DEMAND & SUPPLY STUDY REPORT

SAMOA

Climate and Disaster Risk Financing and Insurance

This publication is brought to you by the Pacific Insurance and Climate Adaptation Programme (PICAP) .

The Programme is jointly administered by the United Nations Capital Development Fund (UNCDF), the United Nations Development Programme (UNDP) and the United Nations University Institute for Environment and Human Security (UNU-EHS).

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What is this report?

This demand and supply study report examines the growing impact of disasters caused by environmental hazards on individuals and households across Samoa and explores financial gaps that could feasibly be filled through climate and disaster risk financing instruments (CDRFI) such as parametric insurance.

By shedding light on the intricate interplay between demand and supply, this study aims to provide information on the state of climate and disaster risk financing in Samoa, with the ultimate goal of enhancing resilience and adaptation in the face of an increasingly uncertain climate future through targeted CDRFI.

The study behind this report is based on:

Samoa Country Profile

(Census[1])

(Map of Samoa)

1 **SAMOA IS COMPRISED OF 4 INHABITED ISLANDS**

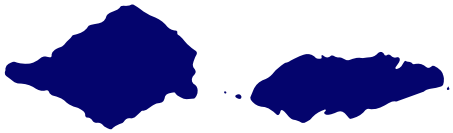
2 **2,934km² LAND AREA²**

3 **POPULATION 205, 557**

4 **49.0% OF POPULATION ARE FEMALES**

5 **61.5% OF POPULATION ARE OVER 15 YEARS OF AGE**

6 **99.6% OF SAMOA'S POPULATION RESIDE WITHIN THE 2 MAIN ISLANDS OF UPOLU AND SAVAII**



1 https://sbs.gov.ws/documents/census/2021/Factsheet-Samoa-PHC2021SBS_21112022_v4FINAL.pdf

2 https://sdd.spc.int/ws

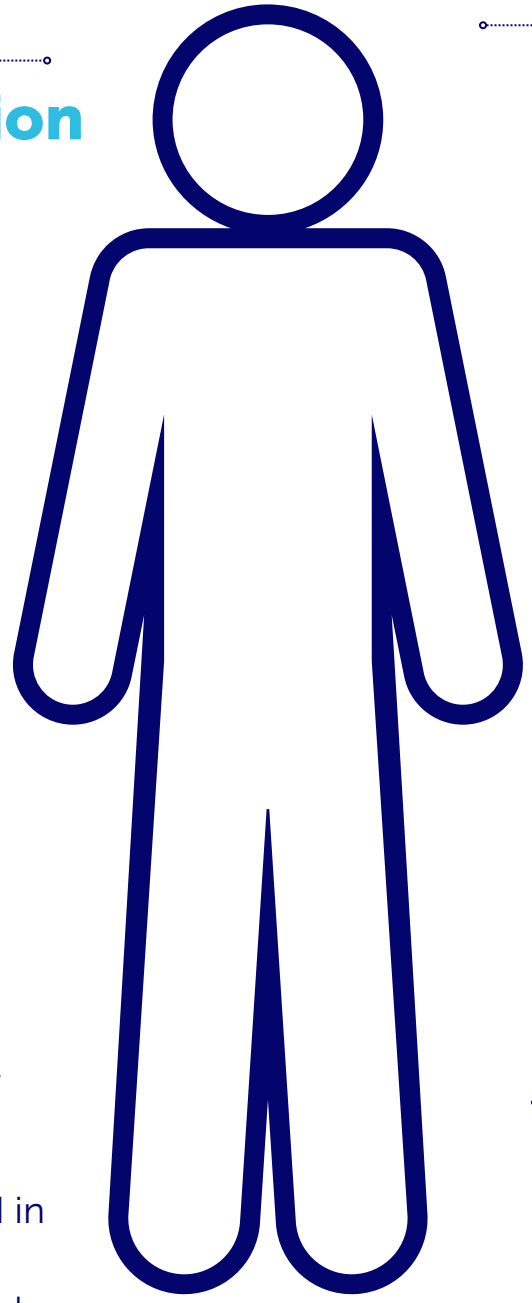
Macroeconomic and Development Indicators

US$832.4 Million

GDP (Current Prices)[3]

US$3,743

GDP per capita



24.9%

of Samoa's population is multidimensionally poor[4]

Labour force participation rate:

43.3%

of population[5]

94.3%

households are engaged in agricultural activity

Key Crops:

- Taro
- Coconut
- Cocoa
- Breadfruit
- Banana

Livestock:

- Cattle
- Pigs
- Poultry
- Goats

HOUSEHOLDS' MAIN INCOME SOURCE:

- Small business
- Formal employment
- Sale from agricultural and fishing produce
- Remittances

3 https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=WS

4 https://www.undp.org/sites/g/files/zskgke326/files/2023-02/Samoa%20MPI%20Report%20Final.pdf

5 https://sdd.spc.int/digital_library/samoa-2017-labour-force-survey-report

Key Findings

Climate Risks

TROPICAL CYCLONES

Based on the Demand Side Survey 73.5 percent of respondents who reported being affected by a natural hazard have ranked cyclones as the most impactful natural event.

FLOODS

Based on the Demand Side Survey 16.2 percent of respondents who reported being affected by a natural hazard have ranked flooding as the most impactful natural event.

DROUGHTS, TSUNAMIS AND EARTHQUAKES

Based on the Demand Side Survey 10.3 percent of respondents who reported being affected by a natural hazard have ranked a combination of tsunami, earthquake, drought and volcanic eruption as the most impactful natural event.

Samoa Risk Profile[6]

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

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

National Disaster Risk Management Initiatives

National Action Plan (NAP)

Climate Change and Disaster Risk Management mainstreamed across public, private and community that includes awareness and promotion of insurance for Disaster Risk Transfer/Management.

National Disaster Management Plan (2017 – 2020)

A policy framework that promotes a whole country and a multi sectoral approach to disaster risk management at the local, national, and regional level.

Pacific Resilience Project

Development objective of strengthening early warning, resilient investments and disaster risk financing (DRF).

DRF Policy 2022-2025

The goal is to prioritize DRF to reduce socioeconomic and fiscal vulnerability of the economy as well as strategic guidance and direction for the Government of Samoa and its institutions through prioritizing and combining specific financial instruments in the aftermath of a disaster.

Community Financial Coping Mechanisms

SAVAII

80.5%
Tap into their Savings

20.1%
Use Loans

UPOLU

24.8%
Rely on Domestic Remittances

39.9%
Rely on International Remittances

18.3%
Rely on Government Assistance

70.9%
Use their Savings

19.8%
Use Loans

Financial Service Providers

BANKING INDUSTRY

- Australia New Zealand Bank (Samoa) Ltd
- Westpac Bank Samoa Limited
- National Bank of Samoa
- Samoa Commercial Bank

OTHER FINANCIAL INSTITUTIONS

Samoa Pacific Business Development

NON-FINANCIAL INSTITUTIONS

- Samoa National Provident Fund
- Samoa Housing Corporation
- Development Bank of Samoa
- Unit Trust of Samoa
- Public Trust Office

INSURANCE COMPANIES

- Apia Insurance Company
- Federal Pacific Insurance
- National Pacific Insurance
- Samoa Surety Insurance Limited
- Samoa Life Assurance Corporation

MOBILE WALLET SERVICES

- Digicel (MyCash)
- Vodafone (M-Tala)

