 percent of PNG's GDP, with major contributions from floods and earthquakes (see table below). However, estimates based on another assessment suggest the true financial burden may be as much as three times higher—closer to 3 percent of the GDP. The impact of disasters on poor people can, besides loss of life, injury, and damage, cause a total loss of livelihoods, displacement, poor health, and food insecurity, among other consequences.

Table 3: Average Annual Loss (AAL), Current

Natural Hazard	USD, Million	% of the GDP
Droughts	$0	$0
Floods	$86.4	$0.4
Tropical Cyclone	$1.4	$0
Tsunami	$0.6	$0
Earthquake	$73.6	$0.3
Biological	$10.8	$0
Extensive Risk	$48.6	$0.2
Indirect Loss	$84.2	$0.4
All Hazards	**$305.7**	**$1.3**

Without sufficient risk mitigation programs, governments experience increasing volatility in fiscal revenue and budget appropriation. This can, in turn, impact the delivery of public services and investments. Precautionary measures help governments reduce pressure on the public purse after a disaster. It lowers volatility in the state budget and improves planning certainty for the public sector. The quicker an economy can bounce back to normal productivity, the lower the impact will be on society.

60 (World Bank , 2021)
61 (Kjellstrom, et al., 2016)

Analysis of Inclusive Insurance and Disaster Risk Finance

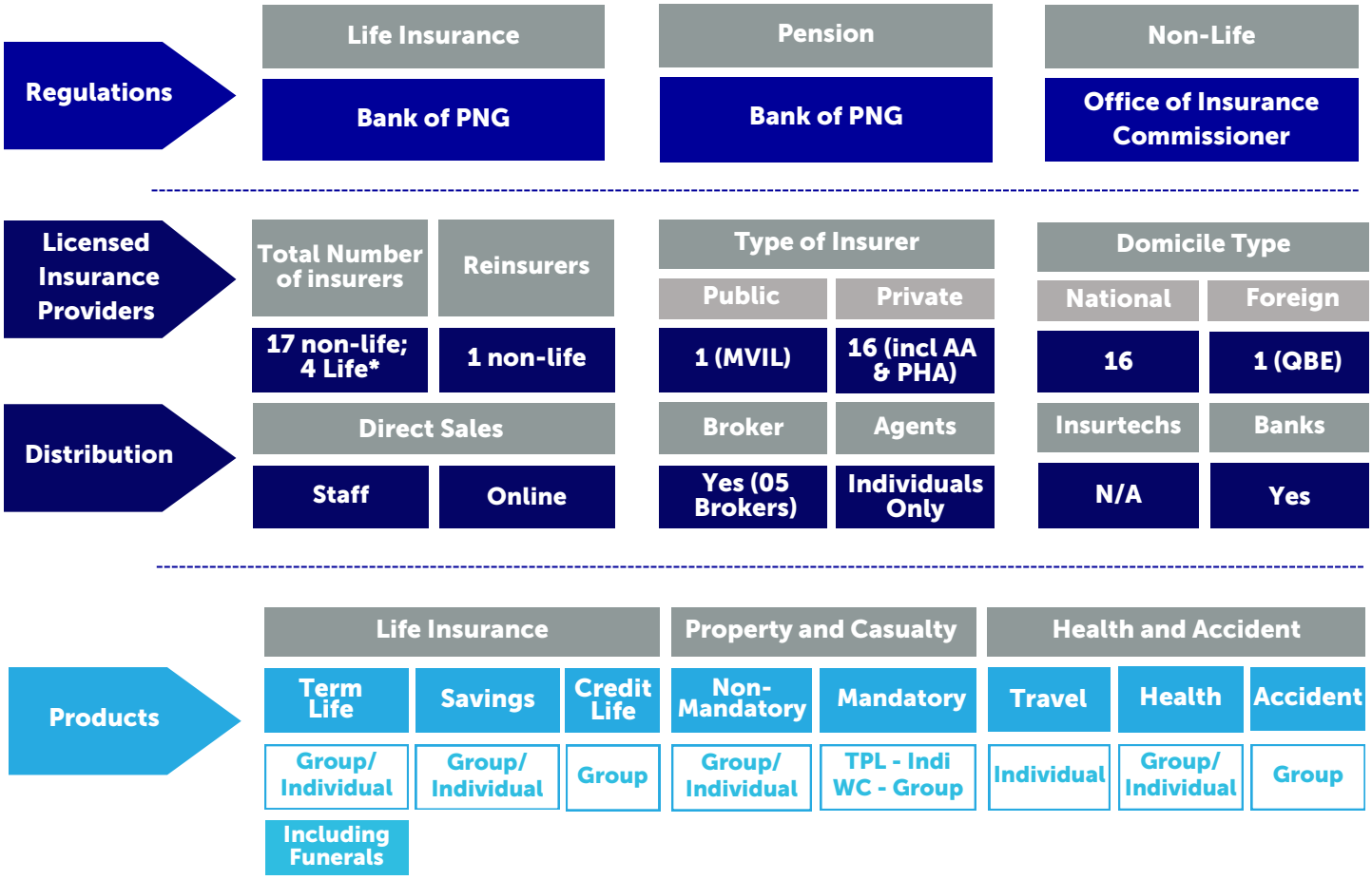
This section analyzes the insurance sector's capabilities in PNG, with a focus on its capacity to serve the country's low- and moderate-income segments and other vulnerable communities. The analysis is done at three levels: regulatory, institutional, and product. The table below highlights the key parameters identified at each level that inform market maturity for financial resilience.

