A partnership between the World Bank's Disaster Risk Financing and Insurance Program and the Swiss State Secretariat for Economic Affairs (SECO)

ANNUAL REPORT 2017–18

Sovereign Disaster Risk Finance in Middle-Income Countries

Disaster Risk Financing & Insurance Program

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Sovereign Disaster Risk Finance in Middle-Income Countries

Foreword

IVO GERMANN

ZOUBIDA ALLAOUA

Every year, disasters cause an average of $300 billion in economic losses. But these numbers don't tell the full story: Middle-income countries suffer the worst impacts relative to GDP as booming economic growth and rapid urbanization and infrastructure development put more and more assets at risk. Across the world, the poor and vulnerable suffer devastating impacts that can affect their ability to thrive and lift themselves out of poverty.

Far too often, governments are faced with tough choices in the aftermath of a disaster – juggling macro fiscal constraints with the imperative of protecting their people from the worst of nature's wrath.

It is governments who shoulder most of the costs of emergency relief, recovery and reconstruction efforts, especially where insurance penetration is low like in many emerging economies. Governments must therefore take steps to proactively manage disaster-related contingent liabilities to protect public finances, and ultimately, their citizens.

To support these efforts to strengthen financial resilience against natural disasters, Switzerland's State Secretariat for Economic Affairs (SECO) and the World Bank (WB) have joined efforts since 2012 through a program dedicated to middle-income countries vulnerable to the impacts of disasters. The *Sovereign Disaster Risk Finance in Middle-Income Countries* Program provides select middle-income countries with advisory services to integrate climate and disaster risks in their fiscal risk management frameworks and financial planning. Disaster risk finance and insurance solutions enable access to rapid financing, allowing for early action in the immediate aftermath of a disaster or at the early signs of an impending threat, like a volcanic eruption or a slow-onset drought.

One key element of this approach is the development of comprehensive disaster risk financing strategies, which are key to helping governments better manage their contingent liabilities related to natural disasters and become more effective risk managers. These strategies are articulated

around a suite of instruments and policies – including budgetary instruments (such as contingency funds and reserves), contingent financing and risk transfer solutions – that help governments manage the full range of disaster impacts.

As the first year of the second phase of the Program comes to an end, this Report highlights achievements so far and pulls together operational lessons learned to inform the way forward. A new dedicated Fiscal Risk Unit in Serbia, a multi-country catastrophic bond for Pacific Alliance countries, regulatory and legal reforms in support of financial resilience in Morocco and Vietnam, are just some examples of how this Program is contributing to the implementation of cost-effective financial protection strategies.

Implemented by the World Bank's Disaster Risk Financing and Insurance Program (DRFIP), this Program is one component of the broader Swiss-WBG partnership on fiscal risk management for middle income-countries, which also includes a component on government debt and risk management.

The Program offers SECO an opportunity to support its partner countries in achieving macroeconomic stability and longer-term fiscal sustainability, which are essential for long term and inclusive economic growth. An active management of fiscal risk caused by natural disasters makes these countries more resilient against climate change which is expected to exacerbate extreme weather events. SECO's engagement in this partnership is part of Switzerland's longstanding effort to promote disaster risk reduction as an essential requirement for sustainable development.

This work also contributes to the achievement of the WBG's twin goals of ending extreme poverty and boosting shared prosperity. Increased financial resilience against disasters helps break the poverty cycle, often perpetuated by disasters, and prevents countries from losing years of development gains by efficiently managing shocks. This also support the WBG's approach on maximizing finance for development by leveraging the private sector and optimizing the use of scarce public resources.

Since inception, the Program has supported progress and innovation in financial protection against natural disasters. It has served as a testing ground for approaches that are now being promoted in a number of countries and across the development agenda. From regional initiatives such as those sponsored by APEC and ASEAN+3, to global ones such as the InsuResilience Global Partnership, we see an increased focus on financial protection as a valuable approach to help governments proactively manage the risks they face.

At the core of the Program's success is a strong emphasis on government ownership, supported by a comprehensive set of financial and advisory services on disaster risk finance. Going forward, it will continue to build on these successes and lessons learned, by helping governments take the next step to integrate disaster risk finance approaches in the fiscal risk management function within Ministries of Finance.

Zoubida Allaoua
Director

Finance Competitiveness and Innovation

World Bank Group

Ivo Germann
Head of Operations

Economic Cooperation and Development

Swiss State Secretariat for Economic Affairs

Abbreviations

ACAPS	Autorité de Contrôle des Assurances et de la Prévoyance Sociale (Morocco)
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
ASEAN+3	ASEAN + China, Japan, South Korea
CAR	capital-at-risk
cat bond	catastrophe bond
CAT DDO	Catastrophe Deferred Drawdown Option
COP	Conference of the Parties
DFID	UK Department for International Development
DRFI	disaster risk financing and insurance
DRFIP	Disaster Risk Financing and Insurance Program
DRM	disaster risk management
DTFE	Direction du Trésor et des Finances Extérieures (Morocco)
FNGRD	National Fund for Disaster Risk Management (Colombia)
FSEC	Solidarity Fund (Morocco)
GDP	gross domestic product
GFDRR	Global Facility for Disaster Reduction and Recovery
IBRD	International Bank for Reconstruction and Development
IGP	InsuResilience Global Partnership
IMF	International Monetary Fund
MARD	Ministry of Agriculture and Rural Development (Vietnam)
MDTF	multi-donor trust fund
MoF	Ministry of Finance
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
PforR	Program-for-Results
SBS	Superintendence of Bank, Insurance and Pension
SECO	Swiss State Secretariat for Economic Affairs
The Program	World Bank–SECO Sovereign Disaster Risk Finance in Middle-Income Countries Program
UNFCCC	United Nations Framework Convention on Climate Change

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Introduction

In 2012, Switzerland's State Secretariat for Economic Affairs (SECO) and the World Bank's Disaster Risk Financing and Insurance Program (DRFIP) joined efforts to support middle-income countries (MICs) in building their financial resilience against natural disasters. During a first phase (2012–2016), the Sovereign Disaster Risk Finance in Middle-Income Countries Program (the Program) provided tailored advisory services and institutional capacity building for public financial management of natural disasters, with promising outcomes. In just four years, the Program helped participating countries better understand the financial impact of disasters, often leading to institutional changes and reforms in support of financial planning for disasters. For instance, guidelines developed under the Program played a key role in improving the quality and coverage of insurance of public assets in Colombia and Peru, and of private assets in Morocco.

The success of the first phase has led SECO and the World Bank to renew the Program for a second phase (2017–2022) with the same objective: to increase the financial resilience of middle-income countries against natural disasters and support their capacity to meet post-disaster funding needs by providing neutral, independent advisory services. Representing a scale-up in the work to date, this second phase helps build middle-income countries' ownership of and capacity in the disaster risk financing agenda.

Key lessons from the past four years inform the second phase of the Program and emphasize the following needs:

- **Government ownership.** Active ownership of the agenda by the government has been instrumental in countries that have made substantial progress.
- **Identification of key stakeholders.** Building relationships with several relevant ministries and departments has allowed countries to continue engagements despite changes in government.
- **Clear identification of priorities and challenges.** Determining priorities and challenges early in the engagement has enabled a strategic approach in the support provided.
- **Timely delivery of customized solutions.** Responding to client needs in a timely and responsive manner has been a key factor for strengthening relationships.
- **Regular interaction with counterparts.** Hiring local consultants has made frequent engagement with the government possible and has contributed to building government capacity.
- **Balance between technical and policy solutions.** Giving equal weight to both technical and policy aspects of disaster risk financing and insurance (DRFI) has helped produce sustainable solutions.

To achieve its objective, the second phase of the Program focuses on strengthening three elements:

Institutional capacity on financial protection through policy measures, investment decisions, and the development of a broader menu of financial solutions

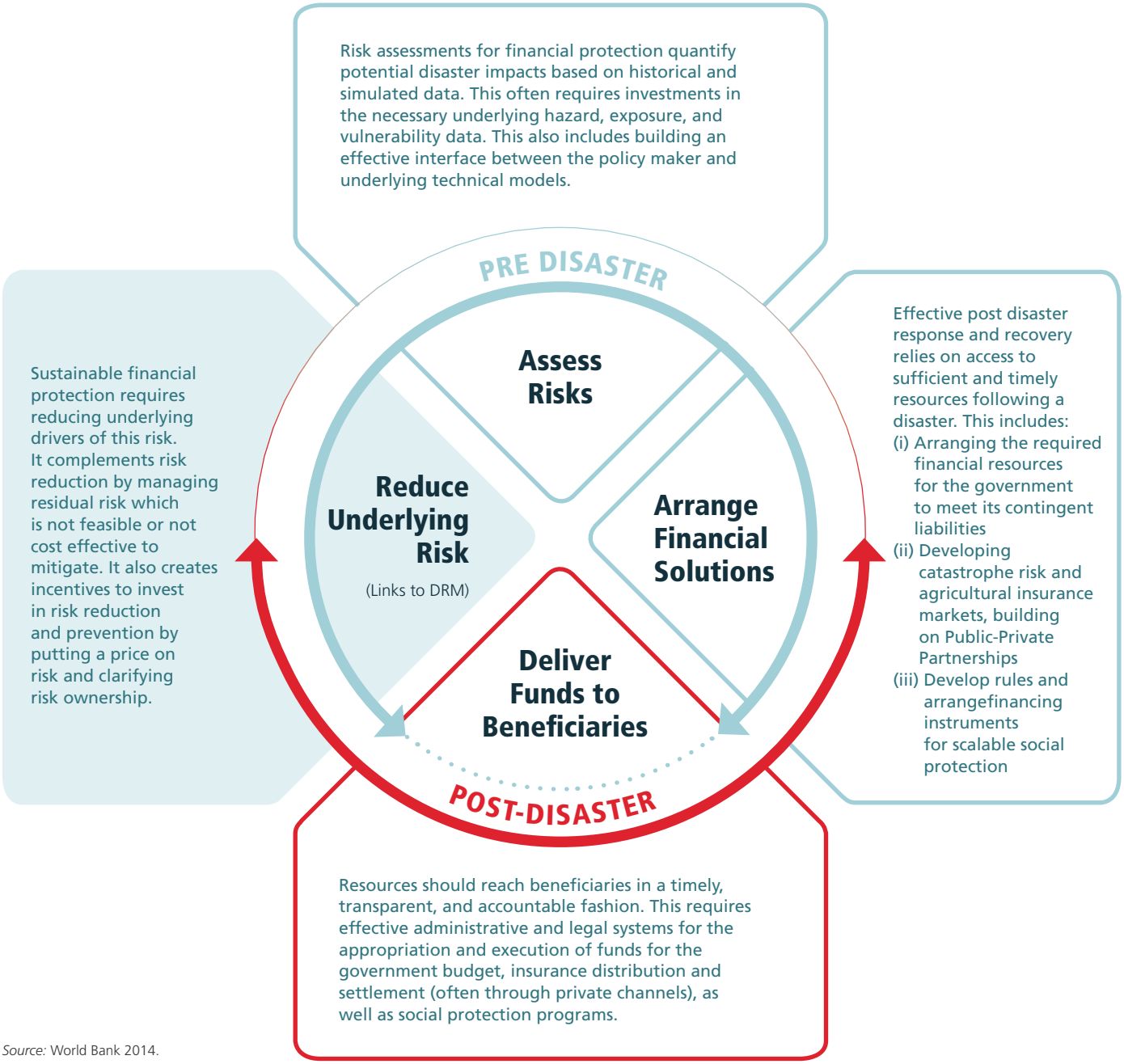
Financial capacity through technical assistance and the development of analytical tools to drive risk-based decision making and institutional change

Partnerships with development partners, external stakeholders, and the private sector

The Program builds on the DRFI framework: for effective and cost-efficient financial protection, governments should understand the risks they face, consider where resources may be obtained following a disaster, and identify appropriate channels to ensure that those resources reach the intended beneficiaries without delay. These steps are summarized below and shown in the DRFI operational framework (figure 1), which provides a practical guide to support decision makers who look to strengthen their nation's financial resilience to natural disasters:

Under this framework, decision makers may take some short-term steps to address urgent problems, while at the same time working toward longer-term and more comprehensive financial protection policies. Risk transfer, for example, is a long-term goal, since it may require a change in existing laws – a step that could take several years to accomplish. Over time, a long-term strategy developed around various ongoing activities can help the government build a comprehensive approach to the financial management of disasters.

