

Knowledge Catalog 2009-2019 and Learning



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Global Facility for Disaster Reduction and Recovery

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WORLD
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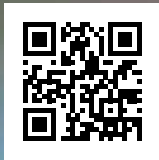
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About this Catalogue

All the publications displayed in this catalog can be found at

[gfdr.org/publications](https://www.gfdr.org/publications)

and are freely available for download and use (with citation).



GFDRR Knowledge and Learning Catalog (2009–2019)

Inside you will find information about the range of knowledge products GFDRR offers, including core operational documents, reports, evaluations, programs & tools, country profiles (including disaster risk and adaptation), post-disaster needs assessment (PDNA) guidelines, videos, and multimedia.

<https://www.gfdr.org/en/publication/knowledge-and-learning-catalog>

REMODELING THE PAST FOR A RESILIENT FUTURE

after shocks

Fault Lines

The Mexico City Earthquakes of 1985 and 2017

p16

Constructing Resilience: The 2010 Earthquakes in Haiti and Chile p38

Aftershocks

Remodeling the Past for a Resilient Future (2018)

This report aims to provide readers with an accessible look at what would happen today if we were to experience some of the iconic disasters of the past and explores how risk modeling can be used to analyze natural events that led to the major disasters of the past. Most of the disasters documented here took place in the developing world, where population growth, rapid urbanization, and climate change are heightened, and the impact of adverse events is exacerbated by the vulnerability of poorer communities. This report makes the case for renewed support to the poorest of the poor.



- A Direct Hit:** San Zenon Hurricane, Santo Domingo, 1930
- When the Rivers Rise:** Thailand Floods, 2011
- The Scary Wind:** Typhoon Wanda, Zhejiang, China, 1956
- Return of the Black Swan:** The Carrington Event, 1859
- Modeling the Future:** From Statistics to Stories to Action



- Fault Lines:** The Mexico City Earthquakes of 1985 and 2017
- Shadow of the Past:** Mount Tambora, Indonesia, 1815
- The Lessons of Vulnerability:** Spitak Earthquake, 1988
- A Fragile Harvest:** Tropical Cyclone Enawo, Madagascar, 2017
- Constructing Resilience:** The 2010 Earthquakes in Haiti and Chile



Core Documents

GFDRR Annual Reports 2014–2018

Bringing Resilience to Scale

These annual reports highlight the results of GFDRR's grants, technical assistance, and knowledge sharing activities achieved during the relevant fiscal year. Each report provides an overview of GFDRR's grant-making activities as implemented in countries in its eight areas of engagement. The report also outlines GFDRR's contribution to the global resilience agenda and its efforts to develop innovative solutions, tools, and analytical products for strengthening the global knowledge base for disaster risk management.



Annual Report 2018

This Annual Report highlights the progress and results achieved during FY18. It provides an overview of grant making activities in six regions and across GFDRR's eight targeted areas of engagement, and a section of Special Features explores various areas of work in greater depth. The report also provides information on the Facility's financial health.

<https://www.gfdr.org/en/publication/annual-report-2018>



GFDRR Annual Report 2017

This report highlights the results achieved during fiscal year 2017. It provides an overview of GFDRR's grant-making activities as implemented in countries in its eight areas of engagement. The report also outlines GFDRR's contribution to the global resilience agenda and its efforts to develop innovative solutions, tools, and analytical products for strengthening the global knowledge base for disaster risk management.



GFDRR Annual Report 2016

This annual report highlights the results of GFDRR's grants, technical assistance, and knowledge-sharing activities in the fiscal year 2016 (FY16). By empowering its many partners and providing clear leadership on the international stage, GFDRR helped make communities in more than 70 countries around the world safer and more prosperous. This report shows that tremendous progress has been made in these efforts, and reveals the momentum—and the challenges—that will animate the years to come.



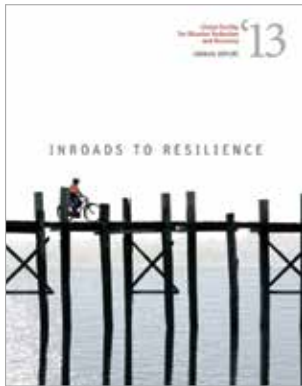
GFDRR Annual Report 2015

This Annual Report highlights the results of GFDRR's grants, technical assistance, and knowledge sharing activities in fiscal year 2015 (FY15). Through its growing program, GFDRR worked to maximize impact and enable countries to design and implement comprehensive approaches to disaster risk management, helping embed resilience directly into development policies and planning.



GFDRR Annual Report 2014

This report highlights the results achieved during fiscal year 2017. It provides an overview of GFDRR's grant-making activities as implemented in countries in its eight areas of engagement. The report also outlines GFDRR's contribution to the global resilience agenda and its efforts to develop innovative solutions, tools, and analytical products for strengthening the global knowledge base for disaster risk management.



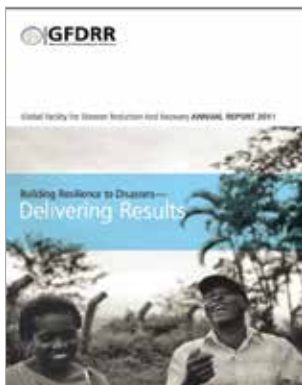
GFDRR Annual Report 2013 **Inroads to Resilience**

The *GFDRR Annual Report 2013: Inroads to Resilience* covers the period July 2012 to June 2013, and has two objectives: to summarize progress achieved in the GFDRR's transition process started in fiscal year 2011-12 (FY12); and to present results according to its new results framework. GFDRR programs involved more than 300 government entities, international organizations, civil society organizations, universities, and private businesses to support disaster risk management in developing countries.



GFDRR Annual Report 2012 **Towards a Resilient Future**

This Annual Report assesses the GFDRR performance in FY 2012 towards its core vision to support vulnerable countries become more resilient to natural hazards. The report provides an overview of progress towards expanding and strengthening global partnerships to coordinate and scale up technical and financial support for national Disaster Risk Management (DRM) and Climate Change Adaptation (CCA); mainstreaming disaster and climate risk management in country development strategies; and assisting countries achieve efficient, effective, and resilient post-disaster recovery.



GFDRR Annual Report 2011 **Building Resilience to Disasters**

This year's annual report features a detailed analysis of the cumulative impact and results GFDRR has achieved over the five-year period since its inception in 2006. Based on advice received from its Consultative Group (CG) over the last year, the analysis presented in this annual report incorporates evidence-based and anecdotal "results stories" during the 2006-11 period, collected and compiled by various regional disaster risk management teams, country offices and GFDRR staff.



GFDRR Annual Report 2007–2010 **Integrating Disaster Risk Reduction and Climate into the Fight against Poverty**

These reports summarize GFDRR's areas of major impacts and use of resources from its inception until FY 2010, and indicate that coming years will be more promising. FY 2010 was a defining moment in the life of GFDRR in becoming a true global knowledge center for DRM and promoting a global partnership to mainstream disaster risk reduction and climate change adaptation for sustainable development. This annual report not only serves as the comprehensive overview of the impact of preceding GFDRR activities for FY 2010, but also serves as the benchmark for present and future role of GFDRR in global DRM and CCA.



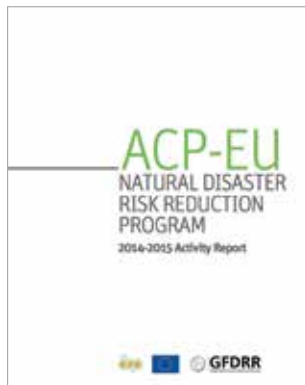
2017–2018 Activity Report
ACP-EU NDRR Activity Report FY2018

The ACP-EU NDRR Program Activity Report highlights the results achieved during Fiscal Year 18 (1 July 2017-30 June 2018). High demand from stakeholders resulted in 40 active projects supporting disaster resilience in 28 countries in FY18, bringing the total program portfolio to 100+ projects supporting over 50 countries. Projects implemented by the ACP-EU NDRR Program have resulted in significant additional investments in disaster risk management.



