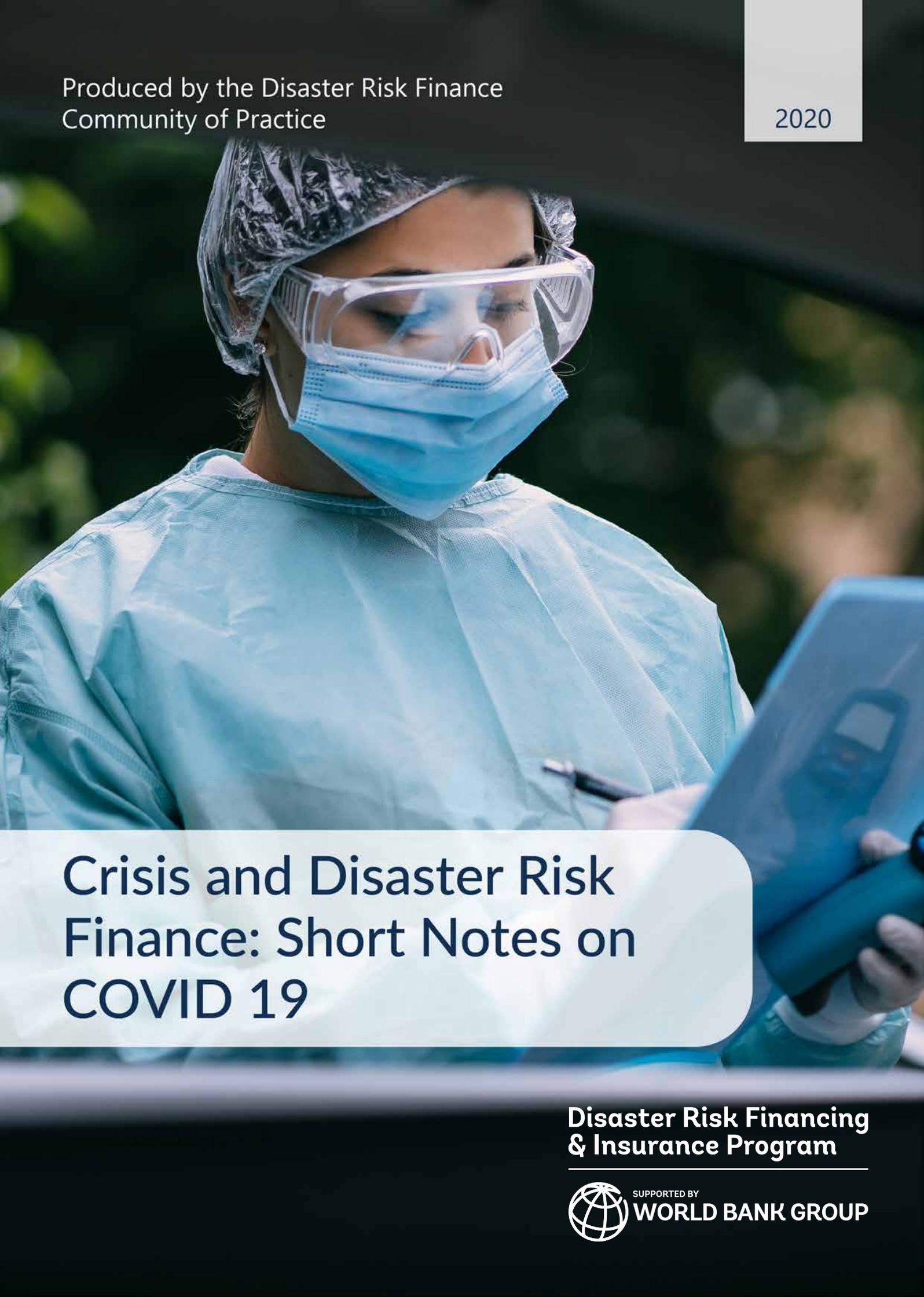


Produced by the Disaster Risk Finance  
Community of Practice

2020

A healthcare worker wearing a blue surgical cap, clear safety goggles, a blue surgical mask, and a light blue protective gown. She is looking down at a tablet device she is holding in her hands. The background is blurred, suggesting an outdoor or semi-outdoor setting.

# Crisis and Disaster Risk Finance: Short Notes on COVID 19

**Disaster Risk Financing  
& Insurance Program**

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The following short notes were published as independent blogs between June and October 2020 as part of Technical Knowledge produced by the Disaster Risk Finance Community of Practice

The following content is also available in a digital format on [financialprotectionforum.org/blogs](https://financialprotectionforum.org/blogs)

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# 1. Five Lessons on Disaster Risk Finance to Inform COVID-19 Crisis Response



**Authors: Alfonso Garcia-Mora, Olivier Mahul, World Bank Group**

While the world was focusing on battling the COVID-19 pandemic, the small Pacific island countries of Fiji, the Solomon Islands, Tonga, and Vanuatu were hit by Tropical Cyclone Harold. In Africa, desert locusts have ravaged farms and pastureland in several countries, including Ethiopia, Kenya, and Uganda. These tragic events are a painful reminder that climate change and other natural disasters have not been locked down by the COVID-19 pandemic.

Vulnerable countries are especially at risk of being overwhelmed by multiple concurrent shocks, which can exacerbate poverty and inequality. The governments of these countries face certain challenges. For example, natural disasters that affect countries already fighting COVID-19 may further overload health and civil protection systems, or even force actions that could drastically increase in virus cases, such as evacuations. Emergency funds are depleted, leaving public decision-makers less resources for responding to additional shocks. National economies are more vulnerable because the pandemic has left some groups less resilient to further shocks; these groups include firms that have suffered both asset and revenue losses and poor households whose members have lost jobs and income.

**A decade of supporting governments on financial preparedness for crises and disasters has taught us some key lessons to better respond to future shocks.** Though money by itself is never enough—and financial resilience needs to be complemented by physical and social resilience—reliable and quick financing is necessary for effective disaster response. Advance financial planning, informed by risk analytics and linked to clear actions, is essential for effective preparedness and response. Below are five key lessons on financial protection that could help inform COVID-19 crisis response.

### **Lesson 1. Pre-arrange financing to respond to future crises holistically.**

Comprehensive financial protection strategies should account for all sources of risk, including hydrometeorological and geophysical hazards, health shocks, cyber security, conflict, famine, and displacement. Such strategies should consider how these risks can intersect and create compounding shocks. Over time, financial instruments for these new risks—including pandemics—will mature to be more efficient, appropriately incorporating more complex financial structures, triggers, and targeted contingency plans. This type of planning requires experimentation and innovation in data collection, risk modeling, structuring of financial mechanisms and market-based instruments, testing of forecasts and triggers, feedback loops, and disbursement channels.

### **Lesson 2. Integrate planning for physical shocks in macroeconomic and fiscal frameworks.**

Governments have mobilized unprecedented resources to implement their policy responses to the ongoing health and economic crises caused by COVID-19. In advanced countries, monetary and fiscal measures have been widespread but costly. Developing countries often have less fiscal space and lower implementation capacity. Shock-responsive fiscal planning can help build resilience against future shocks. Several countries have already established dedicated fiscal risk management units, which also account for the impact on the government balance sheet from physical shocks, in addition to the impact from traditional sources of fiscal risk. The continued integration of planning into macroeconomic and fiscal tools—such as macro-models, fiscal risk statements, debt sustainability analyses, public expenditure reviews, public investment diagnostics, and poverty diagnostics—will be a key driver of greater resilience.

### **Lesson 3. Partner with the private sector.**

Where public resources are scarce, stable financial markets help share the risk among public and private stakeholders. A strong private sector can increase the efficiency, transparency, and discipline of fund mobilization and execution. Financial markets, the insurance industry, and technology companies can help develop and deploy innovative disaster risk assessment and financing instruments. Beyond risk transfer, strong payment systems help ensure that financing reaches the intended beneficiaries in an efficient manner.

## Lesson 4. Link financing to shock-responsive systems.

Rapid access to funding after a shock is critical. But just as critical is directing funding to the appropriate systems for effective, timely, and transparent spending. This is true whether that funding is from the budget, international partners, or financial markets. Experience suggests that public assets and social safety nets have significant potential to be directly linked with risk-financing instruments and to become responsive to shocks.

## Lesson 5. Leverage technology and innovation.

Technology has the potential to significantly boost systems for enhanced financial resilience against disaster shocks. Remote measurement and monitoring by the latest satellite technology enable powerful new applications to support more accurate and timely financial decisions in response to shocks. The quantity and timeliness of information contribute to improved forecasts, early warnings, and post-event loss estimates. These advances help decision-makers manage new risks and develop forecast-based financing applications for disasters and their associated crises, such as famine, drought, and political conflict. Similarly, innovative technologies such as blockchain, digital payment systems, and digitization of insurance hold significant potential to improve disaster risk finance solutions.

## Looking Ahead

To support governments in their efforts to effectively deal with the COVID-19 crisis, we should build financial resilience against future shocks. This requires not only appropriate financial instruments, technology, and delivery channels, but also a supportive institutional environment. To test new financial solutions, the [Global Risk Financing Facility](#)-jointly established by the World Bank and the governments of Germany and the United Kingdom-is providing more than U\$250 million in grants to help integrate financial preparedness mechanisms into large investment programs. The time is now to build systems that will be responsive to the shocks of future climate change, natural disasters, and other crises.

Over the next two months, a series of curated blogs on disaster risk finance and COVID-19 will address each of these lessons individually. Watch this space each week.

PHOTO CREDIT: WORLD BANK GROUP. EMPTY NAIROBI STREET IN APRIL 2020



**Alfonso Garcia-Mora**  
Author



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## 2. Five Reasons You Should Be Thinking About Compounding Risks Now



### **Authors: Evie Calcutt, Nicola Ranger, World Bank Group**

We are in the midst of an unprecedented crisis. To date, more than 435,000 people have tragically lost their lives as a result of COVID-19. The June 2020 edition of the World Bank's Global Economic Prospects report forecasts a 5.2 percent contraction in global GDP in 2020—the deepest global recession since World War II and the broadest collapse in per capita incomes since 1870, thereby tipping millions back into poverty. Such global statistics barely capture the effects on the lives of people around the world.

It feels unnatural to think about future risks and disasters right now in the context of such unprecedented adversity and uncertainty, so why and how should we be thinking today about planning for future risks?

## Reason 1. While economies slow down, disaster risk ramps up.

When one of the world’s largest purveyors of catastrophe risk models tells you that “you don’t need a cat model to know that there will likely be a meaningful disaster somewhere in the world this year” it is time to pay attention.[1]

The triple shock of COVID-19—health, economic, and financial - leaves people and businesses far more vulnerable to other shocks and stresses such as droughts, storms, floods, and food insecurity. Households and firms are less financially secure, and in some areas already suffering from food insecurity or compounding health effects as health systems are under strain. With government fiscal stimulus spending soaring and revenues falling, the fiscal capacity to respond to other shocks has shrunk. Credit—a key lifeline in crises—may be restricted. The capacity to absorb and respond to other shocks at all levels of society is more limited. Taken together, this reaction means that disasters strike even harder, and their negative impacts persist for longer durations.

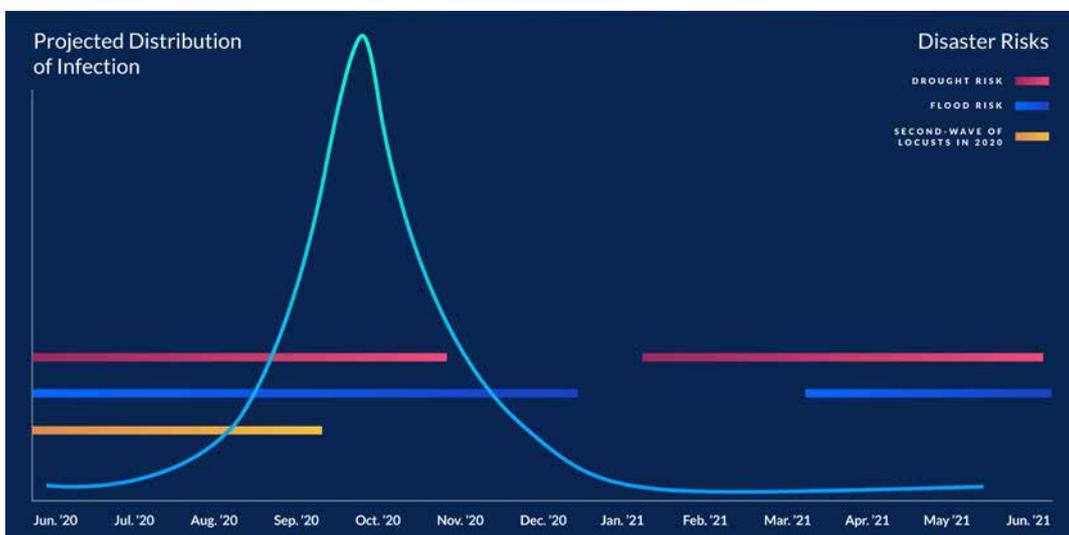
## When two or more risks interact, the potential collective effect can be greater than the sum of its parts - we describe this as compounding risk.

When thinking about future risks, timing is critical. In many emerging and developing economies, COVID-19 cases may not peak for several months, and the full economic and social effects of the crisis may not come for some time. Over this period, those countries will be particularly vulnerable to drought, floods, storms or other shocks.

The Horn of Africa region provides an example. With well over 22 million people already food insecure in the region, and agriculture damaged from several months of locust infestations, the region is already suffering. Moreover, COVID-19 cases are increasing (as of June 18, there are 10,500 confirmed cases and 258 deaths) and economic projections predict a slowdown this year (5.8 percent in Ethiopia, 3.9 percent in Kenya, and 0.6 percent in Somalia).[2] Adding a major drought could be catastrophic.

Current projections for the Horn of Africa suggest that the peak drought and flood risk could likely coincide with the peak of COVID-19 cases. In Kenya, drought alone reduces economic growth an average of 2.8 percent every year[3]. As these risks compound so do risks of short-term threats, such as instability and internal displacement of people, as well as longer-term impacts on lives and livelihoods, poverty alleviation and growth.

FIGURE 1. TIMELINE OF PEAK DISASTER RISK AND POTENTIAL PEAK OF COVID-19 INFECTIONS IN ETHIOPIA, KENYA, AND SOMALIA



SOURCE OF MODELED SCENARIO FOR POTENTIAL COVID-19 INFECTION NUMBERS: [METABIOTA \(VISIT WEBSITE\)](#)

## Reason 2. The future is uncertain, but the benefits of preparedness are clear.

If COVID-19 has taught us anything, it is that there is no substitute for preparedness.

Countries that were better prepared have acted earlier and fared better. Countries already equipped with shock-responsive safety nets and financial shock absorbers, such as contingency budgets and contingent credit, have been more able to protect their economies and to ensure that if the worst happens, they can immediately protect their poorest citizens.

Social protection systems have been shown to be critical. To date, 195 countries and territories have planned, introduced, and adapted social protection systems in response to COVID-19.[4] Malawi's government, for example, has quickly reconfigured its cash transfer program to include an urban intervention that will help fulfill the financial needs of the poorest citizens who are negatively impacted by COVID-19.