Table 5: Parameters Across the Levels of Insurance and Disaster Risk Finance

Regulatory Level	Market Level	Product Offering
• Country-level social security strategy • Regulatory environment regarding inclusive and climate disaster insurance • Financial inclusion policy of the country • Incentives in regulation for innovation in insurance • Robust and active industry associations • Overall digital financial services ecosystem in the country	• Focus of the insurance industry on inclusive products • Developing new delivery channels - creating sustainable partnerships with other stakeholders in the value chain • Gendered aspects of insurance • Existence and maturity of the Fintech ecosystem	• Existence of inclusive and disaster products • Existence, scale and maturity of mandatory insurance at individual or group level • Claim payout Historical loss performance of the industry • Existence of bundled insurance and pension, for the low-income segment • Financial literacy initiatives

Figure 9 below illustrates the analysis of the PNG insurance landscape, which encompasses a diverse range of stakeholders at the policy and regulatory levels, institutions, and channels, including products. The policy and regulatory levels consist of two regulators; the institution level consists of 21 insurance companies, one reinsurance company, five brokers, and individual agents.

Figure 9: PNG's Insurance Landscape



Note: Excl Workers Mutual Insurance (PNG) Ltd (under liquidation)

Policy and Regulatory Level

Good supervision and regulation are essential for consumers to benefit from insurance, sustainable growth, and stable insurance markets. Strong supervisory capacity through a range of policy objectives and incentives makes markets more inclusive so that suitable insurance products are in place for poor people and enhances consumers' confidence.[62] The section below highlights insights, challenges, and a future roadmap to develop an inclusive insurance-friendly ecosystem in the country—including disaster risk finance.

Papua New Guinea lacks a regulatory social security system. However, PNG's citizen employees are mandated to contribute toward superannuation. Non-citizen employees currently do not need to contribute to superannuation but may make them voluntarily.[63] Moreover, the law mandates[64] worker's compensation and motor third-party bodily injury. The Office of Workers' Compensation in the Department of Labour and Industrial Relations regulates workers' compensation insurance. The coverage includes household workers but excludes self-employed persons and casual workers.