REGULATOR

Central Bank of Samoa is the country's monetary authority and primary regulator of financial institutions such as commercial banks and non-banks while MFIs and NGO financial Intuitions are not regulated by CBS, although it is in the pipeline for regulation

Insurance Landscape

INSURANCE COMPANIES

Samoa has **5** insurance companies

INSURANCE PREFERENCE

99.7% of respondents showed significant interest to take insurance up as a response mechanism for natural hazards

Strong preference for Cyclonic Cover and Crop Insurance products

INSURANCE UPTAKE

9.8% reported having any type of insurance (mainly life and general)

WILLINGNESS TO PAY

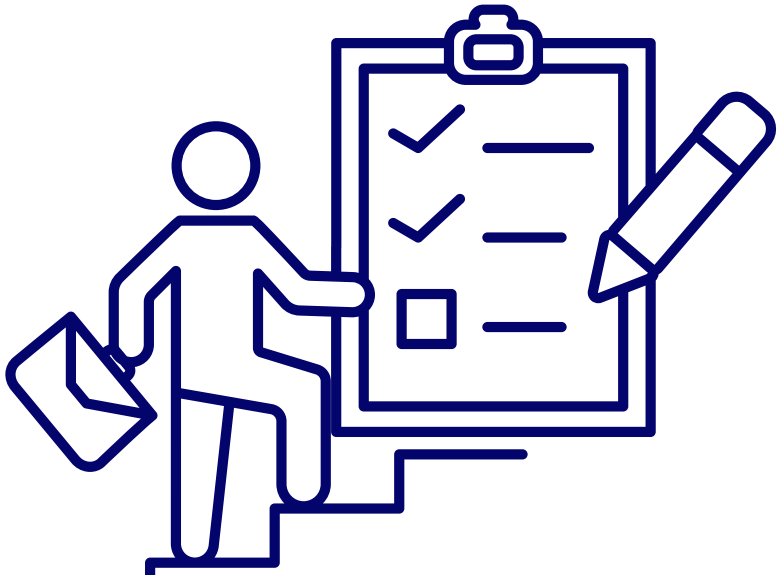
37.1% are willing to pay premium of 60 WST a year for 1,500 WST cover

28.6% are willing to pay up to 240 WST a year around 3,000 WST cover

CLIMATE AND DISASTER RISK FINANCING INSTRUMENTS

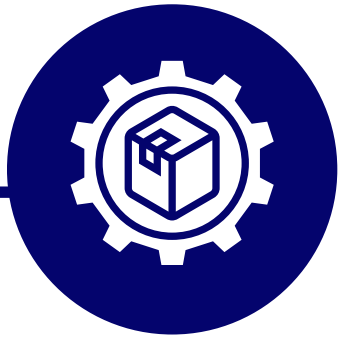
There are no climate and disaster risk financing instruments available in the country and the study reports a strong demand especially for insurance in the agriculture sector

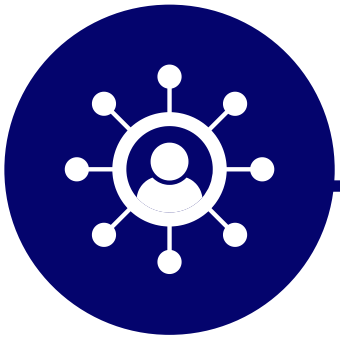
Next Steps



PRODUCT DEVELOPMENT

1





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SUPPLY AND DISTRIBUTION CHANNELS

AWARENESS AND CAPACITY BUILDING

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Introduction

The Independent State of Samoa is an archipelago located 1,534 kilometers south of the equator and right at the centre of the South Pacific. It has a land area of 2,934 km^2 and is home to over 200,000 people. Samoa comprises of 4 inhabited islands with 99.6 percent of the population residing within the 2 main islands of Upolu and Savaii and the remaining 0.43 percent of the population residing in the much smaller islands of Manono and Apolima situated in between Upolu and Savaii.[7]

In 2022, Samoa's Gross Domestic Product (GDP) at current prices was reported at US$832.4 million and its GDP per capita at US$3,743. The Samoan economy has been traditionally dependent on development aid, international remittances, tourism, agriculture and fishing. Its labour force participation rate stood at around 43 percent while the employment rate reported at 85.5 percent according to the country's Labour Force Survey in 2017. Of those that are employed, the top three with respect to employment by industry are in the agricultural sector (21.9%) followed by retail and wholesale (18.2%) and public administration and defense (10.4%). As expected, the agricultural sector is dominated by those in the rural areas (95.3%), particularly by men representing 85.9 percent involved in agricultural activity.

In 2020, agriculture represented 8.3 percent of Samoa's GDP compared to 9.5 percent in 2009. Most (62%) of the agriculture production was non-monetary or subsistence agriculture. The 2019 Agriculture Census recorded 28,516 households, of which 94.3 percent (26,900) of these are agricultural households and more than half are engaged in both crops and livestock, 47 percent are engaged in growing crops only and 0.5 percent are engaged in raising livestock only.[8] Overall horticultural productivity is dominated by five key crops, taro, coconut, cocoa, breadfruit and banana, with 42 percent of the production systems considered organic in nature. Major livestock are cattle, pigs, poultry and goats.

As a low-middle income country and a population heavily dependent on agricultural activity, Samoa remains highly vulnerable to natural hazards. In the recent past, Samoa have been affected by earthquakes, tsunamis and cyclones, severely damaging infrastructure, loss of lives and livelihoods and exert an enormous toll on the development agenda. For instance, Tropical Cyclone Evan in 2012 caused extensive flooding, killed four people, displaced over 6,000, and damaged or destroyed an estimated 1,500 homes on Samoa's main island of Upolu. On average the country has been hit by a natural hazard once every five years, historically increasing public debt as the main response mechanism. Based on past experience, the Samoan government have built fiscal buffers to cushion the impact of natural hazards, however, have stressed the need for private sector activity to strengthen disaster resilience.

This demand and supply study report examines the growing impact of natural hazards on lives and livelihoods across Samoa and particularly explores financial gaps that could feasibly be filled through CDRFI. This diagnostic was carried out through a combination of individual surveys, focus group discussions, desk-based research, key informant interviews and an online survey with supply side stakeholders in Samoa. Further, analysis of satellite datasets was also carried out in order to establish the potential sources of satellite data, which could be used for developing CDRFI.

7 https://sbs.gov.ws/documents/census/2021/Factsheet-Samoa-PHC2021SBS_21112022_v4FINAL.pdf
8 https://www.maf.gov.ws/wp-content/uploads/2023/04/SAMOA-AGRICULTURE-CENSUS-2019-REPORT.pdf

Climate Risk Profile

The geographic location and physical environment of Samoa makes the country prone to several natural hazards such as tropical cyclones, droughts, floods, earthquakes and tsunamis. Some of these hazards are seasonal, such as tropical cyclones, floods, and droughts. These have had adverse effects on communities, the main economic sectors such as agriculture, fisheries and tourism, infrastructure, and the environment, as well as the development priorities of the country.

A summary of key natural hazards are listed below:

Tropical Cyclones: Similar to other Pacific Island countries, Samoa's tropical cyclone season is from November to April. In the 51-year period between 1969 and 2020, around 55 tropical cyclones passed within 400 km of Apia, an average of one cyclone per season and occurring more frequently in El Niño years. Most recent cyclones include tropical cyclone Evan in 2012 that caused damages estimated at 29 percent of GDP, while the damage from Cyclone Gita was limited, although it was a reminder of the ever-present threat of natural hazards in Samoa.