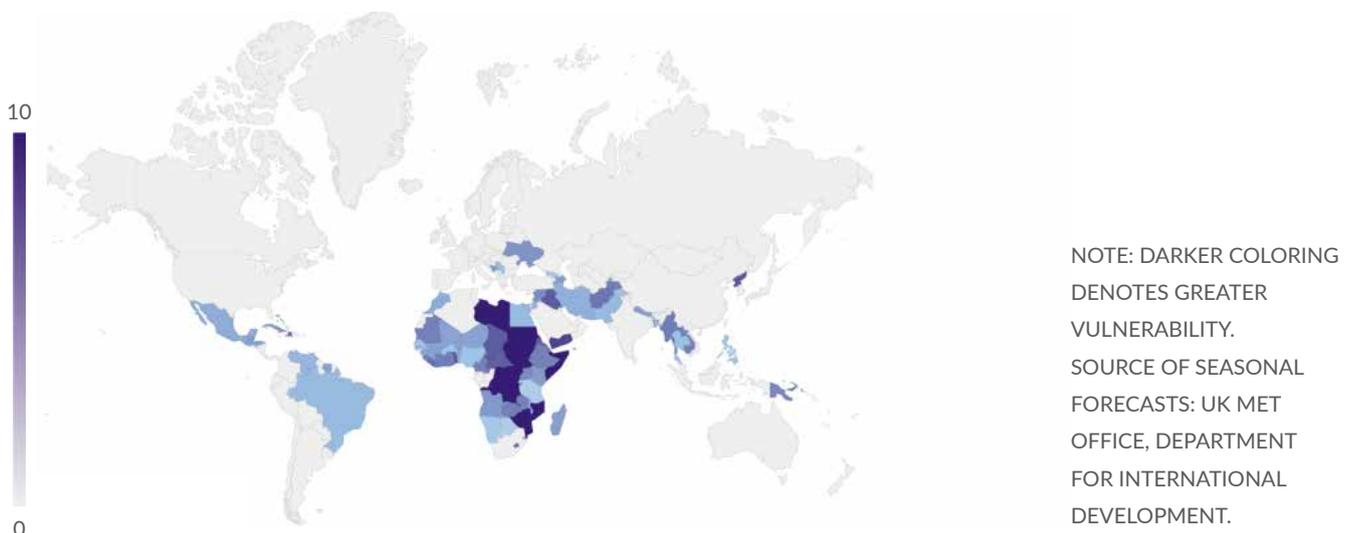
It's also important to think about finance. When fiscal space is limited and there are immediate pressures on budgets, it can be easy to deprioritize financial preparedness for future risks, but preparedness is needed more than ever, both to reduce short-term shocks and avoid long-term impacts on poverty alleviation and economic development. Having in place an effective strategy for disaster risk financing gives certainty that financial resources can be available when needed and at the lowest cost possible.

Just this year, for example, St. Lucia transferred more of its natural catastrophe risks to the Caribbean Catastrophe Risk Insurance Facility to alleviate fiscal pressures in the aftermath of a disaster. Nepal pushed ahead with its first Catastrophe Deferred Drawdown Option (Cat-DDO) of \$50 million - a line of contingent financing that provides immediate liquidity to countries to address shocks related to natural disasters and/or health-related events. The German government provided 19 million euros to protect up to 20 million poor and vulnerable people in Africa against drought using cover offered by African Risk Capacity. This can provide vital financial protection in a drought.

## Reason 3. Keep an eye on the pacific; cold seas herald a Perfect storm.

Financial preparedness is particularly important for those countries that regularly face seasonal, weather-related risks. Although we can't predict individual events, weather patterns enable us to know where and when they are most likely to occur. By combining data on seasonal cycles, seasonal forecasts, and preexisting economic and financial vulnerabilities, we can identify potential hot spots of risk over the coming 6–12 months.

MAP 1. COMPOUND SEASONAL WEATHER AND COVID-RELATED FINANCIAL AND FISCAL RISKS



We are also keeping one eye on the Pacific Ocean. There are early signs of a La Niña developing later this year. This would mean a more active hurricane season for the Caribbean and Central America, a heightened risk of drought in the Horn of Africa, and an increase in the landfall of typhoons in Southeast Asia.

The hurricane season in the Atlantic Ocean has already started early (there were two named storms in May) and food insecurity across many regions is already under stress. To improve financial planning and preparedness, the Disaster Risk Financing and Insurance Program (DRFIP) is working with universities and pandemic modeling firms to better understand how disasters interact with ongoing stresses and co-develop new tools to support our clients to manage such risks.

For countries in such higher-risk regions, monitoring risks, revisiting plans and having financial protection in place is even more important than ever.

#### **Reason 4. Now is the time to plan for a more resilient future.**

Looking ahead to the recovery phase, we find an urgent need to embed stronger preparedness and resilience into policy, investment, and development finance. Now is the time to integrate resilience firmly into COVID recovery plans.

The social protection sector provides important lessons for managing future risks. Linking risk financing to shock-responsive safety nets, as Kenya and Uganda have done and as Malawi, Sierra Leone, and countries across the Sahel are planning to do, can be a game changer for resilience. These same principles can be used to strengthen the shock-responsiveness of other critical sectors, such as health, nutrition and education services, or integrate ‘financial shock absorbers’ into vulnerable economic sectors.

Our experience of embedding disaster risk financing in social protection programs has highlighted three important factors for success. The Global Risk Financing Facility is now supporting clients to build these lessons into other critical sectors.

#### **Three Key Lessons Learned from Embedding Disaster Risk Financing in Social Protection Programs**

Lesson 1. Understand the risk and potential cost before the disaster

Lesson 2. Preplan the financing to ensure a timely response

Lesson 3. Put effective delivery mechanisms in place.

#### **Reason 5. Rise of the super cat: a new risk paradigm**

The negative impacts of the COVID-19 crisis have been unprecedented; arguably, the speed and scale of its progression has taken many by surprise. We nonetheless know that this type of cascading, complex, systemic shock is becoming more common in our globally interconnected world. Super cats—systemic risk events—are here to stay. Climate change and growing pressures on resources and the environment add to the risk. Although our

immediate concern is to protect countries during this crisis period, we also need to think about how to tackle these risks for the future.

Financial preparedness is even more important in this new risk paradigm, but we need a new tool kit to fully understand and quantify the new risks. Many institutions around the world are trying to tackle this same problem, and there are advantages to working together to share knowledge. DRFIP is currently working in more than 60 countries to help strengthen their financial preparedness and the first step is to understand our clients' needs as we jointly develop new tools and approaches.

We also need to track those compounding risk factors that could make things worse right now, such as changes in global food prices and reduced remittance flows. The DRFIP is supporting World Bank efforts to develop a system for risk surveillance to support countries to better plan and prepare now, but also over the long-term.

We do not yet have all the answers, but we do have the questions. For example, is there a role for pandemic risk insurance pools? How can we use the principles of risk financing to better protect small and medium enterprises and firms from future shocks? What role can new sources of data such as remote sensing and machine learning play? And how can we leverage existing facilities such as the Global Risk Financing Facility to support our clients to manage their risks in this new risk paradigm?

We will be exploring those and other questions as part of this blog each week.

[1] <https://www.rms.com/blog/2020/05/26/pandemic-plus-quantifying-potential-...>

[2] <https://www.worldbank.org/en/publication/global-economic-prospects>.

[3] Kenya Post-Disaster Needs Assessment, 2008-2011 Drought

[4] <https://www.ugogentilini.net/wp-content/uploads/2020/06/SP-COVID-respons...>

PHOTO CREDIT: UNSPLASH. VOLCANO ASH CLOUD IN MOUNT SINABUNG, INDONESIA



**Evie Calcutt**  
Author



**Nicola Ranger**  
Author

# 3. Five Reasons the Global Risk Financing Facility Is Relevant During an Ongoing Pandemic



**Authors: Sumati Rajput, Benedikt Signer, World Bank Group**

COVID-19 has halted the world as we know it. Unfortunately, natural disasters and climate shocks will not stop in its wake. When disasters do strike, they compound the already devastating impacts of COVID-19.

After only a few months, COVID-19 has already increased countries' vulnerability to disasters and has reduced the countries' capacity for dealing with shocks. It is placing a heavy burden on national health care and social protection systems; it imposes ever-increasing economic exposure in even the wealthiest nations. Developing countries have

already depleted their contingencies and their limited emergency preparedness capacities; instated lockdowns are crippling their economies.

Many countries, businesses, and families are left with little or no buffer to protect against additional shocks. Even relatively small events that would be manageable in normal times are likely to have much larger and more devastating negative impacts as a result of the pandemic. Such a catastrophic event risks wiping out years or decades of development progress, thereby requiring an even longer recovery period.

## **‘Natural disasters will not stop during COVID-19, and neither should financial planning for them.’**

Although the World Bank’s core business has drastically shifted toward delivering a meaningful response to COVID-19, trust fund resources are playing their part to complement those investments and to support planning for the future. Next are five things to note about the relevance of the [Global Risk Financing Facility](#) (GRiF) during the ongoing pandemic.

**One:** GRiF, financed by Germany and the United Kingdom, and co-managed by the [Disaster Risk Financing and Insurance Program](#) and the [Global Facility for Disaster Reduction and Recovery](#), was established to support financial planning for climate shocks, natural disasters, and—over time—a range of crises. GRiF’s mandate has become even more important during the COVID-19 pandemic. Although GRiF is not set up to provide direct pandemic support, it will provide funding to help countries prepare for the heightened risks that are likely to accompany disasters during the COVID-19 response and recovery period. GRiF support will take the form of two types of grants: small, short-term grants and larger, medium-term grants.

**Two:** As an immediate measure, GRiF will provide up to 10 small grants of up to US\$200,000 for short-term analytical work that incorporates financial preparedness to compound shocks into COVID-19 response and recovery projects that are currently being prepared.

**Three:** In the medium term, GRiF will provide three to five grants of US\$5 million to US\$15 million each to co-finance operations that will design and establish financial solutions to compound shocks. The grants will fund the embedding of sustainable financing mechanisms to protect vulnerable businesses and families against compound shocks in lending operations that are currently being prepared. The objective is for the mechanisms to outlive the current pandemic so they can respond to future shocks and crises.

Several new ideas are already under discussion for both short- and medium-term support.

**Four:** Countries must protect small and medium enterprises (SMEs) from compound risks of drought during COVID-19. One short-term grant is financing an analytical framework, which is being piloted in several countries, including Burkina Faso and Vietnam, to assess the financial effects of COVID-19 and disaster shocks on SMEs in vulnerable countries.

In Burkina Faso, which experiences high levels of climate variability, unpredictable rainfall, and regular droughts that negatively impact the livelihoods of the most vulnerable, this analytical work is informing a larger investment. Together with the government, a World Bank team is exploring ways to protect SMEs from the compounding effects of drought during COVID-19 through a larger GRiF grant.

To safeguard access to credit for SMEs, the government plans to expand its existing Partial Portfolio Credit Guarantee (PPCG) scheme to include an additional “crisis”-related window with a linked facility that encourages financial institutions to offer longer grace periods, as well as to maintain or even extend maturities during a crisis. This approach would guarantee restructured and short-term working capital for needed loans if borrowers run into difficulty resulting from either the COVID-19 pandemic or a drought.

The project team is exploring the use of GRiF support for providing additional capital to the guarantee facility for this crisis window. The team is also looking at ways to invest in related reforms that will increase the use of digital payment systems and will reduce cash-contact for financial services. The PPCG is locally owned and managed and will continue beyond the pandemic to respond to future crises.



PHOTO CREDIT: ROBERTO VI. A LOCAL MARKET IN BURKINA FASO.

**Five:** Water utilities are already under stress from COVID-19, which necessitates financial planning for future shocks. Handwashing with water is a critical infection-control measure for COVID-19. This necessity has led to increased demand on water service providers around the world. At the same time, the water providers face unprecedented declining revenues as households struggle to pay bills. They also face rising operating costs related to overtime charges; enhanced water services in low-income, high-density communities; and increased costs for chemicals, adequate personal protective equipment, and so on.

Immediate financing will support the water global practice in carrying out financial assessments of utilities in Albania, Brazil, and Colombia. The resulting data will provide a better understanding of the financial effects of COVID-19, will help to estimate the funding gap, and will provide recommendations to feed into the design of longer-term reforms that ensure financial sustainability of water utilities.

The country-level assessments will also inform discussions around the potential establishment of a national or a regional liquidity facility that would provide timely support

to water service providers and would ensure continued service delivery in the face of future shocks. GRiF could fund the technical work required to design and structure such a facility, provide start-up and operating costs, and finance the cost of financial instruments.

Now, in the wake of the COVID-19 pandemic, financial planning for compound risks is more important than ever. As the World Bank continues its pandemic response and recovery efforts, GRiF is ready to work with teams that are looking to plan today for additional risks that may materialize tomorrow. Such efforts will ensure that—even though health systems and economies are taxed—there will still be support for vulnerable countries, businesses, and families when future disasters strike.



PHOTO CREDIT: WORLD BANK. LAUNDRY WASHING AT A WATER POINT IN BRAZIL.

PHOTO CREDIT: UNITED NATIONS. A WOMAN CARRIES SUPPLIES THROUGH A FLOODED STREET IN CAP HAÏTIEN, HAITI



**Sumati Rajput**  
Author



**Benedikt Signer**  
Author

# 4. Five Ways COVID-19 Leads to Natural Catastrophe Protection Gaps at the Sovereign Level



**Author: Cathy Ansell, World Bank Group**

Several recent articles have discussed how losses from hurricanes in the United States may be [exacerbated by COVID-19](#). Many of the articles are written from the perspective of insurers and reinsurers; here, though, we consider the negative impact of such losses on the insured in the context of parametric insurance schemes, which several developing countries have implemented within their risk-financing strategies for disaster response.

## 1. Context always matters for catastrophe losses.

The same hurricane, earthquake, or flood cannot happen twice. Even if it could, the impacts of each event would not be the same because of the ever-changing global, social, and economic contexts in which natural disasters occur. For example, an economy in recession could have lower fuel prices, which could lead to cheaper supply chain costs for recovery or to more unemployed workers who would undertake rebuilding work after a natural disaster, thus minimizing demand surge. If we consider the North American tropical cyclone season of 2017, many Caribbean islands were, unfortunately, affected first by Hurricane Irma, then by Hurricane Maria; thus, the damage caused by Hurricane Maria was different from what would have been the case had only that storm occurred. Catastrophe models can help quantify risk to provide expected losses from natural disasters, but context always matters in determining the real negative impacts of an event. For 2020, that context is COVID-19.



PHOTO CREDIT: UNITED NATIONS. A SCENE FROM LES CAYES, HAITI, IN THE AFTERMATH OF HURRICANE MATTHEW, THE CATEGORY 4 STORM WHICH MADE LANDFALL IN THE COUNTRY.

Social distancing systems put in place by governments to help slow the spread of COVID-19 may lead to increased losses by impeding preparation before a storm or recovery after a storm. For example, social distancing requirements may make it difficult for property owners to purchase window coverings or sandbags to mitigate damage before a storm. Further, homeowners or builders may not be able to access properties to commence reconstruction after the storm, thereby leading to increased losses through mold growth and general deterioration.

## 2. Sovereign disaster risk–financing strategies are not the same as traditional insurance.

Sovereign disaster risk–financing strategies, which the [World Bank’s Crisis and Disaster Risk Finance Team](#) helps to implement, are often designed to provide short-term liquidity and relief during the period immediately after a disaster. Those financing strategies, including parametric insurance schemes, are designed to ensure rapid payouts to cover

emergency response costs such as those for operating shelters, supplying food and medicine, and removing debris.

Emergency response costs are also context dependent. Thus, they are expected to increase as a result of COVID-19, for example, through purchase of personal protective equipment for first responders, for additional shelters to comply with social distancing requirements, and for many of the loss-amplification impacts discussed earlier. This increase is particularly relevant for small island states in the Pacific or the Caribbean where, because of travel restrictions, supplies may be unable to reach certain countries. In April, [Tropical Cyclone Harold](#) which was the most powerful storm to hit the South Pacific in years, demonstrated those problems.



PHOTO CREDIT: UNITED NATIONS. TWO GIRLS FROM TACLOBAN, THE PHILIPPINES, STAND IN FRONT OF SOME OF THE DAMAGE AND DEBRIS LEFT BY THE SUPER TYPHOON YOLANDA/HAIYAN.