The regulatory structure for the insurance sector is complex. Two authorities regulate Papua New Guinea's insurance sector—the Office of Insurance Commission (OIC) under the Department of Treasury (DoT) and the Bank of PNG (BPNG). The OIC administers general insurers, reinsurers, brokers, and loss adjusters, while BPNG oversees life insurance. The Insurance Act of 1995 regulates general (nonlife) insurance, whereas the BPNG operates in line with the Life Insurance Act 2000.

62 Adapted from A2ii (https://www.a2ii.org/en/about-a2ii/DEFINITION/INCLUSIVE%20INSURANCE)

63 (PWC, 2023)

64 At individual level

Insurance companies and brokers that intend to offer life and nonlife products must register with both regulators and comply with different regulations, considering the insurance market's relatively small size, currently valued at around USD 150 million. In many parts of the world, pro-poor insurance products are designed as package insurance products that cover an individual's assets, health, and life. The development of such products and their reporting prove tedious for insurance providers,[65] and the latter are not motivated to develop such products.

The World Bank's Financial Sector Development Strategy document also reflects the regulatory lacuna. The report has highlighted the key challenges in the insurance sector related to the level of skills or leadership and effective coordination and implementation. It highlights the need to improve the supervision of both the life and nonlife sectors, which is currently "inefficient." The OIC also has a conflict of interest as a department under the Department of Treasury (DoT).

In this regard, the strategy document has also suggested BPNG as the single supervisor for the Insurance sector. This suggestion is also echoed by insurance providers, especially the insurers and brokers that have an interest in life as well as nonlife insurance offerings.[66]

The Financial Inclusion Strategy has emphasized the need for inclusive insurance.[67] The Mid-Term Development Plan (MTDP) – IV has included access, usage, and quality of insurance as the strategy's key deliverables. In the areas of insurance, the strategy seeks to strengthen the enabling legal and regulatory environment and use technology to deepen service delivery. The Centre for Financial Inclusion (CEFI), in association with the "Inclusive Insurance Working Group," also conducted an insurance awareness campaign to promote inclusive insurance. Insurance providers do not see a business case to serve low-income groups. Micro and small businesses remain unattractive, especially those in the informal sector.[68]

Supportive regulations for inclusive and index insurance do not exist in PNG. The regulating authorities can use dedicated inclusive insurance guidelines to drive insurance services to excluded or underserved segments. The guidelines provide supervisors with activities that target processes, structures, or general business practices for inclusive insurance. Globally, regulators use qualitative and quantitative parameters that define pro-poor insurance. The qualitative parameters focus on the target subgroup—the "economically disadvantaged" population, while quantitative parameters target each product line that sets various minimum and maximum amounts of cover. In the absence of these guidelines, the long-term viability of an inclusive insurance pilot will remain uncertain due to either misplaced actuarial analysis or a lack of a customer protection mechanism.[69]

Disaster risk financing is majorly through ex-post instruments. The Government of PNG (GoPNG) has developed multiple national-level policies and strategies to mitigate climate disaster risks, such as Nationally Determined Contributions (2020). However, no climate disaster risk instruments in the form of reserves or risk transfer mechanisms are available in the country. The National Disaster Risk Reduction Framework (2017) suggested developing an enabling policy environment for disaster risk transfer and insurance. Yet, so far, no regulation has been implemented in this direction.

After the 2018 Highlands Earthquake, the GoPNG approved PGK 450 million (USD 126 million) for relief operations and restoration of services. Australia and other countries offered humanitarian support worth nearly USD 5 million to help affected communities re-establish their livelihoods, repair and rebuild infrastructure, and restore water and sanitation, with a specific focus on the needs of women, girls, and persons with disabilities.

65 KII with Insurance providers

66 KII with insurance providers and broker

67 (CEFI, 2019)

68 (CEFI, 2023)

69 (IDF, 2022)

Roadmap For A Regulatory Ecosystem that Supports Inclusive Insurance and Disaster Risk Finance:

The National Financial Inclusion Strategy (NFIS) has emphasized the need for inclusive insurance. However, this would require possible interventions at the policy level to act as a market enabler. This would intervene through advocacy or innovation support to the market stakeholders to kickstart an innovation-focused inclusive and disaster risk insurance market.

