A PROPOSAL FOR BETTER DISASTER RISK MANAGEMENT IN FIJI

PACIFIC CATASTROPHE RISK INSURANCE COMPANY

(PCRIC, 2021)

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Statement of the Challenge in Fiji

1. Introduction of the Research Paper

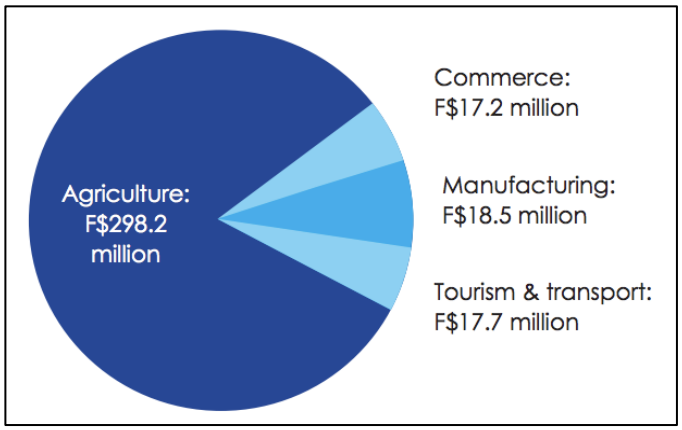
This research paper was designed to help provide a viable proposal for bettering the disaster risk management in Fiji, specifically targeting the use of disaster risk insurance to better prepare the Island of Fiji with their on-going battle against the devastating effects of natural disasters. The paper focuses more on the economic effects that natural disasters have in Fiji, and how financial tools can be used to mitigate the negative effects caused by such disasters.

The research paper will aim to analyze the use of a single disaster risk financing instrument, and how that insurance instrument can then potentially be applied within Fiji. It is essential that the merits of this tool be addressed as well as any demerits that need to be considered when utilizing disaster risk insurance. In addition, specific cases will also be looked into, which will further strengthen the argument towards Fiji's need for a feasible disaster risk tool. Lastly, the paper will briefly address the potential need for practical solutions that Fiji can implement and viable delivery models for providing insurance.

2. Background of the Research Paper

a) Natural Disasters in Fiji

The Island of Fiji is a nation extremely vulnerable to various natural disasters like landslides, earthquakes, floods, and the most damaging natural disaster known as cyclones. Cyclones have been deemed the most devasting natural disasters to Fiji due to their high frequency and the severity of damages. In 2016, cyclone TC Winston affected nearly 62% of the entire population and in 2020 Fiji experienced two cyclones by the names of TC Harold and TC Yasa. In total, the two cyclones affected over 273,000 people nationwide (PCRIC, 2021). A global logistics cluster, funded by the European Commission (Emergency Preparedness, 2012), estimated that one or two cyclones impact Fiji on an annual basis and that due to the increase in climate change, the nation is starting to experience a rising occurrence of floods and flash floods. Additionally,



(Development Fund, 2020)

the commission also claimed that in 2003, TC Ami resulted in the economic and social loss of more than $100 million. These figures are quite concerning given the fact that this consistent battle with natural disasters always takes a toll on the economic resources and reserves available to the Government of Fiji. The above illustration depicts TC Winston's impact on economic cost for different sectors of Fiji's economy.

The significant issue resulting from this illustration is that 'Agriculture' is currently the leading contributor to the Fijian economy, given the fact that 'Tourism & Transport' exponentially decreased due to the COVID-19 pandemic. Fiji's high exposure to natural hazards has already shown that it can cause long-term cumulative harm to the economic situation. In addition, Fiji's geographical remoteness and large land area dispersion are both contributing factors that only increase the risk and severity of natural disasters. In 2019, the *'World Risk Report'* ranked Fiji as the 12th most hazardous country in the world due to their exposure to natural hazards and their lack of coping capacities to endure such natural hazards (Bochum, 2019). The reality of the matter is that Fiji is extremely vulnerable to natural hazards and the International Monetary Fund (IMF) only makes the reality more visible by estimating that Fiji has approximately 70% annual chance of suffering from a significant natural disaster (Lee, 2018).