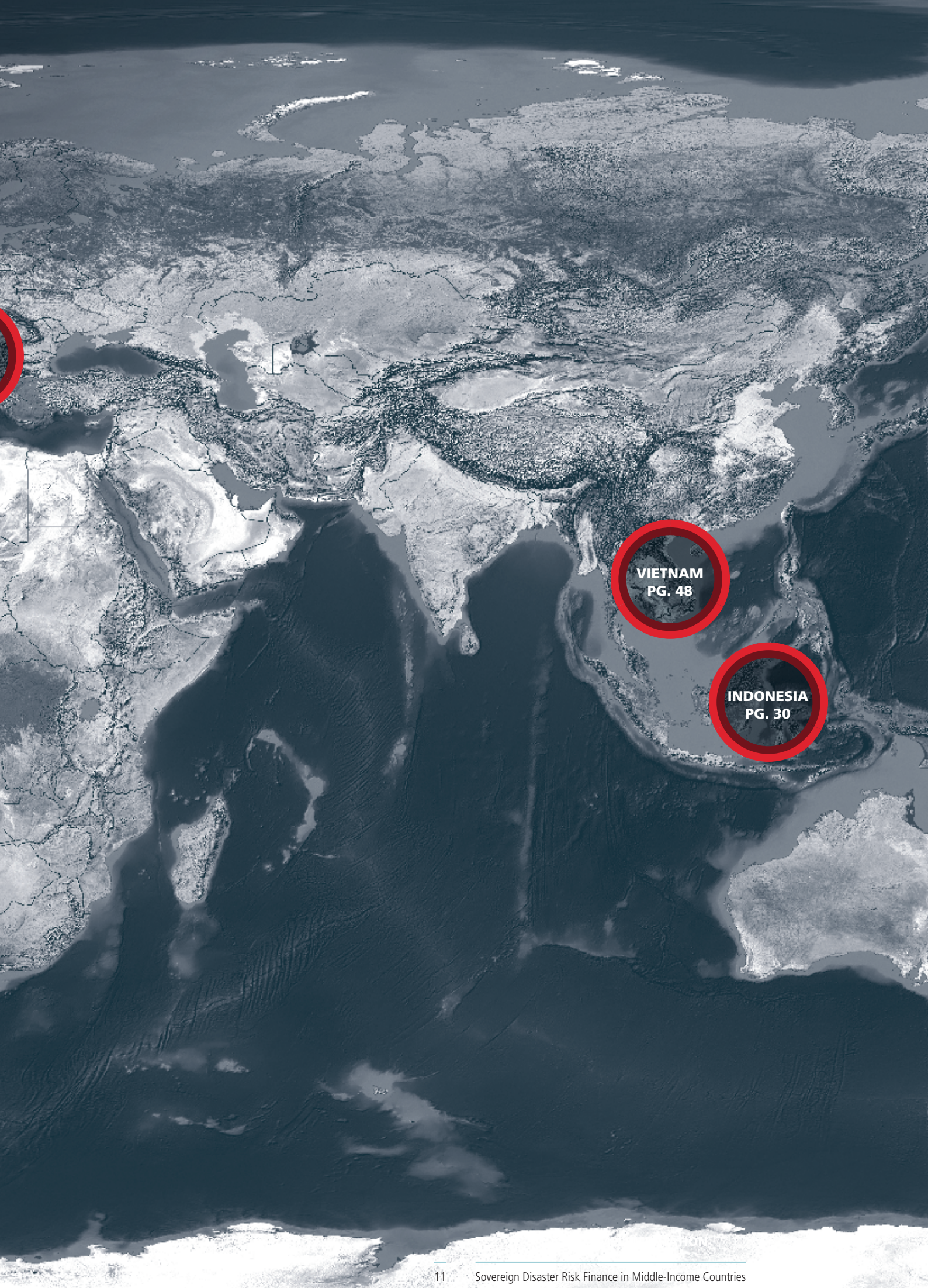
FIGURE 1. OPERATIONAL DISASTER RISK FINANCING AND INSURANCE FRAMEWORK: CORE TECHNICAL STEPS



Source: World Bank 2014.

Where do we work?

The *Sovereign Disaster Risk Finance in Middle-Income Countries* Program has successfully supported a select group of countries over the past six years in the implementation of the DRFI framework. This report presents a summary of the main achievements of the Program in the first year of its second phase (April 2017–March 2018), with highlights from work carried out in Colombia, Peru, Indonesia, Morocco, Serbia, and Vietnam. Prepared by the DRFIP teams leading engagements with participating countries, it builds on lessons learned from these ongoing engagements and on invaluable inputs from government representatives.


VIETNAM
PG. 48
INDONESIA
PG. 30

Colombia

Jointly with three other countries, the Government of Colombia issued a three-year catastrophe bond that provides US$400 million in seismic coverage in the event of an earthquake.

Colombia is focusing on expanding its DRFI strategy to the subnational level, starting with Bogotá and defining a strategic approach for all municipalities.

During the last 40 years, natural disasters have cost Colombia over US$7 billion and destroyed 190,000 houses. Four types of disasters account for 90 percent of all reported events in Colombia between 1970 and 2010: floods, which affected 16 million people and led to US$3.7 billion in damages; landslides, which affected over 30,000 people and caused US$400 million in damages; earthquakes (21 events); and volcanic activity (10 events).[1]

1 World Bank. 2011. *Main Report. Vol. 2 of Analysis of Disaster Risk Management in Colombia: A Contribution to the Creation of Public Policies*. Washington, DC: World Bank. http://documents.worldbank.org/curated/en/658361468018050201/Main-report.

Country highlights

With support from the Program, in 2013 Colombia became the first country in the world to develop a dedicated national DRFI strategy, which combines risk retention and risk transfer instruments. The country also has a dedicated unit for financial risk management within the Ministry of Finance (MoF). In Phase 2, the Program supports the development of the long-term implementation plan for the strategy, and all proposed activities are aligned with the overall strategic objectives. Thanks to technical support from the Program, Colombia joined a three-year catastrophe bond (cat bond) that provides US$400 million in seismic coverage, and complements Colombia's risk financing strategy. The government is now focusing on expanding its DRFI strategy to the subnational level, starting with Bogotá, with the goal of defining a strategic approach for all municipalities.

Over the past year, a five-year work plan was developed through a consultative process with key public institutions. The plan identifies priorities for action and will contribute to strengthening transparency and accountability through regular monitoring.

The Program has supported the government in several areas.

Catastrophe bond within the Pacific Alliance. During the period when Colombia served as pro tempore chair of the Pacific Alliance, the Program provided technical assistance for the issuance of a joint cat bond within the Pacific Alliance framework, whose members include Chile, Mexico, and Peru as well as Colombia. (See "Innovations in Sovereign Risk Transfer: The Pacific Alliance Cat Bond" below for more details.)

The cat bond, issued in February 2018, is now one of several financial instruments available to Colombia as part of its DRFI strategy. Other instruments include budget reallocations, the

National Fund for Disaster Risk Management (FNGRD), and a contingent credit line (through a US$250 million World Bank Development Policy Loan with a Catastrophe Deferred Drawdown Option, or CAT DDO). The cat bond covers large-scale earthquake events; for smaller- and medium-scale events, the Government of Colombia plans to use the other instruments in its portfolio. It can also rely on insurance of public buildings and public-private partnerships as part of its DRFI strategy.

During the technical assistance phase, the catastrophe modeling firm AIR Worldwide produced stochastic modeling of the seismic risk in Colombia and the other three countries (creating among other things, a risk profile of each country, metrics of country losses, and an aggregate risk portfolio). These studies strengthened the MoF's technical capacity, and—by providing information on the geographic zones subject to the greatest potential losses from seismic activity (due to accumulation of seismic activity, exposed assets, and generation of gross domestic product (GDP), among others)—they helped ensure that the MoF made informed decisions about the potential benefits of transferring seismic risk to capital markets.

A stochastic financial gap analysis was also developed to establish the probability of exhaustion of current financial instruments and the probability of attachment for the cat bond.

The participating countries decided to issue a cat bond composed of five series of capital-at-risk (CAR) notes with a total principal amount of US$1.36 billion. This will provide coverage against earthquake risk until February 2021. The CAR note for Colombia has a tranche with principal of US$400 million. The magnitude of any payment to Colombia depends on the earthquake's location and the magnitude of the earthquake.

Web-based information system for managing information on public assets and insurance policies. A beta version of a web-based information system for data management of public property and property insurance policies was developed and is now being piloted by the Government of Colombia. During a mission in December 2017, the World Bank ICT team held a training session for the MoF IT team on the functionalities of the web-based platform.

Strengthening of DRFI at the subnational level. MoF and the World Bank jointly held training sessions on DRFI for the municipal authority in charge of disaster risk management (DRM) and climate change in Bogotá (IDIGER). In addition, the Program supported a diagnostic review of the legal and regulatory framework to clarify the roles and responsibilities of the national and local governments as they relate to DRFI, including a specific analysis of the city of Bogotá.

Report on Colombia's DRFI achievements. A draft document summarizing Colombia's progress in DRFI was prepared to support the post-election transition and handover to the new government.

Looking ahead

Going forward, the Program is supporting the Ministry of Finance in preparing the transition and handover to a new government, and is seeking generally to strengthen Colombia's DRFI strategy. Important aspects of ongoing work include the following:

- **DRFI as a component of the new National Development Plan.** A proposal for including DRFI in the new National Development Plan will be discussed in the next mission. This is a potential next step to strengthen the long-term sustainability of the DRFI strategy and to support the establishment of a legal framework for effective implementation of DRFI instruments. The current draft article includes the legal basis for (i) implementation of new financial instruments, particularly a centralized scheme for the insurance of public assets; and (ii) generation of incentives for the design and implementation of DRFI strategies at subnational level and in the private sector.
- **Five-year work plan for the implementation of the DRFI strategy.** The five-year operative plan will be prioritized, since it will be used to present the DRFI program to the new administration. As it currently stands, the plan (i) continues support for the technical evaluation

and implementation of innovative risk transfer instruments, particularly for hydrometeorological risk within the Pacific Alliance framework (with World Bank support); (ii) continues support for mainstreaming DRFI at subnational level (in the context of Bogotá's plan to include its DRFI strategy in its forthcoming DRM Plan); and (iii) seeks to develop instruments to strengthen insurance of public assets.

- **Report on achievements on DRFI in Colombia.** As part of the effort to support the post-election transition and handover to the new government, a report summarizing Colombia's progress in DRFI has been prepared.
- **Coverage of meteorological risk.** The Program will continue to support the technical evaluation and implementation of innovative risk transfer instruments.
- **Web-based information system for managing information about public properties and their insurance policies.** A pilot phase of the web information system will use information about public properties in Bogotá and the insurance policies that cover them.
- **Strengthening of DRFI in Bogotá.** Thanks to the support provided by the MoF and the Program, the city of Bogotá is expected to adopt (by decree) a comprehensive DRM plan that includes a DRFI strategy.
- **Framework agreements for aggregating insurance demand.** The work plan to create framework agreements for aggregating insurance demand will be prepared for implementation.

JAVIER ANDRÉS CUÉLLAR SÁNCHEZ

Risk Deputy Director, Ministry of Finance and Public Credit, Colombia

What was your government's main motivation to start investing in DRFI?

Our motivation was to better handle the economic impact of disasters in Colombia, which is very high, in particular in relation to rehabilitation and reconstruction. Over the last 40 years, disasters in Colombia have generated accumulated losses of US$7.1 billion. Between 1970 and 2011, 28,000 events were registered, with around 60 percent of them happening since the 1990s.[2] In Colombia, disaster response is considered a contingent liability of the government.