Floods: Samoa's topography have a significant effect on rainfall distribution where the southeastern side of the main island receive more rainfall than the northwestern region. Samoa's annual mean rainfall ranges from 3000 to 6000 millimetres. About 70 percent of the annual mean rainfall is observed during the Hot and Wet season. Flooding associated with tropical cyclones and strong La Niña events has caused widespread damage in Samoa in the past, particularly in Apia. In early 2008 and 2011, for example, transportation, infrastructure and water supplies were severely damaged.

Droughts: The impacts of droughts are severe in Samoa. For example, droughts in 1972, 1983, 1987 and 1997 triggered forest fires and destroyed 80 percent of food crops. Samoa has experienced forest fires in dry native forests and widespread water shortages from the El Niño related drought/dry periods of 1982-83, 1997-98, 2001-02 and 2002-03.[9] In 2011, Samoa suffered one of its driest periods as the La Nina weather pattern affected large parts of the Central Pacific. Droughts were also reported in Samoa in 2015 and 2016.

Tsunami and Earthquake Risks: Samoa is not immune to the impacts of tsunamis and earthquakes as have been demonstrated in the past. Whilst such events are not as frequent relative to other natural hazards such as tropical cyclones and flooding, the devastation is equally detrimental to lives and livelihoods particularly when majority of Samoa's population (~80%) live in coastal areas and the central business district of the country is also located along the Apia harbour. Since 1868, there have been 12 tsunami events recorded, majority of which originated from seismic activity associated with the Pacific Ring of Fire, although local volcanism have also played a role in generating local tsunami events. The more recent event in Samoa occurred in 2009, starting with two large earthquakes which generated tsunami waves of up to 22 meters that engulfed the shores, killing at least 149 persons. The devastation extended beyond human casualties with houses destroyed, cars swept out to sea and some villages being virtually annihilated. With an estimated US$166 million in damages, Samoa was ravaged both physically and economically.[10]

9 https://climateknowledgeportal.worldbank.org/country/samoa/vulnerability
10 https://www.ncei.noaa.gov/news/2009-Samoa-Tsunami

National Disaster Risk Management

Samoa has its National Disaster Management Plan 2017-2020 (NDMP) with the purpose to provide a policy framework that promotes a whole-of-country and multi-sectoral approach to disaster risk management at a local, national and regional level. It also provides a framework and mechanism to enable a coordinated national response to threats that have the potential to cause a disaster and recovery from its impacts. An element of the NDMP is the sectoral approach to Disaster Risk Management (DRM) and insurance was prominently referenced to under Finance, Tourism and Trade, Commerce and Manufacturing Sector as listed below.

Finance Sector:

- Strengthen mechanisms for disaster risk transfer and insurance, risk-sharing and retention and financial protection for both public and private investment in order to reduce the financial impact of disasters on Governments, agencies and communities, in urban and rural areas;

- Integrate disaster risk considerations into the design of social protection programs and complement such programs with insurance principles and private sector products;

- Develop risk market infrastructure to support delivery channels (e.g. underwriting and claims settlement process, delivery channels through insurance intermediaries and alternative delivery channels such as micro-finance, nongovernmental organisations, etc.); and

- Use risk transfer to access international private reinsurance and capital markets.

Tourism Sector:

- Explore opportunities to raise sustainable climate financing from market based economic instruments including insurance cover incorporated into national legislation.

Trade, Commerce and Manufacturing Sector:

- Develop and implement appropriate risk transfer mechanisms, including micro-insurance for micro and small-scale industries; and

- Create awareness on insurance schemes.

Furthermore, Samoa has its National Action Plan (NAP) with the purpose of operationalising the NDMP. In this Plan it has Climate Change and DRM mainstreamed across public, private and community activities that includes awareness and promotion of insurance for Disaster Risk Transfer/Management.

Samoa also has a Pacific Resilience Project that became effective in 2015 with the development objective of strengthening early warning, resilient investments and disaster risk financing (DRF).[11] The DRF component includes the establishment of mechanisms to access finance in the immediate aftermath of a major natural hazard through the Contingency Emergency Response Component (CERC) and by providing insurance premium financing.

Samoa also recently launched a DRF Policy 2022-2025 and is one of only two countries in the Pacific to have a DRF policy. The goal is to prioritize DRF to reduce socioeconomic and fiscal vulnerability of the economy as well as strategic guidance and direction for the Government of Samoa and its institutions through prioritizing and combining specific financial instruments in the aftermath of a disaster.

The priority of exploring options to transfer disaster risks to the private sector is a potential linkage between the intention of this study and the policy. Additionally, the policy highlights the rapid mobilization of funds to support disaster response activities is crucial and this is also the intention of the initiative and therefore further linkages of the initiative and the Samoa DRF Policy.

11 https://websites.pmc.ucsc.edu/~thorne/TL.pdfs/LO_Gilbert_PEPI1983.pdf

Financial Sector

The banking industry in Samoa is composed of two locally owned and two foreign owned licensed commercial banks: National Bank of Samoa Limited, Samoa Commercial Bank Limited, Australia New Zealand Bank (Samoa) Ltd and Westpac Bank Samoa Limited.

Other financial institutions include Samoa Pacific Business Development - a microfinance institution, nonbank financial institutions including Samoa National Provident Fund, Samoa Housing Corporation, Development Bank of Samoa, Unit Trust of Samoa and Public Trust Office.

There are four general insurance providers - Apia Insurance Company, Federal Pacific Insurance, National Pacific Insurance and Samoa Surety Insurance who are private companies and two life insurers - Samoa Life Assurance Corporation that is a Government State Owned Enterprise and Deseret Mutual Benefits.

The Central Bank of Samoa (CBS) is the country's monetary authority and primary regulator of financial institutions such as commercial banks and non-banks while MFIs and NGO financial Intuitions are not regulated by CBS, although it is in the pipeline for regulation. Samoa's insurance sector is also regulated by the Central Bank of Samoa under the Insurance Act of 2007. The Governor of the Central Bank of Samoa is also the Insurance Commissioner and all applications to be an insurance provider in Samoa must be approved by the Commissioner through an application process.

There are no CDRFI available in the market although Samoa Surety Insurance Company has expressed interest and provided draft Insurance Policies based on Disaster Risk Insurance for the Central Bank to review indicating future offerings of related products.

Demand Study Data Analysis

The survey covered Samoa's two main islands of Upolu and Savaii where 99.6 percent of the population resides. A total of 25 Focus Group Discussions (FGDs) with 102 participants and a total of 437 individual surveys were conducted with priority coverage of the main population centres as reported by the Samoa Bureau of Statistics census. Figure 1 presents the coordinates of each individual survey.

Figure 1: Location of Surveyed Respondents

Majority (69.3%) of those interviewed were female as shown in Figure 2. This was not an intended focus during the survey to capture more females and was organically encountered during the survey process except for the selection of Women in Business Development Inc.

The sample section is consistent with the population distribution as shown in Figure 3.