### 3. The insurer or the insured—who loses in the COVID-19 context?

Indemnity catastrophe reinsurance layers payout when a natural disaster such as a tropical cyclone causes losses above a predetermined level. COVID-19 has increased the likelihood of such losses occurring. Therefore, reinsurers expect to pay a higher volume of claims in 2020 than they would have paid if the same tropical cyclone had occurred in 2019. Homeowners and business owners, however, are still covered within the context of their insurance policies—that is, their policies will still pay to cover the actual costs to repair their property. Within the context of COVID-19, the indemnity insured are still able to cover all their costs, and the insurer or reinsurer must bear the additional burden.

For parametric schemes, however, in which the insured receive a predetermined fixed amount when an event of an observed intensity or magnitude occurs, it is the insured people or groups who lose. Such policies have been designed to provide an amount of money that will cover the expected losses of an event. Thus, if the real-world context changes sufficiently so that the losses from an event are significantly larger than expected, the insured are now unable to cover the costs. There is a new and context-specific protection gap.

#### 4. We have the tools to quantify this protection gap.

We have the tools to quantify how large this protection gap could be for a sovereign disaster risk-financing strategy.

Let's consider a simple hypothetical example to explore how significant such a protection gap can be.

Consider a model for a country that can experience only five types of event and the losses increase with an event magnitude from US\$1 to US\$5. The country assessed its risk and determined that the probability of needing to access more than US\$3 of funding each year was only 3 percent. Therefore, the country implemented a layered approach: US\$1 from budget reallocation, US\$1 from contingent financing, and US\$1 from parametric insurance, which would trigger when an Event Type 3 or greater occurred.

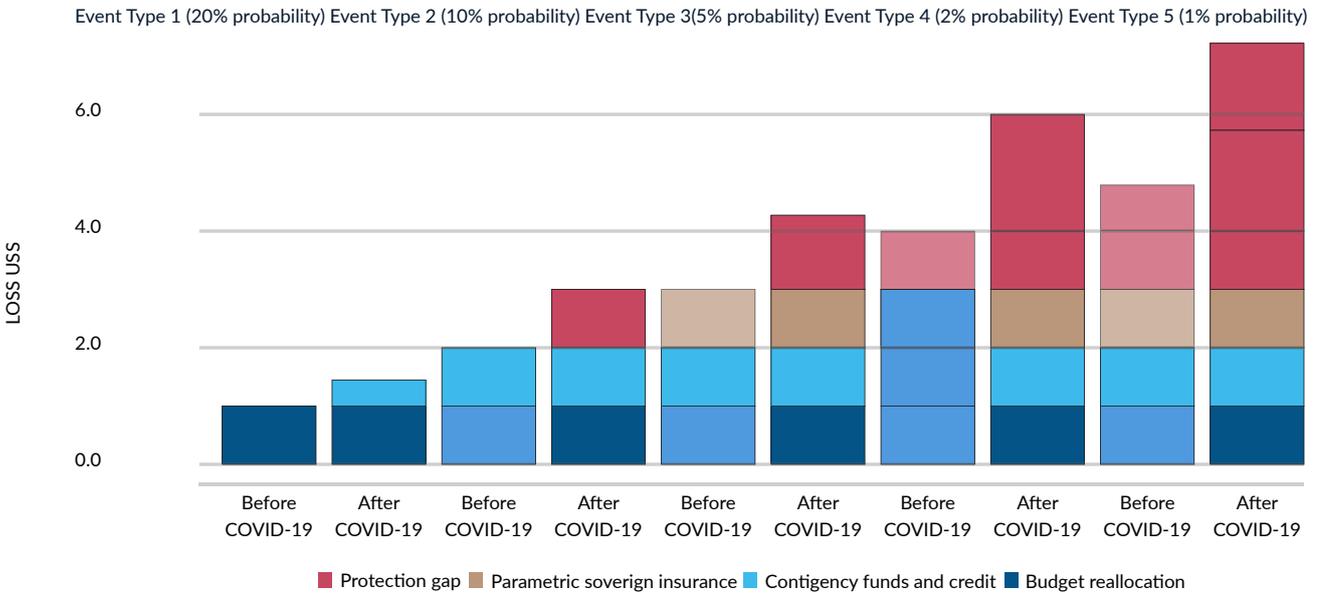
In this simple model, before the loss amplification of COVID-19, the country had a 3 percent chance of suffering a funding gap if either an Event Type 4 or an Event Type 5 occurred, with an average annual funding gap of US\$0.04.

Let us assume that the stressor effects of COVID-19 are expected to increase emergency losses in the country by 50 percent. Although the country has a risk-financing strategy in place to cover losses up to US\$3, it can access the parametric insurance only for the larger events; the country now has a protection gap for Event Type 2 that did not exist before COVID-19.

See table 1 and figure 1. Overall, although the country's emergency losses have increased by only 50 percent, the probability that the country will suffer an event that leads to a protection gap has increased by 500 percent, with the annual average funding gap increasing seven times to US\$0.28. Critical for this conversation, more than 60 percent of the expected gap is from the smaller, high-frequency Type 2 and Type 3 events, for which the country had previously budgeted and expected to be covered.

	Event Type 1 (p=20%)	Event Type 2 (p=10%)	Event Type 3 (p=5%)	Event Type 4 (p=1%)	Event Type 5 (p=1%)	Average annual loss	Probability of funding gap
Funding gap before COVID-19	0.0	0.0	0.0	1.0	2.0	(2% x1)+ (1% x2)= 0.04	3%
Funding gap after COVID-19	0.0	1.0	1.5	3.0	4.5	(10% x1)+ (5% x1.5) +(2% x 3) +(1% x 4.5=0.28	18%

FIGURE 1. MODEL RESULTS OF AMOUNT OF TOTAL LOSS FUNDED BY SOVEREIGN DISASTER RISK INSTRUMENTS



### 5. COVID-19 is a systemic form of basis risk.

The impact of COVID-19 is a systemic form of basis risk for the parametric insured—the difference between the payouts and the needs of the insured—and it may lead to protection gaps for relatively high-frequency events.

Although not represented in our simple model, many countries have also reallocated their budgets to cover other losses caused by COVID-19, and similarly they may have exhausted existing lines of contingent credit to support their economies—thereby further widening the funding gap.

Countries in disaster-prone regions now have less capacity to absorb shocks, which leads to an increased risk of people falling into poverty should they be affected by a tropical cyclone, flood, or other shock in the coming months. COVID-19 may have widened the protection gap even further in some of the most vulnerable developing countries, where the impacts of disaster shocks can undo many years of economic progress.

PHOTO CREDIT: UNITED NATIONS. A SCENE FROM CODRINGTON TOWN IN BARBUDA AFTER THE BACK-TO-BACK, CATEGORY 5 HURRICANES IN 2017.



**Cathy Ansell**  
Author

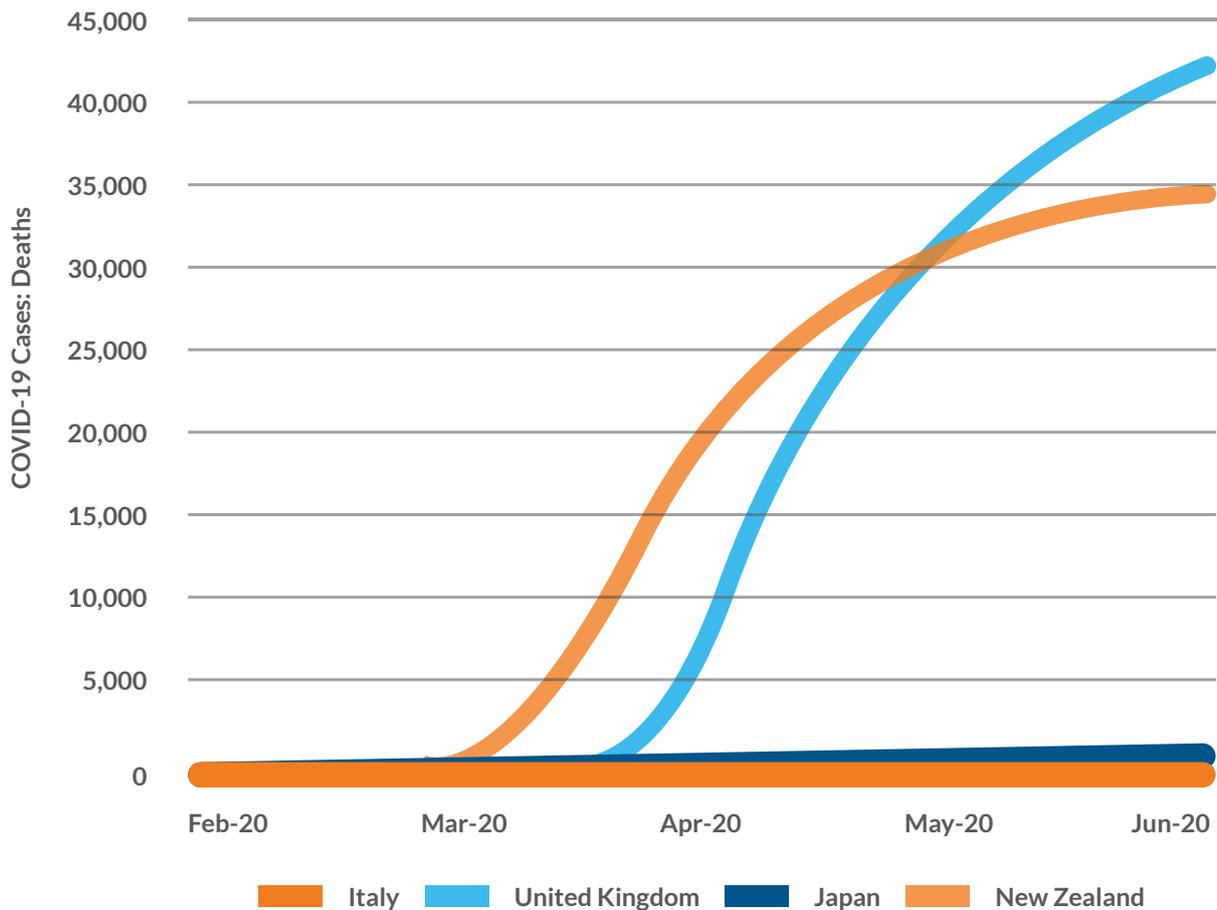
# 5. Expect the Unexpected: Three Benefits of Rainy Day Funds



**Authors: Samantha Cook, Tatiana Skalon, World Bank Group**

Simply put, we save money as a precaution because we do not know what the future holds. Savings help governments fulfill their fundamental role, which is to ensure the well-being of their citizens. When natural disasters or crises strike, early action saves lives. COVID-19, which has wreaked havoc on economies and taken the lives of people around the world, has proved this yet again. Statistically speaking, COVID-19 has shown that timely action helps flatten the curve (see figure 1).

FIGURE 1. COVID-19 DEATHS IN ITALY AND UNITED KINGDOM VERSUS THOSE IN NEW ZEALAND AND JAPAN.



SOURCE: DATA FROM JOHNS HOPKINS UNIVERSITY CENTER FOR SYSTEMS SCIENCE AND ENGINEERING, [LINK HERE](#).

The current pandemic was not unpredictable. Since the 1918 Spanish influenza, scientists have talked about the possibility of another pandemic. Among many voices, in 2003 the [Organisation for Economic Co-operation and Development](#) warned that another pandemic was not only possible but imminent. With COVID-19, we are learning just how costly those events can be (through their [triple health, economic, and financial impact](#)).

The future development of the pandemic is uncertain. Models of the virus’s spread propose different outcomes as they are subject to assumptions. For instance, it is unclear if we should expect second, third, and fourth waves of infection like those seen during the Spanish influenza. Or will typhoons or earthquakes hit us tomorrow? In any scenario, it is our duty as humans to act—and to act quickly.

Governments cannot act quickly without financial resources. A recent [World Bank blog](#) by Alfonso Garcia-Mora and Olivier Mahul stressed prearranged funding as a key enabler of rapid and effective response. Less-advanced economies might struggle with securing such funding because their economic well-being often compares to their capacity to raise revenues.

In India, the government of Kerala showed that effective containment measures are possible through preparedness. The government had access to rainy day funds, which allowed for the quick release of money to support a well-designed disaster (or pandemic) response plan.



PHOTO CREDIT: WORLD BANK GROUP. SICHUAN PROVINCE AFTER THE 2008 EARTHQUAKE. CHINA.

In fact, Kerala had been preparing for the next catastrophe since the 2018 floods that revealed how important it is to [build resilience](#).

For governments, savings have an opportunity cost of those monies not invested elsewhere. So why would a government want to save funds for a rainy day? Some key reasons are as follows:

**1. Be prepared.** Though it would be great to know when and where we will need cash in the future, we have no such certainty. We do not know how COVID-19 will develop or when the next disaster will strike. Nor do we know how many regions or people a disaster will affect—but we know something will happen. Considerations such as how much money we will need immediately or how we will spend it, and on what, make regular budget planning a challenge. Saving for a rainy day can help manage this uncertainty.

Like many countries, Albania has a reserve fund. In the beginning of 2020, the government tapped into half its reserves to support immediate containment and lockdown in response to COVID-19. It then doubled the fund and, soon after, increased the reserves by almost eight times the initial amount of the fund. This change was most likely done to reflect how little we know about COVID-19 and how quickly measures must be implemented to contain its spread (while still being prepared for other unexpected events).

**2. Act early.** Early action helps reduce the negative impacts of disasters and crises. However, governments' resources are depleted day by day and an absence of savings may worsen any crisis. Countries across the world are eating into their fiscal reserves, reallocating budgets, and borrowing, thereby worsening their debts. Revenues fall as people lose salaries, businesses lose earnings, and economies slow down. Setting money aside in a rainy day fund will help governments to have the means to act early.

Many countries are searching for rapid funding to respond to COVID-19. For instance, the World Bank's Catastrophe Deferred Drawdown Option (Cat DDO)—a contingent credit available to governments—was triggered in **nine countries** soon after the world realized just how far-reaching the impacts of the pandemic could be.



PHOTO CREDIT: WORLD BANK GROUP. COVID-19 TESTING IN MADAGASCAR.

**3. Respond.** A reactive approach is expensive and can cost lives. It is often said that it is easier to prevent than cure a disease. Preparing in advance requires thinking about how to manage financial costs before those costs materialize. Rainy day funds have been used for centuries as a source of quick liquidity. In the time of COVID-19, they could secure the capacity to buy health equipment and medical supplies, support containment measures, or provide food for the needy.

Rainy day funds, however, are not an all-in-one solution to cover any cost of a crisis or disaster. A risk-layering approach, which combines different sources of funds to ensure cost-effectiveness, is important. Though it might be too late to buy insurance for COVID-19 (unlike those who have already done so, such as the **Wimbledon tennis tournament**), we can decide how to transfer future pandemic and disaster risk, access capital markets, put contingent credit in place, and effectively mobilize donor aid.

Rainy day funds are well known, but a word of caution is that such funds must be carefully designed. This design includes consideration and scrutiny over such aspects as governance and oversight, disbursement rules, and funding sources. Maintaining transparency and efficiency in a time of such an unprecedented volume of emergency spending will help generate trust among taxpayers and donors. As we grieve for those who have lost their lives to COVID-19, we have an important strategic decision to make about what we can do

better amid the current crisis, and how we can prepare for the next one. This requires acting now on financial preparedness.

The structure of financial preparedness matters less, be it a rainy day fund, a Cat DDO, a contingent emergency response component, a [Pandemic Emergency Financing Facility](#), or even a risk-sharing facility for the private sector. What matters more is that we have funding ready to act early.

PHOTO CREDIT: UNITED NATIONS. STREETS AND PATHWAYS ARE FLOODED AFTER THE PASSING OF HURRICANE TOMAS IN GONAIVES, NORTH OF PORT-AU-PRINCE, HAITI.