Under both the previous National Development Plan (entitled "Prosperity for All") and the current plan ("All for a New Country"), the Ministry of Finance and Public Credit is responsible for the design of a strategy to reduce fiscal vulnerability to disasters at national level. The ministry therefore developed a policy strategy for fiscal risk management for disasters in 2013.[3] In addition, the Medium Term Fiscal Framework (2017) for the first time includes an analysis of the potential impacts of potentially hazardous phenomena such as La Niña, which could reduce GDP by 2 percent.

What do you see as your main priorities going forward?

The Ministry of Finance and Public Credit's work plan prioritizes strengthening DRFI territorial (subnational) strategies. We will design a territorial strategy that considers the results of the Municipal Risk Index developed by the National Development Planning Agency,[4] which groups municipalities by vulnerability, capacity, and economic factors.

Another priority—one agreed on by the Pacific Alliance MoFs—is to develop technical studies to evaluate hydrometeorological risk coverage.

In addition, with the aim of strengthening public asset insurance, we will promote a web information system for managing information about insurance of public assets. This will allow the government to optimize the use of resources for purchasing insurance, which is mandatory for public property.

What was a key lesson you learned during your engagement on DRFI that you would like to share with other countries embarking on similar reforms? What advice would you give other countries?

We have learned several key lessons. First, legal and institutional frameworks are key. More specifically:

- Including disaster risk and establishing an adequate legal and institutional framework are essential for sustainable fiscal risk management.
- The DRFI strategy helped define key policy objectives to reduce disaster risk fiscal vulnerability. The Quinquennial Operations Plan to implement the strategy established activities for the short, medium, and long term.

- The mapping of stakeholders and DRM responsibilities allowed the institutions making up the National Disaster Risk Management System to work in coordination and in line with their capabilities.

Second, it is important to define an effective and sustainable DRFI strategy:

- The strategy must ensure immediate access to funds post-disaster. Colombia met this need by strengthening the FNGRD, contingent credit lines, and risk transfer instruments.

- The timely availability of resources must be supported by a transparent mechanism that allows fast and adequate assignment and distribution of resources, and by an efficient system of damage information.

- The DRFI strategy identifies financial instruments stipulated by the norm, such as public building insurance and securing concessions via public-private partnerships. This promotes optimal use of public resources and better coverage and lower prices in insurance policies (in keeping with international standards).

- International experience and standards are used as the basis for the strategy on insurance and reinsurance—so Colombia benefits from other countries' examples and serves as an example itself.

- The strategy's implementation will take a few years. The operational plan and prioritization of activities should be revised frequently.

Third, it is important to implement the DRFI strategy in a sustainable way:

- The design of risk transfer instruments requires adequate information—for instance, on exposure and coverage levels. This in turn requires sustainable information systems that are updated on a timely basis. Risk evaluation of hazards to be covered by insurance is also necessary.

- The strategy includes cost-benefit analysis and an understanding of the existing legal framework and institutional capacity. These guarantee the viability and optimal selection of financing instruments for the country.

- The evaluation of risk transfer products for earthquake and hydrometeorological hazards should be supported by scientific and technical entities, such as the Colombian Geological Service (SGC) and Institute of Hydrology, Meteorology and Environmental Studies (IDEAM).

- Given their role in the post-conflict phase in Colombia, the strategy should consider key economic sectors such as agriculture. Sectors that have incurred historical losses, such as road infrastructure and housing, should also be considered.

- The strategy has been supported by capacity strengthening at national and territorial levels with the aim of improving sustainability.

- Regulating the National Disaster Risk Management Fund is a commitment with the Organisation for Economic Co-operation and Development (OECD), supported by DRFIP. Articulating the DRFI strategy within international commitments like OECD can generate support for its implementation.

Finally, it is important to articulate DRFI strategies at both national and territorial levels. National fiscal vulnerability reduction should also consider DRFI actions and activities at the territorial level.

2 The figures can be found in World Bank (2011).
3 The policy is available at http://www.minhacienda.gov.co/HomeMinhacienda/ShowProperty?nodeId=%2FOCS%2FP_MHCP_WCC-059133%2F%2FidcPrimaryFile&revision=latestreleased.
4 Information on the risk index is available at https://colaboracion.dnp.gov.co/CDT/Ambiente/Presentaci%C3%B3n_%C3%8Dndice_Municipal_Riesgo_Desastres_Ajustado_Capacidades.PDF.

Peru

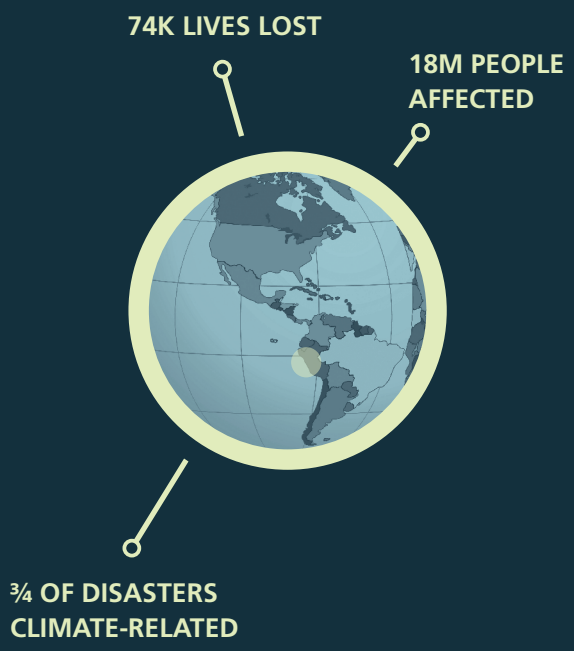
Jointly with three other countries, Peru issued a three-year catastrophe bond that provides the country with US$200 million in seismic coverage.

To strengthen the local insurance market, Peru's Insurance Supervisory Authority has updated its regulation on reinsurance and catastrophe reserves for insurance markets.

Photo: Scott Wallace / World Bank

Peru is vulnerable to diverse risks and hazards. Between 1970 and 2010, Peru was impacted by 109 disasters; of these, 72 percent were related to climate (droughts, floods, frosts, and mudslides) and 28 percent were geophysical events (seismic activity, volcanic eruptions, and landslides). These disasters caused over 74,000 deaths and affected 18 million people[5].

5 World Bank. 2016. Sovereign Disaster Risk Finance in Middle Income Countries: A partnership with the Swiss State Secretariat for Economic Affairs (SECO). Washington, DC: World Bank.



Country highlights

Peru officially launched its national DRFI strategy in 2016, after several years of work. The strategy builds on extensive analytical support provided to the government under the Program, which has since supported the development of a detailed implementation plan led by the MoF fiscal risk management unit. Thanks to technical support from the Program, Peru joined a three-year catastrophe bond that provides US$200 million in seismic coverage, and complements Peru's risk financing strategy. The Program also supports Peru's Insurance Supervisory Authority in updating its regulation of reinsurance and catastrophe reserves for insurance markets, with the aim of strengthening and deepening the local insurance market.

Catastrophe bond within the Pacific Alliance framework. The Program provided technical assistance for the issuance of a joint catastrophe bond within the Pacific Alliance framework, whose members include Chile, Colombia, and Mexico as well as Peru). This bond is one of the financial instruments that Peru has implemented as part of its DRFI strategy.

The issuance of the cat bond consists of five series of CAR notes with a total principal amount of US$1.36 billion, of which Peru issued US$200 million. The CAR notes are issued through the World Bank's IBRD (International Bank for Reconstruction and Development) global debt facility. The structuring agents are Swiss Re Capital Markets and Aon Securities; the bookrunners are these two companies in conjunction with Citigroup; and the risk modeler and calculation agent is AIR Worldwide.

During the technical assistance phase, the catastrophe modeling firm AIR Worldwide carried out stochastic modeling of the seismic risk in Peru and the other three countries that were part of the transaction. It developed a risk profile of each country, metrics of country losses, and an aggregate risk portfolio. These studies strengthened the government's technical capacity, and—by providing information on the geographic zones subject to the greatest potential losses from seismic activity (due to accumulation of seismic activity, exposed assets, and generation of GDP, among others)—they helped the government make informed decisions about the potential benefits of transferring seismic risk to capital markets. In addition, a Peru-specific stochastic financial gap analysis was developed to establish the probability of exhaustion of current financial instruments.

For additional detail about the cat bond, see "Innovations in Sovereign Risk Transfer: The Pacific Alliance Cat Bond" below.

Superintendence of Bank, Insurance and Pension (SBS) technical assistance. The program has assisted SBS in a number of ways:

- With support from the Program, SBS adopted Resolution SBS No. 4706-2017 on reinsurance and coinsurance acquisitions and management. The resolution was drafted based on the technical inputs and recommendations of the World Bank team.

- The Program has supported SBS in the development of Resolution SBS No. 1305 and its related Technical Note, which are designed to improve calculation of Peru's catastrophe reserve. The Technical Note was developed by the CISMID, which is currently implementing World Bank recommendations. As a next step, SBS will arrange a meeting with the local insurance market to explain the most relevant changes.

Looking ahead

Going forward, Peru plans to strengthen DRFI in several ways:

- **Five-year work plan.** In 2016, with support from the Program, the MoF developed a five-year work plan. However, due to political instability and the change in the DRM director, the plan is currently being revised by the MoF risk management unit to update priorities.

- **Insurance of public assets.** The current minister of Finance and DRM director have identified insurance of public assets as a priority. They are currently in the process of reviewing and revising the analysis and recommendations provided by the Program in order to agree on an implementation plan.

- **Calculation tool for tsunami and earthquake losses.** The SBS has asked the Program to support the development of a calculation tool for tsunami and earthquake losses. This continues the support provided to SBS for the calculation of catastrophe reserves.

- **Flood and rain stochastic catastrophe model.** In pursuit of a stochastic catastrophe model for flood and rain, SBS has asked the Program to support (i) the development of terms of reference for a modeling firm, (ii) the review of deliverables, and (iii) the drafting of a resolution.

- **Actuarial capacity building:** SBS has also asked the Program to support the development of a month-long actuarial training program for 20 of its employees.

JORGE ENRIQUE SIU RIVAS,
General Director,
Debt and Treasury Directorate,
Ministry of Economy and Finance,
Peru

What was your government's main motivation to start investing in DRFI?

We were looking for instruments that allowed us to reduce the impact of disaster-generated losses and have resources available for the response, rehabilitation, and reconstruction phases. These are essential components of the financial development and strategy of Peru. We have been working with DRFI for a few years, but risk transfer is a recent addition to our strategy.

What do you see as your main priorities going forward?