Figure 2: Sample Distribution by Gender

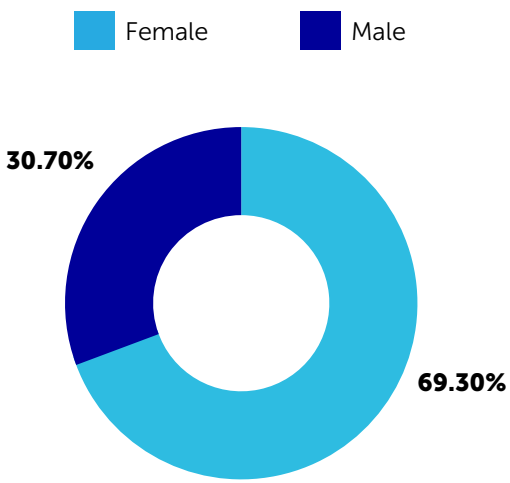
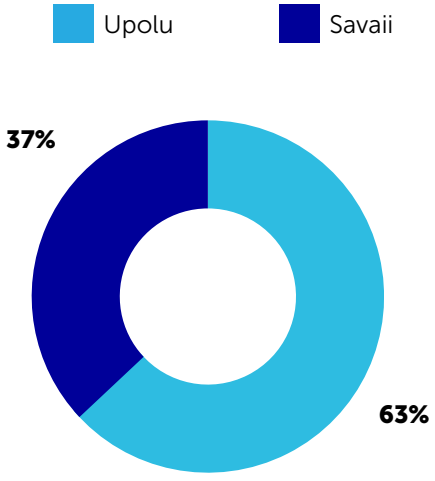
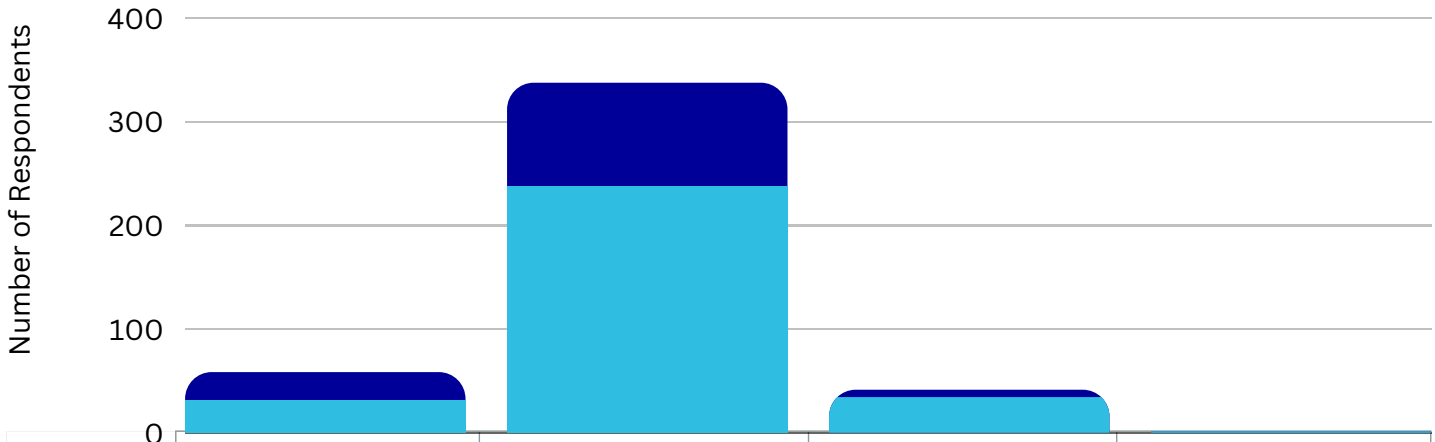


Figure 3: Sample Distribution by Location



The average age of respondents was 44 years of age and mostly either completed or started but did not complete secondary school education.Considering the location of the respondents and their age, it is important to acknowledge that during their time of education, there were limited opportunities for Technical and Vocational Education and Training (TVET) and other forms of learning apart from the formal education system. As shown in Figure 4, majority of the respondents only reached secondary level of education, hence many turn to agriculture to sustain their livelihoods.

Figure 4: Sample Distribution by Gender and Education Level

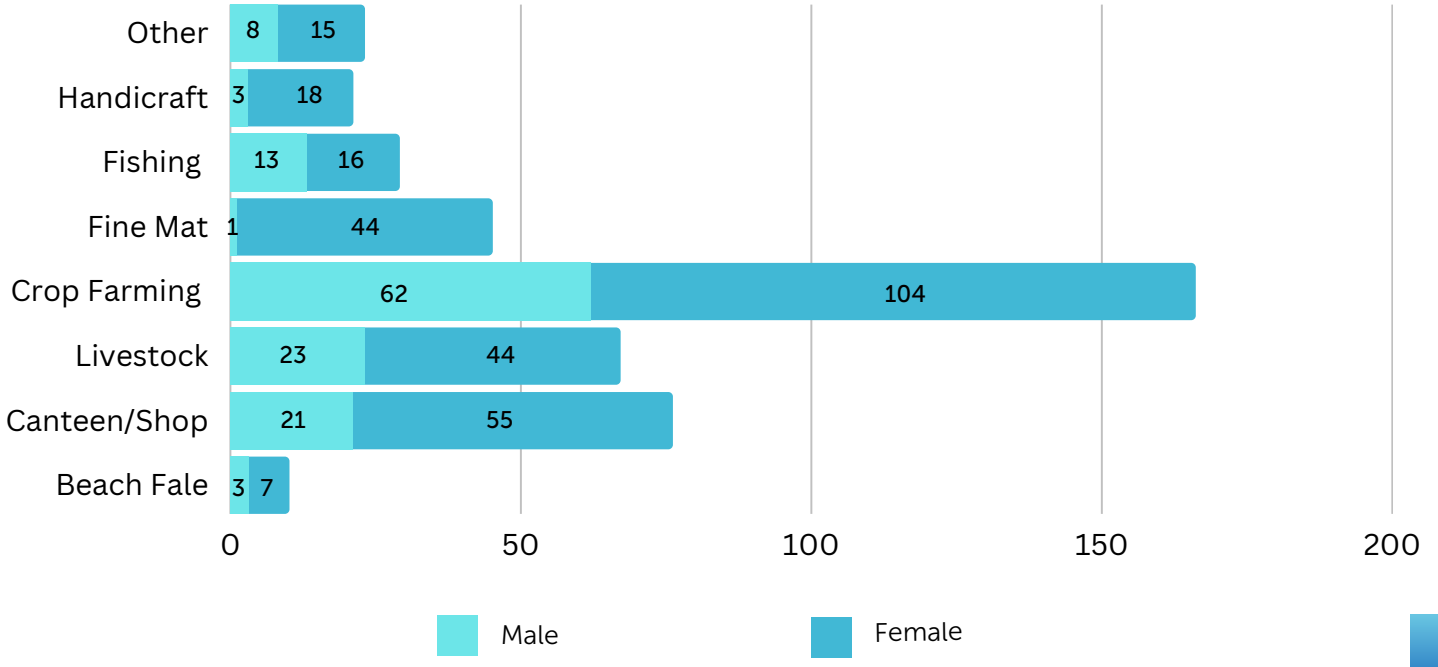


	Primary Level	Secondary	Tertiary	Other
Female	31	237	34	1
Male	27	100	7	0

Livelihood

Majority of respondents indicated that their income is agriculturally based (53.3%) as shown in Figure 5. This is consistent with the Agriculture Census of Samoa 2019.