2015–2016 Activity Report
ACP-EU Natural Disaster Risk Reduction Program

The Africa Caribbean Pacific (ACP) Group of States, the European Union (EU) and the World Bank (WB) established the ACP-EU Natural Disaster Risk Reduction (NDRR) Program to support disaster risk reduction activities in ACP countries. Its operations are financed by an EU grant of €54.5 million to a single-donor Trust Fund managed by the WB-led Global Facility for Disaster Reduction and Recovery (GFDRR). The program has been active in vulnerable countries and regions with the aim of reducing impacts from disasters of all scales and magnitudes. This report summarizes activities and achievement under the ACP-EU Natural Disaster Risk Reduction (NDRR) Program from July 1, 2015 to June 30, 2016.



2014–2015 Activity Report
ACP-EU Natural Disaster Risk Reduction Program

The program, known as the ACP-EU Natural Disaster Risk Reduction (NDRR) Program, has been active in vulnerable countries and regions with the aim of reducing impacts from disasters of all scales and magnitudes. This report summarizes activities under the ACP-EU Natural Disaster Risk Reduction (NDRR) Program for the period under review (November 2013 – June 2015) and provides an overview of achievements.



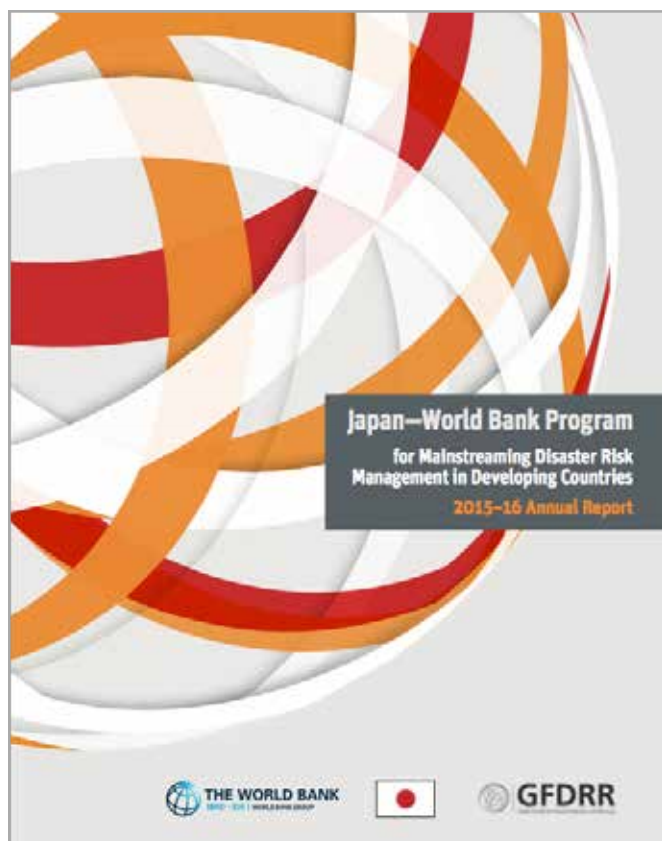
2014–2016 Activity Report
Building Disaster Resilience in Sub-Saharan Africa Program: Result Area 2

This report summarizes the activities and achievements under Result Area 2 of the Building Resilience to Natural Hazards in Sub-Saharan African Regions, Countries and Communities Program: African Regional Economic Communities have DRR coordination, planning and policy advisory capacities operational to support their respective member states and regional and sub-regional programs from August 2014 through June 2016.



2014–2016 Activity Report
Building Disaster Resilience in Sub-Saharan Africa Program: Result Area 5

This activity report summarizes activities of Result Area 5, also known as the Africa Disaster Risk Financing (ADRF) Initiative—referred to as the “ADRF Initiative”, the “Initiative” or “R5”—from its commencement in August 2014 to June 30, 2016. The report gives an overview of the achievements to date and identifies upcoming priorities and challenges.



2015–16 Annual Report Japan–World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries

This annual report covers activities of the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries between April 2015 and March 2016. It was presented at the Third Program Steering Committee Meeting, held in Tokyo, Japan on February 26, 2016. It highlights results achieved by the Program and provides an overview of activities supported by the World Bank DRM Hub, Tokyo through its two interdependent work streams: (i) the Country Program and (ii) the Knowledge Program.

2015–2016 Program Profiles Report Japan–World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries

This annual report covers activities of the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries between April 2015 and March 2016. It was presented at the Third Program Steering Committee Meeting, held in Tokyo, Japan on February 26, 2016. It provides a profile of each Country Program, presenting highlights, overview, activities, coordination and partnerships, and next steps; it also looks at each Knowledge Program, presenting context, project overview, expected outcome, completed activities, coordination and partnerships, related Country Program Projects, and next steps.

2014–15 Annual Report Japan–World Bank Program Mainstreaming Disaster Risk Management in Developing Countries

The Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries (the Program) was established in February 2014 as a partnership between the Ministry of Finance of Japan (MoF) and the World Bank. This annual report covers the period April 1, 2014 to March 31, 2015, and highlights progress and results achieved.



GFDRR Strategy 2018–2021 **Bringing Resilience to Scale**

Disaster risk management is a development challenge. This document presents the seven operating principles underpinning GFDRR's strategy. GFDRR's approach to delivering on its strategy is organized by priority areas of engagement, described here, which support priorities for action outlined in the Sendai Framework as well as contribute to achievement of the Sustainable Development Goals and the Paris Agreement. To advance its mission, GFDRR will continue to build strategic partnerships across the UN system, NGOs, national and sub-national governments, regional organizations, academic institutions, and other communities of practice.



Inclusive Community Resilience **A Strategy for Civil Society Engagement, Community Resilience, and Gender, 2015–2017**

Two main principles guided the development of this 2015-2017 Strategy for Inclusive Community Resilience: (i) to build upon the previous Pilot Strategy by taking into account lessons learned during implementation and how GFDRR's program has evolved, and (ii) to foster a participatory and inclusive process during the design of the operational framework. In taking this Strategy forward, GFDRR will undertake further consultations to develop a concrete work plan and indicators to monitor progress towards the strategy objectives.



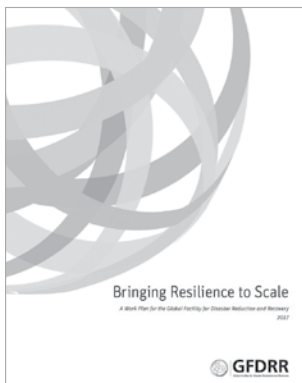
Managing Disaster Risks for a Resilient Future **A Strategy for the Global Facility for Disaster Reduction and Recovery 2013–2015**

This Strategy for the Global Facility for Disaster Reduction and Recovery (GFDRR)–Managing Disaster Risks for a Resilient Future—is set in a context of global consensus on the urgent need to build greater resilience to disasters. Collective action under the International Strategy for Disaster Reduction has played an important role in securing this global momentum. In line with the GFDRR Partnership Charter³, this strategy seeks to build on this opportunity and reaffirms GFDRR's commitment to advance and scale up coordinated financial and technical assistance to disaster prone countries.



2018 Work Plan Bringing Resilience to Scale

This Work Plan articulates how the Facility intends to implement the Strategy 2018–2021 (Strategy) during fiscal year 2018 (FY18). By implementing its vision, GFDRR will continue to support developing countries to implement the Sendai Framework for Disaster Risk Reduction, and contribute to the achievement of the Sustainable Development Goals and the Paris Agreement.



Bringing Resilience to Scale A Work Plan for the Global Facility for Disaster Reduction and Recovery–2017

This Work Plan sets out a detailed program of work for the Global Facility for Disaster Reduction and Recovery (GFDRR) during financial year 2017 (FY17). It provides the basis for prioritization, implementation, and monitoring of GFDRR resources and activities. The Work Plan was presented and endorsed at the 17th meeting of the GFDRR Consultative Group (CG), held in Washington, D.C. on April 27, 2016.

