



INCLUSIVE  
GREEN  
FINANCE



INCLUSIVE GREEN  
FINANCE (IGF)  
WORKING GROUP



# DISASTER RESILIENCE THROUGH FINANCIAL INCLUSION

THE ROLE OF FINANCIAL REGULATORS IN DISASTER RISK REDUCTION



AFI SPECIAL REPORT

 INTERNATIONAL  
CLIMATE INITIATIVE (IKI)

Supported by:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

based on a decision of the German Bundestag

# CONTENTS

EXECUTIVE SUMMARY	3
INTRODUCTION	4
LINKING FINANCIAL INCLUSION AND DISASTER RISK REDUCTION	4
UNDERSTANDING THE RISKS AND IMPACTS OF DISASTERS	8
PREPARING FINANCIAL SYSTEMS AND MECHANISMS	12
RESPONDING TO DISASTERS	18
REBUILDING MORE RESILIENT ECONOMIES AND ECOSYSTEMS	20
CONCLUSIONS AND RECOMMENDATIONS	24
REFERENCES	26

## ACKNOWLEDGMENTS

This report examines the role of financial regulation in disaster risk reduction (DRR) from a financial inclusion perspective. While financial regulators are commonly expected to contribute to DRR in terms of disaster risk financing, they also have a role to play in making it more inclusive. AFI members that have implemented DRR-related policies are showcased here.

This report builds on a 2019 paper by Daniel M. Schydrowsky commissioned by AFI and initiated by the AFI Pacific Island Regional Initiative (PIRI), “Prudential Regulation for Greening the Financial System: Coping with Climate Disasters”. This report was written by Jeanette Moling, Johanna Nyman and Laura Ramos of the Inclusive Green Finance (IGF) Team of the AFI Management Unit, and reviewed by PIRI and the AFI Inclusive Green Finance Working Group (IGFWG), particularly Jorge Moncayo of Superintendencia de la Economía Popular y Solidaria (SEPS) de Ecuador.

The following AFI members were interviewed for this report: Veronica Bayangos of Bangko Sentral ng Pilipinas (BSP); Christian Tondo and Maria Elena Acevedo of Banco Central del Paraguay (BCP); Genaro Segura, Christian Vega and Marcela Arias of Superintendencia General de Entidades Financieras Costa Rica (SUGEF); Lavenia Cocker and Reanu Ramani of the Reserve Bank of Fiji (RBF); and Vineil Narayan and Daniel Lund from the Fiji Ministry of Economy.

The Inclusive Green Finance workstream is part of the International Climate Initiative (IKI) supported by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

## EXECUTIVE SUMMARY

Low-income populations are disproportionately affected by disasters caused by natural hazard events, from extreme weather like flooding to slow-onset impacts like droughts. Exacerbated by climate change and combined with the social and economic conditions associated with poverty and lack of access to resources, disasters and climate-related events are leaving low-income communities increasingly vulnerable to financial shocks and economic distress.

Financial inclusion plays a vital role in building resilience to the impacts of disasters and the ability to recover quickly. From access to finance and disaster assistance to financial education about the importance of savings in times of economic crisis, financial inclusion can help meet the needs of vulnerable groups before and after hazard events. Prudential financial regulation also plays an important role in building community resilience and minimizing risks to the financial system. To ensure a robust resilience-building process and to reduce the risks to financial stability, the needs of vulnerable groups must be addressed.

---

Understanding the risks and impacts of disasters is the basis of robust actions and strategies for disaster risk reduction (DRR). As risk managers, financial regulators are doing well in this area, but they may need to look more closely at emerging risks, especially those associated with climate change.

---

For example, more frequent and extreme weather events and prolonged droughts. At the micro level, financial vulnerabilities can inform product design and support the provision of appropriate products and services for low-income segments. Such assessments and analyses inform robust preparedness policymaking, which helps financial institutions plan for the inevitable externalities that can be triggered by natural hazard events.

---

Preparedness policies from financial regulators can also facilitate immediate access to financial products and services to help prepare for fortuitous events.

---

Financial regulators, particularly central banks, also play a role in emergency response. As macroeconomic responders, they ensure sufficient cash is circulating in the economy, including asset purchases to raise funds for government emergency response and to provide humanitarian response assistance.

---

Through enabling policies for digital financial services, such as relaxed Know Your Customer (KYC) requirements using a Risk-Based Approach (RBA), financial regulators can help governments rapidly deploy a more efficient and transparent humanitarian response to affected populations.

---

Financial regulation is also critical to post-disaster economic recovery as it can help the private sector immediately resume economic activities and “build back better”.

---

To enable a more sustainable and resilient recovery, financial regulators can examine their role in disaster risk financing, including exploring possibilities to expand risk transfer and risk-sharing mechanisms, and align policy actions with national resilience-building objectives and global agreements.

---

Financial regulators can also support financing for disaster recovery through dedicated lending facilities.

Finally, as institutions mandated to safeguard the financial system against any crisis, capacity building for financial regulators can be strengthened to understand and manage evolving and emerging risks. Financial regulators must also adopt a more forward-looking and broad perspective that includes adaptation to climate and environmental change.

This paper examines the roles of financial regulators in DRR from a financial inclusion perspective, and highlights examples of good practices in the AFI network.

## INTRODUCTION

According to the 2020 Global Climate Risk Index Brief, “Signs of escalating climate change can no longer be ignored – on any continent or in any region. Impacts from extreme weather events hit the poorest countries hardest as these are particularly vulnerable to the damaging effects of a hazard and have a lower coping capacity and may need more time to rebuild and recover.”<sup>1</sup>

Between 1999 and 2018, 495,000 people died as a direct result of about 12,000 extreme weather events around the globe, and estimated losses amounted to around USD 3.54 trillion in purchasing power parities. In 2018, the Philippines, Japan and Germany topped the list of most-affected countries, while Puerto Rico, Myanmar and Haiti were the most affected between 1999 and 2018. The Climate Risk Index notes that heatwaves were one of the major sources of damage in 2018, causing health-related problems and labor issues, especially in India, Germany and Japan (Germanwatch 2020).

---

The 2019 WorldRiskReport found that island states of Vanuatu, Antigua and Barbuda, and Tonga had the highest disaster risks in the world due to high exposure to natural hazards.

---

Africa had the highest levels of social vulnerability followed by Asia and the Americas, while Europe had the lowest disaster risk. Schydrowsky (2019) identified the impacts of disaster on the real economy, which include the destruction of physical assets, income, creditworthiness and the fiscal base, and a shift in immediate needs like food and shelter. He also mapped the consequences for the financial system, including the destruction of owned physical assets, collateral and ability to pay, an increase in defaults and insurance payouts and flips in fiscal balance.

---

A recent UN report on the Sustainable Development Goals (SDGs) highlighted that meeting the 2020 target for DRR has been slow.

---

“As of April 2020, 85 countries – slightly over 40 per cent – reported that they have national DRR strategies

aligned, to some extent, to the Sendai Framework, with six of the countries reporting fully aligned national strategies” (UN 2020). The report captures how prepared economies around the globe are for the future given the changing climate.

Amid these global disaster risk figures and impacts on the real economy and financial system, those living at the base of the economic pyramid are the most vulnerable and least able to cope. Large segments of these populations live in countries with high exposure to natural hazards. However, financial inclusion provides a potential safety net and has been shown to reduce these vulnerabilities. Access to credit, savings and microinsurance can all strengthen the capacity of affected populations to cope with disasters.

Climate change, coupled with environmental degradation, is increasing the frequency and impacts of most natural hazards. AFI’s 4Ps of inclusive green finance – Provision, Promotion, Protection and Prevention – provides a framework for understanding how financial inclusion can build climate resilience and support low-carbon development for low-income populations, while also expanding risk considerations to ensure the stability of the financial system (AFI 2020).

---

This report reiterates the intersections between financial inclusion and disaster risk reduction, focusing on the role of financial policymakers and regulators. Related policies are highlighted to showcase country practices in DRR from a financial regulation perspective.

---

Furthermore, this report establishes links between financial inclusion and DRR, and adapts the four areas of DRR to the context of financial inclusion from a financial regulation perspective. As such, the discussions in each subsection are limited to what financial regulation and financial inclusion can contribute to national DRR and community resilience building, as well as the application of DRR concepts in the financial sector. For instance, in Section III, the discussion of prevention or mitigation is limited to understanding physical climate risks and disaster risks, as well as disaster prevention in the financial system.

---

<sup>1</sup> The Climate Risk Index (CRI) indicates levels of exposure and vulnerability to extreme events, which countries should understand as warnings to prepare for more frequent and/or severe events in the future (Germanwatch).

This is accompanied by a brief discussion of how financial regulation can influence actions to prevent or mitigate disasters from happening.