**Samantha Cook**

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**Tatiana Skalon**

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# 6. Five Ways the World Bank's IDA-19 Is Supporting the Poorest Countries in the Time of COVID



**Author: Samuel Munzele Maimbo, World Bank Group**

The COVID-19 crisis has been a sudden, high-speed reverse gear – quickly eroding gains in economic growth and poverty reduction across the world. The pandemic is still escalating but the pain it is causing in the lives of billions of people is especially evident in the world's 74 poorest countries supported by the International Development Association (IDA). These are countries where children, women, people living in fragile and conflict-affected situations, and those employed in the informal sector are suffering the most.

Amid these unprecedented and disheartening times, I joined as Director of the incredible IDA Resource Mobilization and IBRD Corporate Finance team, which has stepped up to the plate in the COVID-19 fight. The team is contributing to the World Bank's delivery of an exceptional response to help countries deal with the demands and effects of the crisis. I am excited to be part of it.

IDA's support is part of the broader \$150-160 billion [World Bank Group response](#) over a 15-month period and includes \$50-55 billion in low-interest credits and grants focused on saving lives, protecting the poor and vulnerable, creating jobs, saving businesses, and building a more resilient recovery. Over the next 12 months, IDA will deliver close to \$10 billion in new grants for low-income countries at higher risk of debt distress.

July 2020 is the kick-off of IDA's 19th funding cycle (better known as IDA19). The IDA19 program—supported by a historic \$82 billion replenishment—was developed before the COVID-19 pandemic hit, but in the face of the crisis it shines as even more relevant today.

The 500 million people living in extreme poverty in IDA countries remain at the center of IDA action, whose work and impact aims to make the world a better place for everyone. IDA is uniquely positioned for this mission, so let me share with you five transformative elements to look forward to in IDA19:

### **1. Sharply focusing on crisis preparedness and earlier response to slower-onset crises.**

Prime focus will be stronger resilience building including pandemic preparedness and reducing risks from climate shocks. The COVID-19 pandemic reminds us of the importance of strengthening resilience against any shocks that might strike. That is what IDA19 will proactively do.

### **2. Implementing a new debt policy.**

Many IDA countries were already at high risk of debt distress before COVID-19 which is exacerbating the situation. A new debt policy in IDA19 called [Sustainable Development Finance Policy](#) will help incentivize countries to borrow sustainably and promote coordination between IDA and other creditors.

### **3. Creating more and better jobs.**

Jobs are a critical element of poverty reduction. In many IDA countries jobs are scarce and COVID-19 has exacerbated this situation. The jobs agenda will include facilitating job-creating private investments and much needed infrastructure. Digital technology will also be important in the jobs' agenda. IDA's Private Sector Window will scale up and mobilize private sector investments in IDA countries with support from IFC and MIGA. And IDA19 will ensure there is the human capital with appropriate skills, health, etc.

Strategy will strengthen operations in this regard, and IDA19 will also do more to address regional drivers of fragility through regional programs, including in the Sahel, Lake Chad region, and the Horn of Africa.

### **4. Increasing tailored support in fragile and conflict-affected situations.**

This will help to address a range of risks related to Fragility, Conflict, and Violence (FCV), with strong incentives and accountabilities for countries to confront FCV drivers. The Bank's

[FCV Strategy](#) will strengthen operations in this regard, and IDA19 will also do more to address regional drivers of fragility through regional programs, including in the Sahel, Lake Chad region, and the Horn of Africa.



IDA 17 RETROSPECTIVE - MAXIMIZING DEVELOPMENT IMPACT, [LINK HERE](#)

## 5. Thinking regionally.

Scaled up support for regional integration, such as investments in infrastructure for greater regional connectivity, trade facilitation, and digital economy. Thinking regionally will help facilitate collective action to address common goals.

Even though the environment might be challenging, we optimistically move on knowing that the agenda we have to deliver is for important clients – all the poor people in IDA countries who look forward to a better world. With just 10 years to 2030, it's important that we shift the gear of development back to overdrive towards ending extreme poverty. I am excited by this prospect.

SOURCE: THIS BLOG WAS ORIGINALLY [PUBLISHED HERE](#) IN THE WORLD BANK GROUP'S [VOICES BLOG](#).

PHOTO CREDIT: VINCENT TREMEAU/WORLD BANK. IN POOR AREAS OF AFRICA'S SAHEL, THE SAHEL WOMEN'S EMPOWERMENT AND DEMOGRAPHIC DIVIDEND PROJECT (SWEDD) HAS ALREADY PROVIDED PROFESSIONAL TRAINING TO ALMOST 100,000 WOMEN SO THEY CAN PURSUE INCOME-GENERATING ACTIVITIES.



**Samuel Munzele Maimbo**

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# 7. Three Ways That Contingent Policy Financing Contribute to Resilience Building Before, During, and After COVID-19



**Author: Martin Luis Alton, World Bank Group**

Policy-based financing that is focused on resilience building and on planning for the unforeseen plays an important role in strengthening a state's capacity to deal with shocks.

Political scientist, Francis Fukuyama recently argued in *Foreign Affairs* that [it takes a state](#) to effectively deal with the COVID-19 crisis. Unfortunately, developing countries—arguably by definition—often lack effective state institutions such as (financial) risk management and social protection systems. The importance of such institutions has garnered renewed

attention since the onset of the crisis. In fact, [social protection systems have played a key role](#) in virtually every country in mitigating the economic losses experienced by the poorest members of society.

Policy lending is an important tool to lay the foundations for social protection systems that can be scaled up in times of crisis. For example, the Malawi Disaster Risk Management (DRM) Development Policy Financing (DPF) with Catastrophe Deferred Drawdown Option (Cat DDO) catalyzed the government's adoption of a new social protection plan that contains measures to modernize the system, including by developing shock-responsive social protection. Similarly, the Madagascar Cat DDO has supported better coordination between the humanitarian response and the social protection systems, while the Madagascar COVID-19 response DPF, which is currently being prepared, supports measures to expand cash transfers during the crisis. Such measures include facilitating the opening of electronic money accounts, thereby making it easier to transfer money to beneficiaries of social protection systems while increasing financial inclusion.



PHOTO CREDIT: WORLD BANK / HENITSOA RAFALIA. COVID-19 TESTING IN MADAGASCAR.

## **1. Cat DDOs have strengthened shock responsive systems (including DRM systems) in more than a dozen countries.**

Only with effective DRM systems and adequate preparation can countries execute the logistically complicated response typically required during large-scale emergencies. To this end, the Madagascar Cat DDO included the wholesale reform of the country's DRM system, which will lead, for example, to a significant increase in the number of local DRM offices. Adequate disaster response capacity at all levels, important at normal times, is even more critical during a pandemic. Such capacity can help mitigate potential feedback effects among rapid-onset disasters—such as a flood or a tropical cyclone—and the pandemic.

For example, cyclone preparations might require that people evacuate their homes for crowded shelters, which could amplify the spread of COVID-19. A well-functioning DRM system reduces such compound risk.

## 2. Contingent policy financing makes available quick-response finance and helps strengthen financial resilience beyond natural disasters.

More than half a dozen countries drew down their Cat DDOs after declaring a state of emergency because of COVID-19. Funds were transferred in less than a week, demonstrating the agility of Cat DDOs to provide quick liquidity for emergency response. Governments used the funds to purchase urgently needed goods, such as personal protective equipment, for pandemic response. More generally, however, governments used the funds to help plug fiscal holes caused by increased expenditure needs and plummeting revenues in the wake of lockdowns and the global economic downturn. Apart from injecting liquidity in times of great need, Cat DDOs can also spur the adoption of additional financial instruments that provide further protection against extreme events. For example, as part of its Cat DDO, the government of Madagascar committed to developing a sovereign insurance solution against the risks associated with tropical cyclones, which are estimated to cause an average annual loss of US\$100 million in Madagascar.



PHOTO CREDIT: GLOBAL FACILITY FOR DISASTER REDUCTION AND RECOVERY. IN JANUARY 2015, MALAWI EXPERIENCED SOME OF THE MOST DEVASTATING FLOODING IN ITS HISTORY.

## 3. Contingent policy financing helps improve the assessment and management of the financial risks of disasters.

Like most of us, politicians and government officials tend to focus on the most pressing issues of the day rather than on potentially catastrophic future events. Those who do consider such future events are often a select group of people, such as officials within special fiscal risk units whose focus is on events defined by high uncertainty and potentially devastating impacts. It is therefore essential that administrations carve out space for technical experts who can identify, understand, and manage risks, including the fiscal risks of disasters. DPFs open the space for conversations about different risks and how to manage them. With their multiyear implementation periods and their clearly defined results frameworks, DPFs also ensure that such conversations are ongoing and that commitments to strengthen risk management are honored.

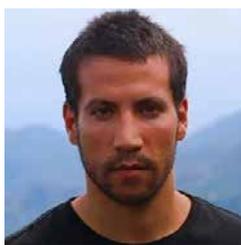
Cat DDOs have supported a variety of measures that help governments better assess and manage financial risks, including the establishment of a fiscal risk unit in Serbia, the adoption of a disaster risk–financing strategy in Malawi, and the creation of a national contingency fund in Madagascar.

The COVID-19 crisis has put risk front and center: in the wake of the pandemic, people now recognize the importance of thinking about risk and preparing for the worst. However, if history is a guide, that current focus on risk will fade as seemingly more pressing concerns again occupy the minds of most decision-makers.

Fortunately, policy financing instruments allow us to support government officials in our client countries who are not only responding to the crisis caused by COVID-19 but also already preparing for inevitable future disasters.

[Click here](#) for more information on World Bank CAT DDOs. Learn more about the work of the Disaster Risk Financing and Insurance Program [here](#).

PHOTO CREDIT: WORLD BANK/ HENITSOA RAFALIA. MARCH 31, 2020 - MADAGASCAR. WITH MADAGASCAR'S HEALTH SYSTEM UNDER STRAIN FROM THE COVID-19 PANDEMIC AND SCHOOLS SHUTTERED FOR THE FORESEEABLE FUTURE, THE HEALTH, EDUCATION, AND OVERALL WELLBEING OF THE MALAGASY PEOPLE ARE INCREASINGLY AT RISK. AS THE PANDEMIC HITS MORE AND MORE COUNTRIES, THE WORLD BANK GROUP AND OTHER ORGANIZATIONS ARE STEPPING UP TO PROVIDE IMMEDIATE SUPPORT IN ORDER TO QUICKLY GET RESOURCES TO THE FRONT LINES OF FIGHTING THIS DISEASE.



**Martin Luis Alton**

Author

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# 8. Five Reasons to Support SMEs So They Can Build Stronger Resilience to Future Disaster Shocks



**Authors: Hang Thu Vu, Tenin Fatimata Dicko, Nicola Ranger, World Bank Group**

**Djibril's Story:** Djibril lives in Ouagadougou, Burkina and owns a workshop that purchases moringa leaves from a nearby women's organization. His workshop then fabricates the leaves into tea bags, powder, and so forth for sale in small retail shops. Until recently, the demand for moringa was growing across the country and had a promising prospect for export. Djibril secured a five-year loan with a local bank to upgrade his equipment and to increase his workshop's productivity.

But COVID-19 has changed everything. To contain the pandemic, his city is under lockdown with travel limitations and closures of shops and markets. The women's organization greatly reduced his supply of moringa leaves as a result of transportation disruptions and social distancing measures. Sales are at their lowest, and to cope with the situation, Djibril decided that his workshop will temporarily scale back production. If there is no positive outcome in four weeks, he won't be able to afford operating costs and salaries for his employees. His challenge is further compounded by damage and losses from heavy rains.

**Tam's Story:** Across the world in Hoi An, Vietnam, Tam and her family friends face similar challenges. They occupy homes that reflect a rural style of living and that provide accommodation services for tourists who visit this heritage town. In 2017, the town experienced heavy floods that resulted in damage to residents' properties and disruptions to their businesses. Although the residents are more familiar with floods or typhoons, which visit the area every year, Tam and her friends found that COVID-19 presented an unprecedented disaster beyond their experiences.



PHOTO COURTESY OF NGUYEN THANH TAM. HER HOME WAS FLOODED IN 2017.

As the country went under lockdown, most of the town's businesses were closed except for those serving guests who were stranded because of travel restrictions. Tam and the town's people were lucky because Vietnam was able to contain the first wave of the pandemic quickly. However, their businesses will continue to undergo difficulty with the global travel industry now under paralysis and with revenues quickly declining. While coping with the consequences of the pandemic, Tam and her friends are bracing themselves for yet a resurgence of COVID-19 and another season of floods and typhoons.

As policy makers worldwide examine shocks caused by future disasters and crises, the critical and debilitating effects on small and medium enterprises (SMEs) as illustrated in the above case studies present compelling reasons as to why and how support measures can be better delivered to this sector.

## **Reason #1: Smes are the lifeblood of economies and face mounting challenges from COVID-19 and from growing disasters and climate shocks.**

Djibril's and Tam's stories are similar to those of millions of SME owners around the world who contribute to more than 50% of the world's employment[1]. Globally, more than 436 million[2] enterprises face high risks from serious disruptions caused by COVID-19 in sectors such as wholesale and retail, manufacturing, accommodation and food services, and real estate. About 75 percent of SMEs surveyed by the International Labour Organization (ILO)[3] are experiencing or expecting a decrease in revenues with one-third of them expecting losses of more than 50 percent of their incomes. As a result, nearly 9 out of 10 businesses surveyed are already experiencing a shortage in cash flow, and income losses will range from US\$860 billion to \$US3.4 trillion.[4]

## **Reason #2: Access to finance in emergencies is critical for smes to weather the storm.**

A common denominator for SMEs' financial resilience is an often low buffer of cash to survive such an exogenous shock as COVID-19, not to mention surviving compounded shocks. As shown from historical disasters such as the 2011 Thai floods or the 2011 Tohoku earthquakes, what SMEs need in the short term is a quick injection of liquidity to keep them afloat. Indeed, the damage from the 2011 Thai floods was estimated at US\$46.5 billion, and the needs for reconstruction were estimated at US\$50 billion, whereas 90 percent of damages and losses of Thai floods was borne by the private sector (US\$41.8 billion), and their reconstruction was approximately US\$37.5 billion. However, not every SME will be lucky enough to access liquidity at the required speed and volume. SMEs' credit profiles are likely weakened—together with damage to properties and inventories—in the case of a disaster and associated losses of revenues. In addition, banks' risk aversion tends to increase when there is an often-uncertain outlook following large-scale catastrophic events that will exacerbate the challenges faced by firms.

## **Reason #3: The world bank can support governments to reduce the negative impact of disaster and climate shocks on smes, and helps to relieve the relievable from this coronavirus crisis.**

Following COVID-19 and past natural disasters, governments were quick to ramp up existing support measures or to introduce new support packages so firms can have access to quick liquidity. Failures in firms' access to finances could potentially lead to bankruptcy, loss of jobs and income, and transmission into the banking sector, all of which could eventually fall on governments' liabilities. As of mid-April 2020, the World Bank recorded 723 policy measures in 113 countries to support firms in response to the COVID-19 crisis. The number of measures reflects the scale of the impact. Such measures focus on access to finance, financial sector prudent measures, tax relief, and employment support, among other needs. Similar measures such as tax relief, bridge loans, and credit guarantees were also found in the wake of past natural disaster events.