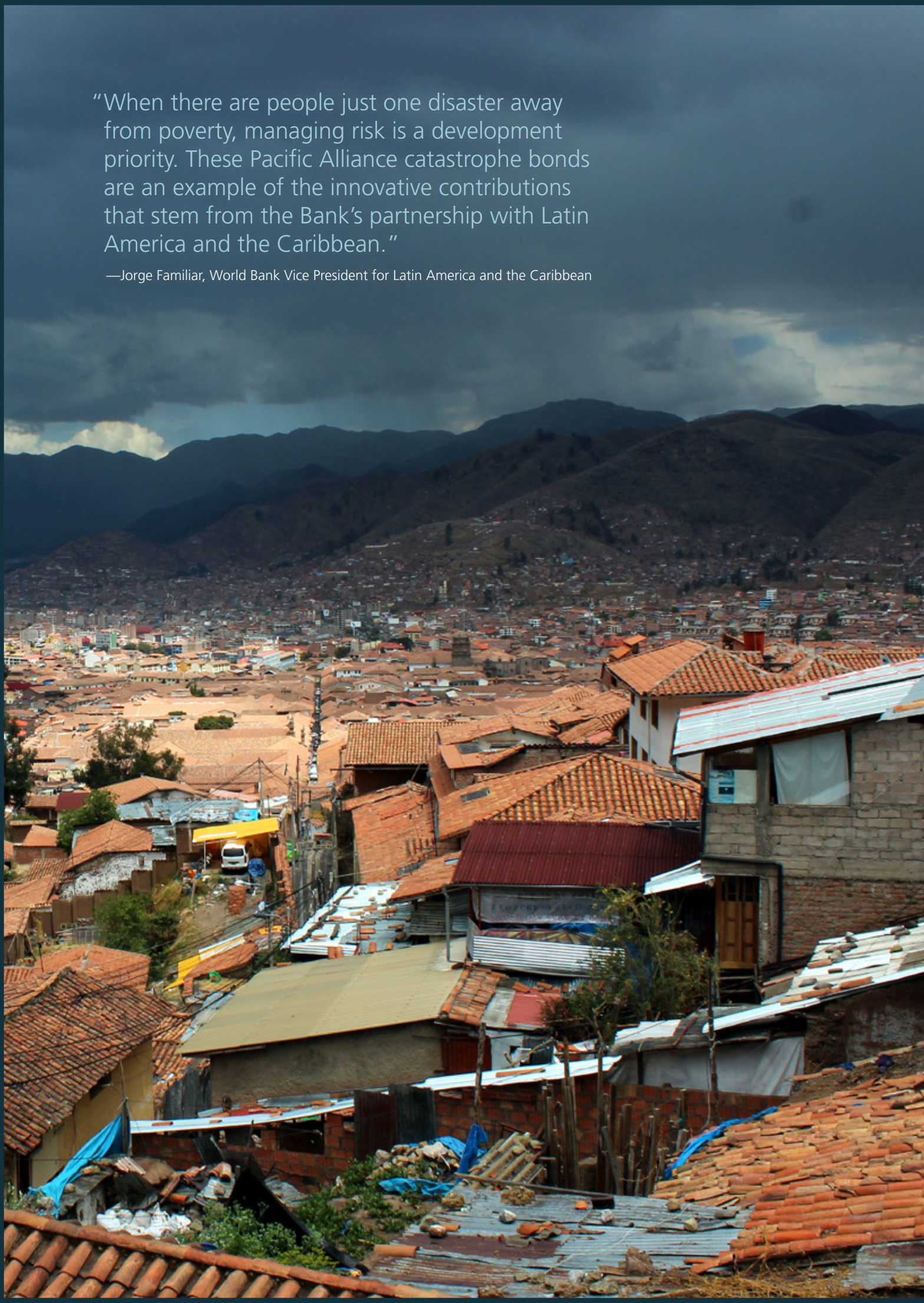
We have several priorities at the National Directorate level:

- To create a database of publicly owned assets (at national, regional, and local levels) with information on assets' value, location, condition (owned, rented, other), exposure, and vulnerability; and to use this information to evaluate disaster risk at the national level.
- To develop a risk transfer scheme to establish parameters and policies that will facilitate obtaining insurance for public infrastructure.
- To develop a specific procedure for use of financial resources that accords with the different roles of each Ministry of Economics and Finance dependency and with the National Disaster Risk Management System (SINAGERD) Law.
- To help subnational governments become more efficient in their disaster prevention efforts and their post-disaster rehabilitation and reconstruction activities.

What was a key lesson you learned during your engagement on DRFI that you would like to share with other countries embarking in similar reforms? What advice would you give other countries?

We can mention three lessons here:

- For prudential reasons, it is ideal to have financial instruments available before a disaster hits.
- Working together with other countries with similar risk management situations leads to better results.
- Technical assistance from multilateral organizations contributes to better knowledge of good practices in other countries.



"When there are people just one disaster away from poverty, managing risk is a development priority. These Pacific Alliance catastrophe bonds are an example of the innovative contributions that stem from the Bank's partnership with Latin America and the Caribbean."

—Jorge Familiar, World Bank Vice President for Latin America and the Caribbean

Innovations in Sovereign Risk Transfer

The Pacific Alliance Cat Bond

The cat bond is the largest sovereign risk insurance transaction ever and the second-largest issuance in the history of the catastrophe bond market

In April 2016, the four Pacific Alliance members (Chile, Colombia, Mexico, and Peru) jointly decided to explore whether they could protect themselves from the negative financial impact of natural disasters by transferring earthquake risk through a catastrophe bond. To support this effort, the Program and broader DRFIP team worked with the four countries on catastrophe modeling and the highly specialized technical analysis needed to evaluate countries' earthquake risk, assess potential risk transfer solutions, and strengthen finance ministries' technical capabilities and decision-making processes under uncertainty conditions.

The main outcome of this collaboration is the issuance of a joint catastrophe bond for the Pacific Alliance, composed of five series of CAR notes with a total principal amount of US$1.36 billion in earthquake protection to the member counties. In offering protection to government budgets, the insurance is an important complement to emergency funds, budget reserves, contingent credit lines, and other financial instruments governments use in the aftermath of natural disasters.

The bonds, which are issued by the World Bank, do not contribute to the countries' debt. If an event occurs that triggers a payout from the bond, the country receives the payout. The investors lose part or all of the capital.

The transaction is the largest sovereign risk insurance transaction ever and the second-largest issuance in the history of the catastrophe bond market. It created strong demand by offering diversification to the market in the form of uncorrelated risks from four different geographical areas. More than 45 investors from around the world took part in the transaction, which attracted almost US$2.5 billion in investment orders. The structuring agents are Swiss Re Capital Markets and Aon Securities; the bookrunners are these two companies in conjunction with Citigroup; and the risk modeler and calculation agent is AIR Worldwide.

The issuance consists of five classes of bonds: one each for Chile, Colombia, and Peru, and two classes for Mexico. Under the respective classes, Peru

receives US$200 million in risk insurance, Colombia US$400 million, Mexico US$260 million, and Chile US$500 million. Each class has different terms, and all are designed to cover earthquake risks. The classes for Chile, Colombia, and Peru provide coverage for three years. The classes for Mexico provide coverage for two years. Further details on the terms and conditions of the cat bond are in table 1.

The triggers are parametric and depend on data provided by an independent third party, the U.S. Geological Survey. The amount of the payment to the country depends on the earthquake's location as well as its depth and magnitude.

In April 2018, the XVI Meeting of Ministries of Finance of the Pacific Alliance took place in Washington, DC, with participants from the finance ministries of Colombia, Chile, Peru, and Mexico. After recognizing the successful issuance of the earthquake cat bond, the representatives requested analysis for issuance of a cat bond for floods and droughts.

"Strengthening the resilience of our partner countries is a key objective of Switzerland's economic cooperation and we are proud to partner with the World Bank in assisting middle-income countries in building their resilience against natural disasters."

—Raymund Furrer, head of SECO's Economic Cooperation and Development Division.

Table 1. Pacific Alliance Cat Bond: Summary Terms and Conditions

Class of Bond	CAR 116 Chile	CAR 117 Colombia	CAR 118 Mexico A	CAR 119 Mexico B	CAR 120 Peru
Issuer	IBRD				
Trade Date	February 2, 2018				
Issue Size	US$500 million	US$400 million	US$160 million	US$100 million	US$200 million
Settlement Date	February 7, 2018				
Scheduled Maturity Date	February 15, 2021	February 15, 2021	February 14, 2021	February 14, 2021	February 15, 2021
	(subject to extension and to early mandatory redemption)				
Issue Price	100%				
Bond Coupon (per annum)	3-month US$ LIBOR + Funding Margin + Risk Margin (subject to a minimum rate of interest equal to the Risk Margin)				
Funding Margin	0.20 per cent. per annum				
Risk Margin	+ 2.50 per cent. per annum	+ 3.00 per cent. per annum	+ 2.50 per cent. per annum	+ 8.25 per cent. per annum	+ 6.00 per cent. per annum
Covered Perils	Earthquake Event				
Redemption Amount	The bonds will not be fully repaid if an Earthquake Event occurs				

"By working together to manage their financial exposure to earthquake, the leaders of Chile, Colombia, Peru, and Mexico are making a powerful commitment to their people to promote long-term economic development. We are privileged to have been part of this landmark transaction."

—Martyn Parker, Chairman Global Partnerships, Swiss Re

Recent Developments in Risk Financing

The SECO–World Bank Program is a key component of a growing global movement by donors and development partners to strengthen financial planning for disaster shocks. Significant momentum is building to further improve existing approaches to climate finance and aid through more pre-arranged financing and stronger fiscal risk management. This effort has been recognized in recent high-level policy forums such as the G7, G20, and UNFCCC COP (United Nations Framework Convention on Climate Change Conference of the Parties). Some important new initiatives are described below.

THE INSURESILIENCE INITIATIVE, launched by the German presidency of the G7 in 2015, aims to scale up climate insurance in developing countries and provide climate risk insurance coverage to 400 million additional people by 2020. Based on the recommendations of a World Bank Technical Note, the 2017 G20 Summit endorsed the creation of the InsuResilience Global Partnership (IGP), which was formally launched in November 2017 at COP23. The IGP's goal is to deepen climate risk insurance markets and promote use of innovative insurance-related schemes in developing countries. The IGP includes a political convening function with over 40 signatories as well as an operational arm, mainly implemented through the InsuResilience Climate Risk Financing and Insurance Program multi-donor trust fund (MDTF), managed by the Global Facility for Disaster Reduction and Recovery (GFDRR) and implemented by the World Bank's DRFIP (US$35 million to date).

In consultation with the United Kingdom and Germany, the World Bank is currently working to transform the InsuResilience MDTF into a **NEW GLOBAL RISK FINANCING FACILITY.** The goal is to create a platform for testing and scaling up innovative ideas to enable more rapid and reliable crisis response through pre-arranged financing.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The World Bank DRFIP is also working with the UK Department for International Development (DFID) to establish a new DRFI hub as part of the Centre for Global Disaster Protection. The hub will focus on bringing the specialized financial expertise of the London market to vulnerable countries to help improve disaster risk finance policies and instruments.

The World Bank has also supported Vietnam as the 2017 APEC chair in integrating disaster risk finance in the APEC Finance Ministers' Process, including through **A STUDY ON RISK MANAGEMENT OF PUBLIC ASSETS AGAINST NATURAL DISASTERS.**

PARTICIPATION FROM PRIVATE SECTOR PARTNERS is also increasing, especially in the areas of public asset insurance and sovereign catastrophe risk transfers. SECO-supported engagements with the private sector, such as the recent Pacific Alliance cat bond transaction, are helping spread lessons learned on risk transfer to other countries. A number of countries, including the Philippines, have already expressed interest in learning from the Pacific Alliance cat bond to inform their own DRFI activities.

Building bridges, creating knowledge:

Peer exchange among participating countries

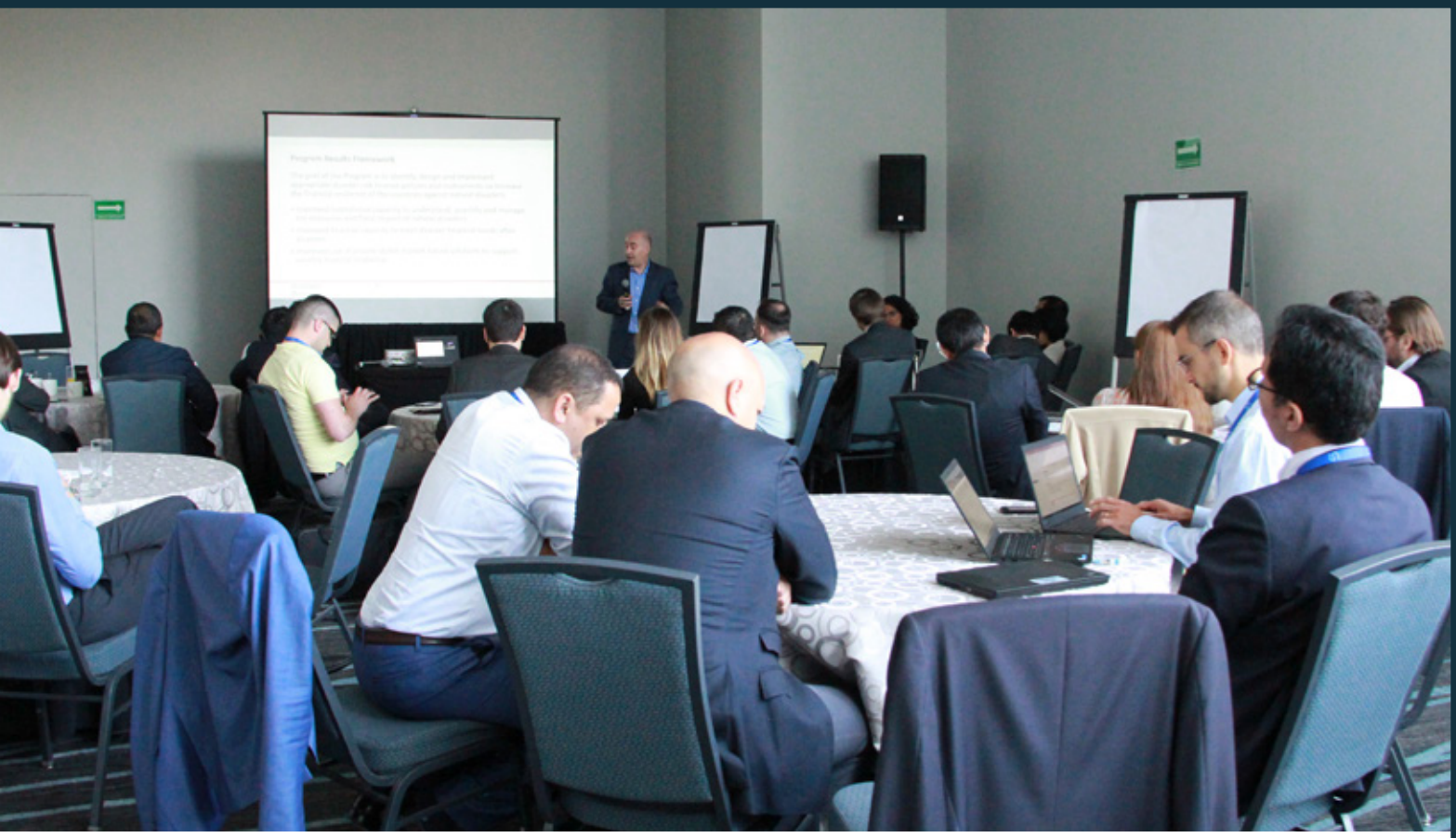
The Program continues to generate valuable lessons learned to advance financial protection—in participating countries and beyond

Over the past year, the SECO–World Bank Program continued to generate valuable lessons learned which are helping to advance financial protection as a key element of sound fiscal management – in participating countries and beyond.

During the 2018 Understanding Risk Forum, the Program convened participating countries for a peer exchange workshop. Participants included officials from Colombia, Indonesia, Morocco, Peru, Serbia and Vietnam, as well as representatives from SECO, the WB/DRFIP team, and from the UK Department for International Development (DFID). The attendees also benefitted from the participation of officials from Mexico, who shared their experience with FONDEN – Mexico's natural disaster fund, as an example of a comprehensive framework for public financial management of natural disasters.

During the two-day workshop, participants highlighted lessons learned, challenges, and future priorities in their DRFI engagements, including:

- The value of supporting countries in the **development of comprehensive disaster risk financing strategies**, as a guiding framework to better understand and manage the fiscal and economic impact of natural disasters. Colombia and Peru are currently implementing their strategies, while Indonesia, Morocco, Serbia and Vietnam are in the design phase.
- The importance of e**ngaging private sector partners** (i) through the development of sovereign catastrophe risk transfer solutions to increase fiscal resilience, like Peru and Colombia with the recent issuance of a joint cat bond; and (ii) by supporting domestic insurance markets to offer homeowners and small business protection against disasters, like in Morocco.
- The need to **strengthen insurance coverage of public assets**, including through better data and information on assets at risk, improved insurance supervision, and development of standard insurance terms and conditions.
- The importance of **investing in analytics** to enable countries to make informed decisions about innovative financial instruments.



- The key **role of subnational governments** in the effective management of disaster risks and the need to clarify their role and responsibilities as part of a **country's DRFI strategy**. Mexico's experience with FONDEN highlighted the importance of providing technical assistance and incentives to sub-national governments to take ownership of disaster risk.
- The need for a comprehensive DRFI strategy to address both **resource mobilization and effective budget execution** to ensure flexible and timely assistance to households and communities in the aftermath of a disaster.
- The importance of **strong institutional arrangements** for the development and implementation of DRF solutions, for example, through the establishment of a dedicated fiscal risk management unit in the Ministry of Finance, such as those created by Colombia, Peru, and Serbia.

"Facilitating a dialogue among colleagues from different countries is an extremely enriching process for the technical team as well as for participating countries. What we heard in Mexico will inform our dialogue with both middle-income and low-income countries going forward"

—Olivier Mahul, Program Manager and Global Lead, Disaster Risk Financing and Insurance Program, World Bank

Indonesia

The Government of Indonesia (GoI) has embarked on an ambitious set of reforms on disaster risk financing and insurance, including a pilot on insurance of public assets.

The Ministry of Finance is actively engaged in the APEC Initiative on Disaster Risk Finance and convened national and international experts for a seminar focused on best practices in integrating disaster risk considerations into fiscal policy frameworks.

Because of its complex geography and its location in one of the most hazardous regions in the world, Indonesia is highly exposed to natural hazards. The annual economic impact of disasters averaged 0.3% of GDP, or about US$3 billion a year, between 2000 and 2011. According to World Bank analysis, the potential impact of disasters could be significantly higher: a major earthquake, for example, could cost Indonesia as much as 3% of GDP (US$30 billion). Furthermore, Indonesia ranks among the top ten countries for number of deaths, with approximately 180,000 lives lost between 1996 and 2017[6].

6 World Bank and GFDRR. 2011. *Indonesia: Advancing a National Disaster Risk Financing Strategy – Options for Consideration*. Washington DC: World Bank.

Country highlights

After a slowdown in engagement following the 2014 elections and reorganizations within the Ministry of Finance, The Government of Indonesia has recently reprioritized reforms and investments in disaster risk finance. Strengthening the government's approach to disaster risk finance is now one of the policy priorities of the Voyage to Indonesia campaign led by the Ministry of Finance in preparation for the 2018 WBG-IMF Annual Meetings to be held in Bali in October 2018. With technical support from the Program, the Ministry of Finance has integrated a chapter on DRFI in the government's Fiscal Policy Document (KEM-PPKF) to inform the formulation of the 2019 Budget.

Over the past year, the GoI has made significant progress towards developing a Disaster Risk Financing and Insurance (DRFII) Strategy with technical support from the Program and building on lessons learned from international experience.

MoF first focused on raising awareness and building buy-in within the GoI. In December 2017, the Program provided technical support for the organization and delivery of an international seminar on DRFI organized by MoF as part of the APEC Initiative on Disaster Risk Finance – *Disaster Risk Financing in the Asia Pacific Region: Integrating Disaster Risk Management and Fiscal Policy*. The seminar, organized by the Ministry of Finance in Padang, West Sumatra, was instrumental in raising awareness within the GoI on the value of DRFI as part of sound fiscal risk management, and to discuss lessons learned from international experience and their relevance for the Indonesian context.

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In the margins of the APEC Seminar, the Program delivered a dedicated DRFI training to key GoI staff on the fundamentals of disaster risk finance. The training was also an opportunity to consult key officials on potential priorities and next steps to strengthen financial resilience against natural disasters in Indonesia. Participants included officials from the Fiscal Policy Agency; DG State Asset Management, DG Budget, and DG Treasury in Ministry of Finance; Bappenas; CMEA; and Maipark.

Building on the momentum created through these engagements, the Program has continued to support the Ministry of Finance in identifying priority areas for reform and investment. As a result, for the first time, MOF has included a chapter on DRFII in the 2018 Fiscal Policy Document (KEM-PPKF), which will serve as the basis for a DRFII Strategy.

Looking ahead

- As a **short-term priority**, MoF has requested support from the Program to revise and implement Ministerial Decree no. 247 on public asset insurance. The DG of State Assets has requested WB support to redraft the decree and develop a plan for its implementation, with a specific focus on the identification of priority assets, risk identification, and technical strategies for the implementation. MoF has also asked WB support to pilot a public asset insurance scheme in 2019 with full roll out by 2020.
- **To mitigate fiscal risks** arising from natural disasters, and increase the efficiency and timeliness of disaster response, the GoI is planning to prepare a comprehensive post-disaster risk financing strategy, building on the DRFII Chapter in the KEMP-PPKF. As part of such a strategy, several instruments and institutions will be considered carefully in light of Indonesia's potential needs as well as its legal and institutional framework. Instruments used in other countries include financial instruments (such as catastrophe bonds, insurance, and the Cat DDO), but also institutional measures such as escape clauses in fiscal rules, which may be activated when facing a natural disaster.
- GoI is also considering the feasibility of setting up a **new Public Service Unit** (BLU) with the specific mandate to manage disaster risk financing and insurance mechanisms, as has been done, for example, in Mexico. The BLU could become a vehicle for the implementation of a financing strategy based on a portfolio of instruments. It could be financed through a yearly budget allocation from the national government, used to channel resources from donors and disbursements from a potential Cat DDO, and directly purchase sovereign risk transfer coverage. It could serve the function of streamlining budget execution procedures for post-disaster related expenditures and incentivizing risk reduction investments, and link financing directly to specific disaster mitigation and post-disaster programs, enabling timely disbursement of funds outside of the budget cycle.
- Finally, **GoI has expressed interest in exploring the feasibility of sovereign risk transfer solutions** given, including review of relevant government policies and regulations.

KRISTIYANTO

Head of Division, Interregional Affairs, Center for Regional and Bilateral Policy, Fiscal Policy Agency, Ministry of Finance, Indonesia

What was your government's main motivation to start investing in DRFI?

Indonesia experiences a high number of natural disasters of several types including earthquakes, landslides, floods, tsunamis and forest fires. Past disasters have resulted in enormous economic losses. In the first ten months of 2017, there have been at least 2,171 disasters recorded in Indonesia causing 567 deaths, 489 injured, 2,770,814 displaced, 23,628 lightly damaged houses and 5,750 heavily damaged houses. The costs are significant, while the ability of the country's budget to finance disaster-related losses is limited. So far, financing has been heavily dependent on ex-post interventions, such as budget allocations and reallocations, foreign aid, or the use of foreign exchange reserves.

Currently, the country is at high financial risk given its limited fiscal capacity and unplanned fiscal management. It is important to balance the DRFI strategy with investing in disaster risk reduction. To reduce fiscal risk at central and local levels, the government needs to enhance its ex-ante approach to a more proactive and systematic one, as well as increasing the government's funding capacity for emergency relief, reconstruction and rehabilitation.

In addition, the government needs to develop an integrated disaster risk financing strategy, aligned with the national disaster risk management, social protection policy and national development milestones.

What do you see as your main priorities going forward?

There are at least three key objectives in managing the financial impacts of natural disasters:

- Improve fiscal governance and resilience against disasters
- Protect state-owned assets/ properties/infrastructure managed either by the central or regional governments
- Protect communities, especially low-income households, against disasters

To achieve these objectives, the government needs to: (i) increase the funding capacity of governments to provide social protection to the poorest communities affected by disasters; (ii) generate funding schemes that are fit to the risk, region, and social and economic characteristics of the community; and (iii) increase the role and capacity of all relevant stakeholders in disaster risk financing.

What was a key lesson you learned during your engagement on DRFI that you would like to share with other countries embarking in similar reforms? / What advice would you give other countries?

We started this exercise by mapping existing regulations, schemes and policies as well as all stakeholders, especially government's unit related to DRFI activities. We explored the gap between the current conditions and the needs in the future.

Our main findings include the fact that government financing schemes have heavily relied on ex-post interventions which are more unplanned. We also found that there are too many actors involved in DRFI in Indonesia, including the National Agency for Disaster Management, Ministry of Finance, Ministry of National Planning, Ministry of Public Works and Housing, Ministry of Social Affairs, Ministry of Home Affairs, Ministry of Villages, Parliament, local governments, NGO and development partners.

A third finding is that reducing fiscal vulnerability creates opportunities to develop disaster resilient policies that generate co-benefits for the achievement of multiple development objectives, including DRM, fiscal sustainability, and climate change adaptation. The governments should therefore be able to generate broader economic benefits for governments and communities via its disaster risk financing management strategy and fulfill the government's obligations to support and protect the disaster-affected parties that are managed within the framework of government investment.