Managing Disaster Risks for a Resilient Future

A Work Plan for the Global Facility for Disaster Reduction and Recovery 2016–2018

The Work Plan 2016-2018 presents a pathway for the Global Facility for Disaster Reduction and Recovery (GFDRR) to scale up efforts to meet the demand of developing countries for enhanced resilience in the face of growing hazards from and exposure to natural disasters and climate change, both well aligned with and supporting the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

Managing Disaster Risks for a Resilient Future

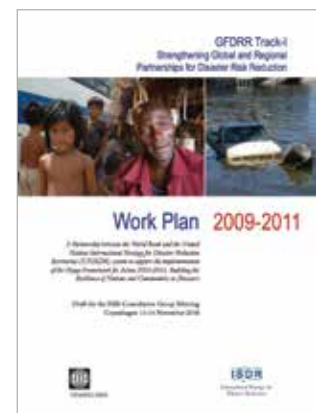
A Work Plan for the Global Facility for Disaster Reduction and Recovery 2015–2017

The Work Plan FY15-17 lays out how the Global Facility for Disaster Reduction and Recovery (GFDRR) will continue to implement its Strategy 2013–2015. GFDRR also aims to scale up efforts to meet the demand of Priority Countries and those of additional countries by supporting activities that influence and leverage country investment programs to improve resilience to climate change and disaster risk management (DRM).

GFDRR Track 1—Strengthening Global and Regional Partnerships for Disaster Risk Reduction

Work Plan 2009–2011

The Fiscal Year 2009-2011 (FY09-FY11) Work Plan of the Global Facility for Disaster Reduction and Recovery (GFDRR) Track-I builds on the experience of FY07 and interim results from FY08. It is based on reviews of the preliminary impact of Track-I deliverables by the Results Management Council (RMC) and the Consultative Group (CG) and related recommendations—in particular, the recognition of the importance of regional and global mechanisms for sustaining efforts in reducing disaster risks in LDCs. The current work plan is for three years, 2009–2011. It includes an outline of expected results for FY09. Detailed work plans will be developed for FY10 and 11.





**Gender Action Plan 2016–2021
Fall 2016 Consultative Group Meeting**

GFDRR is bolstering both its commitment to and capacity for integrating gender issues into its climate and disaster risk management efforts. GFDRR’s gender strategy is an overarching plan that emerges from and is driven by the Inclusive Community Resilience (ICR) program but is applied across the GFDRR portfolio. The plan addresses two critical aspects of gender and Disaster Risk Management (DRM): (i) understanding and addressing the different needs of men and women in DRM investments; and, (ii) promoting women’s empowerment for broader resilience strengthening.



**World Bank Group 2016–2023 Gender Strategy
Gender Equality, Poverty Reduction, and Inclusive Growth**

This strategy builds on the conceptual framework of the *World Development Report 2012: Gender Equality and Development*, which posits that households, markets, and institutions, and the interactions between them, influence gender equality and economic development. The framework focuses on three domains of gender equality: human endowments, economic opportunity, and voice and agency. It focuses on four objectives: improving human endowments, removing constraints for more and better jobs, removing barriers to women’s ownership of and control over assets, and enhancing women’s voice and agency and engaging men and boys. The new strategy also places a stronger emphasis on outcomes and results.



2013 Partnership Charter

The Global Facility for Disaster Reduction and Recovery (GFDRR) is a global partnership program administered by the World Bank Group. GFDRR supports developing countries to mainstream disaster risk management and climate change adaptation in development strategies and investment programs, and improve the quality and timeliness of resilient recovery and reconstruction following a disaster. GFDRR was launched in 2006 to support implementation of the Hyogo Framework for Action 2005-2015 (HFA). In 2015 the Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was adopted. GFDRR now supports the implementation of this framework.

GFDRR Track I—Strengthening Regional and Global Partnerships for Disaster Risk Reduction: A Five-Year Retrospective 2007–2011

After the Hyogo Framework for Action in Kobe in 2005, the World Bank, donor partners, and key stakeholders of the International Strategy for Disaster Reduction (ISDR) system launched the Global Facility for Disaster Reduction and Recovery (GFDRR) as a partnership to support the implementation of the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters. This report provides a five-year retrospective on the experiences and successes of Track I and identifies some pointers for 2013 and beyond. This report focuses only on the period 2007–2011.

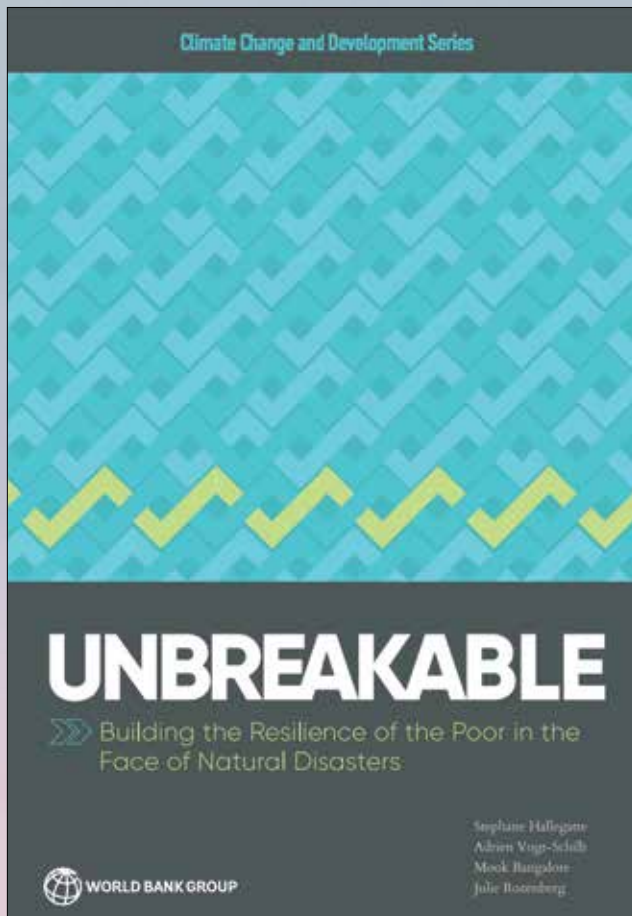
2010 Partnership Charter: Global Facility for Disaster Reduction and Recovery—Committed to Reducing Vulnerabilities to Hazards by Mainstreaming Disaster Reduction and Recovery in Development Strategies

The Global Facility for Disaster Reduction and Recovery (GFDRR) is a partnership of the International Strategy for Disaster Reduction (ISDR) system to support the implementation of the Hyogo Framework for Action (HFA), which is the primary international agreement for disaster reduction. One hundred sixty-eight countries and multilateral organizations, including the World Bank and the United Nations (UN) system, participated in the UN World Conference on Disaster Reduction in Kobe, Hyogo, Japan in January 2005. The HFA's principal strategic goal is to effectively and coherently integrate disaster risk considerations into sustainable development policies, planning, programming, and financing at all levels of government.

GFDRR Partnership Strategy 2009–2012: Reducing Disaster Risks for Sustainable Development

This paper outlines a medium-term strategic framework for the Global Facility for Disaster Reduction and Recovery (GFDRR) and should be considered in the broader context of the increasing global commitments of GFDRR partners to mainstreaming disaster risk reduction and climate change adaptation for sustainable development. It has been developed in accordance with the GFDRR Partnership Charter in response to the outcomes identified at the 4th Consultative Group (CG) meeting in April 8–9, 2008, Washington, DC.

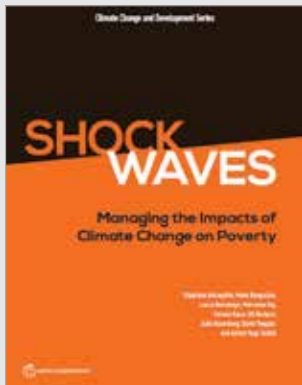
Flagship Reports



UNBREAKABLE

Building The Resilience of the Poor
in The Face of Natural Disasters (2017)

This report looks at the impact of extreme natural disasters and climate change on global poverty. Through new research, it warns that the combined human and economic impacts of extreme weather on poverty are far more devastating than previously understood. This report moves beyond asset and production losses and focuses instead on how natural disasters affect people's well-being. Here, natural disaster risk and losses are measured using a metric that can capture their overall effects on poor and nonpoor people, even if the economic losses of poor people are small in absolute terms.



Shock Waves

Managing the Impacts of Climate Change on Poverty (2016)

This report brings together two overarching objectives of ending poverty and addressing climate change, and explores how they can be more easily achieved if considered together. It examines the potential impact of climate change and climate policies on poverty reduction, and provides guidance on how to create a “win-win” situation so that climate change policies contribute to poverty reduction and poverty-reduction policies contribute to climate change mitigation and resilience building.