## **Reason #4: Credit guarantee schemes can play an important role.**

Credit guarantee schemes can act as shock absorbers during crises and can help SMEs to weather the storm. Many countries around the world have established credit guarantee schemes that support SMEs such as Djibril's or Tam's businesses. Those schemes provide access to finance for response and recovery following COVID-19, as well as after large-scale disaster shocks. Given the significant uncertainty about the length and scale of the outbreak, a public credit guarantee scheme (CGS) is considered by countries as an important



PHOTO COURTESY OF NGUYEN THANH TAM. TAM, THIRD FROM RIGHT, AND HER LOCAL STAFF MEMBERS AT THEIR AN HOME IN HOI AN, VIETNAM

instrument to unlock firms' access to finance. Worldwide, CGSs amount to an estimate of US\$1.8 trillion.<sup>[5]</sup>

Following the 2011 Thai floods, while the established portfolio guarantee scheme which had a mandate to cover disasters had a capital of THB2 billion (US\$64 millions), commercial banks extended up to THB100 billion (US\$3.2 billion) in new loans to flood-impacted SMEs. Given firms' needs to access quick guarantees so they could gain quick liquidity for short-term response and long-term borrowing for recovery after disasters and crises, CGSs must be able to respond to both. However, not all of them can mobilize capital in a quick enough manner to respond, especially public CGSs that rely on the limited fiscal support of governments. In addition, CGSs are often not protected against pandemics and other disasters in most countries although those events could significantly undermine the quality of banks' underlying loan portfolios that would, in turn, increase the vulnerability of the credit portfolios that the CGSs are protecting.

### **Reason #5: Can governments do more to support smes more rapidly during emergencies? Create shock-responsive credit Guarantee schemes.**

Can governments apply the principles of disaster risk financing to help CGSs work more quickly and effectively as “automatic” shock absorbers? By understanding risk in advance, establishing the right systems, and pre-arranging finance, CGSs could be enhanced to act even more quickly to support SMEs.

Catastrophe risk solutions could strengthen the resilience and the sustainability of CGSs against future disasters and crises; this pre-arranged finance would be released in an emergency to “power-up” the CGS and to enable it to support more SMEs. Then the SMEs would be able quickly to access the finance they urgently need to recover and would have much greater certainty, thereby reducing the long-term negative impacts.

The World Bank's Disaster Risk Financing and Insurance Program is working with wider financial sector specialists to embed such innovations as part of the COVID economic recovery. Practically, catastrophe risk-sharing enhancements are embedded into the existing credit risk-sharing arrangement of the CGS in order to (a) protect the current loan portfolios against credit losses caused by pandemics and other disasters and (b) secure additional economic capital for guaranteeing new loans in the aftermath of pandemics and other disasters. This approach will increase CGSs' financial capacity to (a) reimburse banks for the CGSs' share in the catastrophic losses of their current portfolio, thereby reducing banks' nonperforming loans (NPLs) and freeing up the banks' capacity to underwrite new loans to SMEs; and (b) allow CGSs to offer new guarantees to SMEs in the aftermath of pandemics and other disasters. This arrangement also has the benefit of crowding in private capital and of limiting the fiscal exposure of governments.

With this type of arrangement in place and with support created by the five reasons, MSMEs and entrepreneurs such as Djibril and Tam will be able to invest in the future with greater certainty and can be confident in their ability to weather future storms.

[1] The World Bank. Small and Medium Enterprises (SMEs) Finance. Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital. <https://www.worldbank.org/en/topic/smefinance>

[2] ILO. April 2020. ILO Monitor—Covid-19 and the World of Work, 2nd edition. [https://www.ilo.org/global/topics/coronavirus/impacts-and-responses/WCMS\\_740877/lang--en/index.htm](https://www.ilo.org/global/topics/coronavirus/impacts-and-responses/WCMS_740877/lang--en/index.htm).

[3] ILO. May 2020. "MSME Day 2020: The COVID -19 Pandemic and Its Impact on Small Business." [https://www.ilo.org/empent/whatsnew/WCMS\\_749275/lang--en/index.htm](https://www.ilo.org/empent/whatsnew/WCMS_749275/lang--en/index.htm).

[4] ILO. March 2020. ILO Monitor—Covid-19 and the World of Work: Impact and Policy Responses. 1st edition. [https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms\\_738753.pdf](https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/briefingnote/wcms_738753.pdf).

[5] World Bank Blogs. May 2020. "Boosting Credit: Public Guarantees Can Help Mitigate Risk during Covid-19." <https://blogs.worldbank.org/psd/boosting-credit-public-guarantees-can-help-mitigate-risk-during-covid-19>.

PHOTO CREDIT: PHOTO COURTESY OF DJIBRIL OUEDRAOGO, OWNER OF THE FACTORY SHOWING THE NEW EQUIPMENT.



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# 9. Three Reasons the Public and Private Sectors Are Stronger Together Against Disasters and Crises



**Author: John Plevin, World Bank Group**

The world has changed. Life isn't what it was before. Economies have been flooded while businesses and governments alike are determining how to survive in this new, fragile environment. But some things haven't changed. The private sector is still a critical growth driver and provider of essential goods, services, and employment. Governments around the world recognize this strength as they implement numerous policies to support business. Nor have disasters and crises ceased to happen. Droughts, floods, earthquakes, locust swarms, and other perils happen with increasing severity and frequency.

One thing we can say with confidence: such shocks will impact those who are least well-placed to cope and at a time when resilience has been ground down to a nadir. Populations will look to the state for a response that no government will be able to meet alone. What role can the private sector, which governments are fighting to support, play alongside the public sector to build financial protection so that governments don't stand alone when future crises hit?

## **Formal Financial Protection Increases Resilience to Natural Disasters.**

Bloggers in this series have highlighted how crucial insurance and other financial protection can be for households, businesses, and governments. In the face of heightened vulnerability to disasters and other shocks in the wake of Covid-19, markets for financial products that provide resources when they are most needed are essential for countries' resilience.

## **Financial Protection Markets Are Slow to Grow Organically.**

Such markets are complex, take a long time to develop, and need to be nurtured carefully, especially in the early stages. Developed insurance markets such as those in the UK, the USA, and Europe have grown over centuries and now have access to huge balance sheets, lots of data, and a culture of insurance in the population. Yet this is sometimes not enough. Markets still require public support through subsidizing premiums, through making insurance compulsory, or by having government absorb the biggest losses. What chance do fledgling insurance markets have of growing to provide much-needed financial protection without public sector support?

So, how can public-private partnerships (PPPs) help?

### **1. The Public and Private Sectors Play Complementary Roles.**

Alone, the public or private sector will often fail. Governments aren't set up to act as insurers and can be restricted by a lack of financial flexibility or expertise. Meanwhile, we expect that the private sector should develop products to meet need, but often it is not quite that easy either. Given the frequent focus on short-term profits, investment in certain products do not make financial sense when assessed over only a year or two. This lack of supply can be compounded by a lack of demand where there is no culture of insurance. Even in countries where insurance is commonplace, people don't often like buying insurance unless they feel they have to (or if they are legally required to do so).

The public and private sector can play complementary parts. Certain roles— such as putting in place supportive laws and regulation, or paying for all or part of premiums—fall naturally to the public sector, while taking financial risk and paying claims typically will fall to the private sector. Private sector capital can supplement public sector finances, as highlighted in the World Bank's [Maximizing Finance for Development](#) strategy. Other roles may be shared, such as generating and managing data on risk or advertising and explaining products. In fact, experience shows that awareness building is critical in developing financial protection schemes and requires a concerted effort from both sectors.

As markets develop, the need for public sector input reduces with a market's self-sufficiency. However, a look at even the most developed markets tells us that the public sector will always need to maintain some role in the partnership. Some risks are more than insurers can handle. In the UK and USA, for example, insurance markets were previously unable to provide insurance against terrorist attacks, thereby leaving buildings across major cities unprotected. In response, governments worked with private sector insurers



PHOTO CREDIT: DANIELLA VAN LEGGEO-PADILLA / WORLD BANK. SMALLHOLDER FEMALE FARMERS RAMATA NIASS AND FATY PENDA NI-ASSE HAVE ALREADY LOST CROPS DUE TO A LACK OF RAINFALL. THEY HAVE COME TO THE TOOL BAYE SEED COOPERATIVE PROCESSING UNIT IN KAOLACK TO BENEFIT FROM A WAAPP SEEDS DISTRIBUTION.

to create [Pool Re](#) and [TRIA](#). Those two risk pools encourage insurers to provide terrorism insurance by sharing the risk of losses between insurers and the government. Inspired by this approach and by other pools such as the [TCIP](#) in Turkey, governments and insurers around the world are developing similar schemes to encourage insurers to offer business interruption insurance that will protect against pandemics.

## 2. PPPs Can Support Public Sector Objectives.

Through PPPs, governments can use powerful incentives to advance public policy toward objectives such as:

**Reducing budget uncertainty:** by creating environments where insurance companies can thrive, and perhaps through a “carrot” of paying for premiums (such as [PMFBY](#) crop insurance in India), markets can develop to protect vulnerable households and assets so that the potential burden to government of responding ad hoc—after the fact—is reduced.

**Reducing risky behaviors:** when financial risk is measured and communicated through the medium of insurance premiums, decision makers are more aware of the costs of different actions, incentivizing those which reduce risk. For example, building a house on a flood plain may be viewed as a necessary cost-management exercise, but when faced with an accordingly high insurance premium, construction in lower risk areas will become more attractive.

**Increasing resilience to future shocks:** physical resilience to shocks could be reduced by making insurance available only to those who take action to reduce their risk. In the UK, for example, [Flood Re](#) enables flood insurance for households across the whole country but excludes new properties built in areas with a high risk of floods.

**Increasing financial inclusion:** populations that have access to bank accounts, loans, and other forms of finance demonstrate a resilience to disasters, as well as other benefits such as increased investment, employment, and growth. Insurance schemes (such as the [Kenya Livestock Insurance Program](#)) are increasingly using private sector–supported mobile payments systems, alongside more traditional bank accounts, which increases the number of people who have access to financial systems. The decreased risk stemming from adoption of financial protection products can also make banks more willing and able to lend to insured households and businesses at affordable rates.

### 3. PPPs Help Address New Risks through New Approaches.

In recent years we have seen a huge number of innovations, both in terms of protection against new risks (for example, cyber) and, but also improving the quality of existing products. Novel features that have resulted from private and public sector innovation in insurance markets include: using wearable technology for those covered by health insurance to incentivize healthier lifestyles; driver tracking for car insurance to incentivize safer driving; use of satellite technology in agricultural insurance to determine payouts; and artificial intelligence customer service, sales, and claims to simplify and reduce costs of household insurance. When provided with the right conditions, the public sector and private sector can together develop new products to address the constantly evolving challenges faced by individuals, businesses, and governments.

Such new approaches don't need to be at the cutting edge of technology. Through PPPs, established products could be developed into new markets for which Covid-19 has exposed a need. For example, business interruption insurance, which notably protected the Wimbledon tennis tournament against its cancellation that occurred in 2020, can play a crucial role in supporting firms and workers from shocks such as pandemics and natural disasters.



PHOTO CREDIT: WORLD BANK. FACTORY WORKERS PRODUCING FRESH FRUIT DRINKS AT BLUE SKIES, IN NSAWAN DISTRICT, GHANA ON OCTOBER 13, 2015.

## Summary

Around the world are examples of public-private partnerships whereby collaboration has developed insurance and financial protection for agriculture, property, health, business activity, and disaster response. The potentially catastrophic impacts of disasters and crises can be too substantial for individuals, businesses, or even governments to bear alone. Insurance markets, risk pools, and other financial protection schemes can be used to great effect to increase the level of national financial resilience.

PHOTO CREDIT: TOOMAS TARTES. EVERY YEAR IN THE RAINY SEASON, AFTER WEEKS OF RAIN, THE STREETS OF HOI AN IN VIETNAM GET FLOODED.

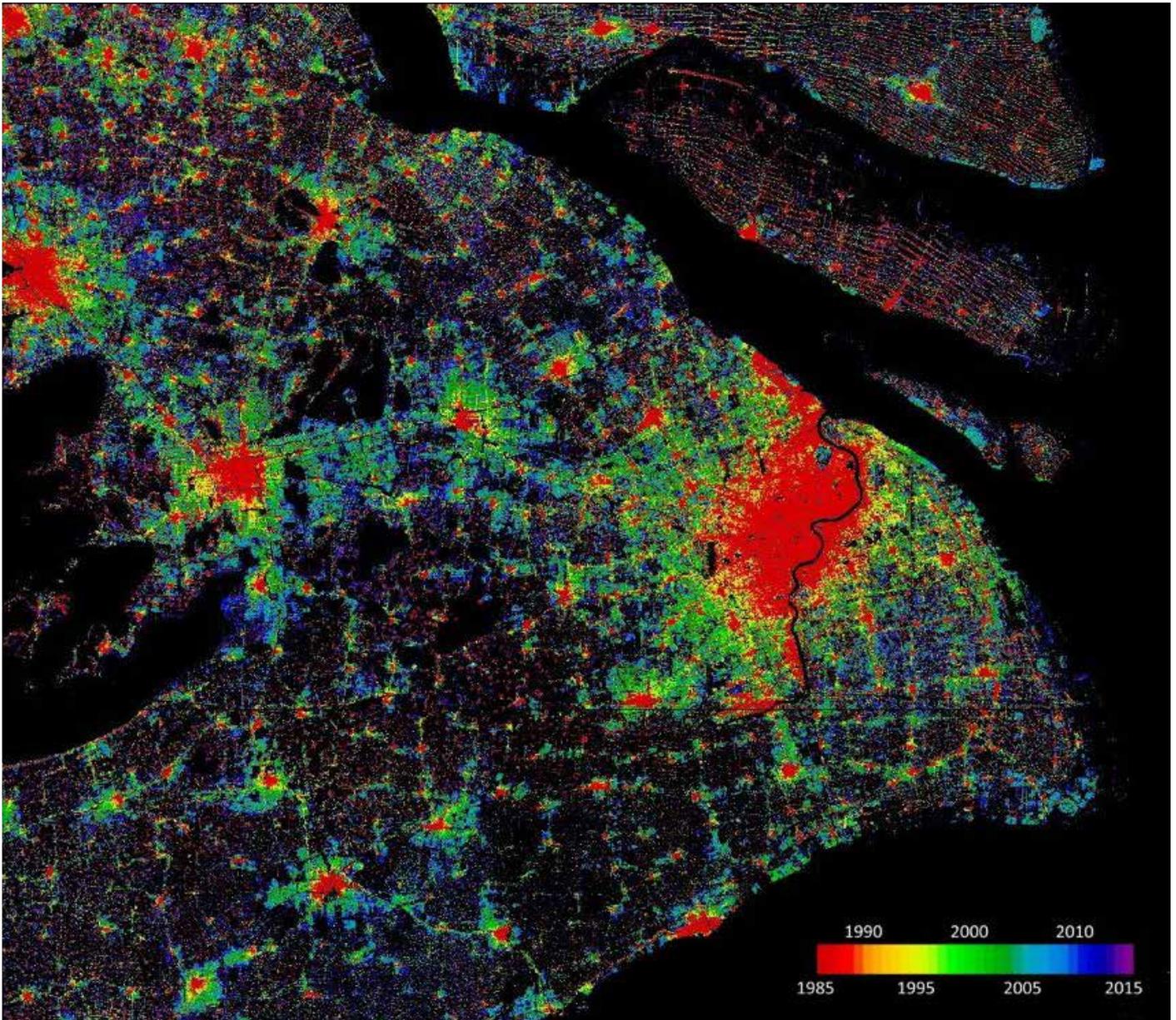


**John Plevin**

Author

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# 10. Five Ways Satellite Data Can Help Prepare for the Unexpected



## Author: Antoine Bavandi, World Bank Group

In a world turned upside down by the Covid-19 pandemic, the role of satellite imagery has never been so critical. At any time, more than 2,000 satellites are orbiting our planet. They help us communicate, locate, and gather data about complex, interconnected crises that require constant, comprehensive, and global monitoring.

Satellite applications are particularly relevant for disaster risk management and financial preparedness, in which early and reliable information is key in ensuring a timely and efficient response.