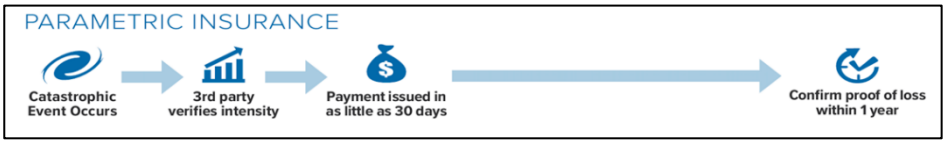
All of these figures and cases were presented to help demonstrate exactly how severe the issue of natural disasters is to Fiji. These stats reflect the need for proper measurements to be put in place that are solely designed to mitigate or remove the effects of natural disasters.

b) Disaster Risk Insurance

Much like any other insurance scheme, this form of insurance deals with providing coverage for a party (countries, individuals, public/private entities, etc.) that has recently dealt with extreme natural hazards and upon doing so have experienced damages across various sectors and regions of the party. One of the earliest forms of this insurance scheme was seen in 1996, where the Sovereign Disaster Risk Financing & Insurance provided Mexico with a natural disaster insurance fund (International Office, 2015). The primary aim for disaster risk insurance is to help provide a concerning party with a quick injection of cash flow that can be used by the party to provide immediate relief needs, post natural disaster (Presentation, 2021). In addition, it is usually seen that disaster risk insurance schemes are provided on a parametric basis. A parametric basis simply means that the insurance will only be paid out according to certain parameters, index or metrics, and that the amount of these payouts will be determined by the circumstance and any threshold that it may exceed. The

following diagram helps to show the brief process in obtaining and clearing parametric insurance programs.

(Kaplan, 2020)



A Clyde & Co report once stated that parametric insurance schemes can help to build a more resilient world and aid in closing the protection gap. The report illustrated that with the current level of support that parametric insurance experiences in conjunction with the demand and proven success of the insurance instrument, government and regulators need to encourage and facilitate the responsible roll-out of parametric insurance (Moorcraft, 2018).

An excellent example where disaster risk insurance aided a nation with their natural disaster crisis can be seen following the devastating earthquakes experienced by Peru, Mexico, Chile, and Columbia on February 7th, 2018. The World Bank issued a catastrophe insurance bond totaling to USD$1.4 billion, which was used to maintain essential services, provide social and environmental relief, and provide the necessary funds for damage control & repair. Another example can be seen in the Philippines, where they obtained an insurance package resulting in a coverage of US$206 million in order to finance fast liquidity for the nation's assets against natural hazards (Insuring the Philippines Against Natural Disasters, 2019).

This example is relatable to Fiji because the two nations share similar geographic features, which shows that Fiji too can benefit from such a coverage. However, Fiji would never be able to obtain such a high coverage amount due to their population density and under-developed infrastructure, subsequently resulting in Philippines experiencing more infrastructural and societal damage than Fiji ever could.

3. Significance of the Research Paper

The significance of this research paper was further highlighted after seeing the current position Fiji faces with natural disasters. Disaster risk insurance schemes will provide a stable coping mechanism for a nation that has a high tendency with facing severe natural hazards that lead to crippling economic, societal, environmental, and infrastructural damages. Thus, the significance of this research paper is to illustrate how disaster risk insurance programs can help to combat and alleviate these damages. Lastly, the research paper will also shine a light on the methods involved to obtained such insurance packages and certain measures that will help incentivize the Fijian Government to engage in disaster risk insurance schemes.

Proposed Solutions

1. Recommendations

After a thorough investigation into the concept of disaster risk insurance, practices of disaster risk insurance, Fiji's position against natural hazards, and Fiji's stance on risk disaster insurance, some strong recommendations include.

a. Reaching out to internationally based insurance facilities that can help to provide maximum payouts at a premium price that is affordable for the nation. The Fijian insurance market is weak and therefore requires international assistance from companies that are fiscally sound in terms of risk capital.
b. Develop the capabilities for effective and reliable risk assessment. This requires providing the means necessary for the creation of institutional risk assessment, which will facilitate the growth of reliable and relevant data. This type of data is essential for policy makers and holders because it dictates the amount of payout.
c. Develop and implement various disaster reduction strategies that can then be complemented with the insurance packages. This will help to minimize the actual risk of loss of lives/assets/resources.
d. Formulate a plan of action that helps to allocate how the funds secured from a potential insurance payout will be distributed throughout the nation. Allocations need to go towards specific sectors, immediate relief events, long-term infrastructure work, risk mitigation activities, etc.