Our advice would be simple: knowledge of your needs, your capacity, and your "playing field" is crucial. Since there are many stakeholders involved, including private sector, building consensus is important. We also recognize the need to shift a paradigm toward more planned financing schemes, which required re-educating some stakeholders.

On the Path to Resilience:

Indonesia Steps Up Efforts on Disaster Risk Finance as Good Fiscal Policy

Indonesia is making great strides on the path to resilience. Building on international experience, and lessons emerging through the APEC engagement on disaster risk financing, the Ministry of Finance has been leading efforts to integrate disaster risk considerations in national fiscal policy.

In December 2017, the Ministry of Finance, with technical support from the Program, convened a seminar on *Disaster Risk Financing in the Asia Pacific Region: Integrating Disaster Risk Management and Fiscal Policy* in Padang, West Sumatra. The seminar brought together over 150 officials from across the region, as well as key stakeholders from the government of Indonesia, to discuss effective strategies to manage and mitigate the impacts of disasters on government finances.

The key recommendations emerging from the seminar were instrumental to inform MoF thinking on how best to integrate disaster risk finance in Indonesia' national fiscal policy framework. As a result, for the first time, MOF has included a chapter on DRFI in the 2018 Fiscal Policy Document (KEM-PPKF), which will inform the priorities for the 2019 budget, and will serve as the basis for a national DRFI Strategy.

The DRFI chapter of the KEM-PPKF outlines key objectives underlying GoI's efforts to improve its approach to disaster risk financing: (i) improve fiscal management of disasters, including post-disaster transfers to local governments; (ii) protect national and subnational public assets; (iii) protect low-income households and communities; and (iv) promote the development of the domestic insurance market. To fulfill these objectives, the KEM-PPKF identifies short-, medium-, and long-term priorities to strengthen GoI capacity to effectively mobilize and deliver post-disaster funding, as well as promote transparency and accountability of disaster-related spending. In addition, it highlights that any reforms should also put an emphasis on providing incentives for investment in risk reduction to support the government's overall approach to disaster resilience.

In the short-term, the GoI will focus on expanding the scope and coverage of existing instruments and developing new instruments, while raising awareness on the importance of DRFI among government stakeholders and the public. In the medium- to long-term, the GoI plans to support the expansion of domestic insurance markets, and explore the feasibility of new institutional set ups to improve the financial management of disasters, including the role of subnational governments in DRFI.

This is an important step for the government of Indonesia as it strives to improve its ability to manage the impacts of disasters. A DRFI strategy will support development and implementation of a portfolio of risk financing instruments to help address needs associated with disasters of different frequencies and severities. The optimal mix of instruments will depend on an assessment of risks, desired coverage, available budget, and cost efficiency. By combining different instruments, GoI can structure their financial needs related to disasters so that the timing and amount of available funding matches the needs.

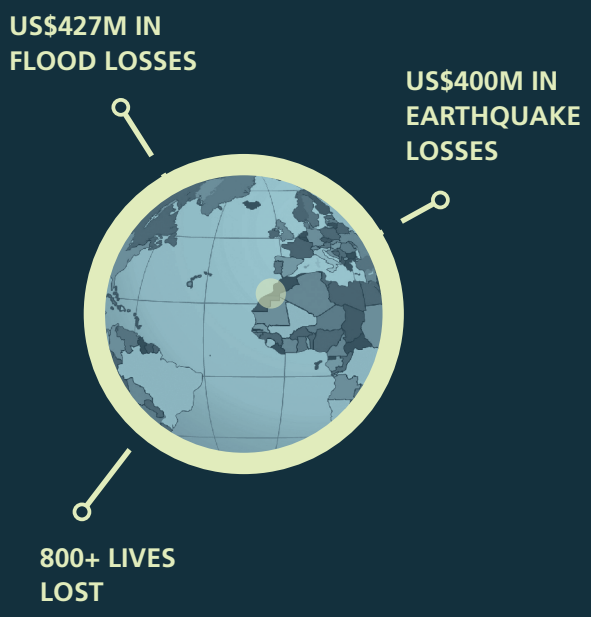
Morocco

The Program supports the Government of Morocco in implementing the law on catastrophe risk insurance (law 110-14). It also supports the development of a comprehensive risk financing strategy for the Solidarity Fund, which provides support to uninsured households affected by a disaster.

These activities are in line with a broader engagement by the Government of Morocco to implement a comprehensive risk financing policy as part of the Integrated Disaster Risk Management and Resilience Program-for-Results (PforR) loan signed with the World Bank in 2016.

Morocco is vulnerable to both chronic and acute events. Impacts from natural hazards—mainly floods, earthquakes, and landslides—cost an average of about US$800 million every year. Between 2000 and 2013, Morocco experienced 13 major floods that killed 263 people and caused losses of over US$427 million in direct property damage. In 2004, the Al Hoceima earthquake caused direct economic losses of US$400 million and killed over 600 people[7].

7 World Bank. 2016. *Sovereign Disaster Risk Finance in Middle Income Countries: A partnership with the Swiss State Secretariat for Economic Affairs* (SECO). Washington, DC: World Bank.



Country highlights

In Morocco, under the US$200 million World Bank lending project for Integrated Disaster Risk Management and Resilience Program-for-Results approved on April 20, 2016, a US$60 million component supports the preparation and adoption of the catastrophe risk insurance law. This law (i) makes insurance against disasters a compulsory part of all property and automobile insurance policies; and (ii) establishes a Solidarity Fund to provide basic compensation to uninsured households affected by a disaster. The preparation of the law benefited from the technical assistance of the Program under Phase 1. Under Phase 2, the Program continues to offer technical assistance and capacity building for the implementation of the law, especially for the development of DRFI analytics tools to guide risk-informed decision making.

The Program offers technical support to the Direction du Trésor et des Finances Extérieures (DTFE) and the Autorité de Contrôle des Assurances et de la Prévoyance Sociale (ACAPS). Thus far, it has delivered ongoing analytical work and capacity building activities to MoF/DTFE and ACAPS to support the implementation of law 110-14 (*Régime de couverture des conséquences d'événements catastrophiques*), as part of a US$60 million component under the US$200 million World Bank PforR operation. This law (i) makes insurance against disasters a compulsory part of all property and automobile insurance policies; and (ii) establishes a Solidarity Fund (Fonds de Solidarité contre les Evénements Catastrophiques, FSEC) to provide basic compensation to uninsured households. The preparation of the law benefited from the technical assistance of the Program during Phase 1. Going forward, the Program will support disaster and financial risk analytical work, insurance costs evaluation, reinsurance program structuring, exposure management, financial protection strategy advice,

and claims handling system design. The team has sought to further strengthen its role as neutral technical advisor by helping the clients directly access knowledge and expertise from private markets, including unbiased lessons learned, sophisticated placement techniques, and other best practices from international catastrophe insurance and risk management.

The Program has also supported upgrades to the financial loss estimation tool, which is now able to run any insurance company's portfolio of exposure—effectively making it a portfolio management tool. This version of the tool was delivered in November 2017, and training was delivered during missions in December 2017 and February 2018. Although technical capacity within Morocco's finance ministry remains a challenge, the DTFE team has been expanding, with a focus on integrating technical and actuarial expertise.

In addition, the Program has supported the development of a comprehensive risk financing strategy for the Solidarity Fund. The goal is to ensure that resources are available to make transfers to beneficiaries, including poor households, in the event of a disaster with large losses. The process of developing this financing plan has helped the Moroccan government better understand the contingent liabilities it faces in the event of a major disaster.

Finally, technical assistance supported by the Program has expanded to address claims management and operationalization of the Solidarity Fund. In this context, the DRFIP team has been leading a study reviewing international best practices and developing specific recommendations for a national claims management system for Morocco. A report summarizing key findings and suggested next steps was presented as part of the February 2018 mission.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Looking ahead

Going forward, it will be important to ensure continuous engagement with government counterparts to strengthen trust and buy-in, and to anticipate and understand the evolving needs of the client. The Program will continue to focus on the technical assistance related to the PforR operation, and will prioritize the preparation needed to implement the catastrophe risk insurance law. Specific steps include the following:

- **Capacity-building work** is being carried out to prepare for the implementation of risk financing strategies for both the insurance and Solidarity Fund components of the law.
- **Private sector companies that provide claims** management solutions are being linked up with DRFI practitioners in Morocco to help reinforce expertise in the management of catastrophe risks. A report summarizing key findings and best practices from the private sector and international experience is under preparation.
- **Risk models and financial loss estimation tools** are being upgraded to support the execution of the selected risk financing strategies with robust and comprehensive risk information.

ABDELJALIL EL HAFRE,
Head,
Institutional Savings Department, Capital Markets Division, Treasury, Ministry of Economy and Finance, Morocco

What was your government's main motivation to start investing in DRFI?

Morocco is exposed to significant recurrent hazards and faces the potential for major earthquake and flood events. Recognizing that disasters can have severe human and economic impacts and create social instability, Morocco has been investing significantly to better understand its exposure. In recent years, the Government of Morocco recognized that a proactive, ambitious, and results-based strategy was needed to increase its resilience to natural disasters. In August 2016, a law (no. 110-14) was passed that creates a national catastrophe risk insurance program. The law sets up a dual mechanism that addresses natural and man-made disasters and makes catastrophe risk insurance coverage compulsory for motor vehicles, households, and firms. It also establishes the Solidarity Fund, which provides basic compensation for the uninsured, who represent 80 percent of the population, including close to 3 million people below the poverty line. The objectives of the disaster risk financing component are to design and implement (i) a national insurance program for protection against natural disasters for homeowners, car owners, and businesses; and (ii) a dedicated Solidarity Fund to compensate the uninsured affected by catastrophic events (i.e., those experiencing bodily injury or damage to housing).

What do you see as your main priorities going forward?

The priorities are to make sure that the Solidarity Fund and the insurance program are operational before the law is implemented. The design of the Solidarity Fund will benefit from public and private markets' experience and lessons learned in the management of sovereign funds, including risk financing strategies that are resilient to severe loss events. Although the overall Moroccan insurance market is ranked the third-largest within the Arab world, almost no insurance currently exists against catastrophe risk. Specific issues and mechanisms will therefore need to be taken into account—for example, capacity and retrocession needs, standard policy clauses, and claims management systems. Communication among members of the general public, insurers, reinsurers, and intermediaries will also be key to the success of the law.

What was a key lesson you learned during your engagement on DRFI that you would like to share with other countries embarking on similar reforms? What advice would you give other countries?

The investment in analytical financial tools and models has been essential in helping us understand the exposure and contingent liability of both the state and the insurance markets. The development of a Morocco-specific catastrophe risk model has also helped us prepare for potential loss events, as opposed to just historical ones. This will in turn allow for the design of risk financing strategies that make best use of financial instruments, drawing from private market expertise.. And these are ongoing processes that will be improved over time as we build more capacity and expertise in disaster risk financing in Morocco.

Maximizing Finance for Development:

Leveraging Private Markets for Financial Protection against Disaster Risk in Morocco

The Government of Morocco introduced a national catastrophe risk insurance program to improve the financial resilience of Moroccan households and businesses at risk. The law establishing the program sets up a dual system: it guarantees coverage against natural and man-made catastrophes for insured people, households, and businesses, and it also provides basic compensation for uninsured people and households through the Solidarity Fund (FSEC).

The implementation of this law is supported by one of three components of the US$200 million Integrated Disaster Risk Management and Resilience loan signed with the World Bank. The DRFIP has been instrumental in providing DRFI technical assistance to the Government of Morocco since 2016.

According to World Bank analysis, about US$400 million of direct property and casualty losses are expected from natural catastrophes in Morocco each year (mostly from flooding and earthquakes). But these loss numbers increase tenfold about once every 100 years when the country experiences severe disasters.

In line with Maximizing Finance for Development principles (see box), private markets will play a central role in providing the required capital, legal framework, and claims expertise, thereby building up local experience in managing large-scale catastrophe insurance programs. This approach will also ensure the sustainability of the program over time and thus help promote increased insurance penetration rates. Longer-term benefits may also be expected in areas such as risk prevention and mitigation, risk management techniques, crisis response plans (e.g., via remote-sensing services), and reinsurance regulations.