Table 6: Possible Interventions at the Ecosystem Level for Market Development

Stakeholder	Challenges	Possible Interventions
Insurance regulator (Bank of PNG and OIC),	• Lack of clarity of the market due to different regulations for life and nonlife segments	✓ Establishing a single office of the regulator as suggested by the Financial Sector Strategy Document ✓ Policy advocacy to create a single regulator and design the structure of the regulator's office so it can function as an independent body without any conflict of interest
	• Limited skill at the regulator level to design and enforce clear rules and regulations for the insurers on inclusive insurance and develop an enabling environment where insurance products can be tailored to customers' unique needs and circumstances	✓ Provide technical assistance to the regulator to mainstream inclusive insurance and disaster risk finance, with a focus on developing guidelines and supervision of inclusive insurance market
	• Missing benchmarking and against global practices	✓ Facilitate dialogue and formal relationships between regulators and international bodies, such as IAIS (International Association of Insurance Supervisors) or A2ii (Access to inclusive insurance) ✓ Policy advocacy through knowledge creation and demonstration of results from successful models of inclusive insurance in the region and similar geographies

National Disaster Center	• Nonexistent disaster risk transfer and insurance mechanisms	✓ Develop a country-focused Disaster Risk Finance (DRF) strategy in alignment with existing government policies and the National Disaster Centre (NDC) framework ✓ Evaluate the scope of implementation of various financial instruments (risk layering) from PNG's context
Industry players (insurance and banking industry, Government agencies, such as SME Corp.)	• Limited priority on inclusive insurance and disaster risk finance due to lack of experience in the sector	✓ Facilitate industry-level associations' innovations through grant- or equity-based engagement-linked financial assistance ✓ Facilitate sector-level dialogues and actions to improve regulations, product design and development, and awareness around inclusive insurance and disaster risk finance
Department of Treasury, regulators, insurance players, CEFI, and other government agencies	• Lack of consensus among the stakeholders on the alignment of priorities to develop an inclusive insurance ecosystem	✓ Facilitate the constitution of the insurance working group and support meaningful and result-oriented outcomes of the group

Institutional Level

The design, development, and implementation of inclusive insurance depend upon the technical and financial capabilities and maturity of the complete insurance value chain. The value chain covers insurance providers, aggregators and distributors, risk modeling agencies, technology providers, and reinsurers. The next section will highlight the maturity of these entities to yield an understanding of the possible development agenda for inclusive and disaster risk solutions.

Insurance Market Landscape

The insurance sector's limited development in PNG constrains the focus on inclusive insurance. The absence of market data in an open forum makes it difficult to ascertain the PNG market's ranking. As per Axco estimates, Papua New Guinea ranked as the 129th largest insurance market in the world in 2018.[70] PNG's insurance penetration[71] and density are around 0.6% and USD 16, respectively, which is lower than countries in the same region.[72] International insurers generally provide commercial and industrial cover, with larger risks priced and reinsured offshore in

70 (Axco , 2022)

71 Sum total of insurance premium as a percentage of GDP

72 Insurance penetration: Fiji: 3%; the Philippines: 1.7%, Indonesia: 1.6%. Density: Fiji: USD 188, the Philippines: USD 58, Indonesia: USD 62

Singapore or Sydney markets.[73] Alongside a few local insurers, these firms also cater to the local economy's property and motor vehicle insurance needs. However, the uptake of insurance is comparatively meager beyond the formal economy. Most PNG residents own little and, therefore, have little property to protect from loss and limited income from which to pay insurance premiums.