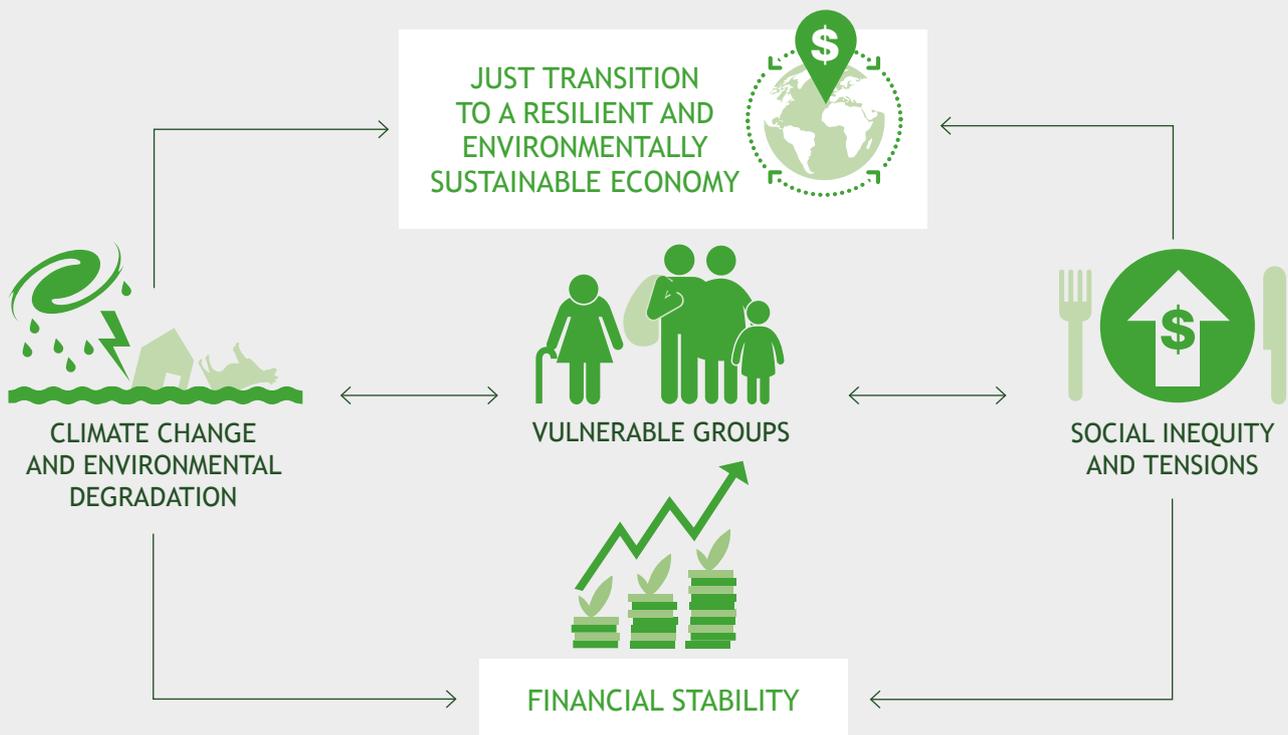
This differs from the typical prevention or mitigation discourse, which focuses on understanding climate and disaster risks in a broader, more extensive sense, and is more concerned about actions to prevent or mitigate disasters at the macrolevel, including saving lives. Similarly, Section IV looks at the preparedness of the financial system and how it contributes to national and community preparedness. In Section V, the role of financial regulators in responding to disasters is discussed, as well as response mechanisms for the financial system. Section VI, Rebuilding More Resilient Economies and Ecosystems, examines the role of financial regulation in national recovery efforts, as well as how recovery is addressed in the financial sector.

## LINKING FINANCIAL INCLUSION AND DISASTER RISK REDUCTION

The links between climate change and environmental degradation, vulnerable groups, social inequity and tensions and financial stability are illustrated in Figure 1.

The just transition to a resilient and environmentally sustainable economy includes building resilience to climate change and disasters. The connections in this figure highlight the key role of vulnerable groups in this effort. While addressing the needs of vulnerable groups can empower them to build more resilient communities, neglecting them could increase social tensions and the impacts of disasters, which can in turn threaten financial stability and hamper a just transition to a resilient and sustainable economy (Volz et.al. 2020). This is where financial inclusion comes in.

FIGURE 1. THE LINKS BETWEEN CLIMATE CHANGE AND ENVIRONMENTAL DEGRADATION, VULNERABLE GROUPS, SOCIAL INEQUITY AND TENSIONS, AND FINANCIAL STABILITY



Source: AFI and SOAS (2020)

Figure 1 establishes the links between financial inclusion and building resilience to disaster, but how these connections work can be understood through the three key pillars of financial inclusion:

- 1 ACCESS TO AFFORDABLE FINANCIAL SERVICES** helps reduce the vulnerabilities of low-income populations and strengthens their capacity to cope with the impacts of natural hazard events. Access points and the wider financial infrastructure of banking institutions and non-bank financial institutions (NBFIs) also provide a channel for disaster finance at the micro level. Access to savings provide a mechanism for low-income populations to set aside a portion of their earnings for future or emergency use. Access to credit provides the most vulnerable with additional cash, which can be used to restore livelihood activities or repair assets following a hazard event. Credit can also provide much-needed cash to prepare for hazard events, such as building more resilient houses. Access to insurance, meanwhile, allows the most vulnerable to protect their assets, livelihoods and lives by sharing or transferring disaster risks to third parties.
- 2 USAGE OF FINANCIAL SERVICES.** The use of financial products and services, including digital financial services (DFS), enables rapid distribution of humanitarian assistance following a disaster since the target beneficiaries of financial inclusion are the same segment of the population. Uptake of financial services not only opens channels for the digital distribution of social payments; the distribution of assistance also offers an opportunity for greater financial inclusion. The use of financial services also enables disaster risk finance flows that help to smooth household consumption during and after a disaster, and to prepare for such events.
- 3 QUALITY OF FINANCIAL PRODUCTS AND SERVICE DELIVERY.** DRR is integrated in a way that enhances financial literacy and builds financial capability. For instance, savings for emergencies not only cover natural hazards, but other life events and emergencies. Promoting responsible use of credit and investing in financial education are other ways to help individuals prepare for the unexpected.

Promoting and enabling financial inclusion requires multi-stakeholder coordination and governance structures. This includes cooperation and collaboration between government agencies (with financial regulators at the helm) and the private sector, especially banking institutions, NBFIs and other financial services providers (FSPs). These coordination structures and mechanisms can also be leveraged for DRR.

---

#### THE 4Ps OF INCLUSIVE GREEN FINANCE IN THE DRR SPECTRUM

---

Inclusive green finance (IGF) is a rapidly developing policy area that promotes resilience and supports actions to mitigate climate and environmental change through financial inclusion (AFI 2020). Table 1 outlines the role of IGF in DRR enabled by financial regulation. AFI's 4P framework of IGF intersects with disaster risk reduction since it also provides regulatory perspectives on building resilience to disasters and climate change. Given that the focus of IGF is the role of financial inclusion in climate action and resilience building, it promotes regulatory policies that support climate change adaptation priorities and redirecting finance to low-carbon and sustainable activities. These policies are matched with the four areas of DRR, and an integrated approach was used to frame both spheres in subsequent sections instead of using the exact DRR areas.

---

#### GENDER-RESPONSIVE FINANCIAL MECHANISMS

---

Women face discrimination in many societies with unequal gender roles, which makes them disproportionately more vulnerable to disasters since basic services and assistance are “gender neutral” and may not take their specific needs account. While financial inclusion does not necessarily address gender equality on its own, having equal access to a broad range of financial services can empower women, both socially and economically.

---

Gender-responsive financial mechanisms that enable access to financial services reduces women's vulnerability, strengthens their capacity to cope with natural hazard events and helps ensure they are not left behind when economies rebuild.

---

TABLE 1: THE ROLE OF IGF IN DRR

		DISASTER RISK REDUCTION (DRR)			
		MITIGATION	PREPAREDNESS	RESPONSE	RECOVERY
<b>PROMOTION</b> 	Policies and initiatives that aim to encourage private-sector participation, such as intergovernmental coordination, reporting frameworks and disclosures, moral suasion, awareness raising and capacity building, all of which cut across the DRR spectrum.				
	<b>PROVISION</b> 		Policies aimed at supporting resilience and disaster preparedness, such as DFS and establishing disaster recovery facilities	Policies issued in times of disaster aimed at the macroeconomic level, such as lowering base interest rates, lowering reserve requirements and moratoriums on loan payments	Lowering of base interest rates and moratoriums on loan payments are sometimes extended to aid with recovery.  Disaster recovery facilities
<b>PROTECTION</b> 			Policies that enable distribution of risk-sharing and risk-transfer mechanisms, such as microinsurance, crop insurance, credit guarantees and other non-life insurance	Policies that aid in humanitarian response, such as relaxation of KYC rules and no-frills accounts policies	Protection policies during the response phase are sometimes extended to aid in the recovery phase, such as early withdrawal of pension funds
	<b>PREVENTION</b> 	Risk-related policies and initiatives, including stress testing, which considers disasters and climate risks, risk assessments and modeling			

Source: AFI and SOAS (2020)



Elderly men find fish on dry ground. Asia. (Photo by Jcomp/iStock)

# UNDERSTANDING THE RISKS AND IMPACTS OF DISASTERS

Mitigation involves reducing or limiting the impacts of natural hazards (UNISDR 2009), which broadly includes conducting risk assessments and selecting an array of actions to prevent disasters. Mitigation is a broad area and this paper will not dive extensively into the wider discourse on climate and environmental change mitigation. Instead, it focuses on mitigating the impacts of natural hazard events.

Financial policymakers and regulators may not necessarily be involved in the planning and implementation of mitigation measures at the national level. However, they play an important role in mitigating the impacts of extreme economic shocks from disaster events on the financial system, and in channeling resources to efforts that build resilience. This requires understanding and estimating these impacts.

## HAZARD, VULNERABILITY AND RISK ASSESSMENTS

Risk assessments inform national DRR strategies or action plans, while community-based risk assessments help shape local strategies or action plans. Also known as a vulnerability and capacity assessment (VCA), assessing risk involves identifying natural hazards and the vulnerabilities and capacities of communities.

Natural hazards are physical phenomena that occur naturally and are either rapid or slow-onset events ranging from earthquakes, landslides and tsunamis to extreme temperatures and drought (IFRC N.D.). With global warming, the possibility of more droughts and increased intensity of typhoons are likely to occur (Burkett 2013). Vulnerability refers to the characteristics determined by physical, social, economic and environmental factors or processes that make an individual, community, asset or system more susceptible to the impacts of natural hazard events. Capacity, on the other hand, refers to all the strengths, attributes and resources available to manage and reduce disaster risks and strengthen resilience (Twigg 2004).