Here are five ways we can leverage the power of satellite data in the current Covid-19 context:

## 1. Tracking the Current Pandemic

Pandemics, famines, and conflicts are not always visible to the naked eye, let alone to a satellite orbiting 800 kilometers above the Earth's surface. Nonetheless, satellites can detect critical indicators that are helpful in monitoring and responding to infectious disease outbreaks and other complex crises.

Coupled with ground data (e.g., those from health authorities and surveys), satellite imagery makes an outstanding tool for situation awareness. This is particularly true in the context of epidemics, which are often poorly modeled and are difficult to track over time. Advanced analytics can map roads and buildings using satellite data, and they even can help identify populations at risk of acquiring disease through specific transmission channels. Similarly, satellite imagery can track the construction of medical facilities, hospitals, and other elements of public health infrastructure. Satellites allow for precise monitoring at submeter resolutions of strategic areas, including tourist attractions, cultural points of interest, and public transport hubs.

Combining satellite imagery with thousands of open data sources creates a rich data set of both geospatial and demographic data, which has enabled public administrations around the globe to monitor the current crisis, to anticipate civilian needs better, to enforce restrictive measures, and to ensure safety in public spaces. A good example of this potential is the [Earth Observing Dashboard](#), a concerted effort among the European Space Agency (ESA), the Japan Aerospace Exploration Agency, and the U.S. National Aeronautics and Space Administration. The dashboard combines the resources and expertise of its three partner agencies to strengthen our global understanding of the environmental and economic effects of the Covid-19 pandemic.

## 2. Measuring Lockdown Efficiency

The Covid-19 pandemic has paralyzed daily life. In the absence of another efficient remedy, lockdown restrictions continue to be the most critical instrument to minimize the effect of the crisis on the population. Moreover, satellite data give us direct insight into whether stay-at-home orders are succeeding.

As road traffic in cities around the world comes to a near standstill and as companies close major manufacturing plants, Europe's Copernicus Sentinel-5P satellite has provided key information about changes in concentrations of atmospheric pollutants such as nitrogen dioxide. By tracking significant declines in nitrogen oxide emissions over regions where activity is restricted, governments can monitor the efficiency of their lockdown measures. Less nitrogen oxide in the atmosphere means less human activity in areas where restrictions might help slow the spread of the novel coronavirus.

Finally, by tracking the movements of goods in ports and on major roads, satellite imagery can be used to measure the effects of the outbreak and the pace of eventual economic recovery. Today, many economic indicators significantly lag behind actual behavior and tell only part of the story; real-time geospatial data can help accelerate and focus recovery efforts, thereby minimizing negative financial effects.

## 3. Anticipating the Next Outbreak

Epidemic outbreaks tend to be location based: they emerge in certain areas and are transmitted along certain pathways. High-quality geospatial data enable epidemiological models to characterize location-specific disease transmission and risk factors. This is

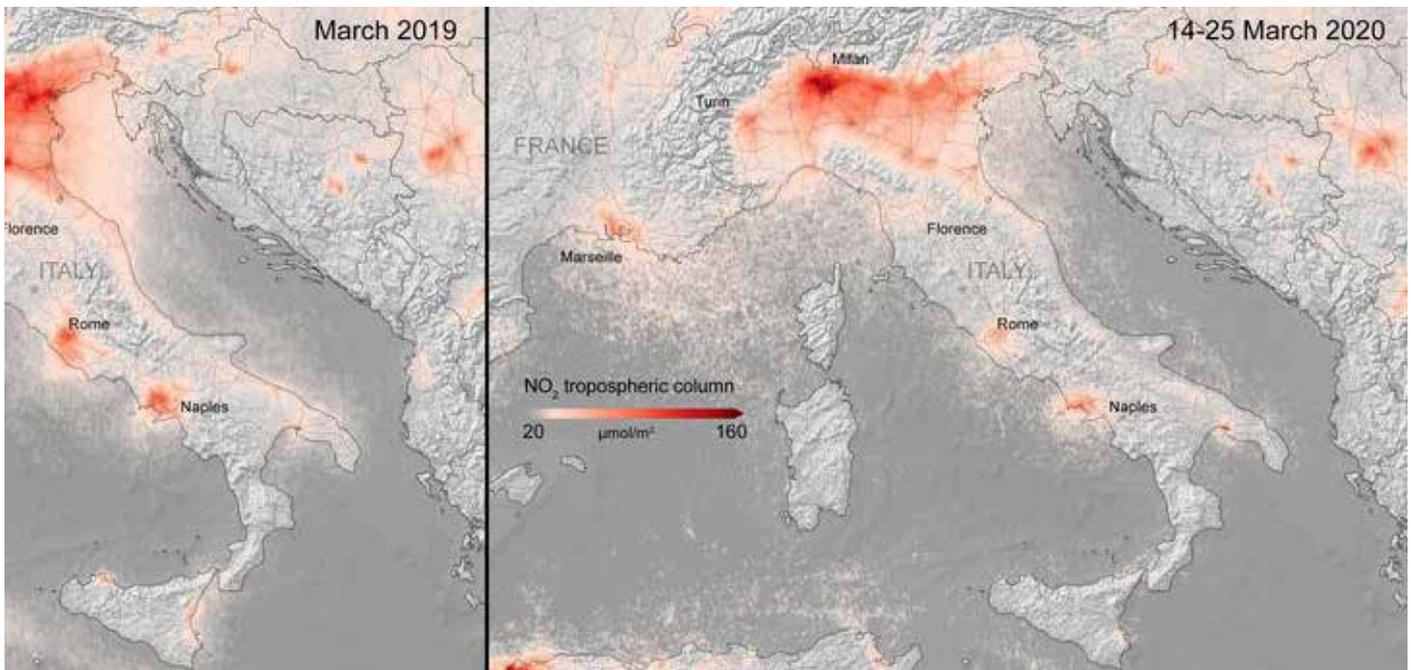


PHOTO CREDIT: ESA'S COPERNICUS SENTINEL-5P. DROP IN NITROGEN DIOXIDE CONCENTRATIONS OVER ITALY, MARCH 2019–MARCH 2020

particularly important in low- and middle-income countries, which often lack reliable health record systems.

Satellite imagery can be used to monitor places where viruses are more likely to emerge or where certain risk factors are concentrated. For example, many novel viral illnesses, such as SARS (severe acute respiratory syndrome), MERS (Middle East respiratory syndrome), and Covid-19, are zoonotic—so-called because they can be transmitted from animals to humans. Around 75 percent of emerging infectious diseases are zoonotic.

One way to detect where new zoonotic illnesses such as Covid-19 might arise in the future is to monitor the places where humans **come into contact with wildlife**. Often, this contact happens where human beings are changing the landscape by turning forests into pasture land or fields for agriculture. As humans continue to squeeze the habitats of wild animals, the likelihood will continue to grow that a new virus—found, for instance, in bats or birds—will migrate either directly to human beings or indirectly to humans through livestock. Satellite monitoring of land-use change helps surveil current public health conditions, thereby allowing for better anticipation and location of outbreaks in the future.

#### 4. Addressing Climate Change and Other Contributing Factors

Satellites provide objective evidence of not only the changes taking place but also the contributing factors, root causes, and underlying issues behind epidemics and climate change-related disasters. Satellite measurements of Earth's rising temperatures, heightened sea levels, changes in atmospheric gases, diminishing icecaps, and reduced forest cover, for example, are among the main ways to improve our understanding of the Earth and can help us predict its future.

Since 2014, ESA has operated the Copernicus environmental monitoring program, a unique constellation of 30 satellites providing the latest generation of Earth observation services dedicated to environmental monitoring and emergency management. Those satellite missions have proven critical to our understanding of where climate change is increasing the risk of transmissible illnesses.

The Zika virus, for instance, is carried by mosquitoes; as the Earth’s temperature rises, the virus’s habitat is **expanding** both northward and southward and away from the tropics, while its seasonality is also expanding. Satellites monitor the effects of climate change and thus provide a reliable indication of when and where human beings might be at risk of disease transmission.

Another application of satellite data is the monitoring of water bodies that have the potential to spread tropical diseases. “River blindness” is a widespread disease that has infected more than 20 million people and blinded nearly 1 million. It is transmitted through black flies that breed along fast-flowing rivers and streams, often in remote communities. Satellite imagery can identify where rivers are flowing in near real time, marking places where the risk of parasitic transmission is high, thereby helping to dispatch front-line health workers in a timely manner.

## 5. “Taking the Pulse of Our Planet” and Monitoring Compound Risks

Despite the current Covid crisis, other humanitarian crises and natural disasters are still happening and actually represent an increased risk to populations and economies. The triple health, economic, and financial shock from Covid makes people and businesses far more vulnerable to other disasters. Those disasters have lately included floods, droughts, and one of the worst waves of **locusts** to invade Africa in many years. Though such disasters are not unusual, what is different now is the effect that the Covid-19 pandemic has had on the global food supply. Measures to slow the spread of the virus are affecting the availability of inputs, labor, transport, and cross-border trade. Thus, Covid-19 is predicted to exacerbate the risks already facing the **world’s 800 million hungry people**.



PHOTO CREDIT: A'MELODY LEE / WORLD BANK. RICE PADDIES IN THE SWAMPS AND MARSHES MAXIMIZE ARABLE LAND, YIELDING FOOD, AND ECONOMIC SECURITY DURING THE GROWING SEASON IN RWANDA.

By augmenting the information about how crops are growing, satellite data can help farmers more efficiently use their inputs—seeds, fertilizer, water, and pesticides—as they work to lower their costs while improving their yields. The same data and analytics are also being used to help governments better anticipate food insecurity and to purchase insurance covers that are more reliable and fairly priced, thus offering the right financial compensation when needed. Those efforts contribute to the development of insurance and financial markets in a technically sound and sustainable way.

Such data are becoming the foundation for new kinds of financial risk-management products, thereby protecting livelihoods from unanticipated shocks and disruptions in ways never considered before. Such products include the satellite-based [Next-Generation Drought Index](#) which is led by the World Bank’s Crisis and Disaster Risk Finance Team in partnership with ESA and with financial support from the Crisis Risk Analytics program funded by the [Global Risk Financing Facility](#). The partnership leverages the latest satellite data to secure new ways of protecting livelihoods and economies from devastating droughts.

In the years to come, satellite technology will shift the traditional way of monitoring and financing risks (i.e., using scarce data in opaque models) to one that focuses on identifying key visual patterns in an unprecedented amount of risk information.

Though important challenges are associated with that technology (e.g., large amounts of data to process; complexity of extracting useful information; and integration with other, possibly conflicting sources of information), satellite data will enable better-informed and more timely decisions, will empower new kinds of policy and risk-financing instruments and will reshape how we understand and respond to crises on a global scale.

This technology shall be leveraged to support governments in their efforts to return to sustainable development pathways while increasing their abilities to strengthen financial resilience to future shocks—whether those shocks are induced by environmental, economic, or social factors—and to be better prepared for the unexpected.

Learn more about the work of the Crisis and Disaster Risk Finance Team [here](#) and learn more about Earth Observation for Sustainable Development [here](#).

PHOTO CREDIT: ESA/WSF. URBAN SPRAWL IN SHANGHAI, CHINA, 1985–2015. THE SATELLITE IMAGE HIGHLIGHTS AREAS OF RAPID, UNCONTROLLED DEMOGRAPHIC GROWTH.



**Antoine Bavandi**

Author

# 11. Four Ways Disaster Risk Finance Strengthens the Effectiveness of Adaptive Social Protection

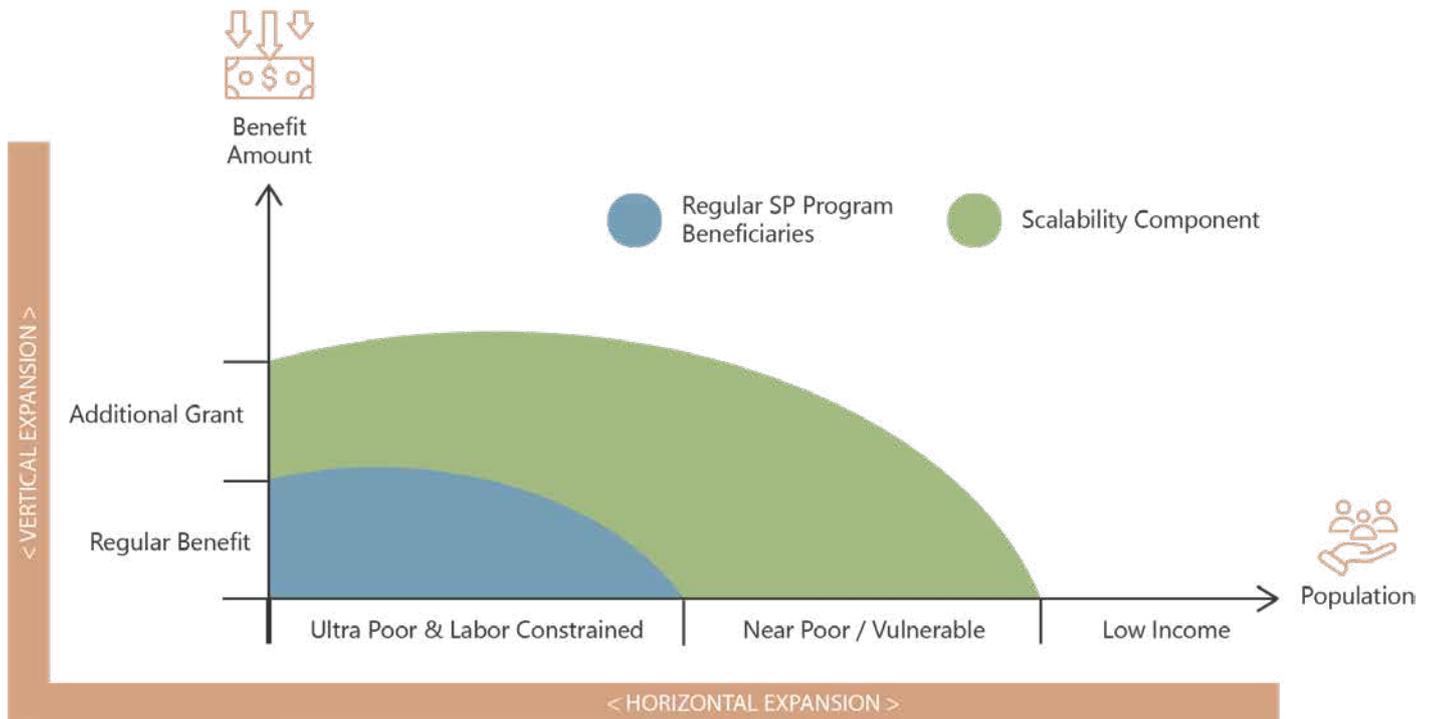


**Authors: Evie Calcutt, Simon Hagemann, World Bank Group**

COVID-19 will hit the poorest the hardest. Estimates show that by the end of the current crisis, [the pandemic could push up to a 100 million people into extreme poverty](#). Poor and vulnerable households are often forced into negative coping strategies that have long-term, irreversible, and intergenerational effects. This crisis and the unremitting risk of other seasonal disasters, such as floods and droughts, once again highlight the need to build systems that strengthen resilience within the poorest communities ahead of the shock.

The good news is that this negative cycle can be broken. Experience shows that social protection (SP) systems combined with sound financial risk management instruments can be leveraged to **build household resilience** to those kinds of shocks by providing timely assistance to vulnerable households. This is often offered referred to as Adaptive Social Protection (ASP). To adapt, the systems commonly expand vertically by offering greater assistance to existing beneficiaries, or horizontally by using program systems to provide assistance, or both. This approach is illustrated in figure 1.