Morocco's risk insurance program should be funded exclusively through private markets: out of the total capital required, a first layer will be retained by domestic insurance and reinsurance markets, while the remaining part will be transferred to international risk carriers. The financing of the Solidarity Fund could involve a variety of options that leverage private market contributions.

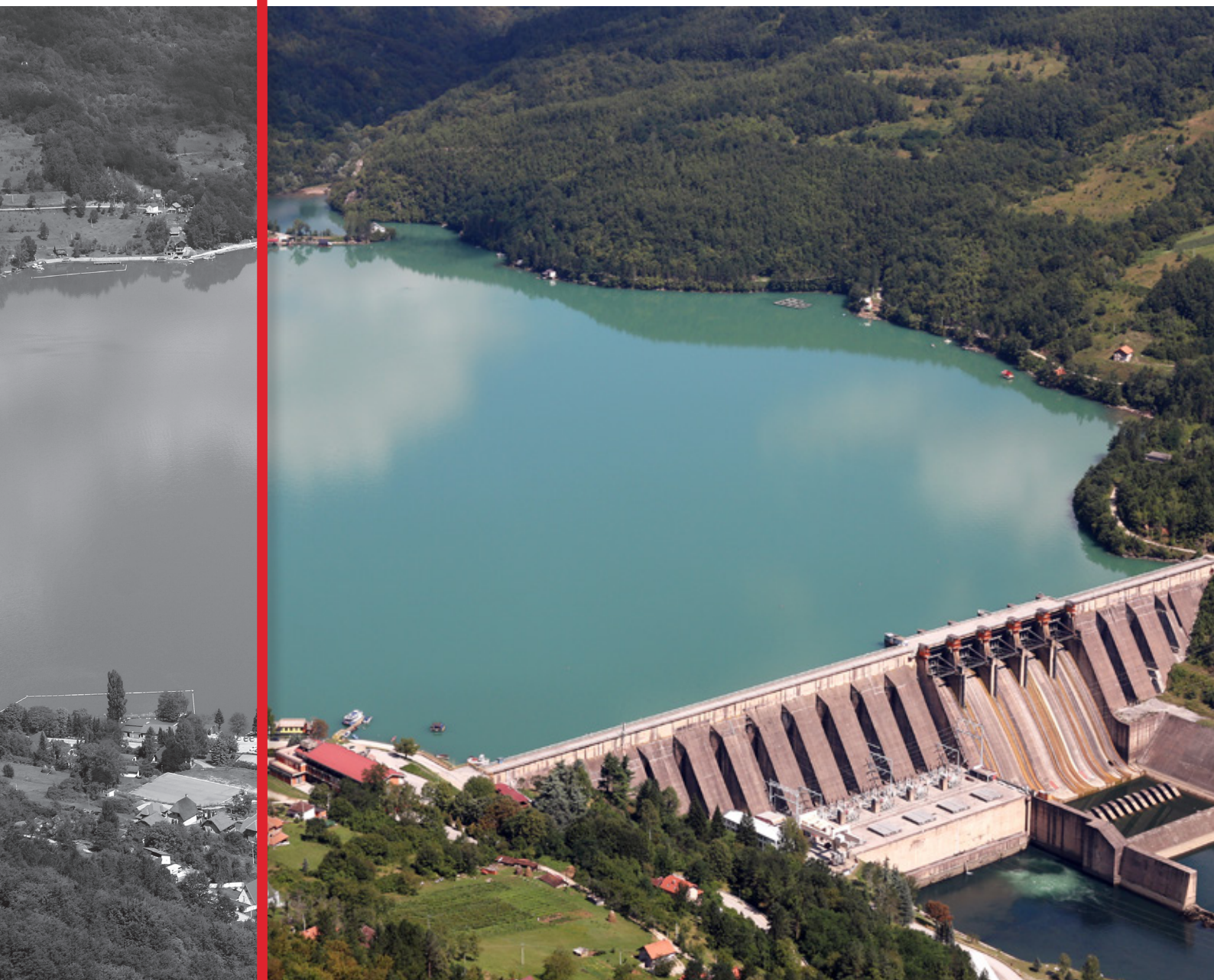
Maximizing Finance for Development

Goals Developing countries are committed to meeting the Sustainable Development Goals, but cannot do so relying only on national budgets and available donor funding. To address the funding gap, multilateral development banks have committed to collectively increase the private financing that can be accessed by developing countries by 25–35 percent over the next three years (until 2020). Maximizing Finance for Development is the World Bank's approach to systematically leveraging all sources of finance, expertise, and solutions to support sustainable growth for developing countries.

Serbia

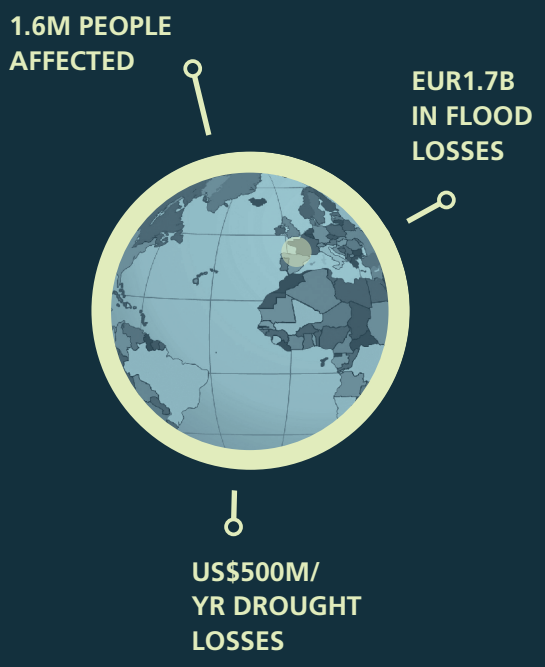
In 2017, the Government of Serbia adopted a national DRFI program and signed a contingent line of credit (CAT DDO) with the World Bank.

The Government of Serbia is finalizing the establishment of a dedicated fiscal risk management team in the Ministry of Finance.



Serbia is affected by floods, droughts, and earthquakes. In 2014, floods in Serbia affected 1.6 million people and caused damages and losses of over 1.7 billion (equivalent to 4.8 percent of GDP). These losses contributed to a contraction of Serbia's economy of 1.8 percent (compared to projected growth of 0.5 percent). Serbia's economy has also been affected by droughts, which cause estimated damages of US$500 million per year, on average[8].

8 World Bank. 2016. *Sovereign Disaster Risk Finance in Middle Income Countries: A partnership with the Swiss State Secretariat for Economic Affairs* (SECO). Washington, DC: World Bank. World Meteorological Organization. 2012. *Strengthening Multi-Hazard Early Warning Systems and Risk Assessment in the Western Balkans and Turkey:* Assessment of Capacities, Gaps and Needs. Geneva: WMO.



Country highlights

Serbia first requested technical assistance in disaster risk finance from the World Bank in 2015. Since then, the Government of Serbia has made substantial progress in strengthening financial preparedness for disasters. Leveraging the policy dialogue in preparation for a CAT DDO, the Program has supported (i) the development of a national DRFI strategy, (ii) the establishment of a dedicated fiscal risk management team in the Ministry of Finance, and more recently (iii) financial protection against disasters at the local government level.

Both the establishment of the fiscal risk unit and the effectiveness of the CAT DDO are important achievements over the past year. Through the latter, the Government of Serbia now has access to 66 million in rapid liquidity should a disaster occur and an emergency be declared.

The fiscal risk unit, established within the Macroeconomic and Fiscal Sector of the Serbian Ministry of Finance, anchors the DRFI agenda within the ministry. Its establishment is the culmination of a protracted process of policy dialogue and technical assistance. Originally this work emerged in response to recommendations by the IMF and the World Bank's Governance team, which advised establishing such a unit to address a variety of fiscal risks linked to state-owned enterprises and the severe fiscal impacts of floods in 2014. Although the establishment of the fiscal risk unit has taken longer than originally hoped, it now provides an institutional locus for fiscal risk management, including fiscal risk management of disasters, and therefore represents a significant milestone. The team expects this unit

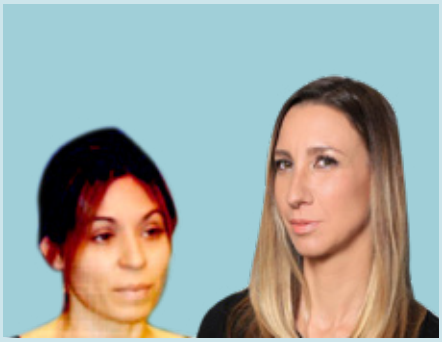
to be a strong counterpart within MoF throughout the second phase of the technical assistance offered under the Program.

Over the past year, the team has worked with the Serbian government to agree on a work plan for Phase 2 of the Program, with key activities focusing on the following priorities:

- **Building the capacity** of the newly established unit to assess and manage disaster-related fiscal risks
- **Supporting the unit** in producing a statement of disaster-related fiscal risks
- **Reviewing international experience** with post-disaster taxation and mandatory property insurance
- **Reviewing the guidelines and processes** for accessing contingency funds and for reallocating budget funds after disasters
- **Developing local DRFI programs**

Looking ahead

Going forward, the Program will continue to support capacity-building activities to help the newly established unit assess and manage disaster-related fiscal risk. It will assist the unit in producing a statement of fiscal risks, including those related to disaster; in reviewing international experience with post-disaster taxation and mandatory property insurance; and in reviewing the guidelines and processes for accessing contingency funds and for reallocating budgetary funds after disasters. It will also work with local governments and assist them in developing DRFI programs.



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What was your government's main motivation to start investing in DRFI?

We had extremely strong rains in May 2014, which resulted in catastrophic flooding. Over 1.6 million people were affected; 32,000 families had to be evacuated, and over 50 people were killed. Damage from the floods—to businesses, farms, schools, health care facilities, homes, and crucial infrastructure—was equal to 4.8 percent of GDP.

At the Floods Reconstruction Office (now known as PIMO), we experienced at first hand the acute need for liquidity to respond to the aftermath of the rains. Unfortunately, it took quite a while to mobilize funds from various sources. For example, a supplementary budget was not passed before December. A World Bank emergency recovery loan became effective only in the first quarter of 2015, and the larger part of international aid came only in the second quarter of 2015. While we were obviously grateful for all these funds, the need for quick funds after disasters really struck home, and has since motivated us to try and prevent such shortfalls after similar situations going forward. Thus in sum, the liquidity shortage after the floods was the main motivation to start working on DRFI.

What do you see as your main priorities going forward?

A definite priority is strengthening of financial preparedness for disasters at the local level. After all, the local level is where the rubber hits the road in terms of immediate disaster response.

In particular, we will do our best to overcome significant challenges related to the provision and take up of catastrophe insurance for local governments—and for households as well, for that matter. We have gained initial experience with insurance in one municipality, but sustaining this effort, let alone extending it to more municipalities, has proved challenging so far. Still, we are determined to keep going. At the moment, we are doing some initial diagnostic work related to the public financial management of disasters at the local level, and we hope to build on that to devise some solutions to improve financial preparedness, step by step.

In addition to the local level work, we'd like to look further into the possibility of creating a fund that can accumulate resources. Current contingency budget funds that can be used for disaster response lapse at the end of each year if not used. As you know, we were just at the UR 2018 in Mexico, where the experience of FONDEN featured prominently.

What was a key lesson you learned during your engagement on DRFI that you would like to share with other countries embarking on similar reforms? What advice would you give to other countries?

At the risk of sounding repetitive given our answer to the first question: the timing of financing is as important as its availability. Also—and this may be stating the obvious, but it's really crucial and so worth emphasizing—investing in prevention significantly reduces disaster risk and consequently the need for post-disaster financing; if other countries are anything like Serbia, the scope for high-return risk reduction investments should be considerable.