Financial regulators and policymakers can look at financial vulnerabilities and coping capacities especially of vulnerable groups including women to ensure these are integrated in risk modeling and, subsequently, in DRR programming. Similarly, comprehensive mapping of hazards, exposures and vulnerabilities provides a baseline for developing disaster risk financing strategies (OECD 2017).

At the micro level, financial vulnerabilities inform the design of financial products and services for groups highly susceptible to the identified natural hazards. Vulnerable groups typically have low coping capacity and high vulnerability due to poverty, isolation, insecurity and lack of defense in the face of risk, shock or stress, and limited capacity to resist, cope with and recover from hazard events (IFRC N.D.).

## CLIMATE CHANGE AS A RISK TO THE FINANCIAL SYSTEM

Climate change has increased the risks associated with natural hazard events. The Intergovernmental Panel on Climate Change (IPCC) has reported the risk impacts of rising global temperatures, including reduced precipitation and more frequent droughts in most inhabited regions, and melting glaciers and sea level rise continuing beyond 2100, which will put small islands at risk of flooding and other associated risks (IPCC 2018).

There are three ways in which climate change is considered a systemic risk.

- 1 **Physical risks** from rising global temperatures are contributing to various hazards, such as super typhoons, cyclones and other catastrophic events.
- 2 Climate change and extreme weather events are also associated with **socio-economic risks** like lower productivity, which has negative impacts on ecosystem-related sectors, such as agriculture and fisheries.
- 3 Finally, **transition risks** associated with an unplanned transition to low-carbon development will result in stranded assets and losses for high-carbon industries (Ramani 2020).

## FIJI'S APPROACH TO CLIMATE RISK MANAGEMENT

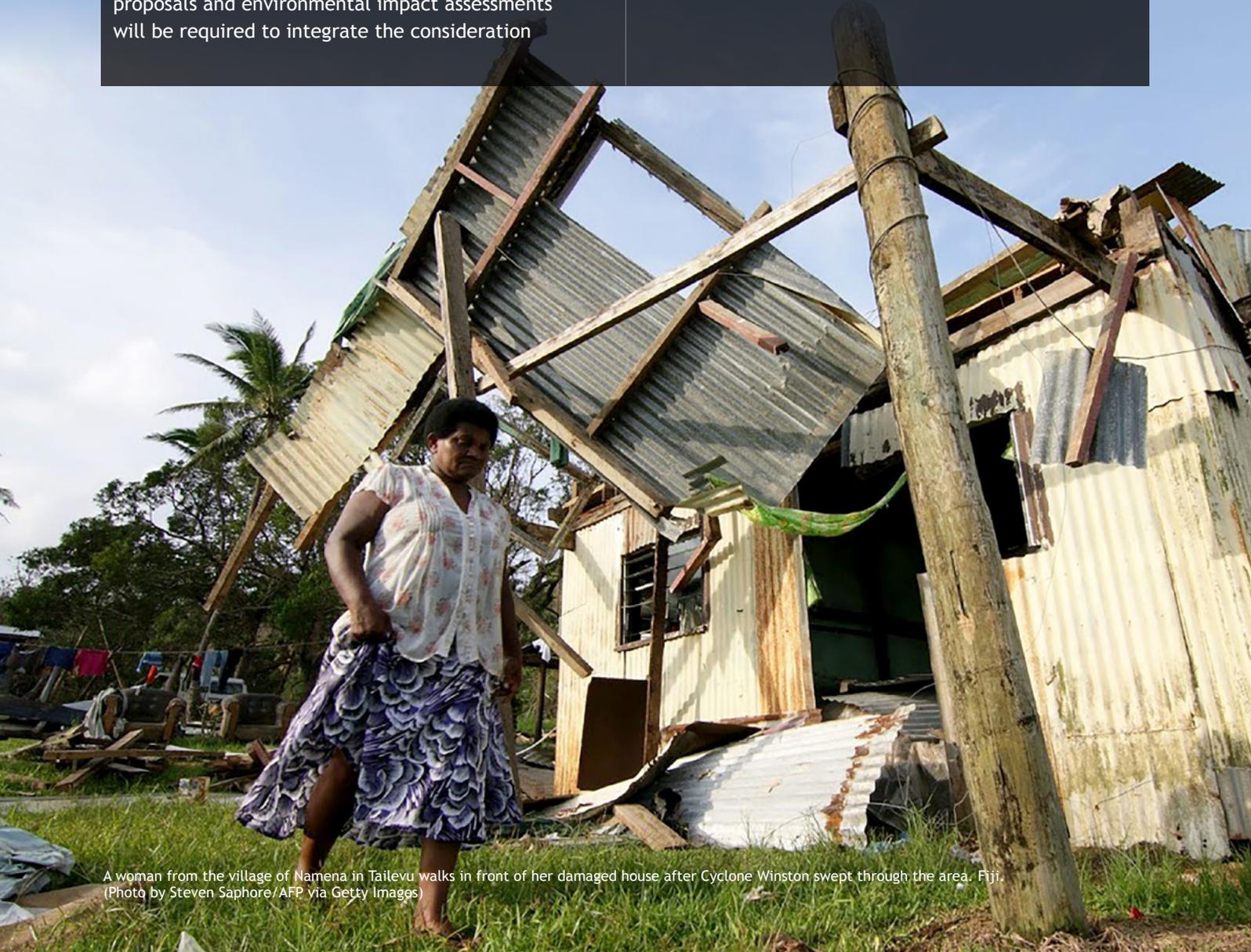
Fiji, an island nation in the Pacific, faces intensifying climate and disaster risks and is at the forefront of international advocacy efforts for robust climate action. From frequent tropical cyclones to rising sea levels, Fiji faces both rapid and slow-onset threats to its people and economy. In light of past, current and future risks, Fiji has placed the management of climate risks at the heart of its national development strategies.

Fiji's current draft climate change legislation articulates national objectives and efforts to mitigate the impacts of climate change through new governance arrangements and obligations for state entities. The draft bill requires government ministries to align national budget submissions with national climate change objectives. New infrastructure proposals and environmental impact assessments will be required to integrate the consideration

of long-term climate risks. The draft bill requires company directors and financial institutions to disclose information on how they are considering and responding to climate risks in their annual reports. The proposed legislation to recognise the planned relocation of communities as a legitimate and state-endorsed form of climate change adaptation is a first of its kind globally.

These developments present an opportunity for financial regulators in Fiji to mainstream similar risk awareness and assessments in private sector infrastructure financing. The Reserve Bank of Fiji is also studying how climate risks will be integrated in operating risk frameworks.

Fiji's holistic approach to climate risk and upcoming legal requirements to integrate the consideration of climate risk in project risk assessments is a welcome development that is closely aligned with the funding priorities of both the government and international financiers.



A woman from the village of Namena in Tailevu walks in front of her damaged house after Cyclone Winston swept through the area. Fiji. (Photo by Steven Saphore/AFP Via Getty Images)

### ESTABLISHING THE PARAGUAY FINANCIAL STABILITY COUNCIL

Paraguay, a small landlocked country in South America and the fourth-largest soya bean exporter in the world, is sensitive to the impacts of climate change. Agricultural crop production, which over 60 percent of the rural population relies on for their livelihood, accounts for 19 percent of GDP (USAID, 2018). The 2007 drought heavily affected the growth of Paraguay’s agricultural sector, which posted negative growth in 2009 and 2012, and took years to recover as reduced precipitation and water supply severely affected crop production.

This prompted Banco Central del Paraguay to add drought to its list of economic stressors in its recent stress test. Policy adjustments were then made to ensure the stability of the financial system, taking into account the economy’s sensitivity to risks.

The Paraguay Financial Stability Council (FSC) was established in 2019 to ensure macroeconomic balance in the economy and the stability of the banking sector amid financial and other emerging risks, including stressors brought about by climate change like drought. While an FSC may not be a new concept, establishing one in Paraguay has helped to ensure financial sustainability in the country.



Farmers cutting organic SOYA bean in a field, Latin America. (Photo by Nailot/Shutterstock)

## CLIMATE RISKS IN FINANCIAL DISCLOSURES

In its final recommendations in 2017, the Task Force on Climate-related Financial Disclosure (TCFD) provided a framework for companies and other organizations to integrate effective climate-related financial disclosures (TCFD 2019). Its 2019 report revealed that while more companies are including climate-related risks in their financial disclosures, this information is not being provided quickly enough, and the resilience of their strategies are not being disclosed.

In the financial sector, the Bank of England released its climate-related financial disclosure for the first time in June 2020. The report provided an analysis of the bank's risk exposure across its entire operations and its climate strategy, which is "focused on understanding and mitigating the financial risks from climate change, which directly impact both its outward-facing policy remits, and its own operations." (Bank of England 2020).



Read the Task Force on Climate-related Financial Disclosure (TCFD), Final Report.

[> View here](#)

Financial policymakers and regulators are starting to look at simulating adverse scenarios triggered by natural hazard events. Financial regulators in developing countries are still in the early stages of systematically integrating climate-related risks in their risk frameworks. However, past experiences are being used to identify and include natural hazard events as stressors in stress tests conducted by the banking sector.

To understand disaster and physical climate risks, availability of data is crucial. While historic climate and weather data can be obtained in cooperation with more developed countries, socioeconomic data that sheds light on financial vulnerabilities may be more difficult to obtain and make it challenging to quantify the impacts of disasters.