The nonlife segment leads in terms of insurance providers and market premiums. With 21 insurance companies (Life: 4; nonlife: 17), the number of insurance providers in PNG per million people (2.2) is higher than in South Asian countries, such as Bangladesh (0.4) or Nepal (1.35) or neighboring countries, such as the Philippines (0.8) or Indonesia (0.6). The nonlife segment dominates the market in terms of the number of players and premium underwritten. The nonlife segment has 17 players against four in the life segment. It underwrote an annual premium of PGK 557 Million(USD 155 million) in 2021, which is roughly 90% of the total (life and nonlife) market premium.

The private sector dominates the life and nonlife segments. All the life insurance companies are privately owned, whereas in nonlife, the government owns Motor Vehicle Insurance Limited (MVIL), Pacific MMI, and share of the sole country-based reinsurer Pacific Re. As the sole provider of third-party motor insurance, MVIL is a leading market player in the nonlife segment. However, QBE, Trans Pacific, and Capital Group lead the market share for traditional Property and Causality (P&C) products (property, marine, liability aviation). The life insurance segment has no government-owned life insurance players.

Multiple international players have exited the market in the past decade. Private sector players dominate the, insurance market, which started with the entrance of Queensland Insurance Co (now QBE) in 1899, followed by Southern Pacific Insurance (now Tower Insurance) and Royal (later Royal Sun Alliance) in 1935. However, in 2016, Alpha Insurance bought American International Group's (AIG) operations in a management buyout, followed by the Pacific Assurance Group's liquidation in 2017 and the sale of Tower Insurance to the Alpha Group in 2022.[74]

The key factor behind the declining interest in the PNG market is the general economic situation, characterized by low GDP growth, coupled with falling prices for natural resources and the end of the construction phase of the PNG LNG project.[75] The insurers rely largely on commercial business and have minimal or no exposure on the retail or mass market side.[76]

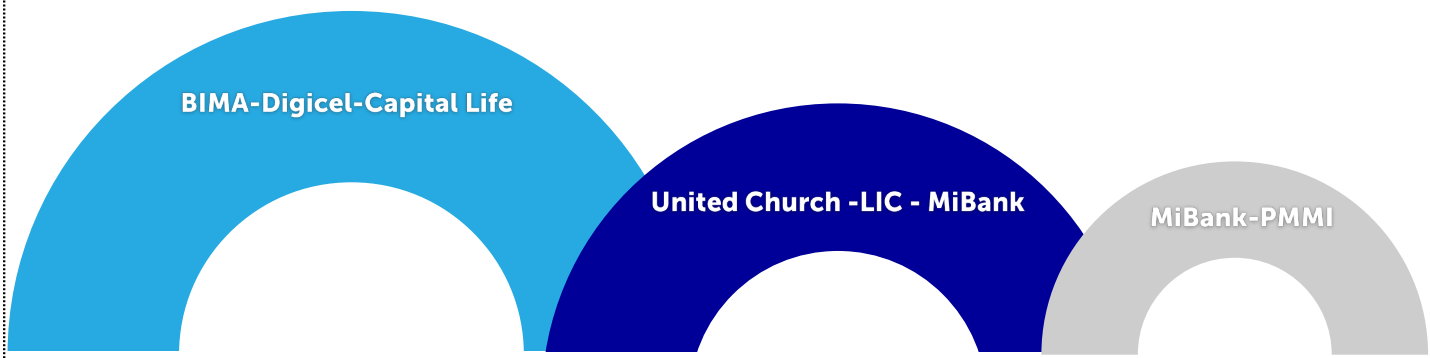
Institutional Innovation and Capabilities

Unfavorable physical conditions and a lack of business cases restrict the mass reach of insurance and the overall financial sector. Most insurance providers lack offices outside of Port Moresby or Lae.[77] This is partly due to limited business potential and high operation costs in most districts. Sparsely populated areas of high mountains and numerous islands contribute to high transport costs and deteriorating infrastructure, which makes it difficult to sustain their regular branch. A lack of lucrative business cases outside commercial insurance also restricts insurance providers when they attempt to reach out to low-income groups.[78]