Figure 5: Source of Income by Gender



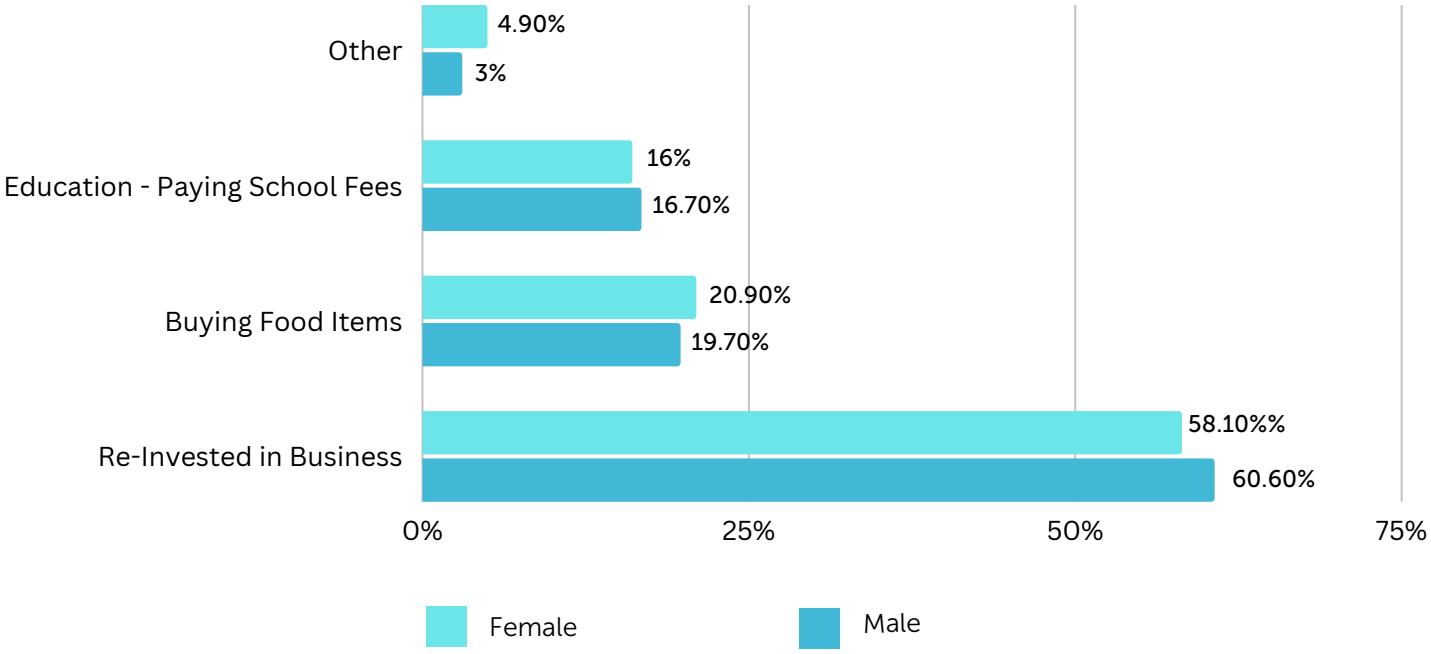
Respondents also indicated that they cannot rely solely on their small business (64%) as the only source of income and therefore have multiple income streams such as other household member employment and international remittances. It has also been increasingly difficult over the years to continue operating small businesses due to the rising cost of production and less buyers in the rural areas, hence some are actively looking for alternative sources of income or employment.

It was interesting to note that there was a difference in dependency of the respondents based on location. Those in urban areas, particularly in Upolu indicated that their operations are supplementary to another main source of income such as spouse or other family member income from formal employment. On the other hand, those residing in rural areas, especially Savaii (36%) indicated that their operation is the primary household income. Therefore, those residing in Savaii would be at a higher risk of impact in the event of a natural hazard because their primary income would be disrupted and less means to recover.

Income Utilization

Both men and women use their income comparably where a lion share is invested back in the business followed by buying food items, paying school fees or on education and other as presented in Figure 6.

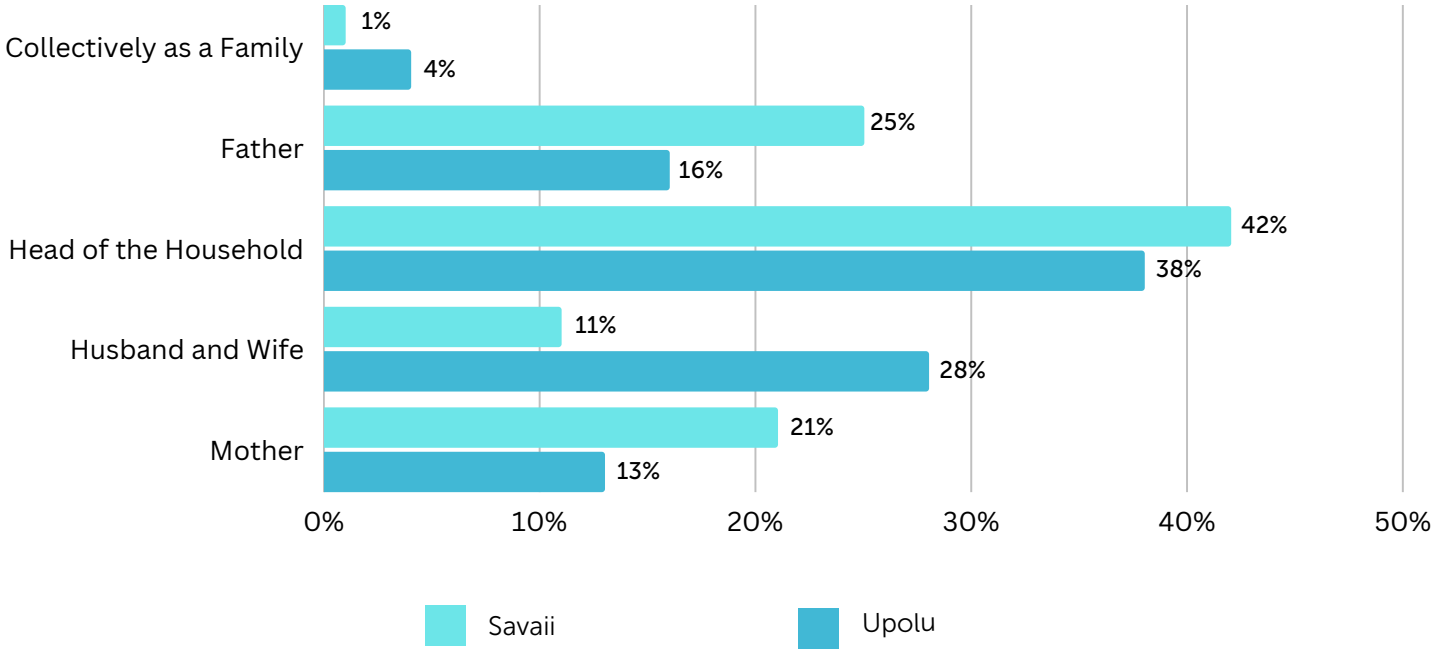
Figure 6: Income Utilization by Gender



Financial Decision Maker

The decision of how household income is used shows a significant difference between the respondents from Upolu compared to Savaii as shown in Figure 7. This reflects the feedback from those residing in Upolu where their operations are only a supplementary source of income which indicates that their spouse earns the primary income and therefore the decision maker would lean towards their spouse which is mainly men (54%). However, a significant 46 percent of women in Upolu are also the key financial decision maker but there is also a trend of either husband and wife or the family collectively making household financial decisions. In Savaii, the financial decision maker of the household mainly rests with the head of or the elder as expected for rural setting in Samoa.