## A MULTISECTORAL APPROACH TO DISASTER RISK REDUCTION

A multisectoral approach to DRR is vital to ensuring all actions are integrated and coordinated with resilience-building objectives. A holistic approach helps to address gaps and challenges, and ensure all sectors are covered and no one is left behind. It also enables scarce resources to be used efficiently and ensures basic services are available when hazard events occur. Given that climate change is a global concern, regional cooperation is vital in DRR, especially for countries that rely on food imports. A systems approach and transboundary cooperation are likewise necessary given the magnitude and frequency of impacts of climate-related disasters.

Understanding risks to mitigate the impacts of disasters is the foundation of a robust DRR program. Beyond this, financial policymakers and regulators can play a role in broader climate and environmental change mitigation efforts by supporting economic activities aimed at lowering carbon emissions.

Some of these policies are mapped in the Provision pillar of AFI's 4Ps of inclusive green finance, including the imposition of green lending quotas, refinancing facilities for green lending and innovation investment funds.

These policies not only help redirect finance toward green activities, but also ensure that those living at the bottom of the pyramid can participate in these activities, reduce their vulnerabilities and strengthen their coping capacities, all of which build resilience to natural hazard events (AFI 2020).

## PREPARING FINANCIAL SYSTEMS AND MECHANISMS

Having effective preparedness mechanisms in place can lessen the impacts of disasters and support immediate recovery. Disaster preparedness refers to the “knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions” (UNISDR 2017).

While financial institutions and financial regulators have contingency plans and business continuity plans in place, policies for emergency response and recovery are equally important. In an emergency response, access to cash is vital, and this involves ensuring that access points like ATM machines are working and, if not, other access points like supermarkets can be explored as options (Schydrowsky 2019). In addition, DFS, which can provide faster access to cash, should be in place and post-disaster recovery policies can also be pre-positioned. This can include rediscounting and refinancing facilities and other policies that can be activated to support economic recovery.

In low- and middle-income countries (LMICs), mechanisms for DRR include diversification of livelihood activities, which is also important to the management of financial portfolios. Having diverse sources of income, economic activities and assets are all key to coping with financial shocks and reducing vulnerabilities. Financial mechanisms for DRR also include insurance, savings and credit (Twigg 2004). Even in small amounts, savings and insurance can provide a social safety net in times of economic distress. Credit, however, has proved effective not only at rebuilding livelihoods after a disaster, but also strengthening livelihood activities in preparation for eventualities. Tighe (2011) found that microfinance plays a critical role in addressing the vulnerabilities of the poor by providing access to credit and rapid access to cash. This allows them to repair damaged assets or restart livelihood activities after a disaster.

## PLANNING FOR RESILIENCE

Business continuity management is fundamental to risk management in the financial system, and this has been expanded under the Basel II Accord. Financial regulators, especially central banks, require banking institutions to prepare business continuity plans that outline institutional strategies and actions in the event of disaster. In countries where natural hazards like typhoons and cyclones are common, these are included in risk frameworks and integrated in business continuity plans and contingency plans.

## DIGITAL FINANCIAL SERVICES ECOSYSTEM

Digital financial services play an important role in financial inclusion by providing a cost-efficient way to reach the most vulnerable with financial services that help strengthen their resilience and better prepare for any hazard event. They have also become a channel for delivering humanitarian assistance after a disaster. Cash transfer programming is a form of humanitarian response that provides for basic needs and can also protect, establish or restart livelihoods and economic activities following a hazard event (IFRC 2007). This can be provided through vouchers, electronic cash transfers or physical cash distribution. E-payments have proven to be an efficient and transparent tool for expediting cash transfers.

### BLOCKCHAIN IN DISASTER RELIEF AND HUMANITARIAN RESPONSE

Blockchain, a decentralized database that records transactions shared by a network of participants, has enormous potential to facilitate an orderly and efficient response to disasters (Ko et al. 2016). Originally created to transfer financial value, today it facilitates information management, beneficiary identification and supply chain tracking, all of which are critical to managing disaster response efforts. It can also enable cash programming and humanitarian financing.

According to Ko et al., the potential key benefits of blockchain in humanitarian response include facilitating peer-to-peer engagements that eliminate third parties and intermediaries, lower transaction costs, speed up transactions and enable transparency and accountability, information use, traceability and data security. More humanitarian organizations are beginning to recognize and test blockchain in their emergency response, especially to facilitate cash transfer programs.

## DISASTER PREPAREDNESS IN THE PHILIPPINES' FINANCIAL SECTOR

Like many other island nations, the Philippines experiences extreme weather events, on average 20 tropical cyclones annually, almost half of which make landfall (UNOCHA 2017). Lying in the Pacific Ring of Fire, the country also experiences 100 to 150 earthquakes a year on average (magnitude 4.0 and above) (Philippine Institute of Volcanology and Seismology, PHIVOLCS). Given these risks, integrated and risk-based planning is needed across all sectors of the economy, including the financial sector, as is building resilience to economic shocks that may be triggered by such hazards.

The country's central bank and financial regulator, Bangko Sentral ng Pilipinas (BSP), has taken a whole-industry approach to disaster preparedness, consulting with other government agencies and the banking sector on how to make the sector more resilient. In 2017, the BSP institutionalized Circular 951 Guidelines of Business Continuity Management (BCM), which provides guidance to the banks and quasi-banks it regulates on how to integrate natural hazards and pandemics in their business continuity plans (BSP

2017). This risk-based approach aims to build resilience through a robust regulatory BCM framework and continuing on-site and off-site supervision of BCM processes at BSP-supervised financial institutions.

This measure was complemented by Circular 1017 Series of 2018, which institutionalizes a framework for the provision of regulatory relief measures to BSP-supervised institutions in times of disaster. These measures are activated immediately during and after hazard events and made available to financial institutions (BSP 2018). This was prompted by past experience, which made it clear that regulatory relief is necessary to help financial institutions affected by disasters to cope and recover. This measure mainstreams a policy response framework in the event of disaster. To ensure that the objectives of relief measures are met and reach those most in need, regulated institutions are required to apply for a specific measure subject to assessment and evaluation by the BSP, which field personnel undertake immediately.

The BSP believes that these readiness systems and mechanisms, arising from and tested by past experience, have contributed greatly to lessening the impacts of COVID-19 on the country's financial system.



### **COSTA RICA'S APPROACH TO DISASTER RISK MANAGEMENT**

In Costa Rica, hazard events are included as an external risk event in the general operational risk framework used by the banking sector. Financial institutions are required to identify risks and define policies based on the framework, which also includes putting sufficient infrastructure and response mechanisms in place for risk events. These are embodied in a business continuity plan required for financial institutions and monitored by Superintendencia General de Entidades Financieras (SUGEF).

In 2017, when Tropical Nate hit Costa Rica, financial regulators led by the central bank convened to assess

the need for policy modifications. A quantitative impact assessment was conducted to determine the need for regulatory relief measures and found that the impacts could be absorbed by existing strategies at the institutional level and did not warrant additional relief measures to be activated.

Impact assessments are critical in the provision of regulatory relief measures as they determine the extent and severity of risks. Assessments are needed even when risk events have more widespread systemic impacts, such as the COVID-19 pandemic. The difference lies in which regulatory authority determines the relief measures. With the ongoing and evolving COVID-19 pandemic, the National Council for Supervision of the Financial System is involved because the impacts are system wide.

**BLOCKCHAIN CONTINUED**

After using blockchain technology in its Building Blocks Project in Pakistan, the World Food Programme (WFP) used the same technology to scale its humanitarian operations for Syrian refugees in Jordan (WFP N.D.). Oxfam, in partnership with Sempo and Consensus, implemented the Unblocked Cash Pilot, a blockchain-powered cash transfer program for affected populations in Vanuatu following Tropical Cyclone Harold. The pilot demonstrated the time and cost savings of the technology in relief operations, and found that the quality of the solution, based on transparency, security and user experience, was extremely high (Rust 2019).

Financial regulators can strengthen the preparedness capacity of governments to establish social payment distribution mechanisms for disasters via enabling policies, such as relaxed KYC and lower deposit requirements for opening bank accounts.

For instance, no-frills accounts can complement public humanitarian response strategies. The relevance of DFS, both to humanitarian responses and the future of financial services generally, has become clear during the global COVID-19 pandemic.

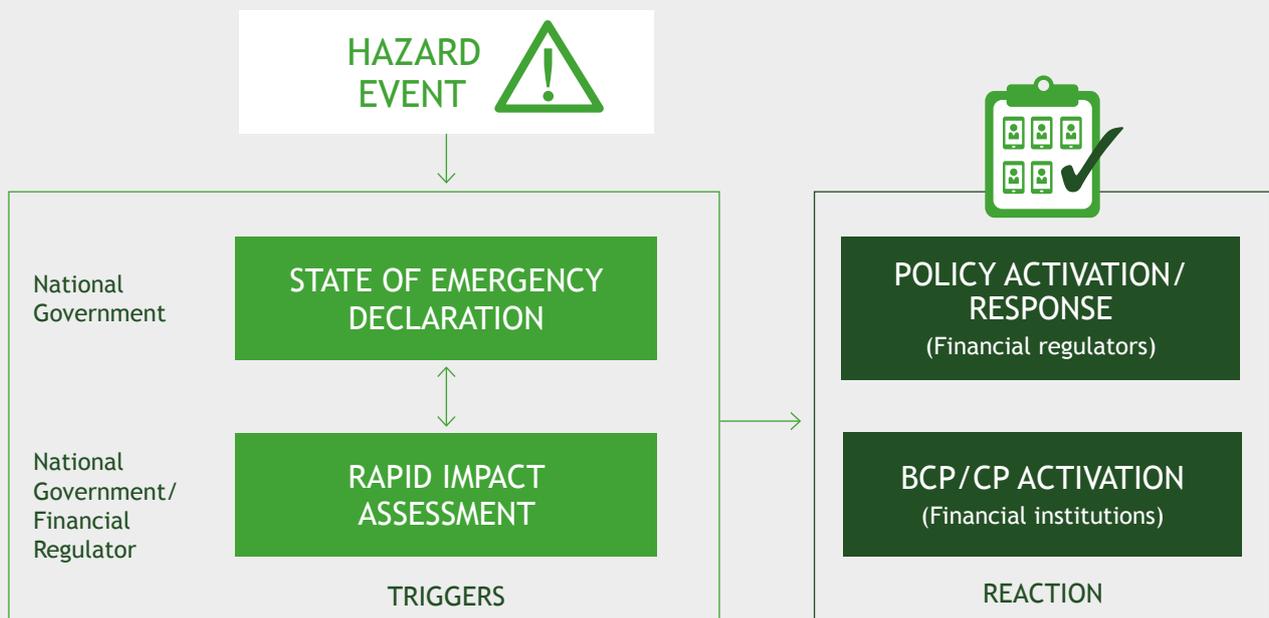
However, it takes a combination of infrastructure, policy, regulation and stakeholder coordination to roll out DFS effectively in a disaster.