In regard to potential recommendations that weren't discussed throughout the research paper, Fiji can also improve their disaster risk financing position by introducing;

a. A COVID-19 element to their disaster risk financing. The current economic situation in Fiji has been crippled by the COVID outbreak. Therefore, recent trends around the globe have seen the inclusion of COVID-19 into their parametric risk insurance products. If Fiji can successfully meet the insurance claim criteria, then it can benefit immensely from the payout.
b. Incorporating more private-public corporation when it comes to insurance market penetration. This collaboration will not only help the government or public sector, but it will also provide further knowledge and skills to privatized sectors of the economy. Thereby, invoking more local insurance packages and building solid reputation to ensure larger, international insurance schemes for the government.

Lastly, recommendations also need to be provided towards the potential delivery modes used when providing insurance or microinsurance. These recommendations were constructed from the concepts found in the '*IIASA Disaster Insurance Report*' (Mechler, 2006);

a. *Full-Service Model*: Commercial/Public insurers provide insurance services from initial development, to distribution, and all the way to absorbing the risk.
b. *Provider Model*: Banks and other providers can directly acquire or offer insurance packages. However, it is usually accompanied with credit, in case of any default.
c. *Community-Based Model*: Local Communities or NGOs distribute the insurance product, manage the risk pool, and absorb the risk.
d. *Partner-Agent*: Commercial/Public insurers collaborate with other institutions to develop the product. Insurer absorbs the risk and agent markets the product.

Assessments and Conclusions

1. Pros, Cons & Risks of Disaster Risk Insurance

Before this paper begins to assess Fiji's position on disaster risk finance, further analysis needs to be done towards the advantages, disadvantages, and risks of implementing disaster risk insurance policies. Many of the following arguments are cited from the '*UNDP Financing Solutions for Sustainable Development*' (Disaster Risk Insurance, 2021).

a. Advantages

i. It aids a nation by providing the necessary liquidity means needed to restore people's livelihoods and minimize the risk of falling into poverty. These insurance policies provide timely liquidity relief for recovery purposes in a post-disaster event. The 2021 Insurance Development Forum (IDF) and Risk Finance Facility (RFF) studies suggested that various insurance schemes can potentially minimize losses experienced from a natural disaster in low-income developing countries by as much as 25% (Giang, 2021). In addition, outreaches to vulnerable communities can be facilitated under a relatively shorter time.
ii. Insurance can alleviate the pressures of market planning and trading by creating a level of stability for organizations and governments. This is extremely important for places like Fiji because of their climate-sensitive sectors like agriculture and tourism.
iii. This form of insurance promotes high risk diversification. The pooling of risks over a wide spectrum allows for premiums to be offered at considerably lower rates. Once again, this is vital for a nation like Fiji that already has a national budget that is thinly stretched out. In 1997, the Caribbean Disaster Mitigation Project (CDMP) reinsured by the United Insurance Company (UIC), were able to offer premiums at a discount of 25-40% (Warner, 2013). This example may be a bit outdated but it just goes to show the impact of risk diversification.

iv. Prevents nations being condemned to a downward fiscal spiral due to temporary loss on tax revenues and increased cost on reconstruction expenditure.

b. Disadvantages

i. Insurance schemes are designed to help parties recover from a natural disaster and incentivize preparedness. However, these schemes cannot prevent the actual risk of loss of lives/assets/resources. Therefore, these insurance schemes need to be complemented with disaster reduction strategies.

ii. Affordability of insurance premiums is highly dependent on grants, donors or public incentives. Therefore, poorer countries in the Pacific Islands may not be able to afford premiums set at a high price.

c. Risks

i. One of the biggest risks in developing areas is access to reliable information. Risk assessment requires the capabilities for institutional risk assessment, which is limited in developing nations. In 2016, the African Population Research Center (APRC) claimed that African policy makers struggled to make reliable policies due to the nations weak data systems (Beguy, 2016).

ii. Another risk lies with the financial sustainability of the insurance scheme. Direct insurance schemes are only commercially viable if there is a steady, scaled stream of premium revenue to match future pay-outs.

iii. The magnitude and frequency of extreme natural hazards can be a potential risk to insurance policy makers. In some cases, insurers may withdraw from the market if risks become too high to pool. This is definitely a future problem for Fiji because of the increasing severity of natural hazards and rising sea levels.