Shock Waves - Policy Notes (2016)

A series of three policy notes linked to the Shock Waves report. [Policy Note 1](#) is on Good Development to Manage the Impacts of Climate Change on Poverty; [Policy Note 2](#) is on Policies Can Reduce the Impacts of Climate Change on Poverty—in Agriculture, Disaster Risk Management, and Health; [Policy Note 3](#) is on Scalable Social Protection for Disaster Risk Management and Climate Change Adaptation.



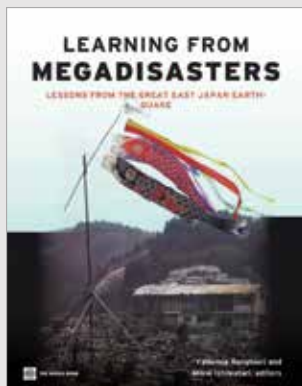
The Triple Dividend of Resilience: Realising Development Goals through the Multiple Benefits of Disaster Risk Management (2015)

This report provides evidence for three types of benefits – or dividends of resilience – that disaster risk management investments can yield: (1) Avoiding losses when disasters strike; (2) Stimulating economic activity thanks to reduced disaster risk; and (3) Development co-benefits, or uses, of a specific DRM investment. While the first dividend is the most common motivation for investing in resilience, the second and third dividends are typically overlooked.



Investing in Resilience (2015)

While much was accomplished in the last decade, disaster losses and exposure to risk continue to grow. 2015 provides a unique window of opportunity to curb this trend. The Sendai Report argues that the practice of disaster risk management is a defining characteristic of resilient societies, and should therefore be integrated—or ‘mainstreamed’—into all aspects of development.



Learning from Megadisasters

Lessons from the Great East Japan Earthquake (2014)

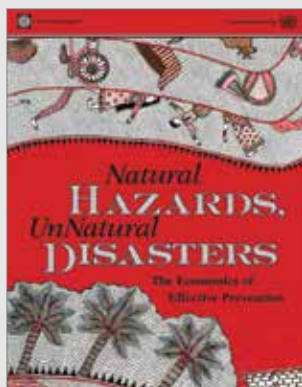
The successes of Japan's disaster risk management (DRM) system as well as the ways in which that system could be improved are reflected in the lessons drawn from the Great East Japan Earthquake (GEJE) and presented in the initial reports from the Learning from Megadisasters project. Japan has an advanced DRM system that has evolved over nearly 2,000 years as the country has coped with natural risks and hazards. The loss of life and property during the GEJE might have been much greater if the nation's policies and practices had been less effective. Following the disaster, these policies and practices were reviewed, and recommendations for improvement were proposed to make DRM even more effective.



The Sendai Report

Managing Disaster Risks for a Resilient Future (2012)

This report argues that the practice of disaster risk management (DRM) is a defining characteristic of resilient societies, and should therefore be integrated into all aspects of development. The report informed the Development Committee at the Annual Meetings 2012, and supported discussion at the Sendai Dialogue—a special event co-organized by the Government of Japan and the World Bank as part of the Annual Meetings program.



Natural Hazards, UnNatural Disasters

The Economics of Effective Prevention (2010)

This World Bank–United Nations joint publication looks at disasters through an economic lens. Every disaster is unique, but each exposes actions—by individuals and governments at different levels—that, had they been different, would have resulted in fewer deaths and less damage. Prevention is possible, and this report examines what it takes to do this cost-effectively. The intensities and frequencies of hazards in the coming decades will change with the climate, and the report examines this complicated and contentious subject, acknowledging all the limitations of data and science.

Areas of Engagement

- ➊ Using Science and Innovation in Disaster Risk Management p18
- ➋ Promoting Resilient Infrastructure p36
- ➌ Scaling Up Engagements for the Resilience of Cities p45
- ➍ Strengthening Hydromet and Early Warning Systems p56
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- ➑ Enabling Resilient Recovery p86

1 USING SCIENCE AND INNOVATION IN DISASTER RISK MANAGEMENT

Reports & Publications



Machine Learning for Disaster Risk Management

A guidance note on how machine learning can be used for disaster risk management, including key definitions, case studies, and practical considerations for implementation. The goal of this document is to provide a concise, demystifying reference that readers, from project managers to data scientists, can use to better understand how machine learning can be applied in disaster risk management projects.



Afghanistan Multi-Hazard Risk Assessment

This report provides a comprehensive multi-hazard risk assessment at the national level, including in-depth assessments for selected geographic areas. The analysis covers flood, flash flood, drought, earthquake, snow avalanche, and landslide hazards, as well as detailed asset and exposure modelling. This publication describes the applied methods and main results of the assessment.



Design for Impact Framework

Integrating Open Data and Risk Communication for Decision-Making (2018)

Advances in technology are generating unprecedented volumes of data. Governments, international agencies, and scientific institutions are increasingly making their data available to planners, civil contingency managers, and responders as open data. Our knowledge, however, of how best to design projects that take advantage of these new data opportunities to create impact is inconsistent and unconsolidated. This report aims to provide project designers with a framework to guide them in developing projects that have a tight handshake between the development of risk data and real-world decision making.



Results in Resilience
Mapping to Build Resilience in Kathmandu – Mapping Local Communities to Reduce Disaster Risk (2018)

The project brought together stakeholders from the Department of Education, the National Society of Earthquake Technology, donor agencies, and civil society. Together, they helped generate usable information through community mapping techniques, and developed applications and tools that inform decision making. The project also helped launch a local innovation lab, the non-profit Kathmandu Living Labs.



Results in Resilience: Using UAVs to Assess Disaster Risk in Fiji & Tonga (2018)

By developing local capacity to generate data on disaster risk, countries can carry out more analysis and make decisions based on evidence. Through the UAV4Resilience project, Fiji and Tonga used high resolution aerial images from UAVs to generate cost-effective baseline mapping data and digital elevation models, and been able to generate better data on disaster risk. This, in turn, has enabled them to carry out stronger analysis and make more informed disaster risk management decisions.



Implementing Nature-based Flood Protection (2017)

Floods are the most frequent and damaging of all natural hazards globally. Between 1994 and 2013, floods accounted for 43 percent of all recorded natural events, affecting nearly 2.5 billion people. The objective of this document is to present five principles and implementation guidance for planning, such as evaluation, design, and implementation of nature-based solutions for flood risk management as an alternative to or complementary to conventional engineering measures.

(Available in French and Spanish)



Results in Resilience
Improving Risk Information in Tanzania (2017)

In Dar es Salaam, an open-source mapping project enables communities to map flood risk, share the data, and protect their city and their livelihoods against future weather disasters. Lessons learned: Involving the community is important for building capacity and accessing local knowledge; and making data freely and openly available scales up its impact.



Solving the Puzzle
 Innovating to Reduce Risk (2017)

A recently launched report, *Solving the Puzzle: Innovating to Reduce Risk*, takes an in-depth look at gaps in key areas of disaster risk management, and provides decision-makers with a roadmap to help bridge them—including new collaborative efforts, targeted investments in data and modeling, and improved risk communication.



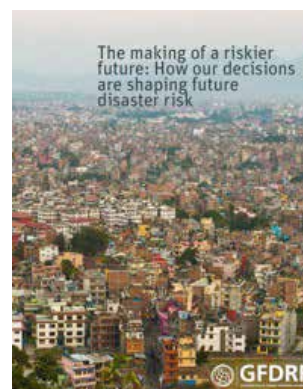
Stories of Impact
 Harnessing Geospatial Data through GeoNode (2017)

With missing or inadequate risk information hindering resilience in many developing countries, GFDRR developed GeoNode, a web-based, open source software that enables users to access, share, and visualize geospatial data. Today, GeoNode is a public good relied on by hundreds of organizations around the world.



Stories of Impact
 Understanding Risk: A Growing Global Community (2017)

In an effort to bridge gaps in risk information and create a self-sustaining culture of resilience, together with partners around the world, GFDRR formed the Understanding Risk (UR) community in 2010. Today, UR is an open and global community of more than 6,500 experts and practitioners in the field of disaster risk assessment, representing a diverse array of organizations in government, academia, civil society, and more from 135 countries. The UR community seeks to better facilitate non-traditional partnerships, encourage innovation, and promote best practices.