**POLICY ACTIVATION AND RESPONSE**

In most countries, rapid impact assessments at the national level trigger the declaration of a state of emergency. This, in turn, activates the emergency preparedness policies of the financial regulator and financial institutions. Emergency options laid out in the contingency plans of financial institutions are automatically activated. In some countries, even in the absence of the declaration, a rapid impact assessment by financial regulators can determine the need to activate emergency policies and identify which ones to activate. In some cases, emergency preparedness at the institution level is sufficient to cushion the impacts of a disaster, but when disasters are more widespread, financial regulators provide additional safety nets for financial institutions to cope with the impacts. The policy activation process is illustrated in Figure 2.

Financial stability councils play a role in policy responses to hazard events, especially if the event creates systemic risks, such as the COVID-19 pandemic. In general, policy responses, whether already in place or newly issued, depend on the severity of the impacts.

**FIGURE 2. POLICY ACTIVATION IN TIMES OF CRISIS**



## RISK TRANSFER AND RISK-SHARING MECHANISMS

Financial regulators can play a role in establishing and shaping risk transfer and risk-sharing mechanisms to help individuals, MSMEs and the economy prepare for disasters. Once in place, these mechanisms can support quick economic recovery.

### A. DISASTER RISK INSURANCE.

With climate change posing major systemic risks and potentially huge and widespread impacts across economies, disaster risk insurance has been gaining traction. Disaster risk insurance can be approached on three levels: micro-level insurance for individuals, meso-level insurance for intermediaries and macro-level insurance for countries. Micro-level insurance covers individual policy holders (Herman et al. 2016).

Meso-level insurance, which is common in Central and South America and in some Southeast Asian countries, reduces losses from credit default by enhancing investments. Macro-level insurance compensates for loss and damages due to extreme weather events for both insured and uninsured individuals. Examples are the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the African Risk Capacity (ARC). Disaster risk insurance includes crop insurance and other parametric microinsurance, such as life insurance, property insurance, calamity insurance and livelihood insurance.

**Microinsurance.** Although traditional insurance products are not accessible to vulnerable groups, group life insurance is now accessible to low-income segments in LMICs, at least in Asia and South America. This is commonly referred to as “term life insurance” that can cover an entire family with an affordable premium, is renewable on a yearly basis and covers deaths and accidents, including from disasters. Index-based insurance, meanwhile, triggers payments to beneficiaries based on a predetermined index, and the amount is based on the index agreement (Camargo 2019).

Although most central banks do not directly supervise insurance regulations, they may work with the insurance regulator and relevant government agencies to develop a disaster risk insurance market. For example, the Central Bank of Armenia has established the Agricultural Insurers’ National Agency (AINA) as a knowledge hub and led the implementation and development of the country’s agricultural insurance market.<sup>2</sup>

### B. CREDIT GUARANTEES.

Credit guarantees are a type of risk-sharing mechanism typically used to encourage credit to MSMEs. Credit guarantee schemes enable third parties to absorb a lender’s losses on loans made to MSMEs in return for a fee (World Bank 2015).

Credit guarantees can be individual, portfolios or a combination of both. At the individual level, a loan guarantee applies only to the principal and typically the unpaid loan balance is guaranteed. Portfolio guarantees apply to a range of loans for a specific target group or specific purpose. The third type is a hybrid in which individual loans or the portfolio of a target group or specific purpose can be guaranteed (ADB 2016). Credit guarantees are also available for agricultural loans and a potential risk-sharing mechanism to help build resilience to disasters. This option can be explored to increase lending for resilience building, such as housing loans, asset purchase loans, green loans and other types of finance products.

In Ghana, the Bank of Ghana supported the establishment of the Ghana Incentive-Based Risk-Sharing System for Agricultural Lending (GIRSAL) to support lending to the agriculture sector. Similarly, the Central Bank of Nigeria supported the establishment and operation of the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) to boost agricultural lending and developed it further to package it with agricultural insurance.

---

In disaster preparedness, financial regulations are aligned primarily to safeguard the financial system and ensure it can withstand hazard events or the risks identified in risk assessments. However, enabling risk transfer and risk-sharing mechanisms are emerging roles that financial regulations need to examine, as they help to build the resilience of those at the bottom of the pyramid.

---

Moreover, access to and use of finance must remain inclusive, especially for low-income populations, as it trickles down to support disaster preparedness at the household level.

---

<sup>2</sup> See the AFI case study, “Climate Risk Insurance for the Agriculture Sector in Armenia”.



## MITIGATING THE IMPACTS OF DISASTERS WITH MICROINSURANCE IN THE PHILIPPINES AND FIJI

Microinsurance, usually parametric, provides a safety net for low-income households to cope with the impacts of disasters. However, in countries where natural hazards are common, microinsurance remains an untapped solution since high risk exposure entails high costs for those least able to afford them.

In the Philippines, microinsurance played a major role in the recovery from Typhoon Haiyan (Swiderek and Wipf 2015). Approximately 111,461 microinsurance claims amounting to USD 12 million were paid to insured low-income families. These funds were used to rebuild houses and restart livelihood activities. The Philippines bancassurance regulation enabled distribution of both life and non-life insurance products among BSP-regulated institutions. Other distribution channels include MFIs and cooperatives. Non-life microinsurance includes coverage for property, livelihood, crops and calamity. After observing the impacts of microinsurance in affected communities, low-income families became more interested in having microinsurance themselves.

Microinsurance is a priority risk management solution the Government of Fiji is exploring as part of its disaster risk financing strategy. It aims to create an enabling environment that incentivizes the private sector to develop appropriate and affordable microinsurance products for low-income households. It is looking further into innovative risk transfer options, such as agricultural index-based insurance and livelihood insurance for smallholder farmers.

## RESPONDING TO DISASTERS

Disaster response refers to the provision of emergency services and public assistance during or immediately after a disaster to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected (UNISDR 2009). Emerging evidence shows that financial services play a positive role in crisis situations, including natural hazard events (Chehade et al. 2017). Financial regulators may not be directly involved in saving lives, but they are at the forefront of monitoring liquidity stresses to ensure sufficient cash is circulating in the economy.

### THE ROLE OF CENTRAL BANKS IN DISASTERS: MONETARY AND MACRO-FINANCIAL RESPONSES

Central banks are considered emergency responders in disasters given their role in ensuring sufficient cash is in the economy and financial stability is maintained (King 2018). At the macro level, central banks are economic managers, supporting the government's emergency response during disasters through monetary policies, such as quantitative easing. Based on past experiences with hazard events, these policies are triggered when these events occur. At the height of the global COVID-19 lockdown, common key monetary policies issued by central banks included the lowering of base interest rates, repurchasing sovereign bonds, temporary changes to provisioning requirements, moratoriums on loan payments and lowering of reserve requirements, among others (IMF N.D.).

#### A. LOWERING OF RESERVE REQUIREMENTS.

This is a common monetary response at the onset of disasters. Relaxation of this policy frees up more resources for banks to lend to affected sectors.

#### B. QUANTITATIVE EASING OR ASSET PURCHASE PROGRAMS FOR DISASTERS.

Macroeconomic strategies like asset purchase programs are employed by central banks to aid governments in times of economic crisis. This monetary tool is also being used to purchase sovereign green bonds as part of efforts to combat climate change.

### FINANCIAL REGULATIONS TO AID HUMANITARIAN RESPONSE

Central banks are indirectly involved in humanitarian response, but play a key role in enabling mechanisms for humanitarian response. Across the AFI network, financial regulators play a prominent role in making cash available to affected populations to access basic goods and services immediately. Furthermore, the distribution of social aid has become more efficient and transparent through digital cash transfers, which require enabling financial policy and regulatory interventions.

#### A. DISTRIBUTION OF SOCIAL AID (G2P)

While financial regulators cannot participate directly in providing social aid in a disaster, they are in the best position to create an efficient mechanism for distributing it effectively. Furthermore, DFS also helps ensure that social aids reach vulnerable groups including women. E-money is becoming an efficient tool for distributing government aid to affected populations. For instance, in Fiji, Help for Homes, a mobile-enabled, government-to-person (G2P) social payments initiative, is helping the government expedite the distribution of social aid to affected populations to rebuild their homes.