Managing Fiscal Risks in Serbia:

From Institutional Arrangements to Financing Instruments

The dedicated fiscal risk team will focus on strengthening fiscal risk management across the government

Following catastrophic floods in 2014, which caused 1.7 billion in damages and losses, the Government of Serbia embarked on an ambitious path to transform its previously reactive DRM system to one emphasizing prevention and mitigation. In April 2016, the DRFIP published a Serbia country note on DRFI, which took stock of existing mechanisms and instruments to finance disaster response and laid the foundation for subsequent technical work on DRFI and ultimately for the development of a DRFI strategy by the Serbian government.

A key milestone in the change toward more proactive risk management was the signing of the CAT DDO between the World Bank and Government of Serbia. This was the first time the Bank's contingent credit instrument was adopted by a country from the Europe and Central Asia Region. As part of the policy dialogue around the CAT DDO, the DRFIP supported the Government of Serbia in development of a comprehensive DRFI strategy; adopted in March 2017, this was also a prior action for the CAT DDO under the risk financing pillar of the operation.

Similarly, technical assistance was provided to assess the need and provide options for a fiscal risk management unit in the Ministry of Finance. This has resulted in the creation of a dedicated fiscal risk management team in the MoF. All the technical work provided by DRFIP to build financial resilience in Serbia was made possible by financing from SECO under the Sovereign Disaster Risk Finance in Middle-Income Countries Program.

The work on the fiscal risk unit initially emerged following the IMF's recommendation to establish such a unit, and it gathered momentum after a workshop chaired by Minister of Finance Dušan Vujovic, where initial options for such a unit were presented. Those attending the workshop—40 participants from across the government (including the MoF, the Public Investment Management Office, the Ministry of Interior, the Sector for Emergency Situations, and the Fiscal Council) along with staff from SECO, the IMF, UNDP, and other international partners—agreed on an outline for a potential fiscal

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risk unit to be established within MoF. In January 2017, the MoF received a final report that analyzed and assessed the government's fiscal risk management capabilities and laid out concrete recommendations and options for how to establish the fiscal risk unit.

The decision to establish the unit was included as a results indicator in the policy matrix of the CAT DDO, and was formally included in the Ministry of Finance's organigram in August 2017.

The dedicated fiscal risk team will focus on strengthening fiscal risk management across the government, with specific responsibilities including the following: (i) ensuring that fiscal risks are properly identified, quantified, monitored, mitigated, and disclosed, and collecting all available information and analysis relevant for fiscal risk management; (ii) providing advice to the minister of finance on issues of fiscal risk and recommending actions to mitigate risks; and (iii) coordinating all government entities that are involved in or relevant for fiscal risk management.

Although the establishment of the fiscal risk unit has taken longer than hoped, it now provides an institutional locus for managing fiscal risks, including those related to disasters, and is therefore a significant milestone indeed.

Vietnam

Vietnam promulgated a new law and decree that promotes financial risk management of public assets against natural disasters.

A country-specific catastrophe risk model was developed to help the Government of Vietnam quantify the likelihood that floods, typhoons, and earthquakes will cause direct losses of different amounts to the country's private and public assets.

Vietnam is the eighth-most populous country in Asia and has the sixth-largest economy among ASEAN (Association of Southeast Asian Nations) countries. Extreme natural events challenge Vietnam's economic growth potential: during the last 30 years, losses from cyclones and floods caused an average of almost US$900 million per year. In the past 20 years, 13,000 people have died due to disasters[9].

9 World Bank. 2012. Fiscal Impacts of Natural Disasters in Vietnam. Washington, DC: World Bank. http://siteresources.worldbank.org/EXTDISASTER/Resources/Vietnam-}Fiscal-Impact-Study_Final.pdf
World Bank. 2017. *Vietnam Catastrophe Risk Assessment*. Summary Report. Washington, DC: World Bank.

Country highlights

Over the past several years, the Program has helped Vietnam better understand its exposure to natural hazards, the potential economic and fiscal impacts of natural hazards, and the challenges it faces in managing risk financing instruments and the catastrophe risk insurance market. The work supported by the Program has now moved from a diagnostic and preparation stage to the implementation stage.

- Phase 2 of the Program focuses on several areas: (i) devising sovereign and subsovereign DRFI solutions, including development of a draft law and associated regulations on financial risk management (including insurance) of public assets; (ii) developing a national DRFI strategy and subnational financial resilience strategy accompanied by innovative financial instruments; (iii) continuing with market development efforts, including further development of catastrophe risk data infrastructure and regulations governing reserves; (iv) (potentially) piloting property catastrophe risk insurance; and (v) carrying out more in-depth risk assessment of public assets and further risk assessment at subnational level as needed. MoF is playing a key role in leading this agenda through active collaboration with relevant ministries and establishment of an interministerial working group. Specific achievements include the following: Decree 151/2017 was finalized and agreed to by the Government of Vietnam with

a chapter on financial risk management of public assets. The World Bank team continues to provide support to the MoF in operationalizing this decree, which mandates that the Minister of Finance propose a list of assets to be insured and provide a road map for implementation to the government for approval. Further risk assessment of public assets will be conducted to inform the MoF in formulating the proposal.

- Support to the MoF also continues for upgrading of public asset databases. Significant work was undertaken to support the Government of Vietnam as Chair of the 2017 APEC Finance Ministers' Process. To complement the report prepared during the first phase of the Program, an in-depth review of the existing legal, regulatory, and institutional framework governing DRFI in Vietnam, along with proposed solutions to identified challenges, is being prepared at the request of Vice Minister Tran Xuan Ha. A review of the operations of the disaster prevention and control funds was also conducted.
- A series of reports prepared by the World Bank team was presented to the APEC finance ministers in October 2017. This included reports on financial risk management of public assets against natural disasters, on managing contingent liabilities against natural disasters (prepared jointly with the OECD), and on methodologies for developing public asset and insurance databases. A draft deep-dive report on disaster risk finance is being finalized in collaboration with MoF departments.
- The National Institute of Finance has also requested that disaster risks be considered as part of the overall World Bank assistance to the MoF on fiscal risk management. In addition, a draft review report on operations of the disaster prevention and control funds was shared with the Ministry of Agriculture and Rural Development (MARD) and MoF to inform the revision of the disaster risk management law and Decree 94.
- Two trainings were provided to the MoF, MARD, and Da Nang and Phu Yen on an analytical tool called Risk Viewer, and on a tool for evaluating risk financing instruments developed by the World Bank team.
- Close and frequent interaction with the MoF and other stakeholders has been maintained through email exchanges, phone calls, and meetings to advance the dialogue and provide timely support to counterparts. As a cross-cutting theme, the DRFI work has also gained additional interest from and traction in other agendas, such as urban and disaster risk management, social protection, and transport as well as macro and fiscal management.

Looking ahead

A proposed work plan for the second phase of the Program focuses on the following priorities:

- **Financial risk management** of public assets
- **State budget protection** against natural disasters
- **In-depth review** of the overall approach to and current legal, regulatory and institutional framework for disaster risk financing and insurance; review of available financial/insurance instruments; and support for preparation of a DRFI strategy/framework
- **Catastrophe risk insurance market development,** including a potential pilot of insurance for public assets, if identified by MoF/DPAM as a step in its financial risk management of public assets
- **Support on disaster risk finance at the subnational level**, initially to the city of Da Nang, but potentially to be expanded to other cities over the course of the project

Taking Steps to Implement a DRFI Strategy:

Public Asset Insurance in Vietnam

In June 2017 the Government of Vietnam passed the Law on Public Assets Management, which mandates financial risk management for public assets that are exposed to natural hazards

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Vietnam is the eighth-most populous country in Asia and has the sixth-largest economy among ASEAN countries. The country ranks first among countries considered to be Global Growth Generators (3G). However, extreme natural events challenge Vietnam's economic growth potential: during the last 30 years, Vietnam paid, on average, US$897 million (in 2014 prices) per year in losses from floods and typhoons.

With the support of the Program, the Government of Vietnam has produced a catastrophe risk model that has been used to develop a series of risk profiles—for tropical cyclones (wind and storm surge), floods (riverine and pluvial), and earthquakes, at national level and for Hanoi, Da Nang, and Ho Chi Minh City, the major cities of Vietnam. The profiles include maps showing the geographic distribution of assets and people at risk, hazards assessed, and potential monetary losses and casualties. They also include an analysis of the possible direct losses caused by tropical cyclones, floods, and earthquakes, and by the impacts of severe winds, rainfall, coastal storm surges, and ground shaking. The model can be used by Vietnam's Ministry of Finance in support of fiscal management of natural disasters, financial management of public assets, market development for property catastrophe risk insurance, rapid post-disaster estimation, and urban planning and infrastructure design.

Informed by the risk profiles, in June 2017 the Government of Vietnam passed the Law on Public Assets Management, which mandates financial risk management for public assets that are exposed to natural hazards. In December 2017, Decree 151 was issued with a chapter on financial risk management of public assets. A draft stocktaking report on the current state of the public asset databases has been shared with DPAM for review, and further international experience will be shared soon.

Other important work toward public asset insurance includes supporting the MoF on the DRFI agenda as Vietnam continues as 2017 APEC Chair; preparing reports for the APEC finance ministers; collaborating with MoF to finalize a report on DRFI; expanding assistance on fiscal risk management to the National Institute of Finance; and sharing draft materials with MARD and MoF to inform the revision of the disaster risk management law and Decree 94.

Moving forward, the cooperation between the Government of Vietnam and the Program will prioritize operationalizing the new legal instruments, upgrading data infrastructures, and conducting a risk assessment for the insurance of public assets.

Lessons Learned

Experience over the past year has confirmed and enriched the lessons learned over the life of the Program. Specifically, it has shown the need for the following elements in establishing and implementing DRFI plans:

1

GOVERNMENT OWNERSHIP. Active ownership of the agenda by the government is instrumental in fostering progress. It is important to have the support of champions in leadership roles.

2

IDENTIFYING KEY STAKEHOLDERS AND THEIR SPECIFIC RESPONSIBILITIES. Building relationships with several relevant ministries and departments makes it possible to continue engagements despite changes in government and other political challenges. This is also key to mainstreaming DRFI and to developing in-house capacity within government.

3

IDENTIFYING PRIORITIES AND CHALLENGES. Discussing priorities and challenges in the early stages of engagement, often through the development of a multi-year work plan, helps ensure a strategic approach in the support provided.

4

MANAGING POLITICAL CHANGES AND STAFF TURNOVER. These changes can affect or delay the development and implementation of DRFI strategies and plans. It is important to help build in-house capacity within the government to avoid key person risks, to provide an institutional anchor to the agenda through inclusion in key policies and regulations, and to adequately document progress made to ensure continuity.

5

KNOWLEDGE EXCHANGE AND CAPACITY BUILDING FOR GOVERNMENT OFFICIALS. Peer exchanges, training workshops, and targeted technical assistance are key to the sustainability of the DRFI agenda.

6

ANALYTICAL TOOLS FOR INFORMED DECISION MAKING. Tools related to innovative financial instruments and models help countries make sound decisions based on relevant information.

7

ENGAGEMENT WITH SUBNATIONAL GOVERNMENTS AS PART OF A COUNTRY'S DRFI STRATEGY. To effectively manage disaster risks, it is important to clarify the roles and responsibilities of subnational governments and provide technical assistance to support this process.

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In 2012, Switzerland's State Secretariat for Economic Affairs (SECO) and the World Bank (WB) joined efforts to support the financial resilience of middle-income countries vulnerable to the impacts of disasters through the *Sovereign Disaster Risk Finance in Middle-Income Countries* Program. The program provides advisory services to integrate climate and disaster risks in countries' fiscal risk management frameworks and financial planning.

The *Sovereign Disaster Risk Finance in Middle-Income Countries* Program is implemented by the World Bank's Disaster Risk Financing and Insurance Program (DRFIP) team. Established in 2010, the team works in more than 60 countries across the world, advising governments on how best to manage the financial impacts of disasters to better protect their people economies. DRFIP partners with countries to develop and implement tailored financial protection strategies, which bring together sovereign disaster risk financing, agricultural insurance, property catastrophe risk insurance, and scalable social protection programs. These tools help to promote quicker and more resilient disaster response by national and local governments, homeowners, businesses, agricultural producers, and low-income populations.

More information: www.worldbank.org/drfi