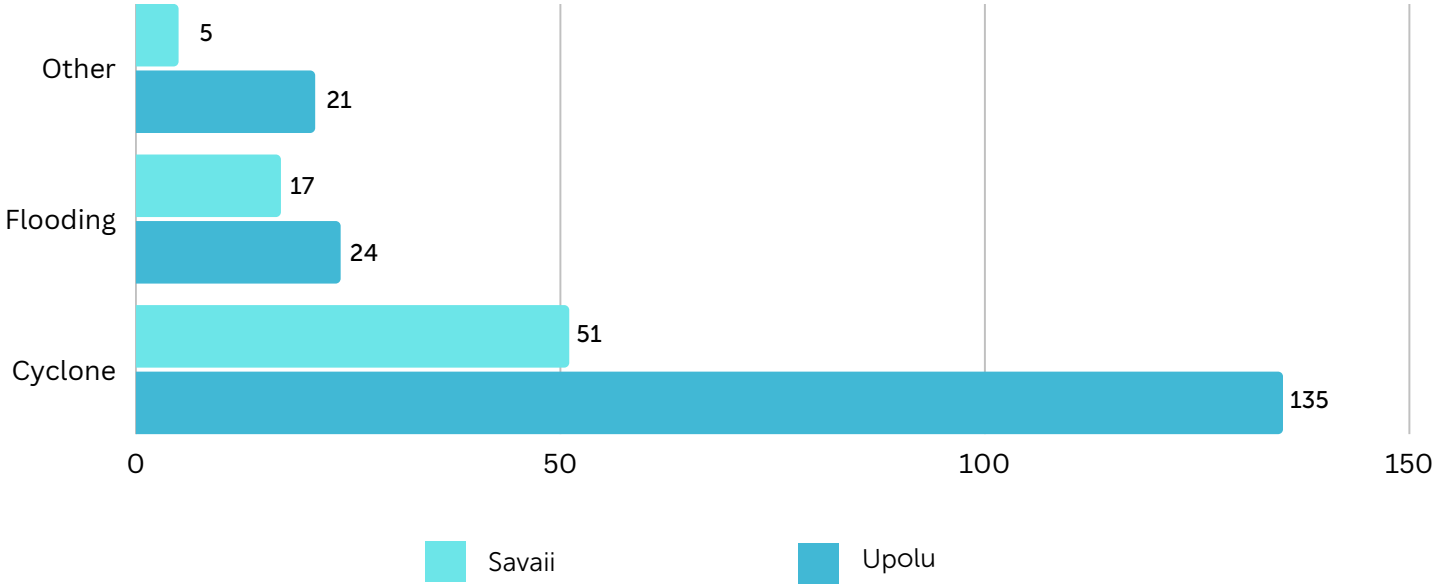
Figure 7: Final Decision Maker



Natural Hazards

More than half of the respondents (57.9%) reported being affected by a natural hazard. Of those reported affected by a natural hazard in the past, 73.5 percent highlighted cyclones, 16.2 percent stated flooding and 10.3 percent listed a combination of tsunami, earthquake, drought and volcanic eruption. Since majority of livelihood is agriculture based, they are more susceptible to strong winds and extreme rainfall and associated flooding. Additionally, a frequently expressed hazard that causes major damage and interruption to operations also include pests and viruses that affect crops and livestock following such events.

Figure 8: Natural Hazards Affecting Samoans

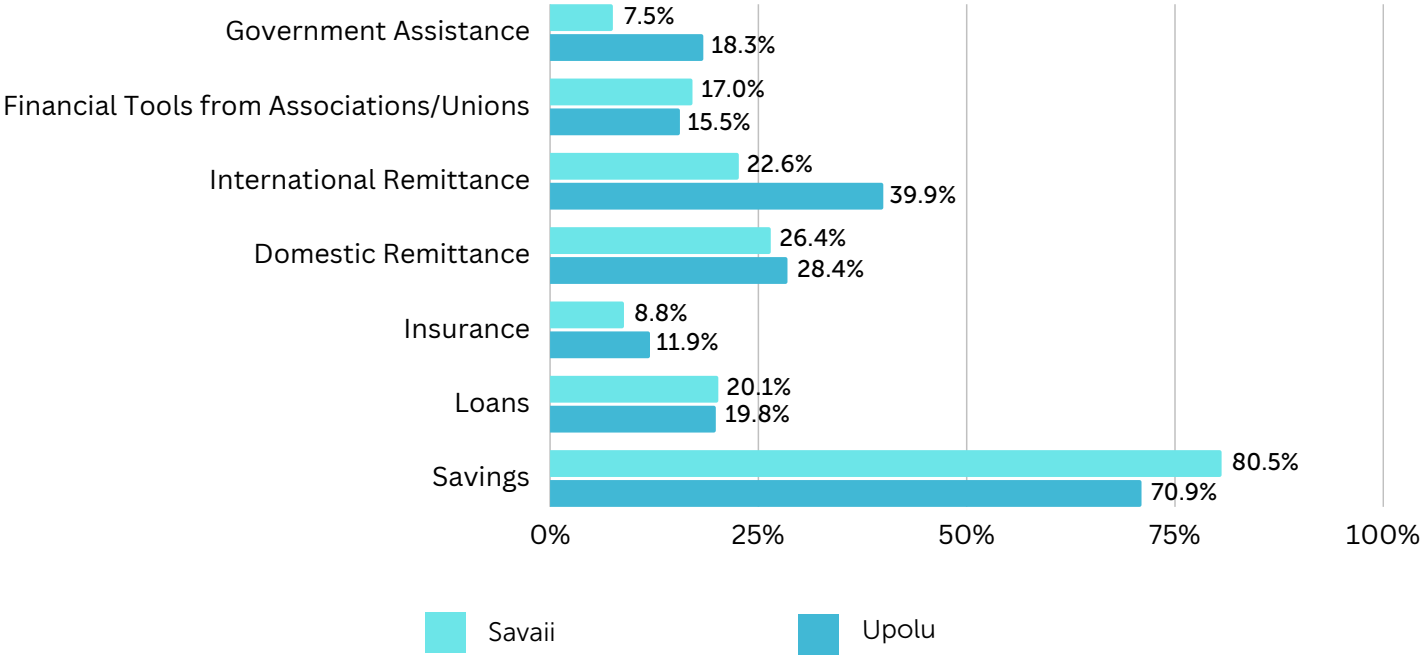


Respondents also reported that they would require approximately US$2,000 on average to recover from the damages caused by such events irrespective of whether they are located in rural or urban centres. To recover from natural hazards, respondents recounted selling assets, household items, seeking assistance from relatives or starting a new business in the hope to quickly generate income to finance recovery efforts.

Financial Instruments

As depicted in Figure 9, respondents in Savaii use financial tools such as savings (80.5%) and loans (20.1%) more than their counterparts in Upolu to recover from the impacts of natural hazard. Although, loans are not popular as respondents in the two main islands highlighted that they do not have the collateral required by lending institutions to access loans and unsecured loans are often too expensive. Respondents in Upolu tend to rely more on both domestic and international remittance as well as government assistance. There were concerns raised by those in rural areas where government assistance takes time and most often accessed by those closer to government offices. Additionally, there are little to no form of community or village clubs because it is discouraged in the villages and some villages prohibit such activities due to previous negative experiences.

Figure 9: Financial Tools Used by Respondents to Recover from Natural Hazards



Mobile Phone Ownership

A significant percentage (90.6%) of Samoans own a mobile phone of which 98 percent reported owning a smart phone. Smart phone adoption reported by respondents is slightly above the percentage reported by GSMA Intelligence for 2022 at 82 percent which is above global average at 76 percent[12].