#### B. RELAXATION OF KYC AND THE NO-FRILLS APPROACH

No-frills accounts and the relaxation of KYC requirements are being used by regulators to drive financial inclusion and support government cash transfer programs. In India, no-frills accounts were introduced to enable low-income populations to access banking services, and later mainstreamed as basic savings deposit accounts. In Brazil, no-frills accounts were provided as an option to social cards to receive cash transfers from the government (Dias 2011).

---

Emergency response policies, if in place in advance, can be activated immediately in a disaster to facilitate the humanitarian response effort.

---

However, in some cases, these policies are issued during a disaster based on risk assessments of the potential economic impact. These policies may also be activated only for a certain period or during the response phase, such as throughout a state of emergency declared by the government, while other policies may be extended to support the recovery phase.

## LEVERAGING E-MONEY IN PARAGUAY'S EMERGENCY RESPONSE TO COVID-19

The COVID-19 global pandemic ushered major progress in the use of digital financial services and opened a window for financial inclusion. Paraguay is one country to leverage e-money to expedite the distribution of emergency funds to low-income populations and those working in the informal economy.

Banco Central del Paraguay has allowed regulatory modifications for e-money, including increasing allowable cash-ins and balances from approximately USD 500 to USD 1,000 and increasing limits on transactions between accounts to the same amounts (for simplification, values were converted from local currency to USD). The number of days for account inactivity was also adjusted from 90 to 180 days.

Paraguay's interoperability project permits transactions between all e-money providers and creates the potential for partnerships with banks and, in turn, the opportunity for greater financial inclusion. These strategic regulatory changes to support Paraguay's emergency response to the global pandemic has reached an additional 1.2 million people and a total projected 2.8 million e-money accounts, or half of Paraguay's total adult population – a huge leap for financial inclusion. While the COVID-19 pandemic is more of a health issue than a climate or environmental change issue, studies have shown that a climate crisis could have similar or even greater impacts. Thus, the lessons learned from enabling a humanitarian response will prove useful in other scenarios.

## SUPPORTING HUMANITARIAN RESPONSE IN THE PHILIPPINES

As a country that experiences extreme weather events, the Philippines has pioneered several initiatives in humanitarian emergency response. Typhoon Haiyan in 2013 affected more than 16 million people and paved the way for major changes in strategic policy approaches across sectors. Cash transfer programming (CTP) was piloted by humanitarian organizations in coordination with the financial sector and other stakeholders, which saw it as an efficient and more transparent mechanism of humanitarian response. CTP not only addressed the basic needs of the affected population, but also aided in the immediate resumption of economic activities.

Bangko Sentral ng Pilipinas (BSP), the country's top financial regulator with a mandate to ensure liquidity in affected areas, complemented the CTP by issuing an ad hoc policy for the temporary relaxation of KYC requirements and adjustments to mandatory account balances and withdrawal limits. The measure was in place temporarily while the BSP studied a more strategic approach to emergency response (Smith 2015). Disaster response post-Typhoon Haiyan followed a more systematic approach to cash transfers as DFS also developed. The BSP also relaxes certain policies temporarily depending on the severity of the disaster. This was reactivated in response to the COVID-19 pandemic. While this policy measure is only in place for a short period, it enables cash flows into affected areas, which not only helps save lives and livelihoods, but also assists in recovery.



Volunteers cook for people in need during a soup kitchen amid the COVID-19 novel coronavirus pandemic. Paraguay. (Photo by NORBERTO DUARTE/AFP via Getty Images)

## REBUILDING MORE RESILIENT ECONOMIES AND ECOSYSTEMS

Post-disaster recovery is an opportunity to rebuild economies to be more resilient and withstand future hazard events. Recovery involves the restoration and improvement, where appropriate of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors (UNISDR 2009).

### ACTIVATION OF DISASTER RECONSTRUCTION AND RECOVERY FACILITIES

Response policies that are already in place, including regulatory relief measures like lowering reserve requirements and base interest rates, are sometimes extended to aid in economic recovery. Facilities are made available in some countries that are frequented by natural hazard events.

For instance, the Central Bank of Sri Lanka offers loan refinancing for disaster rehabilitation, but to balance the stability of the financial system with support for recovery, the duration of temporary relief measures depends on ongoing risk assessments (AFI 2020). In the Philippines, the Countryside Financial Institutions Enhancement Program (CFIEP) provides liquidity support to financial institutions in rural areas, including rural banks, thrift banks and cooperative banks, to encourage lending to affected sectors. The facility helps financial institutions withstand the impacts of disasters, whether natural hazard events, human-induced disasters or, most recently, pandemics (LBP 2020). In Fiji and Vanuatu, disaster rehabilitation facilities were introduced to support financial institutions in lending to the affected population and enable quick recovery.

### EARLY WITHDRAWAL FROM PENSION FUNDS

Pension funds are potential sources of finance for disaster response at the micro level. In times of disaster and economic crisis, pension funds allow members to withdraw their pension deposits subject to certain limits, as was seen in Fiji and Vanuatu. Despite the potential long-term risks, early access to pension funds for short-term relief has been used in both LMICs and high-income countries during the COVID-19 pandemic.

### STRENGTHENING DISASTER RISK FINANCING

Disaster risk financing (DRF) helps to minimize the economic impacts of a disaster and, when used effectively, is crucial to safeguarding economic growth and development from disasters. According to a global survey on DRF, risk maps and data collection on hazards, exposures and vulnerabilities are advanced in many economies, which often provide the basis for DRF models (OECD 2015).

The survey report recognized that DRF is a “central component of a comprehensive approach to disaster risk management and sustainable development and should be anchored in an integrated framework of hazard identification, risk and vulnerability assessment, risk awareness and education, risk management, and disaster response and resilient recovery” (OECD 2015).

According to UN estimates, annual DRR investments of USD 6 billion could generate total risk reduction benefits of USD 360 billion until 2030.

However, a World Bank report estimates that USD 104.32 billion a year is needed for flood and coastal protection on top of climate change adaptation costs of USD 17.85 to 54.90 billion every year. A study by the Global Facility for Disaster Risk Reduction and Recovery (GFDRR)<sup>3</sup> mapped international DRR finance flows from the source to recipients and found that international aid for DRR estimated at USD 13.5 billion is only a fraction of overall global aid for emergency response. Aid is mostly concentrated in a few small middle-income countries, and tends to be weak in drought-affected countries (Kellett and Caravani 2013). Reviews of risk assessments and modeling are therefore critical to improve DRF strategies.

<sup>3</sup> The report, “Financing Disaster Risk Reduction: 20 Years of International Aid”, looks at disaster risk reduction financing over the last 20 years.

### FIJI'S DISASTER REHABILITATION AND CONTAINMENT FACILITY

The Disaster Rehabilitation and Containment Facility was first introduced in 2009 as the Flood Rehabilitation Facility (FRF) with a resource allocation of FJD 20 million from the Reserve Bank of Fiji. The primary goal of the facility was to support businesses to restart and rebuild their businesses following serious flood incidents. This was rolled out for six months with RBF-approved lenders that included commercial banks and licensed credit institutions (LCIs) and the Fiji Development Bank.

The facility was reintroduced in 2011 and 2012 following flash floods on the main island. During this review period, FJD 16.5 million was advanced to 56 businesses. The following year, the facility was renamed to the Natural Disaster Rehabilitation Facility (NDRF) and funding was extended to cover businesses affected by Tropical Cyclone Evan, after which FJD 3.55 million was advanced to 26 businesses.

The facility was used again following Tropical Cyclone Winston in 2016 with an increased allocation of FJD 40 million for home repairs and restarting or rebuilding businesses. A maximum FJD 5,000 loan was made available through the facility at a subsidized rate of 0.5 percent per annum for homeowners and one percent per annum for businesses.

In previous years, the reintroduction of the facility was based on the declaration of a state of emergency. This requirement was removed in a review of the facility, so assistance could be provided following hazard events without the need for this trigger.

The implementation of the scheme was made possible through RBF-approved lenders, which interested homeowners and business owners could approach and request support from the RBF-DRCF. Following assessment and approval, RBF funds would be on-lent to customers through their licensed financial institution. The facility also provided some reference to another RBF-designed facility, the Import Substitution and Export Finance Facility, which provides support for export-oriented industries, including projects relating to sustainable and renewable energy.

When the COVID-19 pandemic reached Fiji, the facility was renamed the Disaster Rehabilitation and Containment Facility (DRCF), and was used for businesses affected by the pandemic. The DRCF has an increased allocation of FJD 150 million while total funds approved for affected businesses are around 65 percent of the total allocation.

## BLENDING FINANCE TO EXPAND RISK TRANSFER AND RISK-SHARING MECHANISMS

Leveraging public finance to increase private finance flows to disaster risk financing is an effective DRR measure. While establishing risk transfer and risk-sharing mechanisms is part of preparing for disasters, in the recovery phase it is important to review these mechanisms and explore emerging solutions at the micro, meso and macro levels.

### CATASTROPHE BONDS

Catastrophe bonds, or “cat bonds”, allow risk to be transferred from the insurer – typically governments, insurers and reinsurers – to investors in the event of a major natural catastrophe, such as a typhoon or earthquake (Abrigo et. al. 2018). An innovative way to promote disaster resilience, they are also an effective tool for vulnerable countries facing major climate catastrophes as it allows capital to be raised for disbursement immediately.

The World Bank assisted the Philippines, a disaster-prone country, to raise USD 225 million in the first insurance-linked catastrophe bonds registered with the Singapore Stock Exchange in the last quarter of 2019. The bonds cover losses from tropical cyclones and earthquakes. In 2006, the World Bank issued four CAT bonds to Mexico (World Bank 2019), another country highly exposed to natural hazards, and the first country to use CAT bonds. The bonds provide USD 485 million in coverage against losses due to earthquake and storm damage (World Bank 2020).