FIGURE 1. ADAPTIVE SOCIAL PROTECTION—HORIZONTAL AND VERTICAL EXPANSION



SOURCE: SHOCK-RESPONSIVE SOCIAL PROTECTION SYSTEMS RESEARCH, O'BRIEN ET AL., 2018.

There is a growing body of evidence about the multiple benefits of a timely response to shocks. SP safety nets can serve as a conduit to deliver financing mobilized through the right mix of disaster risk financing instruments to the most vulnerable. A Disaster Risk Finance (DRF) approach helps governments secure adequate funding for safety nets at the lowest cost, including in the case of disasters. Concretely, a DRF approach to ASP can increase the speed, predictability, and effectiveness of response by prepositioning triggers and finance and by pre-identifying beneficiaries. DRF can strengthen both the ability of governments to (a) finance the scale-up costs (money-in) and (b) provide timely funds to the most vulnerable (money-out).

The DRF principles draw on lessons learned from the private sector and are akin to the market-based principles used in the financial, banking, and insurance sectors. Thus, the principles require expertise in data analytics, underwriting, and catastrophe, actuarial, and capital modeling.

The COVID-19 crisis has highlighted the need for plans that have flexibility in both money-in and money-out so those processes can enable a response to the unexpected.

## How DRF Strengthens the Money-out Process

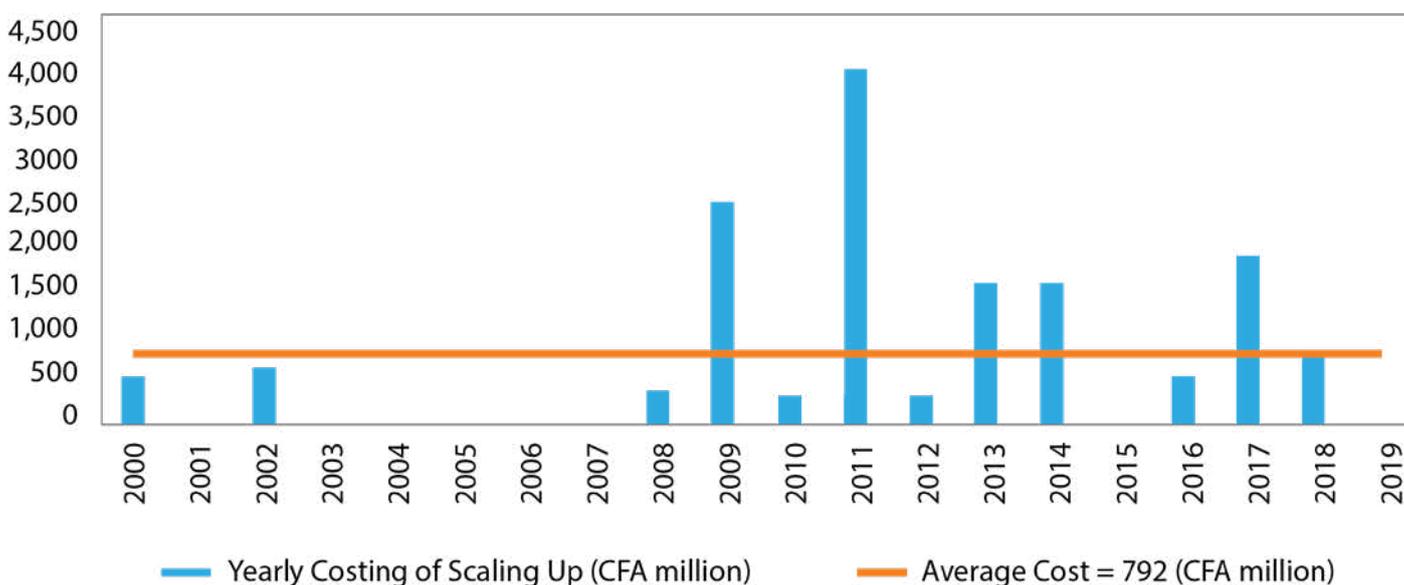
Irrespective of where the finance comes from, if one is to avoid delays in the release of funds, pre-agreed procedures and protocols are needed so the funds can be transferred to ministries or departments that operate the SP program and then can be disbursed to the beneficiaries.

### 1. Prepositioned Triggers for Response

Understanding and quantifying the risk is key to ensuring that the right instruments are in place. An approach similar to the one used by the insurance sector is required, first by modeling the risk and then by assessing appropriate triggers for response. This is an iterative process as the decisions made on the design of the mechanism have an impact on funding needs. An open and transparent approach will help decision-makers understand trade-offs between different scale-up scenarios.

In Niger, for example, following a full review of the available risk data, the government adopted the Water Requirement Satisfaction Index as its index for monitoring drought conditions and for determining when those conditions are severe enough to trigger the scale-up of safety net programs. The team next used data and analytics to build a tool that helps calculate both the number of potential additional beneficiaries and the costs of a scale-up over time. Actuarial techniques were then used to turn this historical cost into an understanding of the potential future costs then used to inform the money-in strategy. (See figure 2.)

FIGURE 2. HISTORIC COST OF SCALE-UP USING DATA FROM THE WATER REQUIREMENT SATISFACTION INDEX FOR COMMUNES IN NIGER



However, caution over the power of triggers is needed because a single trigger will not perfectly correlate with the conditions on the ground (technically referred to as basis risk). A robust system must be designed around any primary trigger to ensure there is flexibility in the plans and finance to respond even if the primary trigger is not met. Such a process is used in Uganda's scalable safety net where a secondary and more flexible trigger is based on food security data and is used by an interagency technical committee to determine if a scale-up of the safety net is needed despite no initial primary trigger.

## 2. Pre-identifying Beneficiaries

By using exposure and historical loss data, analytics can support identification of areas that are most likely to be affected by future disasters. The data can be combined with data about welfare to understand who is the most vulnerable.

Once identified, the systems can be put in place to ensure that the beneficiaries receive a payout when a scale-up is triggered. This approach increases the speed of response and provides some clarity to communities as to who is and isn't eligible.

During COVID-19, registries of potential SP beneficiaries were expanded to include newly affected populations such as urban communities. In Malawi, the government is implementing the emergency COVID-19 Urban Cash Intervention to poor and vulnerable households. This intervention is piggy-backing on the existing systems of the Social Cash Transfer Program, which is a flagship social protection program in Malawi. Through geographic targeting at hotspot locations for the first time, urban households have been uploaded into the Unified Beneficiary Registry and transferred to the Social Cash Transfer Program Management Information System.

## 3. Effective Payment Systems

How funding reaches beneficiaries is as important as how funds are secured in the first place, and so up-front investments payment systems are critical. The stronger the existing systems for delivering benefits, the higher the potential to use them in times of emergency. There is much to learn from the payments and claims management processes of the private sector.

Recent experience shows that e-payment digital technologies such as mobile money provide a faster and transparent mechanism to disburse cash for both regular and emergency programs. In Kenya, there is nearly 100 percent coverage of bank accounts in the counties covered by the Hunger Safety Net Programme. This coverage means that the systems could be leveraged to make a payout to almost all of the population were such a payment required.

### How DRF Strengthens the Money-in Process

Once you have a model for the likely costs of scale-up a strategy can be developed for how to finance this.

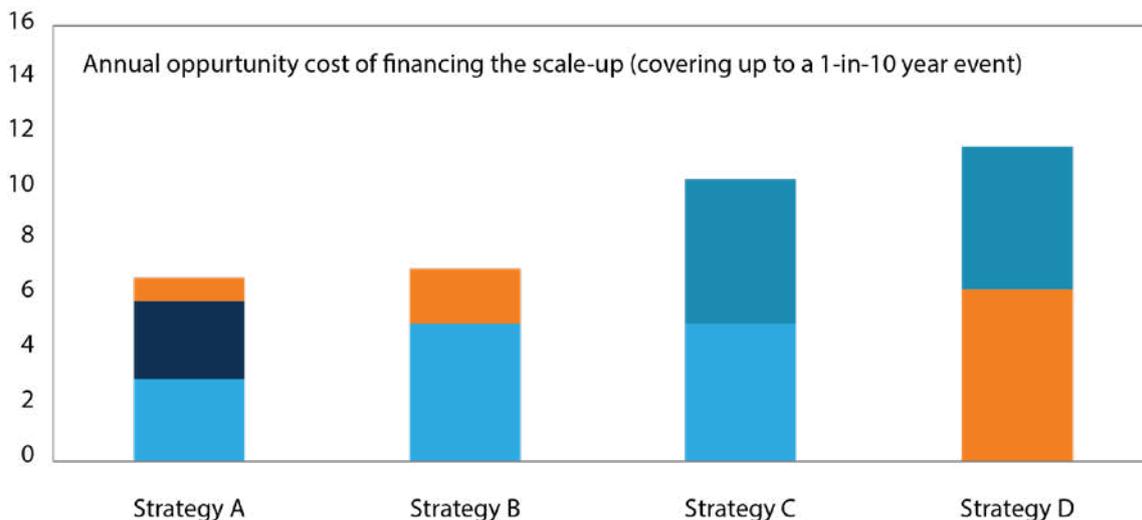
## 4. How to Put in Place the Right Financial Instruments

No single financial instrument can address all risks. Governments should use different instruments to protect themselves against events of different frequency and severity (risk layering). With respect to ASP, this means different levels of scale-up. Figure 2 (shown earlier) highlighted the potential volatility of budget needs for scale-up. Managing budget volatility is a challenge for ministries of finance, and the ministries can use techniques similar to those used by insurance companies to manage this risk.

Through the right mix of instruments, governments can not only rapidly mobilize finance in the face of a shock but also can do so at a much lower cost, as highlighted in figure 3. By layering different types of financing-including reserves and contingent finances-governments can refrain from costly and slow budget reallocations and can reduce their dependence on slow and unreliable humanitarian appeals.

Figure 3 shows an example of a comparison analysis to inform a government about the most cost-efficient mix of instruments to ensure adequate resources to finance the scale-up of its safety net against once-in-10-year events. In this case strategy A is the most cost-efficient.

FIGURE 3. EXAMPLE ASSESSMENT OF RISK FINANCING STRATEGIES FOR SAFETY NET SCALE-UP



## Summary

DRF helps strengthen the transparency, predictability, and effectiveness of spending while protecting the constrained fiscal space. The Disaster Risk Finance and Insurance Program partners with the World Bank’s Social Protection and Jobs Global Practice to integrate ASP into finance ministers’ broader DRF strategies.

With a DRF approach, the following occurs:

1. The decision to trigger a response happens as soon as possible following a shock or before communities are severely affected by its negative impacts.
2. Actors are more inclined to act early because the benefits of early action are acknowledged by all and assistance to affected communities is provided on time.
3. Through the right mix of instruments, governments can rapidly mobilize finance at a much lower cost.

PHOTO CREDIT: WORLD BANK / SAMBRIAN MBAABU. MARKET PLACE IN KENYA IN APRIL 2020.



**Evie Calcutt**  
Author



**Simon Hagemann**  
Author

# 12. Three Ways to Enhance Online Knowledge Exchange During the COVID-19 Pandemic



**Author: Kaavya Ashok Krishna, World Bank Group**

The COVID-19 pandemic caught Benedikt Signer off guard. He had to pivot from his carefully planned two-day workshop on public asset insurance to a fully virtual 10-part webinar series. Despite being an experienced trainer, Benedikt found this shift challenging; virtual interactions with his audience felt very different from the face-to-face interactions he was used to. “In-person workshops allow you to read the room, which helps the dialogue flow more naturally,” Benedikt explained. “The virtual format is a little unnerving; the audience usually is on mute and it feels like you are speaking into a black hole.”

Connecting with the audience in a virtual medium may seem like a daunting task, but it is a fundamental step toward effective online knowledge exchange—and one that can be learned. In response to unprecedented shutdowns grounding all face-to-face trainings, the team at the Disaster Risk Financing and Insurance Program has been exploring how best to build these virtual connections and improve the online learning experience for our clients. Over the last six months, we have delivered over 75 hours of curated online knowledge exchange to more than 1,200 participants globally. **Below are our top three suggestions to enhance virtual knowledge exchange.** [You can also read our full guide on developing and delivering effective webinars here.](#)

## 1. Remember that online knowledge exchange works best when it is highly structured.

To put the basics in place, virtual workshops require as much preparation and structure as any in-person workshop. They require clear decisions on several key issues:

- **Length and agenda:** How much time will the speakers be allotted for presentations? What will be the specific responsibilities of everyone on the organizing team?
- **Audience interaction:** Will all the audience be muted on entry? Will they have a chance to ask questions? If yes, through what modality (chat, voice, etc.) and how often (at regular intervals or during a specified Q&A period)? Who will facilitate these questions, and how will they be prioritized?
- **Call to action:** How will you connect and build a relationship with your audience and ensure that the knowledge is useful? What follow-up after the virtual event will ensure that the discussion leads to action?

In Benedikt's ongoing 10-part virtual learning series on public asset insurance, every webinar follows a standard structure. Ahead of each webinar, audience members receive a detailed fact sheet and a corresponding learning worksheet to familiarize themselves with the topic. [The webinars](#) are always 90 minutes long and feature a set structure that includes an introduction, audience polls, guest speakers, and a facilitated Q&A session. Signer is always the facilitator. "Since this is a series on a specific topic," he said, "it is helpful to have continuity between the sessions. I often pick up threads from previous webinars and connect them to what is currently being discussed. This helps participants see the big picture.

## 2. Invest in building a virtual community.

In a physical space, a group organically builds connections during shared experiences, like group work, coffee breaks, etc. In a virtual environment, it is difficult for participants to establish a similar sense of belonging to their peer learning group.

**A key role for the facilitator is to build and foster these connections.** Using tips such as these can help:

- Take time for an icebreaker—for example, invite your audience to share something unique about their current geographic location and connect this to the larger group.
- Include a way to provide feedback and ensure that the session is inclusive, with opportunities for peer-peer discussion.

- Provide standard templates like discussion questions or worksheets ahead of time to provide a common baseline for conversations and make participants feel more comfortable.



PHOTO CREDIT: [UNSPLASH](#).

Evie Calcutt, who is running a series of six virtual workshops on shock-responsive social protection for a key group of government clients in Malawi, describes her approach: “We invested 30 minutes in interactive introductions during the first workshop to ensure that everyone in the group was empowered and offered the chance to speak. We also sent discussion questions ahead of time so that people have the flexibility to reflect on them. This allows for a much richer discussion with their peers.” An evaluation of the workshop confirmed the value of this approach: the audience appreciated the introduction period and the opportunity to familiarize themselves with their peers.

Also instructive is a recent research article on [Adapting workplace learning in the time of coronavirus](#) published by McKinsey & Company.

### **3. Provide tangible value to your audience.**

Virtual learning has dramatically reduced the barrier of entry cost for workshops. While this has its advantages, it also creates a temptation to quickly pull together a virtual session without sufficient focus on what the value is to your audience. Before designing a virtual webinar or knowledge series, ask yourself three key questions:

- Why are we doing this?
- What value will the audience derive from this?
- How will it facilitate further action?



PHOTO CREDIT: [UNSPLASH](#).

[Read more on “To Webinar or Not to Webinar” here.](#)

Clarity on the objective for your virtual learning helps you prepare the appropriate topic, achieve the right tone, and select the best learning design—all of which will help you achieve your objective. When possible, conduct a Learning Needs and Resource Assessment ([more here](#)), and always get feedback from your audience.

At the Disaster Risk Financing and Insurance Program, we often offer our webinars as part of wholistic learning packages. Participants in Evie’s shock-responsive social protection workshops, for example, are given a knowledge roadmap to accompany the webinars and a virtual workbook to complement their learning journey and connect it to their daily work.

Remember, technology allows us great new opportunities, like the ability to collaborate with experts globally and bring together diverse audiences in a single platform. But it is up to us, as the hosts, to engage the audience and let them know that they are valued members of our community and provide them with the most effective online learning experience possible.