The Making of a Riskier Future
 How our Decisions Are Shaping Future Disaster Risk (2016)

The key messages of this report are: (1) that most disaster risk assessment today is static, focusing only on understanding current risks. A paradigm shift is needed toward dynamic risk assessments; (2) global disaster risk is changing extremely fast, due to combined dynamics of hazard, exposure, and vulnerability; and (3) accurate assessment and continuous reevaluation of risk are required to enable effective risk reduction and prevent drastic increases in future losses. Also available as an interactive report (<https://www.gfdrr.org/sites/default/files/publication/Riskier%20Future.pdf>) and an executive summary.



The Making of a Riskier Future (2016)

Most disaster risk assessment today is static, focusing only on understanding current risks. A paradigm shift is needed toward dynamic risk assessments, which reveal the drivers of risk and the effectiveness of policies focused on reducing risk. This infographic examines how global disaster risk is changing extremely fast, due to combined dynamics of hazard, exposure, and vulnerability.



Stories of Impact

Building a Stronger Emergency Management System in the Kyrgyz Republic (2016)

Funding from GFDRR is helping to enhance the emergency response preparedness of the country's civil protection system by setting up crisis management centers (CMCs), improving emergency warning systems, and reducing response time. The emergency information management service is being expanded to cover the entire country and the CMC capacity is also being steadily improved. Lessons learned: Redundancy is key to effective disaster response and continuously increasing counterpart ownership and capacity is critical.



Stories of Impact

Mapping Local Communities to Inform Response and Recovery in Nepal (2016)

Information gathered as part of the Open Cities Kathmandu project proved crucial to informing response and recovery efforts when two high-magnitude earthquakes with an epicenter near Kathmandu struck Nepal in April and May 2015. The project helped create base maps of the Kathmandu Valley. In response to the 2015 earthquakes, over 6,000 volunteers participated in adding data to OpenStreetMap (OSM), mapping over 80 percent of the earthquake-hit zones. Organizations like USAID now incorporate these data into disaster preparedness planning exercises.



Vulnerable to Shocks: Uganda (2016)

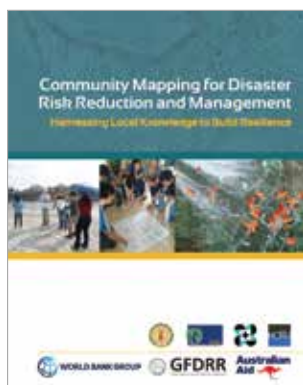
This infographic examines drivers of Uganda's poverty reduction, its vulnerabilities, and proposes recommendations for action. The content is adapted from the study "Welfare, Income Growth and Shocks in Uganda: Understanding Poverty Trends From 2005/6 to 2011/12," by Ruth Hill, Senior Economist in the Africa Region of the Poverty Practice of the World Bank, and Carolina Mejía-Mantilla, Economist in the East Asia Pacific Region of the Poverty Practice of the World Bank.



Stories of Impact

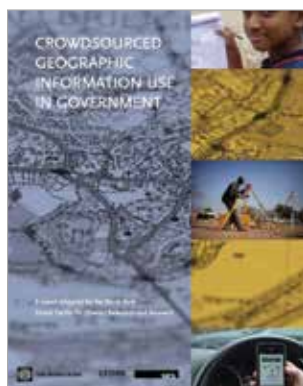
Bringing Disaster Risk Management to Scale in the Eastern Caribbean (2015)

A \$150,000 grant from GFDRR enabled the World Bank, in partnership with other development organizations, to establish a comprehensive program targeting disaster risk management and resilience in the Eastern Caribbean. Lessons learned: In smaller countries with low capacity and limited resources, it is imperative to streamline financing and coordinate support from donors and development organizations; Communities of Practice (CoPs) are an integral tool for building capacity and partnerships, as well as fostering regional collaboration.



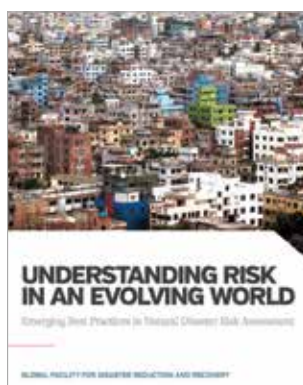
Community Mapping for Disaster Risk Reduction and Management (2014)

This report presents a disaster risk reduction program that provided training and capacity building using OpenStreetMap (OSM) and InaSAFE (free software that produces realistic natural hazard impact scenarios for better planning, preparedness, and response activities) including development of learning materials, assistance in monitoring data edits, and online forum support in the Philippines.



Crowdsourced Geographic Information Use in Government (2014)

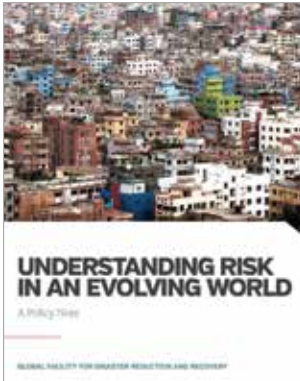
Based on a six-month study of the use of volunteered geographic information (VGI) by government, this publication focuses on government use of information relating to a location, which was produced through what is known as “crowdsourcing”—the process of obtaining information from many contributors amongst the general public, regardless of their background and skill level. The aim of this report is to provide a guide for the successful implementation of VGI in government.



Understanding Risk in an Evolving World

Emerging Best Practices in Natural Disaster Risk Assessment (2014)

This document highlights efforts to create and communicate risk information through a series of case studies spanning 40 countries that showcase emerging best practices, demonstrate how risk assessments are being used to inform DRM and broader development, and highlight lessons learned through these efforts. Taken as a group, these case studies evidence the need for continued investment in accurate and useful risk information and provide recommendations for the future.



Understanding Risk in an Evolving World

A Policy Note (2014)

This Policy Note is founded on, and framed by, the accompanying publication *Understanding Risk in an Evolving World: Emerging Best Practices in Natural Disaster Risk Assessment*. Drawing from the DRM framework proposed in the Sendai report (World Bank 2012), we highlight the role of risk information as the foundation for four key areas of DRM decision making.



World Bank East Asia and Pacific Economic Update 2012, Volume 2: Remaining Resilient (2012)

As the most disaster-stricken region in the world, disaster risk management is essential for supporting sustainable growth in East Asia and the Pacific. Policy makers need to develop practical tools for risk identification and communication, invest in disaster preparedness, and resilient development. This edition of the East Asia Half-Yearly update introduces two new sections—one that looks at selected emerging issues in the region, including Myanmar, covered for the first time in this update. The section on the medium-term regional development agenda focuses on jobs and disaster risk management.

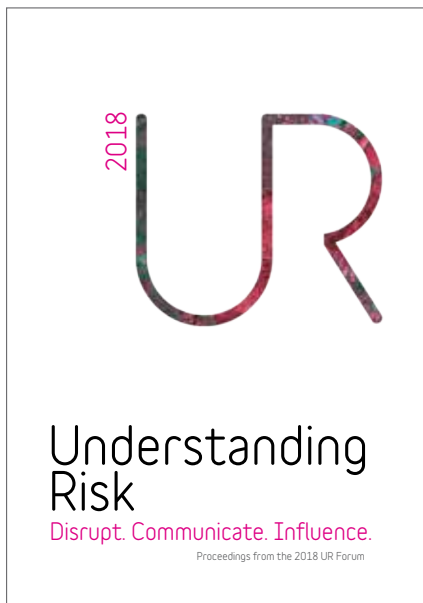


UR2020

Join us in Singapore
for the ten-year
anniversary of the
Understanding Risk
(UR) Forum!

UR2020 will take place 18-22 May 2020 at the Singapore EXPO Convention and Exhibition Centre. More than 1,000 representatives from all over the world are expected to participate. The five-day event is divided into three days for the main conference and two days dedicated to side events led by the community. The Forum features technical sessions, interactive workshops, and multimedia exhibits, as well as space for bilateral meetings.