Financial regulators and policymakers may also want to consider pandemic risks in their risk solutions. This would help low-income families and MSMEs cope with the impacts of global pandemics such as COVID-19.

Risks associated with epidemics, outbreaks and pandemics are challenging to quantify, but there are some products available in the market such as PathogenRX which provides protection for business interruption in times of pandemic, however, there was no product uptake until the COVID-19 global pandemic started (Banham 2020). Developed by Marsh in partnership with Munich Re and Metabiota, this solution covers larger industries, but can also serve as a risk model for designing risk-sharing mechanisms explicitly for MSMEs.

## RECOVERY PLANNING AND INSTITUTIONAL STRENGTHENING

In financial regulation, it is imperative that recovery planning is forward looking and guided strongly by risk scenarios, especially most recent experiences. In the banking sector, recovery planning is preventative in nature and includes an array of options to restore the viability of a bank in close alignment with the concept of building back better. As mentioned in the preparedness section, financial institutions are generally required to have a business continuity plan in place as part of its risk management strategy to ensure business continuity amid extreme scenarios.

In AFI’s 2020 Annual Member Survey,<sup>4</sup> 12 respondents indicated that a disaster/crisis management team is in place in their institution while two did not know and one reported there was none. In more concrete terms, recovery planning in the financial sector is more focused on identifying an array of actions to help affected financial institutions recover from disasters.

For financial regulators working in disaster risk reduction, institutional capacity building may be required to upgrade skills.

For instance, disaster risk assessment and modeling may require technical skills that the institution does not have, especially if it is just beginning to look into DRR. Disaster impact valuation is another knowledge gap that may also require training and new skills (OECD 2020).



Read our 2020, second edition, Inclusive Green Finance: A survey of the policy landscape, special report.

> [View here](#)

4 In June 2020, the AFI Management Unit and IGF team conducted a survey of members of the IGF Working Group (IGFWG) to identify DRR policies among IGFWG members.

## ALIGNING WITH NATIONAL DISASTER RESILIENCE OBJECTIVES AND STRENGTHENING INTERGOVERNMENTAL COORDINATION

Disaster risk reduction policies in most countries are aligned with other national policies, such as national development plans. In some countries, DRR policies have evolved to include climate change mitigation and adaptation while others have separate but related policies. This expansion from risk reduction to resilience building considers climate events, such as sea level rise, frequent extreme weather events and droughts.

Financial regulators, particularly central banks, are not normally part of ad hoc committees or coordinating bodies on disaster risk reduction and disaster management. However, central banks coordinate with other economic managers, especially on macroeconomic and fiscal policy responses to disasters.

Coordination can also happen on a strategic level or initiative basis, such as enabling DFS for humanitarian response. Central banks and banking supervisors are therefore focused on risk reduction and disaster response for the banking sector.

## ALIGNMENT WITH INTERNATIONAL DRR EFFORTS

Aligning DRR policies with international and regional efforts creates a ripple effect that catalyzes global action on disaster risk reduction. It may also help to pool the resources needed to implement these actions.

The Sendai Framework for Disaster Risk Reduction 2015-2030 is a roadmap for communities around the world to become safer and more resilient to disasters. It succeeds the Hyogo Framework for Action adopted at the UN World Conference in Sendai, Myagi, Japan on March 18, 2015. The expected outcome of the framework is the “substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries” (UNISDR 2015).

National policies on DRR management are aligned not only with international efforts, but also with regional frameworks. Goals and objectives are similarly aimed at building national resilience to natural disasters while fulfilling international commitments.

For instance, the first Philippines Disaster Risk Reduction Management Framework considered international commitments such as the Millennium Development Goals (MDG), Hyogo Framework for Action, ASEAN Agreement on Disaster Management and Emergency Response, International Disaster Response Law and the Kyoto Protocol. Changes in international commitments, such as the SDGs from the MDGs and the Sendai Framework of Action from the Hyogo Framework of Action, are integrated when such policies are updated.

## STRENGTHENING ECOSYSTEMS

One of the basic strategies to mitigating global warming is strengthening ecosystems and environmental preservation. This means guiding recovery strategies towards nature-based solutions that not only preserve biodiversity, but may also increase carbon sinks to sustain development in a carbon-neutral environment. While most resources are being channeled to low-carbon investments and activities, investing in ecosystem-based activities will provide two important benefits: carbon sinks and disaster resilience. These can be observed in coastal areas, for instance, where mangroves not only serve as carbon sinks, but also help prevent floods. This also works in drylands.

In post-disaster recovery, building back better is critical to ensuring a just transition to a more resilient and environmentally sustainable economy.

For the financial sector, this requires reviewing and improving disaster risk assessments and modeling and strengthening preparedness policies in business continuity plans and contingency plans. For low-income populations, on the other hand, it will be about restarting livelihoods and rebuilding homes and other assets. This is where financial inclusion and financial regulators can play a vital role in helping countries build back better.

## CONCLUSIONS AND RECOMMENDATIONS

Financial regulation and financial inclusion build resilience to disasters, from catalyzing finance to ensuring the stability of the financial system. While financial regulators are not directly involved in national DRR planning and coordination, they can complement national initiatives with enabling policies.

Depending on the mandate of the financial regulator or supervisory authority, which varies across countries, their primary roles especially the central banks are to ensure a stable financial system amid global crisis, implement regulations consistently and monitor emerging and evolving risks. These activities also help to prevent and mitigate disaster in the financial system, and provide a safety net for the macro economy. Ensuring that financial institutions withstand the economic shocks of risk events is part of their mandate, and this can be extended to preparing financial institutions to respond to disasters with enabling policies and mechanisms.

Risk management in the financial sector is well structured and closely aligned with the concept of disaster risk reduction. However, climate change demands a broader and more strategic approach. While climate change adaptation and DRR share a common space, climate change exacerbates natural hazards and alters the way risk impacts should be measured. In understanding the risks and impacts of disasters, it is therefore imperative that DRR strategies be expanded to include impacts of potentially greater magnitude and increased vulnerabilities. To build climate resilience, the concept of disaster risk reduction needs to be expanded to include slow-onset hazard events, such as rising sea levels and melting glaciers.

The experiences of AFI members have shown that more resilient financial systems have systematically identified and included natural hazard events in risk frameworks. Quantifying the impacts of disasters and including the social costs provide a more realistic picture of the risks involved. On the other hand, embracing new perspectives on climate and disaster risks also means building the capacity of financial regulators and policymakers to cope with their emerging roles.

Disaster risk financing is another area in which financial regulators can exert influence to support preparedness and build resilience. While countries are making progress in establishing DRF mechanisms at the macro level, a holistic approach would also consider the micro and meso level. Disaster risk insurance is just beginning to take shape in some countries, but

advanced microinsurance is already available in others. Both life and non-life insurance, which includes disaster-related insurance, can be made available to low-income segments through collaborative regulation, since it is not typically within the mandate of financial regulators, especially central banks. One example of collaborative regulation is bancassurance policies that make banks and other financial institutions access points for microinsurance. Digital financial services also play a critical role in disaster preparedness as it facilitates expedited distribution of social payments for emergency response and recovery.

When responding to disasters, financial regulators are not directly involved in humanitarian response. Their roles are instead limited to macroeconomic response and providing support to humanitarian response. While the first role is part of the mandate of financial regulators, the latter is an emerging role that involves enabling financial access. Thus, financial regulators can explore the additional potential of financial inclusion to enable a mechanism for humanitarian response and recovery support.

When rebuilding more resilient economies and ecosystems, financial inclusion plays an important role in ensuring that resources are made available to the private sector, including MSMEs, to recover from the impacts of a hazard event. However, financial regulation can help redirect those resources toward a greener and more resilient recovery path. Financial inclusion can also help ensure that, in the process of building back better, the most vulnerable groups are not left behind.

The reality of climate change has made it imperative to examine how DRR fits into institutional mandates, and how financial regulation can complement national disaster response and help build resilience. Financial inclusion, which enables access to and use of financial services and financial education, can also enable DRR. Financial inclusion invariably contributes to more resilient communities as it provides safety nets that strengthen the coping capacity of low-income populations. While financial inclusion by itself will not dramatically lower disaster risks, it will reduce the vulnerabilities stemming from lack of access to resources.