If you would like to join our next webinar, please sign up for the [Disaster Risk Financing and Insurance Community of Practice here](#).

PHOTO CREDIT: [WORLD BANK/DOMINIC CHAVEZ](#)



**Kaavya Ashok Krishna**  
Author

# Author Biographies



## Alfonso Garcia-Mora

GLOBAL DIRECTOR, FINANCE, COMPETITIVENESS &  
INNOVATION GLOBAL PRACTICE  
WORLD BANK GROUP

Mr. Garcia Mora, a Spanish national, is the Finance Global Director in the Finance, Competitiveness & Innovation Global Practice.

Prior to that he was a Practice Manager for the Latin America and Caribbean Region (LCR). He joined the Bank in 2013 as Lead Financial Sector Specialist in the Finance and Private Sector Development Vice Presidency.

Prior to joining the Bank, Mr. Garcia Mora had a successful 12 year career in the private sector at the Analistas Financieros Internationales consulting group, including as Partner Managing Director during 2007-12. In this capacity, he managed a large team of financial sector analysts and consultants, and gained wide ranging experience on banking sector crisis resolution, banking sector management, funding strategies, and market transactions in Europe, Latin America, and the Middle East and Northern Africa. Mr. Garcia Mora also lectured and published widely on financial sector issues.



## Olivier Mahul

PRACTICE MANAGER, CRISIS AND DISASTER RISK FINANCE  
WORLD BANK GROUP

Dr. Olivier Mahul is Practice Manager of the World Bank's Crisis & Disaster Risk Finance unit, which provides developing countries with analytical, advisory, convening and financial services to improve financial planning against disasters, climate shocks and other crises. He oversees the Disaster Risk Financing and Insurance Program (DRFIP) and the Global Index Insurance Facility (GIIF). DRFIP implements, among others, the WB-UK Disaster Risk Finance Hub in London in partnership with the Center for Disaster Protection, and the Global Risk Financing Facility in partnership with the Global Facility for Disaster Reduction and Recovery.

Since he joined the World Bank, Olivier has been involved in the development of innovative disaster risk financing and insurance solutions in more than 40 countries and he has led the creation of flagship regional initiatives such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF), the Pacific Catastrophe Risk Insurance Program (PCRAFI), and the Southeast Asia Disaster Risk Insurance Facility (SEADRIF). Olivier holds a Ph.D. in Economics from Toulouse School of Economics and post-doctorates from Wharton Business School and University of California at Berkeley.



## Evie Calcutt

FINANCIAL SECTOR SPECIALIST  
WORLD BANK GROUP

Evie is a Financial Sector Specialist at the World Bank Group where she has worked globally on disaster risk financing. Key activities include leading policy dialog and developing customized financial solutions with Ministries of Finance to improve their financial resilience to disaster shocks; leading the development of analytical tools which support Ministries of Finance in their selection of financial instruments, including insurance, to protect their fiscal position against disaster risk, and; developing disaster risk financing for scalable safety net programs, which looks to develop mechanisms that enable social protection programs to rapidly increase assistance to the poorest and most vulnerable under disaster conditions.

Prior to joining the Bank, as a qualified actuary with experience of insurance and investment projects in the public and private sector, Evie worked at KPMG and the UK Government. She also worked as a statistician analyzing social research before completing the actuarial qualification. As an actuary at the UK Government Actuary's Department, she advised government departments on how to better understand and communicate uncertainty, perform quality assurance, and manage their contingent liabilities.

Evie holds a First-Class Bachelor's Degree in Mathematics and a Masters in Statistics both from the University of Bristol.



## Nicola Ranger

SENIOR CONSULTANT  
WORLD BANK GROUP

Dr. Nicola Ranger is a Senior Consultant in the Crisis and Disaster Risk Finance team of FCI and a Senior Visiting Fellow at the London School of Economics and Political Science. Prior to joining to World Bank in 2019, Nicola was Lead Advisor on Disaster Risk Finance for the UK Department for International Development and worked for six years on projects related to building resilience to climate, disasters, and other crises across Africa, Asia, and the Caribbean. Nicola has worked for more than 15 years in catastrophe risk management and policy across the public and private sectors. She has previously held posts as Head of Adaptation and Development at the Grantham Research Institute, London School of Economics and Political Science, and as a Scientific Advisor at HM Treasury and the UK Department for Environment, Food and Rural Affairs, and the Parliamentary Office of Science and Technology.

Nicola has authored more than 30 academic papers and contributed to reports including the Stern Review on the Economics of Climate Change, the UK National Climate Change Risk Assessment and the Intergovernmental Panel on Climate Change. Nicola has a background in Catastrophe Risk Modeling, from Risk Management Solutions Ltd., and a Ph.D. in Atmospheric Physics from Imperial College London.



## Sumati Rajput

FINANCIAL SECTOR SPECIALIST  
WORLD BANK GROUP

Sumati Rajput is a Financial Sector Specialist in the Crisis and Disaster Risk Finance team in the World Bank Group. She co-manages the Global Risk Financing Facility (GRiF), a \$200m program that supports developing countries to prearrange financial solutions in advance of climate shocks, disasters and other crises. As part of her operational focus, she works in the Africa region to embed financial solutions for macro-fiscal shocks across sectors, particularly through World Bank projects focused on disaster risk management, financial planning, and social protection. In her previous role, she spent five years at the Global Facility for Disaster Reduction and Recovery and worked on preparing disaster risk management projects in the Africa and the Caribbean regions.

Prior to joining the Bank, she worked as an Economist at AECOM on a diverse set of projects in various geographies within the realm of urban development. Some of these include working on developing a detailed report regarding global best practices in sustainable development, a redevelopment strategy for the city of Miyako in Japan for economic recovery post the 2011 Tsunami, and economic planning for a free zone in Qatar.

Sumati holds a Bachelor's Degree in Economics and Psychology from Columbia University and a Post-Graduate Degree in Development Economics from Yale University.



## Benedikt Signer

PROGRAM COORDINATOR  
WORLD BANK GROUP

Benedikt Signer is a Program Coordinator in the Disaster Risk Finance and Insurance Program, housed in the Finance, Competitiveness, and Innovation Global Practice. Benedikt has supported over 20 countries to more actively manage the potential losses from climate and disaster shocks. This includes the development of Asia's first multi-country risk financing mechanism, implementing the Philippine's Financial Protection Strategy, establishing a dedicated risk management unit in Serbia's ministry of finance and co-leading the setting up of the World Bank's first contingent line of credit to protect against disasters in Eastern Europe and Central Asia. Benedikt has also launched multiple new initiatives including a training program reaching over 2000 people in 35 countries, a new partnership with the Rockefeller Foundation, and supported the 2016 G20 presidency leading to the establishment of the InsuResilience Global Partnership. Previously, Benedikt worked at the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR) on strategy, program development, and policy partnerships. He has a Master's degree in Global Politics from the London School of Economics.



## Cathy Ansell

FINANCIAL SECTOR SPECIALIST  
WORLD BANK GROUP

Cathy Ansell is a Financial Sector Specialist in the Crisis and Disaster Risk Finance team in the World Bank Group. Cathy primarily works with governments and international organisations to support better financial planning and build resilience to protect those most vulnerable to disasters. Her projects are spread across the Caribbean, South East Asia, Africa and the Pacific regions. Prior to working at the World Bank, Cathy has experience at a London Insurance Market reinsurer and broker and led a catastrophe model development team at Risk Management Solutions. Cathy holds a Master's Degree in Physics from the University of Oxford and a Ph.D. in Atmospheric Physics from Imperial College, London.



## Samantha Cook

SENIOR FINANCIAL SECTOR SPECIALIST  
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Samantha Cook is a Senior Financial Sector Specialist within the Crisis and Disaster Risk Financing team in the FCI. Her role focuses on the development of integrated disaster risk financing and insurance solutions leveraging best practices in public financial management. Ms. Cook was instrumental in the establishment of the Pacific Catastrophe Risk Insurance Company, a risk pool established to help the Pacific Islands meet their post-disaster liquidity needs. Ms. Cook coordinates the crisis and disaster risk management program in South Asia and manages the Trust fund for supporting disaster risk finance solutions in middle-income countries financed by the Swiss State Secretariat for Economic Affairs. Ms. Cook began her career as an economist in investment and then central banking and was a fellow for the Overseas Development Institute.



## Tatiana Skalon

DISASTER RISK FINANCING SPECIALIST (CONSULTANT)  
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Tatiana Skalon works in the Crisis and Disaster Risk Finance team, Finance Competitiveness and Innovation Global Practice of the World Bank, based in London, UK. Along with her team, she works with governments in strengthening their financial preparedness to natural disasters and crises. Her key projects are in the regions of Europe and Central Asia, South Asia and East Asia and Pacific, including in such countries as Albania, Serbia, Pakistan, and the Philippines. Tatiana works primarily on sovereign disaster risk finance, public financial management of natural disasters, public asset management, and catastrophe insurance. She holds an MSc in Comparative Law, Economics and Finance from IUC of Turin and a Ph.D. in Risk and Emergency Management from IUSS Pavia.



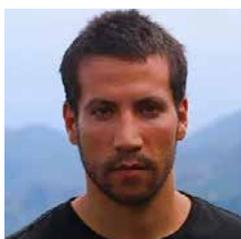
## Samuel Munzele Maimbo

DIRECTOR OF THE IDA RESOURCE MOBILIZATION AND IBRD  
CORPORATE FINANCE, DEVELOPMENT FINANCE  
WORLD BANK GROUP

Samuel Munzele Maimbo is the Director of the International Development Association (IDA) Resource Mobilization and International Bank for Reconstruction and Development (IBRD) Corporate Finance department at the World Bank. In his role, Mr. Maimbo is responsible for the implementation of IDA's hybrid financial model and the policy analysis of IBRD income and corporate finance.

Prior to this, Mr. Maimbo was Senior Advisor in the Office of the Managing Director and Chief Financial Officer. He has also worked on a diverse range of operations and countries and held various positions in the Finance Markets and Innovations Global Practice, including Financial Sector Specialist (South Asia Region, Africa Region, and Europe and Central Asia Region); Practice Manager for Strategy and Operations; and Practice Manager for Long-Term Finance & Risk Management (Agriculture Finance & Insurance, Capital Market Development, Disaster Risk Finance, Housing Finance, Infrastructure Finance, Pensions & Insurance, and Climate Finance).

Before joining the World Bank, Mr. Maimbo held the position of Bank Inspector at the Bank of Zambia and Auditor at PricewaterhouseCoopers (PWC). Mr. Maimbo holds a Ph.D. in Public Administration (Banking) from the University of Manchester, an MBA in Finance from the University of Nottingham, a BSc. in Accounting from Copperbelt University, Zambia, and is a Fellow Chartered Certified Accountant (FCCA, UK).



## Martin Luis Alton

SENIOR FINANCIAL SECTOR SPECIALIST  
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Luis Alton, an Austrian national, is a Senior Financial Sector Specialist at the World Bank's Disaster Risk Financing and Insurance Program where his work focuses on integrating disaster related fiscal risk into public finance frameworks; and on designing and implementing financial solutions that increase countries' access to liquidity after disasters. Mr. Alton has been working on public finance issues for eleven years, of which two at the Ministry of Finance of Zanzibar (as an Overseas Development Institute Fellow) and nine at the World Bank. He holds a BSc from the London School of Economics and an MSc from University College London (both in Economics).



## Hang Thu Vu

SENIOR FINANCIAL SECTOR SPECIALIST  
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Hang Thu Vu is a Senior Financial Sector Specialist in the Crises and Disaster Risk Finance global unit of the World Bank's Finance, Competitiveness and Innovation Global Practice. She has more than 15 years of experience working in both the public and private sector on risk finance and insurance, non-bank financial institutions, financial inclusion and other development topics in East Asia, Eastern Europe, and North America. She holds a bachelor of economics from Hanoi Foreign Trade University, obtained a masters of economics from the University of Leeds, UK as a Chevening scholar, and completed the finance and management graduate program at Boston University as a Hubert H. Humphrey Fellow.



## Tenin Fatimata Dicko

FINANCIAL SECTOR SPECIALIST  
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Tenin Fatimata Dicko is a Financial Sector Specialist working with Crisis and Disaster Risk Finance global team at the World Bank. Within the Bank, she works financial inclusion with a focus on the microfinance sector, agriculture finance and insurance and sovereign disaster risk finance in Africa, MNA, and South Asia. Prior to joining the Bank, Fatima was the Sr Program Officer of the Rural Resilience Initiative (R4) a joint program of WFP and Oxfam providing a package of financial products (index insurance, credit, and savings) to smallholders in Senegal. She also worked with the International Research Group on Financial and Fiduciary Ethics in Montreal on the social performance of corporate and cooperative banks. She holds a degree in Finance from HEC Montreal and an MBA from the University of Quebec in Montreal. Fatima is originally from Mali and is fluent in French and English.

She assists clients in their efforts to strengthen their microfinance sector to become a strong pillar of financial inclusion, the development of agriculture finance & insurance solutions to unlock access to finance for smallholders and solutions to strengthen countries' financial resilience to disasters.



## John Plevin

FINANCIAL SECTOR SPECIALIST  
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John Plevin is a Financial Sector Specialist working with Crisis and Disaster Risk Finance global team at the World Bank. John works in countries across the world to develop financial protection programs for governments, businesses and vulnerable households.

He leads the Agriculture Insurance Development Program which supports governments to build public-private partnerships for financial protection against agricultural risks. Prior to joining the World Bank, he worked in the UK financial sector before working for the UK Government, advising Ministries and developing programs for the financial management of risk. John is a Fellow of the UK Institute and Faculty of Actuaries and holds a First Class degree in Mathematics from the University of Edinburgh.



## Antoine Bavandi

SENIOR FINANCIAL SECTOR SPECIALIST  
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Antoine Bavandi is a senior specialist with the World Bank's Crisis and Disaster Risk Finance team. In his role, he advises developing countries on financial solutions to a broad range of crises, including through analytical work and policy dialogue, primarily in West and North Africa and in the Middle East. Prior to joining the World Bank, Antoine held various roles spanning underwriting, portfolio management and risk modelling, and has worked at Lloyd's of London, Allianz Global Corporate & Specialty and the European Space Agency. He holds degrees from École Centrale, Imperial College and Stanford University.



## Simon Hagemann

DISASTER RISK FINANCING SPECIALIST (CONSULTANT)  
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Simon Hagemann works in the Crisis and Disaster Risk Finance team, Finance and Innovation Global Practice of the World Bank, based in Washington D.C. Along with his team, he works with governments on strengthening their financial preparedness to natural disasters and crisis. His key projects are in Francophone Africa. Simon works on sovereign disaster risk finance, public financial management of natural disasters and adaptive social protection.

He previously worked as a Senior Policy Officer with the German Federal Ministry for Economic Cooperation and Development where he helped develop G7 and G20 initiatives on climate and disaster risk finance and insurance. Before, he held various positions in climate and environment, working with the Bank on climate and forestry in Africa, and on climate adaptation with the United Nations Development Programme around Africa. Simon holds degrees from the Institut d'études politiques in Paris and Grenoble, and the European University Frankfurt.



## Kaavya Ashok Krishna

KNOWLEDGE MANAGEMENT OFFICER  
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Kaavya Ashok Krishna leads capacity building, knowledge exchange and communications for the Disaster Risk Financing and Insurance Program. Kaavya launched the Disaster Risk Financing (DRF) Learning Program which has trained over 6,000 clients from 60+ countries in Crisis Risk Financing. She has previously worked in leadership development and marketing roles at The United Nations, Warner Bros Media, The Indian Express, Sify and Ogilvy and Mather. She holds a Bachelor's degree in Communications from the University of Madras, a Master's degree in Technology, and Learning from Harvard University.

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## Disaster Risk Financing & Insurance Program

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