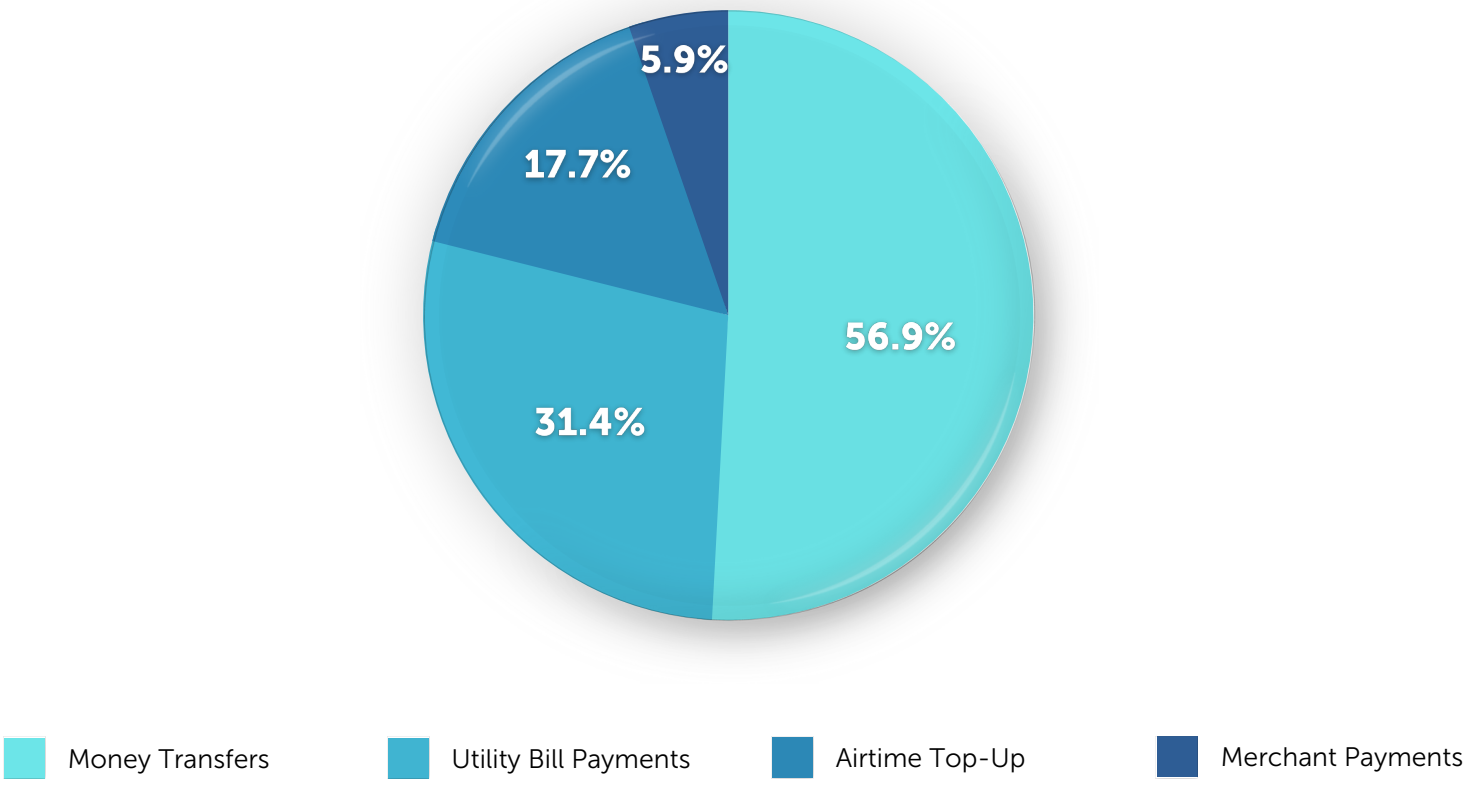
12 https://www.gsma.com/mobileeconomy/wp-content/uploads/2023/05/GSMA-ME-Pacific-Islands-2023.pdf

Table 1: Mobile Phone Ownership

Upolu	Savaii	Total
245	151	396
88.1%	95.0%	90.6%

Of those respondents reported owning a mobile phone, only 15.2 percent reported having registered and used mobile money of which the majority are in Upolu (68.3%). Majority of respondents use mobile money for domestic transfers, followed by utility bill payments and airtime top-up as shown in Figure 10.

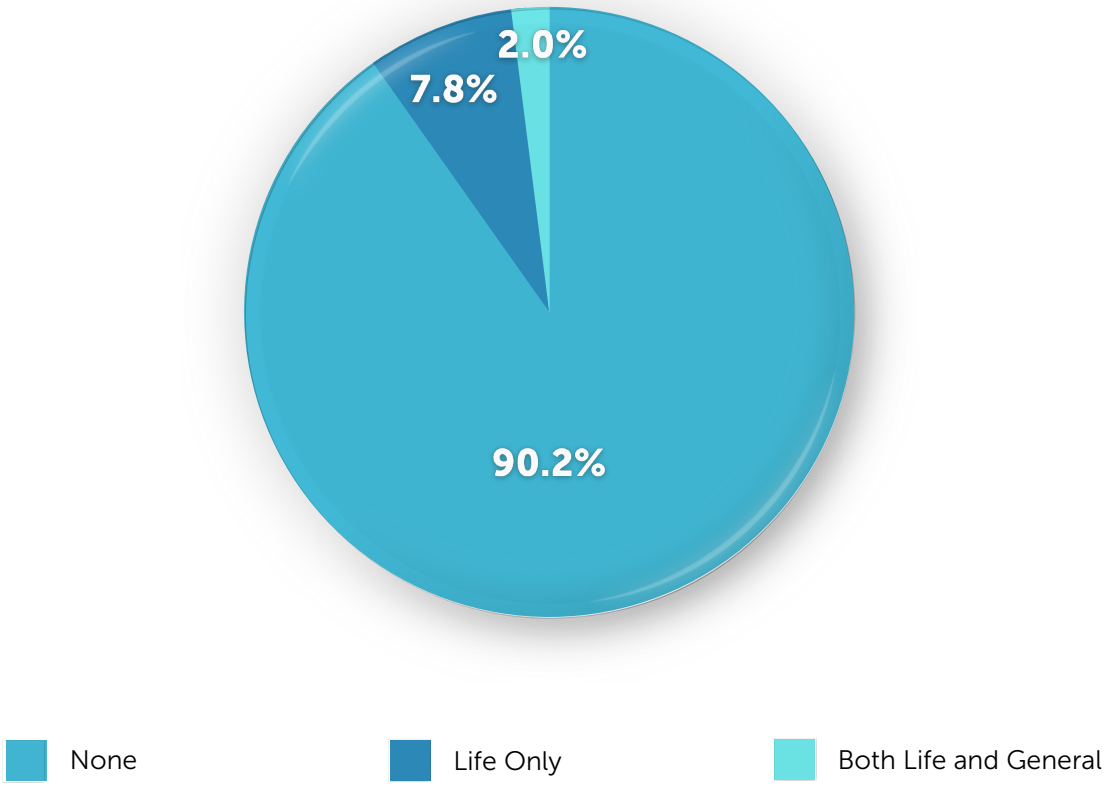
Figure 10: Mobile Money Usage



Insurance Uptake

It was evident that the respondents had very little knowledge of insurance and the benefits until it was explained to them as indicated in Figure 11 where only 10% reported having any type of insurance.