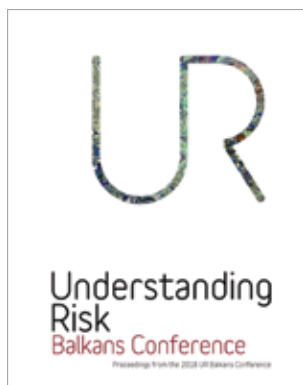
1 USING SCIENCE AND INNOVATION IN DISASTER RISK MANAGEMENT Programs & Tools



UNDERSTANDING RISK FORUM PROCEEDINGS

This report aims to provide readers with an accessible look at what would happen today if we were to experience some of the iconic disasters of the past and explores how risk modeling can be used to analyze natural events that led to the major disasters of the past. Most of the disasters documented here took place in the developing world, where population growth, rapid urbanization, and climate change are heightened, and the impact of adverse events is exacerbated by the vulnerability of poorer communities. This report makes the case for renewed support to the poorest of the poor.





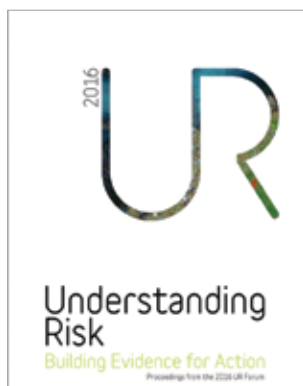
2018 Serbia
Understanding Risk Balkans Conference Proceedings

The first edition of the Understanding Risk Balkans Conference was successfully concluded in Serbia on September 19, 2018. The three-day event brought together more than 350 policy makers, academics, technical experts, and practitioners from both public and private sectors across 46 countries to communicate risk information and share best practices on addressing disaster risk challenges. This document provides summaries of the 12 technical sessions of the conference, including key findings and takeaways.



2016 Austria
Understanding Risk: Proceedings from UR Austria (2016)

During January 20th and 21st of 2016, the city of Vienna hosted the first Understanding Risk Conference for a developed country, URAT. Almost 300 people participated of the two day event where the talent and expertise of Austria's communities, scientists, technologists, NGOs, private sector and government to develop shared understanding of the challenges we face in building long-term resilience to natural hazards; the impacts of climate change; and develop innovative solutions to meet them.



2016 Venice
Understanding Risk: Building Evidence for Action (2016)

The fourth edition of the Understanding Risk Forum (UR2016) was a resounding success, bringing together practitioners from more than 100 countries to meet, learn, and share best practices. This was our most ambitious and global forum yet. More than 2,000 meetings and networking opportunities saw policy makers, risk modelers, urban planners, economists, psychologists, communicators, and others meet in the inspiring setting of the 12th-century Venetian Arsenal.



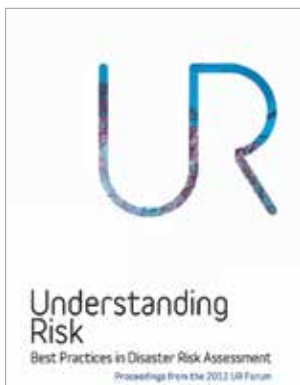
2015 Addis Ababa
Understanding Risk & Finance Conference (2016)

The Understanding Risk and Finance Conference (URf), held on November 17–20, 2015, at the African Union in Addis Ababa, Ethiopia, convened 450 disaster risk management experts and practitioners to discuss and share knowledge on how to mitigate the socioeconomic, fiscal, financial, and physical impacts of disasters in African nations. African policymakers met with members of the private sector, the multilateral community, nongovernmental organizations (NGOs), and academic institutions to discuss the myriad of risks the continent faces, as well as to outline key lessons learned to overcome these challenges. Attendees were encouraged to address risks holistically, as the continent is highly vulnerable to droughts, floods, climate change, forced displacement, political instability, chronic poverty, conflicts, and pandemics.



Understanding Risk: Building Boulder's Resilience (2016)

UR Boulder was a two-day event in October 2015 that convened over 120 experts, practitioners, and community members to discuss challenges in building resilience to climate change and natural hazards in the region. Events included 12 thematic sessions on topics ranging from food security to citizen science, keynote presentations and Ignite Talks from some of Colorado's leading thinkers on these issues, and a TechChallenge that awarded over \$20,000 to local tech innovators working on resilience.



2012 Cape Town

Understanding Risk: Best Practices in Disaster Risk Assessment (2012)

Since the first UR Forum in June 2010, high-impact disasters and extreme events have changed the way we understand disaster risk. UR 2012, held in Cape Town, July 2–6, convened 500 risk assessment experts from more than 86 countries to address this challenge, underscoring the importance of integrating disaster risk management and climate change adaptation as a core element of development. UR 2012 showcased new tools for decision-makers, strengthened regional and global partnerships, and built technical capacity in the Africa region through a series of training events.



2010 Washington, D.C.

Understanding Risk: Innovation in Disaster Risk Assessment

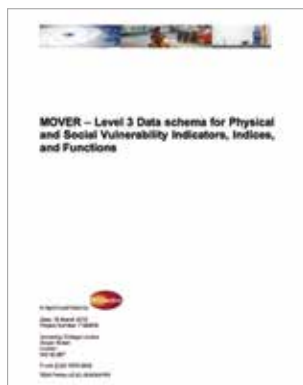
What is risk? Can we measure it? If we understand it, can we manage it better? The Understanding Risk (UR): Innovation in Disaster Risk Assessment conference addressed these important questions. It explored best practices in topics ranging from open source risk modeling to community-based risk assessments. New approaches in risk assessment were showcased, focusing on technological developments and the benefits of inclusive partnerships. It was attended by officials from government agencies, research institutions, multilateral organizations, private sector firms, nongovernmental organizations (NGOs) and community-based organizations involved in disaster risk assessment.

Reports & Evaluations

[Snapshot Performance Evaluation: Understanding Risk Forums \(2017\)](#)

[Understanding Risk: Producing Actionable Information Proceedings from the 2014 UR Forum \(2015\)](#)

[Understanding Risk: Review of Open Source and Open Access Software Packages Available to Quantify Risk from Natural Hazards \(2014\)](#)



Challenge Fund

REPORTS

MOVER: Level 3 Data Schema for Physical and Social Vulnerability Indicators, Indices, and Functions (2018)

This report is the fourth (and last) of a series of reports produced for the fulfilment of the deliverables of the MOVER (Multi-Hazard Open Vulnerability Platform for Evaluating Risk) project. It follows the “MOVER Inception Report,” the “GFDRR-DFID Challenge Fund Expert Workshop-Feedback Report,” and “MOVER – Level 2 Data schemas for Physical and Social Vulnerability Indicators, Indices, and Functions Report.” The main aim of this report is to present the detailed revised MOVER Level 2 and new MOVER Level 3 Vulnerability Data Schemas and associated Scoring Systems.



Challenge Fund: Performance Evaluation of GFDRR-UK Aid Challenge Fund (2018)

This performance evaluation uses Case Study design and mixed methods focused on opensource, DIY remote weather stations (RWSs) in Sri Lanka. The Challenge Fund is a joint initiative of GFDRR and UK Aid and seeks to bridge the gap between technology and on-the-ground user needs in the field of disaster risk identification, thereby building greater disaster resilience. The scope of this evaluation included, but was not limited to, the IWMI Challenge Fund project; it also looked at broader efforts involving this technology in Sri Lanka.



Challenge Fund: A Deep Dive Case Study (2017)

This performance evaluation using Case Study design and qualitative methods focused on the National Institute of Water and Atmospheric Research’s (NIWA) Challenge Fund (CF) Drought Risk Visualization Toolkit (DRVT) project in Solomon Islands, Samoa, and Fiji. Findings showed that NIWA is achieving both access to and use of its DRVT in partner countries. Project results look very likely to be sustained after Phase II ends. Two positive unintended outcomes discovered in this study are an increased confidence by ministry officials using DRVT products and the potential for strengthened intra-governmental cooperation.



Challenge Fund: Phase 1 Results and Learnings (2017)

This internal learning report updates information provided in November 2016 for the SHEAR Annual Review, and includes information from Phase I final reporting and follow-up communications with project leads. The reason for the difference in results reported in this learning document from those previously reported for the SHEAR Annual Review is that not all Phase I projects had concluded at that time. The results in this document take into account updated information and therefore show that the Challenge Fund has performed even better than was cautiously reported back in November.