## REFERENCES

- Abrigo, R. and Lu, X. 2018.** “Catastrophe Bonds Explained”. Development Asia, 21 February. Available at: <https://development.asia/explainer/catastrophe-bonds-explained>
- AFI. 2020.** Climate Risk Insurance for the Agriculture Sector in Armenia. Case Study. Available at: <https://www.afi-global.org/publications/3508/Climate-Risk-Insurance-for-the-Agriculture-Sector-in-Armenia>
- Aragón-Durand, F. et al. 2019.** “Global Warming of 1.5 °C”. Intergovernmental Panel on Climate Change (IPCC). Available at: <https://www.ipcc.ch/sr15/>
- Asian Development Bank. 2016.** Credit Guarantees: Challenging Their Role in Improving Access to Finance in the Pacific Region. Available at: <https://www.adb.org/publications/credit-guarantees-challenging-role-improving-access-finance-pacific>
- Banham, R. 2020.** This Insurance Would Have Helped in Coronavirus Crisis But Nobody Bought It. Available at: <https://www.insurancejournal.com/news/national/2020/04/03/563224.htm>
- Bank of England. 2020.** The Bank of England’s Climate-related Financial Disclosure 2020. Bank of England Annual Report. Available at: <https://www.bankofengland.co.uk/-/media/boe/files/annual-report/2020/climate-related-financial-disclosure-report-2019-20pdf?la=en&hash=5DA959C54540287A2E90C823807E089055E6721B>
- Burkett, V.R. et al. 2013.** U.S. Geological Survey Climate and Land Use Change Science Strategy: A Framework for Understanding and Responding to Global Change. U.S. Geological Survey Circular 1383-A. Available at: <https://pubs.er.usgs.gov/publication/cir1383A>
- Camargo, A. 2019.** The Role of Insurance Supervisors in Climate Risk Insurance: Making the Vulnerable More Resilient to Natural Disasters. Access to Insurance Initiative (All). Available at: <https://a2ii.org/en/news/the-role-of-insurance-supervisors-in-climate-risk-insurance>
- Caravani, A. and Kellet, J. 2013.** Financing Disaster Risk Reduction: 20 Years of International Aid. ODI and the Global Facility for Disaster Reduction and Recovery at the World Bank. Available at: <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8574.pdf>
- Chehade, N. et al. 2017.** “The Role of Financial Services in Humanitarian Crises.” Forum 12. CGAP, SPF and World Bank. Available at: [https://www.cgap.org/sites/default/files/Forum-The-Role-of-Financial-Services-in-Humanitarian-Crises\\_1.pdf](https://www.cgap.org/sites/default/files/Forum-The-Role-of-Financial-Services-in-Humanitarian-Crises_1.pdf)
- Dias, D. 2011.** CGAP G2P Research Project Brazil Country Report. Available at: <http://documents1.worldbank.org/curated/en/342241468228920612/pdf/680930WPOG2POB0Country0Report0Final.pdf>
- Eckstein, D. et al. 2019.** Global Climate Risk Index 2020: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2018 and 1999 to 2018. Germanwatch. Available at: [https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020\\_14.pdf](https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf)
- Hermann, A., Köferl, P. and Mairhöfer, J.P. 2016.** Climate Risk Insurance: New Approaches and Schemes. Allianz SE. Available at: [https://www.allianz.com/content/dam/onemarketing/azcom/Allianz\\_com/migration/media/economic\\_research/publications/working\\_papers/en/ClimateRisk.pdf](https://www.allianz.com/content/dam/onemarketing/azcom/Allianz_com/migration/media/economic_research/publications/working_papers/en/ClimateRisk.pdf)
- IFRC. N.D.** Types of Disasters: Definition of Hazard. Available at: <https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/>
- IRC. 2016.** Making Electronic Payments Work for Humanitarian Response. Available at: <https://www.rescue.org/sites/default/files/document/469/making-electronic-payments-work-for-humanitarian-response-final1.pdf>
- Ishiwatari, M. and Surjan, A. 2019.** “Good Enough Today is not Enough Tomorrow: Challenges of Increasing Investments in Disaster Risk Reduction and Climate Change Adaptation”. Progress in Disaster Science, Vol. 1. Science Direct. Available at: <https://www.science-direct.com/science/article/pii/S2590061719300079>
- King, R. 2018.** Central Banks: The Economy’s Emergency Responders. Available at: <https://www.centralbanking.com/central-banks/financial-stability/3465716/central-banks-the-economys-emergency-responders>
- Koh, J. and Mennon, A. 2019.** “Typhoon-Lashed Philippines Taps Catastrophe Bonds”. Bloomberg, 25 November. Available at: <https://www.bloomberg.com/news/articles/2019-11-25/typhoon-lashed-philippines-taps-catastrophe-bonds-to-cut-costs>
- LBP. 2020.** CFIEP thru LANDBANK offers loan package for calamity-affected CFIs. Philippine Information Agency, 28 May. Available at: <https://pia.gov.ph/press-releases/releases/1043169>

**OECD. 2015.** Disaster Risk Financing: A Global Survey of Practices and Challenges. Available at: <http://dx.doi.org/10.1787/9789264234246-en>

**OECD. 2017.** OECD Recommendation on Disaster Risk Financing Strategies. Available at: <https://www.oecd.org/daf/fin/insurance/OECD-Recommendation-Disaster-Risk-Financing-Strategies.pdf>

**Ramani, V. 2020.** Addressing Climate as a Systemic Risk: A Call to Action for U.S. Financial Regulators. The Ceres Accelerator for Sustainable Capital Markets, June 2020. Available at: <https://www.ceres.org/sites/default/files/reports/2020-06/Financial%20Regulators%20FULL%20FINAL.pdf>

**Schydrowsky, D.M. 2019.** Prudential Regulation for Greening the Financial System: Coping with Climate Disasters. Available at: <https://www.ifc.org/wps/wcm/connect/17343d5c-b66b-4d11-a4c8b05e5ae508fd/CLIMATE+DISASTER+RISKS+AND+PRUDENTIAL+FINANCIAL+REGS+Revised+301119.pdf?MOD=AJPERES&CVID=mYoqcjY>

**Smith, G. 2015.** Cash Coordination in the Philippines: A Review of Lessons Learned During the Response to Super Typhoon Haiyan. CaLP. Available at: <https://www.calpnetwork.org/publication/cash-coordination-in-the-philippines-a-review-of-lessons-learned-during-the-response-to-super-typhoon-haiyan/>

**Day, S. et al. 2019.** WorldRiskReport. Bündnis Entwicklung Hilft and Ruhr University Bochum - Institute for International Law of Peace and Armed Conflict (IFHV). Available at: [https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2019\\_Online\\_english.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/WorldRiskReport-2019_Online_english.pdf)

**Swiderek, D. and Wipf, J. 2015.** “Aiding the Disaster Recovery Process: The effectiveness of microinsurance service providers’ response to Typhoon Haiyan”. Microinsurance Network. Available at: [https://microinsurancenetwork.org/sites/default/files/MIN\\_Typhoon%20Paper\\_WEB.pdf](https://microinsurancenetwork.org/sites/default/files/MIN_Typhoon%20Paper_WEB.pdf)

**TCFD. 2019.** Task Force on Climate-related Financial Disclosures: Status Report. Available at: <https://assets.bbhub.io/company/sites/60/2020/10/2019-TCFD-Status-Report-FINAL-0531191.pdf>

**Tighe, K. 2011.** The Role of Microfinance and Micro Insurance in Disaster Management. Research Brief 2. Advanced Centre for Enabling Disaster Risk Reduction (ACEDRR). Available at: [https://www.preventionweb.net/files/20073\\_researchbrief2roleofmicrofinanceind.pdf](https://www.preventionweb.net/files/20073_researchbrief2roleofmicrofinanceind.pdf)

**Twigg, J. 2004.** “Disaster Risk Reduction: Mitigation and Preparedness in Development and Emergency

Programming”. Humanitarian Practice Network. Available at: <https://www.preventionweb.net/educational/view/8450>

**UN. 2020.** The Sustainable Development Goals Report 2020. Available at: <https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf>

**UNDRR. 2019.** Global Assessment Report on Disaster Risk Reduction. [https://gar.undrr.org/sites/default/files/reports/2019-05/full\\_gar\\_report.pdf](https://gar.undrr.org/sites/default/files/reports/2019-05/full_gar_report.pdf)

**UNISDR. 2015.** UNISDR Annual Report 2015. Available at: <https://www.undrr.org/publication/unisdr-annual-report-2015>

**UNISDR. 2009.** Terminology on Disaster Risk Reduction. Available at: [https://www.unisdr.org/files/7817\\_UNISDRterminologyEnglish.pdf](https://www.unisdr.org/files/7817_UNISDRterminologyEnglish.pdf)

**USAID. 2018.** Climate Risk Profile: Paraguay. Available at: [https://www.climatelinks.org/sites/default/files/asset/document/Paraguay\\_CRP.pdf](https://www.climatelinks.org/sites/default/files/asset/document/Paraguay_CRP.pdf)

**Volz, U., P. Knaack, J. Nyman, L. Ramos, and J. Moling (2020),** Inclusive Green Finance: From Concept to Practice. Kuala Lumpur and London: Alliance for Financial Inclusion and SOAS, University of London. Available at: [https://www.afi-global.org/sites/default/files/publications/2020-12/AFI\\_IGF\\_SOAS\\_3December.pdf](https://www.afi-global.org/sites/default/files/publications/2020-12/AFI_IGF_SOAS_3December.pdf)

**World Bank. 2015.** Principles for Public Credit Guarantee Schemes (CGSs) for SMEs. Available at: <https://www.worldbank.org/en/topic/financialsector/publication/principles-for-public-credit-guarantee-schemes-cgss-for-smes> - :text=A credit guarantee scheme provides, in return for a fee.

**World Bank. 2019.** “World Bank Catastrophe Bond Transaction Insures the Republic of Philippines against Natural Disaster-related Losses Up to US\$225 million. World Bank Press Release, 25 November. Available at: <https://www.worldbank.org/en/news/press-release/2019/11/25/world-bank-catastrophe-bond-transaction-insures-the-republic-of-philippines-against-natural-disaster-related-losses-up-to-usd225-million>

**World Bank. 2020.** “World Bank Catastrophe Bond Provides Financial Protection to Mexico for Earthquakes and Named Storms”. World Bank Press Release, 9 March. Available at: <https://www.worldbank.org/en/news/press-release/2020/03/09/world-bank-catastrophe-bond-provides-financial-protection-to-mexico-for-earthquakes-and-named-storms>

**World Food Programme (WFP).** N.D. Building Blocks: Blockchain for Zero Hunger. Available at: <https://innovation.wfp.org/project/building-blocks>

**Alliance for Financial Inclusion**

AFI, Sasana Kijang, 2, Jalan Dato' Onn, 50480 Kuala Lumpur, Malaysia  
t +60 3 2776 9000 e info@afi-global.org [www.afi-global.org](http://www.afi-global.org)

 Alliance for Financial Inclusion  AFI.History  @NewsAFI  @afinetwork