Figure 11: Insurance Uptake



Similarly, there was a lack of understanding of financial literacy and discussions with the respondents and focus groups indicated that although some respondents have had financial literacy training through various programs and initiatives, they were not comfortable to advocate or explain to other villages because they don't feel they are qualified. Some examples of climate insurance products available in other markets such as Fiji, Tonga and Vanuatu were explained to the respondents. There was an overwhelming support and willingness of not only wanting insurance but a willingness to pay for insurance (99.7%).

The respondents understood that the cost of the insurance premium plan will correlate with the coverage amount in the event of a natural hazard. Therefore, those that have respondent positive to 60WST and 120WST premium per year expect the coverage to be between 1,500WST and 2,500WST and equal interest reported for both islands. However, as shown in Table 2 below, as the willingness to pay increases, the expected cover increases as well and is more prevalent in Upolu amongst those with formal employment.

Table 2: Respondents' Willingness to Pay for Climate and Disaster Risk Insurance

Respondents' Willingness to Pay	Insurance Premium	Preferred Cover
37.1%	60WST	1,500WST
23.8%	120WST	1,500-2,500WST
28.6%	240WST	3,000WST
10.5%	>240WST	Up to 50,000WST

Additionally, there is a strong desire and expectation from the respondents in the agriculture sector for an insurance policy that can mitigate climate risk, as well as cost and disruption caused by pests and viruses that affect crops and livestock. Pests and viruses are difficult to predict and account for, hence, many cannot grow their crops in confidence and commit to scale.

Conclusion

It is evident that Samoa has low to medium exposure to natural hazards. However, its lack of coping mechanisms and the increasing threat of climate events on small island developing states, puts the Samoan people at high risk. While more than half of the respondents reported not being affected by natural hazards, this could be attributed to the absence of extreme events in recent years. Nevertheless, strong winds were identified as the most impactful natural hazard, particularly concerning agriculture-based livelihoods.

The lack of affordable and appropriate climate and disaster risk financial products led Samoans to sell assets or start new businesses to generate quick income to support their recovery efforts. Borrowing is less common due to limited access to loans from commercial banks as many farmers do not have the security required by lending institutions, while savings and remittances played a crucial role in recovery.

Insurance uptake remains low and is due to limited knowledge and understanding of how insurance products work. However, as knowledge and understanding improves, Samoans are likely to take up insurance. Additionally, financial and digital literacy will need to be incorporated into the training models of advocacy agencies and insurance companies to ensure sustainability of any CDRFI offered in the market.

There are no climate and disaster risk financing instruments available in the country and the study reports a strong demand especially for insurance in the agricultural sector, where climate risks and pest-related disruptions are prevalent.

Mobile money usage is relatively low and mainly used for money transfers. It has the potential to reach larger segments of the population by designing suitable use cases that add value and convenience particularly to farmers.

To ensure affordability and convenience, key stakeholders can be considered in the implementation of agricultural or climate risk insurance. This include:

- Ministry of Agriculture and Fisheries (MAF): the principal organization charged by the Government of Samoa to provide the policies, regulation and technical support to agriculture and fisheries production;

- Poutasi Gardens: Established in 2009, through the support of the Tindall Foundation, the Poutasi community, the Poutasi Development Trust (PDT), and the New Zealand Volunteer Service Abroad, Poutasi Gardens is a community-based farm enterprise that employs intensive and protective cropping production practices to produce leafy vegetables and herbs. Poutasi Gardens is one of several Poutasi Development Trust's projects. Poutasi Gardens receive some technical assistance from the local extension officers within Ministry of Agriculture and Fisheries (MAF);

- Samoa Farmers Association: Established in 2006, SFA's core business is helping commercially-orientated smallholder farmers to grow their business. This is achieved by providing access to key services, inputs, and technical expertise.The SFA has an expanding membership of 300, comprising individual farming families and village groups. There are also a small but growing number of agribusiness members. The membership is spread throughout the country (Samoa Upolu, Savaii, and Manono islands) and include both crop and livestock producers; and

- Savai'i Coconut Farmers Association: The Savai'i Coconut Farmers Association (SCFA) is a smallholder producer organisation located on the island of Savai'i, Samoa. Its objective is to develop and secure better sustainable living standards for its members. SCFA currently has 69 full members and many more provisional members.

Next Steps

In developing effective CDRFI solutions, the following suggestions have been proposed:

1. Product Development

a. The demand study validates the need for climate insurance products that address cyclones and heavy rainfall leading to flooding.

b. Local insurance providers will be provided with the necessary support to develop appropriate and affordable parametric insurance products to address climate vulnerabilities in Samoa.

c. Insurance providers will be linked with risk modelling agencies and global reinsurance providers to support the development and implementation of parametric microinsurance products in the country.

2. Supply and Distribution Channel

a. Digital platform: Partnerships with IT Galax (Onboarding of members) will be enabled to reach new underserved market segments and help keep premium costs low.

b. Corporates: To reach scale, partnerships with corporates will be established to act as either an aggregator to onboard employees to the parametric insurance product or to add parametric insurance as an employee benefit. i.e Ministry of Agriculture, Samoa Farmers Association and Savai'i Coconut Farmers Association.

c. Central Bank of Samoa: Establish partnership with the Central Bank to allow for an enabling policy and regulatory environment that supports CDRFI offerings and strengthens the resilience and coping capacities of the most vulnerable segment of the community.

d. Ministry of Agriculture and Fisheries (MAF): the principal organization charged by the Government of Samoa to provide the policies, regulation and technical support to agriculture and fisheries production;

3. Awareness and Capacity Building

a. Build capacity of local insurance providers to deepen their understanding of parametric microinsurance concepts, applications, effective claims management, benefits, and challenges.

b. Support local insurance providers in awareness-raising and marketing campaigns to help Samoans better understand what parametric microinsurance is and how it works. Awareness materials to clearly explain product features, the risks covered and excluded, eligibility for the product, cost structures, and consumer rights and feedback mechanisms.

c. Joint awareness campaigns with community associations will be crucial in reaching wider audience and building customer trust.

About UNCDF:

The UN Capital Development Fund makes public and private finance work for the poor in the world's 46 least developed countries (LDCs). UNCDF offers "last mile" finance models that unlock public and private resources, especially at the domestic level, to reduce poverty and support local economic development. UNCDF's strategy 'Leaving no one behind in the digital era' is based on over a decade of experience in digital financial inclusion in Africa, Asia and the Pacific. UNCDF leverages digital finance in support of the Sustainable Development Goals (SDGs) to achieve the vision of promoting digital economies that leave no one behind. The goal of UNCDF is to empower millions of people by 2024 to use services daily that leverage innovation and technology and contribute to the SDGs. To achieve this vision UNCDF uses a market development approach and continuously seeks to address underlying market dysfunctions that exclude people living in the last mile. https://www.uncdf.org

About UNU-EHS:

The United Nations University – Institute for Environment and Human Security is based in Bonn, Germany and conducts research on risks and adaptation related to environmental hazards and global change. The institute's research promotes policies and programmes to reduce these risks, while taking into account the interplay between environmental and societal factors. Research areas include climate change adaptation by incorporating insurance-related approaches, environmentally induced migration and social vulnerability, ecosystem-based solutions to adaptation and disaster risk reduction, and models and tools to analyse vulnerability and risks linked to natural hazards, with a focus on urban space and rural-urban interfaces. UNU-EHS also offers the joint Master of Science degree programme "Geography of Environmental Risks and Human Security" with the University of Bonn and hosts international PhD projects and courses on global issues of environmental risks and sustainable development. http://ehs.unu.edu

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