Open Data for Resilience Initiative (OpenDRI)

REPORTS

Open Data for Resilience Initiative: Policy Note and Principles (2016)

This document describes the approach taken by the Open Data for Resilience Initiative (OpenDRI) team to design and enact impactful and sustainable projects with our partner organizations and communities. It is organized into a series of nine principles, the first 5 of which guide our thinking about how risk information should be created, managed, and used. The final 4 principles shape our relationships with other actors involved in OpenDRI work. Following a short description of the principle, we also provide examples from past OpenDRI projects and suggestions for relevant resources.



Open Data for Resilience Initiative: Field Guide (2014)

This field guide provides planners and program officers with a map of how to implement the collective effort that is OpenDRI. It is aimed at a person who needs to write a strategic vision, craft a budget, hire personnel, and evaluate the impact of open data. OpenDRI unfolds in four phases: scoping the problem, collating existing data, collecting new data, and catalyzing the open data ecosystem.



Open Data for Resilience Initiative: Planning an Open Cities Mapping Project (2014)

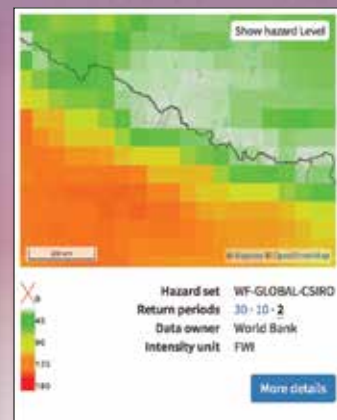
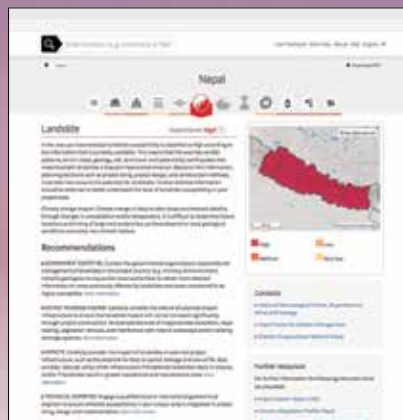
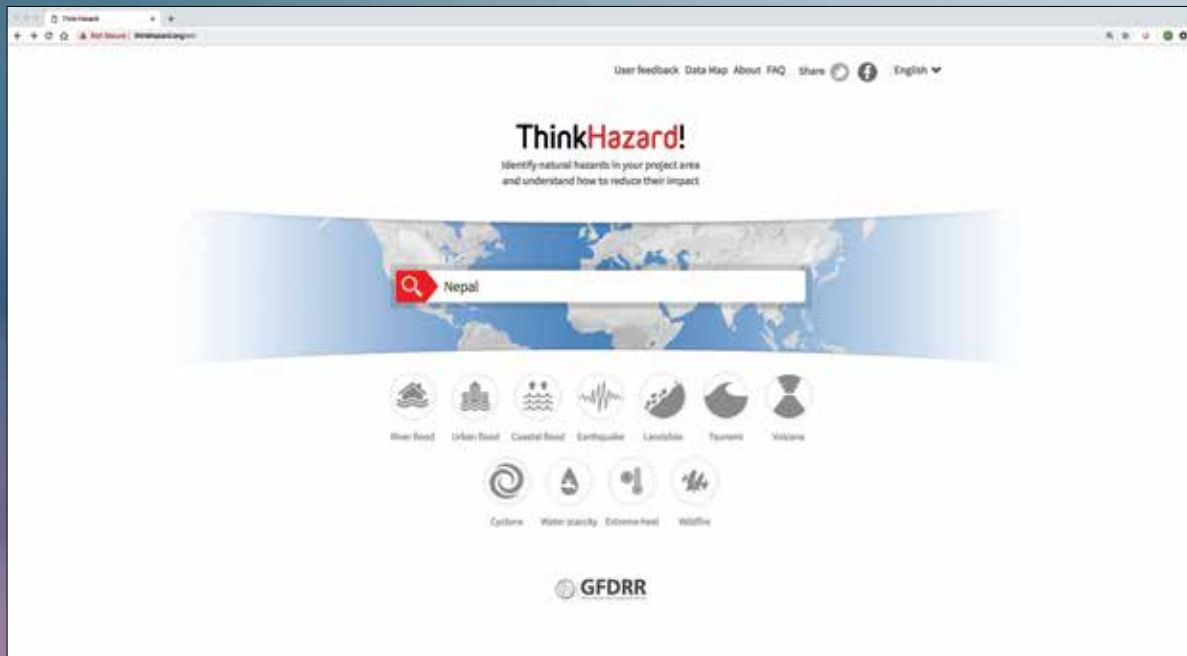
This guide offers a comprehensive understanding of the design and implementation of an Open Cities mapping project—for both practitioners in the field and those interested in a higher-level understanding of the process. The guide's content is based on experience in implementing the initial Open Cities projects in Bangladesh, Nepal, and Sri Lanka as well as on previous mapping project experience. Where relevant, it provides relevant examples from those projects in the text and full case studies at the end of guide.



Open Data for Resilience Initiative: Overview (2013)

This document's goal is to communicate the vision, approach and impact of the Open Data for Resilience Initiative (OpenDRI). Launched in 2011, it is a critical component of the strategy toward helping countries better understand and manage disaster and climate risk. Access to the right information for decision-making is an essential component of building resilience and cuts across all components of this agenda. OpenDRI has developed programs in over 20 countries to achieve this end. This publication documents the successes and lessons learned throughout the course of this work.

ThinkHazard!



ThinkHazard! A New Online Risk Tool from GFDRR (2016)

ThinkHazard! is a new, open source resource pioneered by the Global Facility for Disaster Reduction and Recovery (GFDRR). ThinkHazard! analyzes global, national and local hazard data in a first-of-its-kind digital platform, and is available for all 196 countries across 8 different natural hazards. With this tool, users can have a quick, simple-to-use overview of all hazards in an area of interest.

<http://thinkhazard.org>

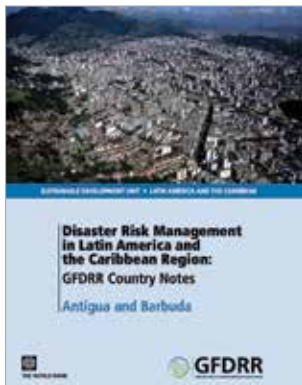
Country Disaster Risk and Climate Adaptation Profiles



REGIONAL REPORTS & COMPILATIONS

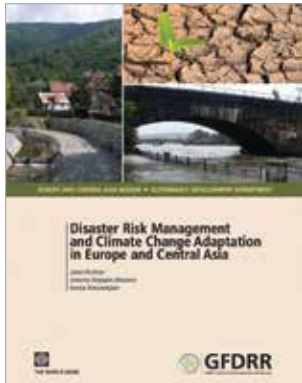
Europe and Central Asia: Country Risk Profiles for Floods and Earthquakes (2016)

The country risk profiles for floods and earthquakes presented in this publication are for countries in the Europe and Central Asia region, and are based on quantitative risk assessments derived using global flood and earthquake models. The objectives are to inform governments of the levels of risk their countries face and facilitate discussions on how they can become more resilient to both current and future risk.



Disaster Risk Management in Latin America and the Caribbean Region: GFDRR Country Notes—Antigua and Barbuda (2010)

Antigua and Barbuda is among the top five countries most exposed to multiple hazards. 100% of the land area and 100% of the population is exposed to two or more hazards. This country note describes the disaster risk management framework for Antigua and Barbuda and presents five priorities for activities under the Hyogo Framework for Action.