The insurance industry has supported attempts to foray into inclusive insurance: The insurance providers have partnered with donor agencies and banks (mostly micro banks) to offer microinsurance programs. These pilots explored the possibility of providing low-cost insurance specially designed for properties currently uninsured in informal settlements and villages. Some key pilot programs (as seen in Figure 10) created an initial impact in reaching out to customers. Yet, they could not be scaled up beyond the pilot stage due to a drop in enrolment and service-related issues in subsequent years.[79]

73 KII with insurance providers
74 (Axco , 2022)
75 (Oxford Business Group, 2017)
76 KIIs with Insurance providers
77 KIIs with Insurance providers and Brokers
78 (CEFI, 2023)
79 KII with insurance providers

Figure 10: Inclusive Insurance Programs in PNG



- United Life Insurance Plan, a micro-life insurance and savings plan for members of the United Church
- PGK 100, PGK 90 as the premium, and PGK 10 for the customer to start a life of savings with MiBank.
- Customers aged between 18 and 60 had a funeral insurance coverage of PGK 6,000 (~US$1,1740) and customers over the age of 60 have PGK 3,000 (~US$870).
- Could not make an impact because of Covid-19 lockdowns.

- Pacific Financial Inclusion Programme (PFIP) and BIMA launched micro insurance products in rural PNG, including the Highlands Region in 2015
- Coverage for death (PGK 4,000 - 12,000) and total permanent disability; hospital cash for up to 30 nights (PGK 2,880)
- Premium: PGK 3.6 - PGK 10.8 to be paid through Digicel
- Registered 300,000 customers for life and hausik products
- Paid PGK 6 million claims across life and hospital cash products

- Underwritten by PMMI and supported by the PFIP, the MiLife term-life policy covered funeral expenses in the event of accidental or natural death (excluding HIV/AIDS)
- Bundled with NMB's mobile banking service, MiCash. Covering policyholders aged 18 to 60 and their spouses,
- Premiums PGK 55 ($22) a year and provides pay-outs of PGK 5000 ($2033)

The insurance value chain can capitalize on lessons from pilots and enhance their technical capabilities to serve inclusive insurance. The insurance products developed during the pilot stage covered a range of areas, including death, hospitalization, and funerals, and promoted savings. Few life insurance providers and brokers currently offer customized products for the low-income segment. BSP Life offers savings and insurance with a pay-as-you-go facility (quarterly and half-yearly installments).

Similarly, other brokers and financial institutions have curated products with insurance companies to offer as bundled insurance with other financial products. However, examples of such innovations are infrequent and have scope to improve the digitization of the customer journey and educate customers to make informed decisions about insurance.

Development of climate disaster risk micro insurance suffers from lack of quality data and ground truthing: A few pilots for rural finance, indemnity-based agriculture insurance, and SME insurance have been tried. Yet, these initiatives have never reached scale.[80] On the agriculture insurance front, the unavailability of verified data on land, yield, or income by the authorities make it difficult to estimate the exposure of risk for re/insurance providers and scale initiatives. Structuring insurance becomes difficult due to the informal structure of micro and small enterprises and the lack of focused research on the impact of climate change on the business viability of micro and small enterprises.

80 (CEFI, 2023)

Insurance companies rely on traditional lines of business and brokers to provide data or additional capacity: 2017, motor insurance accounted for 39.8% of total nonlife premiums, excluding personal accident and health business, and generated annual premiums worth PGK 156.20 million (USD 49 million).[81] The third-party motor liability accounts for more than 50% of motor insurance, and MVIL underwrites it exclusively. Most property insurance, including home insurance, covers earthquakes and tsunamis. International insurers provide the insurance terms for complex risks. Insurance companies hesitate to invest in human resource costs that could innovate on new channels and products due to the relatively crowded market with limited scope of business.