2. Fiji's Disaster Risk Insurance Position

Across the globe, insurance has been deemed as an important instrument when managing and mitigating the risk associated with natural hazards. However, a report by Leith & Subramanian stated that the Pacific regions is one of the least insured regions in the world and one of the most vulnerable regions to natural disasters. In addition, the Pacific region also recorded low rates of insurance penetration, which came out to be 3.6% (Leith, 2013). The insurance penetration rate is used to indicate the level of insurance sector development in a specific region, and the rate is measured as a ratio of annual premiums written to the relative GDP for the year. To give an idea as to how weak the current rate is, the Organization for Economic Co-operation and Development recorded, across all their regions of study, an average of 8.9% for their insurance penetration rate (OECD, 2020). The following table on

page 6, highlights the different number of barriers that impact the proper implementation of disaster risk insurance schemes (Lucas, 2015).

Pacific Island (Fiji) Barriers to Disaster Risk Insurance	Affordability, Distributing Pay-outs, Lack of Mitigation Resources, Aid Dependence, Insufficient Baseline Information, Cultural Trust Lack of Public Asset Registers, Limited Reinsurance Availability.

Further investigation into Fiji's low- and middle-income earning households presented concerning data, which exactly portrayed how behind the nation is on their region's insurance penetration. In 2015, PCRAFI claimed that none of the aforementioned households had any form of insurance protection against natural hazards (PCRAFI, 2015). In addition, the Reserve Bank of Fiji's (RBF's) '*2018 Annual Insurance Report*' found that the penetration rate had dropped down to 3.4%, only 6% of all the households in the nation had claim to insurance protection, and a mere 17% of all commercial properties had any insurance protection for major disasters (Reserve Bank of Fiji, 2019b). These rates become even more concerning when it takes into account that cyclone insurance is only available to these policy holders as an extension to the basic property coverage. In order to even be granted this extension, policy holders need to obtain certain certification from a qualified engineer, which consequently presents another barrier of making properties insurable.

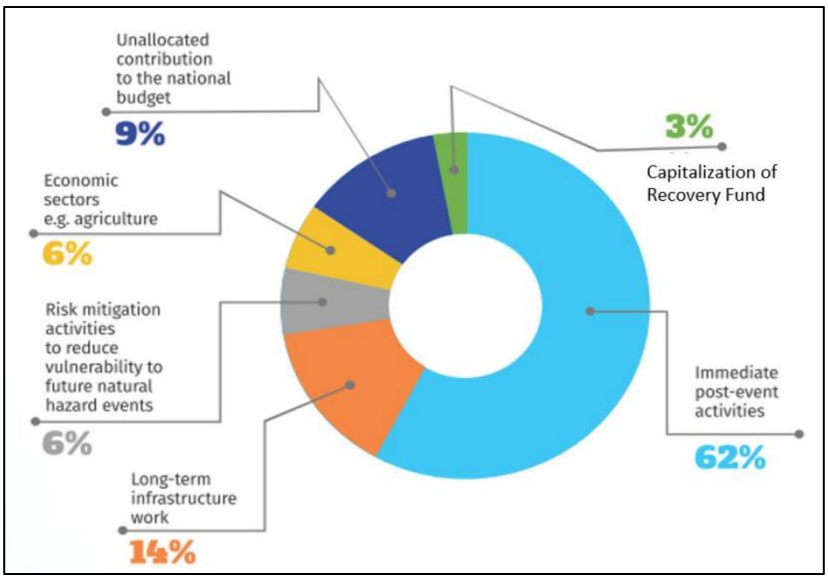
The property insurance rates for cyclones and earthquakes in Fiji are even more concerning than the general insurance rates mentioned above. For cyclones, the property insurance rate was recorded at an incredibly low rate of 0.3% and for earthquakes it was recorded as 0.08% (PCRAFI, 2015). This form of insurance coverage is more commonly held by large corporations and the tourism sector, and very rarely held by sole entrepreneurs or low-middle level properties. This trend is extremely concerning because Fiji's MSME sector currently occupies 97% of the total establishments within the Fijian market (Agency, 2018). In addition, Fiji currently does not possess any forms of microinsurance products that provide coverage from natural hazards. As of 2019, the only forms of microinsurance provided are for life, funeral, hospitalization, personal accident, and fire. The biggest issue with microinsurance products in Fiji, is that it becomes difficult and unsuitable when they are used to cover natural disasters. The current insurance market in place does not have expertise or financial capacity required to underwrite the risks related to large capital reserves and high cost of assessing claims.