The insurance providers are trying to extend their reach to multiple customer segments with mobile money providers, banks, and micro banks. The focus of Port Moresby-based leading brokers is confined to commercial insurance for assets, life, and health. The insurance providers have tied up with micro banks, mobile money providers, and banks to increase insurance outreach. These products are not necessarily bundled with financial offerings but use the partners' point of sale footfall and customer demography. This also benefits from the digitization in these outlets and subsequently provides access to insurance through digital means.

Roadmap to Develop A Future-Ready Insurance Market that Contributes to Meaningful, Inclusive Insurance and Disaster Risk Finance

A concentration of business to commercial products characterizes PNG's insurance market, with competition for traditional property, casualty, health, and life insurance businesses. The limited scope of growth in traditional insurance due to global macroeconomic conditions offers the scope of innovation for low-income segments as a promising market for business turnover. The players need to improve upon the challenges faced in previous pilots and innovate through cost-effective, emerging digital channels, either independently or through partnerships with banks, micro banks, or any other channel.

An increased mobile and internet penetration and scope of expansion for digital financial services make such innovations more attractive to all the players across the insurance value chain. The industry can learn from the expertise of international use cases to drive innovation in the market. The table below outlines some proposed interventions.

81 (Axco , 2022)

Table 7: Possible Interventions at the Institutional Level for Market Development

Stakeholder	Challenges	Possible Interventions
Life and general insurance companies	• Limited data and demand-side insights needed for innovation	✓Provide research and data analytics support to the insurers for product innovation on inclusive insurance and climate disaster products (index insurance) ✓Provide technical assistance to the insurers on product and process innovation, inclusive insurance, and product bundling. ✓Facilitate innovations through engagement-linked financial support (grant, equity, or blended finance) to the insurance companies ✓Facilitate dialogue between insurers and nonconventional channels, such as agriculture aggregators, input suppliers, or retail chains, to identify opportunities for digital delivery innovations
	• Lack of focus beyond traditional insurance products due to perceived sustainability challenges in serving low-income segments	
	• Limited or rare use of digital and phygital delivery channels for cost-effective reach to low-income segment products	
Intermediaries (Brokers)	• Reluctant to venture into inclusive insurance	✓Facilitate dialogue and knowledge creation to mobilize policy-level decisions to generate sustainable business opportunities to serve the low-income segment ✓Engage with international InsurTechs with specialization in climate disaster risk insurance to help insurance providers design and reinsure CDRFIs
Banls and Micro Banks	• Lack of capacity and focus to extend the insurance in a focused way	✓Provide technical assistance on product and process innovation, inclusive insurance, and product bundling

Product Level

This section explores the availability of insurance products for poor and vulnerable communities and the challenges around serving the segment.

Inclusive insurance pilots are mostly designed to cover loans. The key pilots on inclusive insurance covered the beneficiary for term life (credit-linked or standalone). The life insurance products have riders for funeral, accident, or hospital cash. The microbanks also provide insurance that covers a borrower's obligations in the event of untimely death. The Government of PNG established a Risk-Sharing Facility (RSF) to support MSMEs through loan guarantees. By the end of 31st December 2022, the RSF had guaranteed 4,185 loans and disbursed payouts worth PGK 786,213.[82]

Although missing from strategies of insurance providers for long, some private insurers have initiated inclusive insurance and climate disaster insurance. The insurance providers focus on businesses sourced through innovative insurance business models. They have been building a foundation to extend risk protection to low-income individuals. Agri Assurance Limited, a nonlife insurance provider, focuses on agriculture insurance, livestock, and other rural products. Currently, Agri Assurance Limited operates exclusively in the Morobe province. The life insurance provider BSP Life offers multiple retail insurance products that offer benefits of accidental insurance, life insurance, and payouts (in case of survival).