Lastly, disaster risk insurance in the agriculture sector of the economy is still at the level of minimal to none. If this isn't rectified in the immediate future then it can become a huge burden for the nation, seeing as 50% of the economically active population is engaged with the agriculture sector (Narasimhan, 2020). In addition, providing agriculture disaster risk insurance will allow agriculture entities to benefit from having access to farm credit via reduction in the lending risk and increase in modernization investment. This insurance will help farmers to financially weather extreme disaster events, stabilize the supply of agriculture inputs, provide smooth consumption, and protect incomes (Wehrhahn et al., 2019). In 2014, the Fijian government decided to provide funds, due to their lack of other financial instruments, to support the rehabilitation of agriculture in response to extreme weather events. However, reports from the Food and Agriculture Organization (FAO) claimed that only 3% of the total losses suffered were covered (Martin, 2016). In addition to these funds, the '*Sugar Cane Grower's Fund*' lent out loans and grants to almost 4,000 growers for capital, investment, and reconstruction purposes following the devastating events of TC Winston (Wehrhahn et al., 2019). Although this loans and grants are beneficial, they simply cannot cover the damage incurred like an insurance policy can.

3. Real-Life Case Studies of Disaster Risk Insurance

a. Caribbean Catastrophe Risk Insurance Facility (CCRIF)

To date (17th November, 2020), this insurance facility has accumulated a sum 47 payouts and totaled approximately US$173.4 million in pay-outs, over 14 government members. All these payouts were issued and received within 14 days and since 2007, an estimated 2.5 million people have benefitted from the CCRIF payouts. The latest payouts involve US$7.45 million issued to Haiti after TC Laura, and US$10.7 million was paid out to Nicaragua after their devastating experience with TC Eta. Currently, the facility is comprised of 23 members, with 19 residing in the Caribbean, 3 in Central America and 1 electric utility company. The parametric insurance policy products include



(Emmanuel, 2020)

earthquake, tropical cyclones, excess rainfall, fisheries, and electric utilities. All these products are then accessible to the 17 million population members in the Caribbean and 33 million population members in Central America. The diagram on page 7, provides insight into the allocation of CCRIF payouts. These allocations have been averaged from the data of all members (Emmanuel, 2020).

b. Pacific Catastrophe Risk Insurance Company (PCRIC)

Established under the PCRAFI phase II program, PCRIC was established as a regional catastrophe insurance platform that was solely assigned to the provision of disaster risk insurance for Pacific Island countries (PICs). On February 12th, 2018 PCRIC issued a payout of US$3.5 million following a trigger event of TC Gita in Tonga, which just happened to be the maximum payout amount on Tonga's parametric insurance policy. Then again on April 29th, 2020 Tonga received another insurance payout of US$4.5 million following the aftermath of TC Harold. The company also managed to achieve a 19% increase in insurance capacity, thereby, offering governments with greater access to rapid financial relief. In their 6th season of catastrophe risk insurance, the company was issuing 8 policies to 5 current members (Cook Islands, Marshall Islands, Solomon Islands, Tonga and Vanuatu). Then in season 8, 5 insurance policies were issued to 3 participating countries. The Tongan Minister of Finance also stated that "The insurance payout from PCRIC has substantially improved our financial capability to respond swiftly to the most pressing needs of those affected by the cyclone". Lastly, the company's current portfolio is protected by 4 international reinsurers (AXA, Hannover Re, Liberty, and Mitsui Sumitomo Insurance). This strong backing promotes sustainability payouts that will not financially cripple the company and it helps to reduce the price of premiums (Cook, 2021).

2. Conclusions

In conclusion, the research paper has clearly and concisely shown that Fiji is in dire need of revamping their disaster risk financing. The country faces a constant and growing battle against devastating natural hazards that result in crippling effects on the economy and nation as a whole. Therefore, it is vital that the government implement further insurance financing strategies in order to ensure that the current weak insurance position is strengthened and sufficiently adequate for the nation's needs in times of immediate relief, following a natural disaster.

Apart from the statements and arguments discussed in the research paper, it would also be noteworthy to provide further investigation into the development of the workforce's practical and technical knowledge surrounding disaster risk insurance schemes. This will only further benefit the appropriate governance of disaster risk management in Fiji and other PICs.

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