Penetrating insurance through the informal economy is a mammoth task. More than 80% of PNG's population depends on informal semi-subsistence sources of food and income. The informal economy is riddled with barriers and challenges, such as a lack of access to banking and credit. The deteriorating state of infrastructure across the country further increases the cost of reaching out to customers, which results in poor market access. The lack of sufficient resource allocation for adult financial literacy and education among schools and colleges impedes progress in this area.[1] Experience from previous pilots where payouts were rejected due to insufficient documents or poor awareness has also created a negative perception of insurance.[83]

Micro banks and mobile money can potentially bridge the infrastructure gap: UNCDF has collaborated with micro banks and mobile money providers to implement financial inclusion in the country. UNCDF also collaborated with the mobile money provider to improve access and usage of financial services in the Sepik region by using the current customer penetration and brand recall.

However, the present need is to create bank-linked solutions where end-to-end insurance services can be offered through mobile money. The use cases from Fiji where the claim is paid via mobile money and the money can be accessed via a banking account need to materialize in PNG before reaping mobile money's benefits. The micro banks will need human and technical support to distribute insurance meaningfully without impacting their existing relationship with customers.

Future Pathway to Facilitate Inclusive Insurance

The table below highlights some key challenges and possible solutions for future-ready products to develop an inclusive insurance market in PNG.

82 (CEFI, 2023)

83 KII with stakeholders

List of Stakeholders for KIIs and Workshop

STAKEHOLDER	NAME	DESIGNATION
Bank of PNG (BPNG)	Mr. Joseph Nukints	Manager
Bank of PNG (BPNG)	Mr. Eiken Payake	Senior Analyst
Office of Insurance Commissioner	Mr. James Sea	Acting Insurance Commissioner
Office of Insurance Commissioner	Mr. Buka Tau	Assistant Insurance Commissioner, Statistics
Office of Insurance Commissioner	Mr. Timothy Ilave Avaivilla	Assistant Insurance Commissioner, Policy
MiBank	Mr. Tony Westaway	Chief Executive Officer
MiBank	Mr. Nosuau Kini	Chief Risk Officer
Women's Microbank	Mr. Prabhash Ranjan;	Project Manager
Women's Microbank	Mr. Gunanidhi Das	Chief Executive Officer
Women's Microbank	Mr. Benjamin T	
BSP Life Insurance	Mr. Matthew Hasu	Head of Sales
BSP Life Insurance	Ms. Pauline Kerek	Broker Relationship Officer
Capital Life Insurance Group	Mr. Jeremy Norton	Chief Executive Officer
Life Insurance Corporation (PNG) Limited	Mr. Dipayan De	Chief Executive Officer
National Teachers Insurance Limited (NTIL)		

Marsh & Mclennan (PNG) Limited	Mr. Llloyd Aila	Chief Executive Officer
Sunrise Assurance Brokers Limited	Mr. Andrew Aisi	Chief Executive Officer
Trans-Pacific Insurance	Mr. Philip Tolley	Chief Executive Officer
Trans-Pacific Insurance	Ms. Rebecca Snel	Chief Operating Officer
Federation of Savings and Loans Societies Inc. (FESALOS)	Mr. Paulus Laveil	Managing Director
Federation of Savings and Loans Societies Inc. (FESALOS)	Ms. Henao Giri	Manager, Corporate Services
Small and Medium Enterprise (SME) Corporation	Mr. Jamie Lopa	Manager SME Development
Small and Medium Enterprise (SME) Corporation	Mr. Danny Koka	Coordinator, SME Credit Scheme
PNG National Disaster Centre (NDC)	Mr. Martin Mose	Director
Australia Pacific Climate Partnership (APCP)	Ms. Lydia Nenai	
Agri Assurance Limited	Mr. Mark G Baiai	Chief Executive Officer
Agri Assurance Limited	Mr. Taylor Idarovi	
Pacific Health Assurance	Mr. Ashutosh Mishra	Chief Strategy Officer
Pacific Re Limited	Mr. Morris Gaveru	Senior Underwriter
Pacific Re Limited	Mr. Pennias Yasiling	Underwriter

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