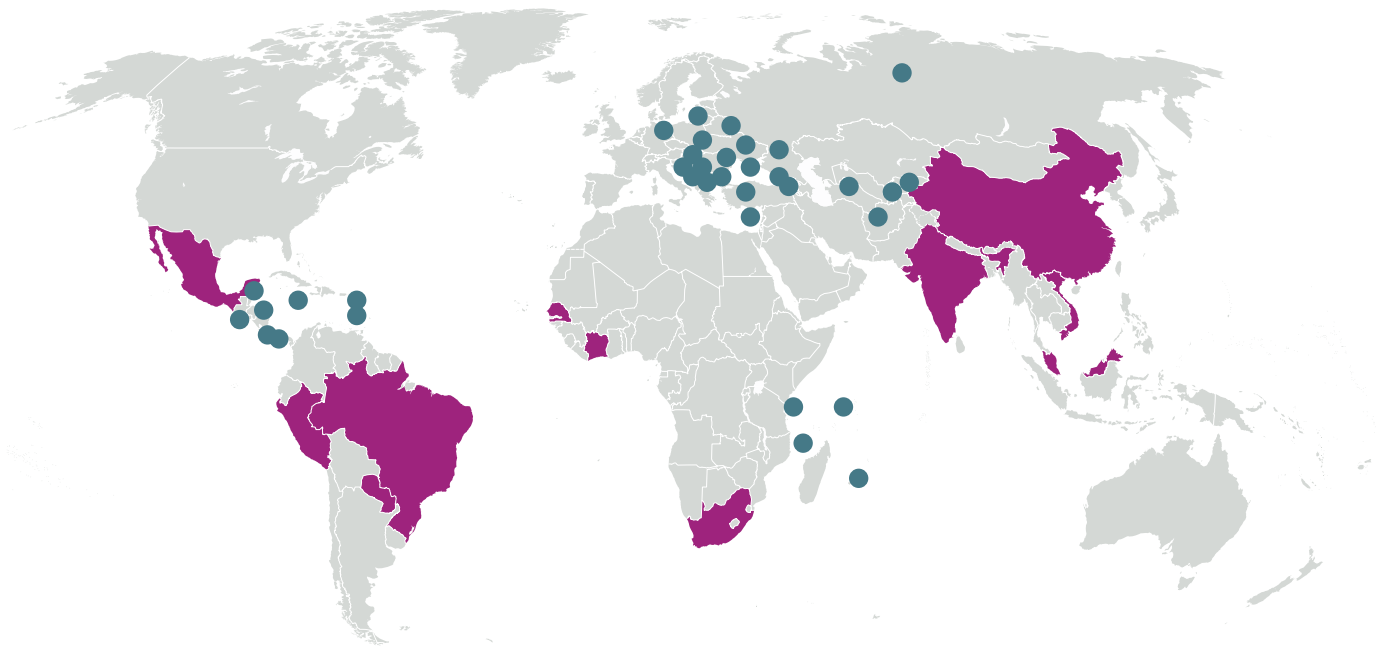


Disaster Risk Management and Climate Change Adaptation in Europe and Central Asia (2008)

As part of climate change adaptation policies and investments, ECA countries need to focus on reducing their vulnerability and planning for measures to mitigate natural disaster risks. This paper reviews the current knowledge on the implications of climate change for extreme weather and analyzes the ability of ECA countries to mitigate and manage the impact of extreme events. It recommends a variety of measures in the areas of financial and fiscal policy, disaster risk mitigation, and emergency preparedness and management to reduce current and future vulnerabilities.

Disaster Risk Profiles (2017)

- | | | | |
|--|--------------------------------|------------------------------------|------------------------------------|
| Afghanistan | Czech Republic | Kyrgyz Republic | Russian Federation |
| Albania | El Salvador | Latvia | Saint Lucia |
| Armenia | Estonia | Lithuania | Serbia |
| Azerbaijan | Georgia | Macedonia | Seychelles |
| Belarus | Greece | Madagascar (EN/FR) | Slovak Republic |
| Belize | Grenada | Mauritius | Slovenia |
| Bosnia and Herzegovina | Guatemala | Moldova | Tajikistan |
| Bulgaria | Honduras | Montenegro | Turkey |
| Comoros (EN/FR) | Hungary | Nicaragua | Turkmenistan |
| Costa Rica | Jamaica | Panama | Ukraine |
| Croatia | Kazakhstan | Poland | Uzbekistan |
| Cyprus | Kosovo | Romania | Zanzibar |



<https://www.gfdr.org/en/disaster-risk-profiles>

Country Profiles & Program Updates (2015)

[Bangladesh](#)

[Burkina Faso](#)

[Colombia](#)

[Costa Rica](#)

[Djibouti](#)

[Ecuador](#)

[Ethiopia](#)

[Ghana](#)

[Guatemala](#)

[Haiti](#)

[Indonesia](#)

[Kyrgyz Republic](#)

[Lao PDR](#)

[Madagascar](#)

[Malawi](#)

[Mali](#)

[Mexico](#)

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[Mozambique](#)

[Pakistan](#)

[Panama](#)

[Papua New Guinea](#)

[Senegal](#)

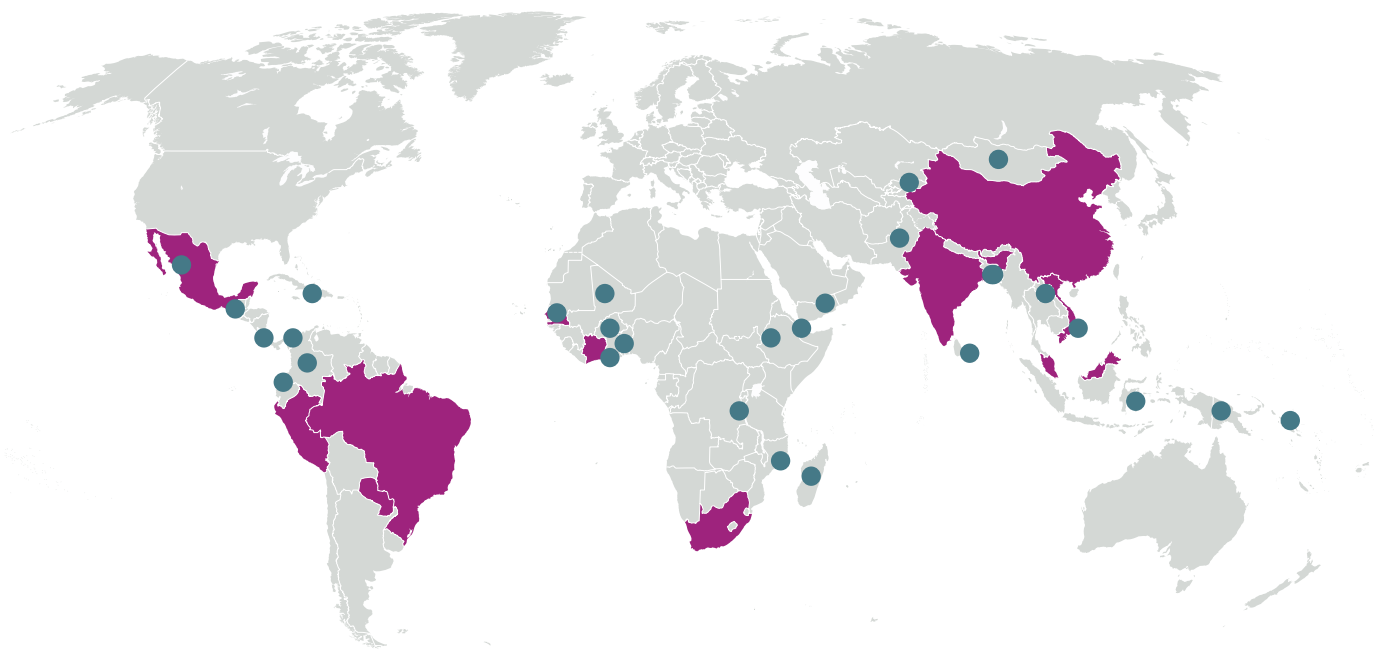
[Solomon Islands](#)

[Sri Lanka](#)

[Togo](#)

[Vietnam](#)

[Yemen](#)



<https://www.gfdr.org/country-program-updates>

Climate Risk & Adaptation Profiles (2011)

[Bangladesh](#)

[Costa Rica](#)

[Djibouti](#)

[Ecuador](#)

[Ethiopia](#)

[Guatemala](#)

[Haiti](#)

[Indonesia](#)

[Kyrgyz Republic](#)

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[Marshall Islands](#)

[Mozambique](#)

[Nepal](#)

[Pakistan](#)

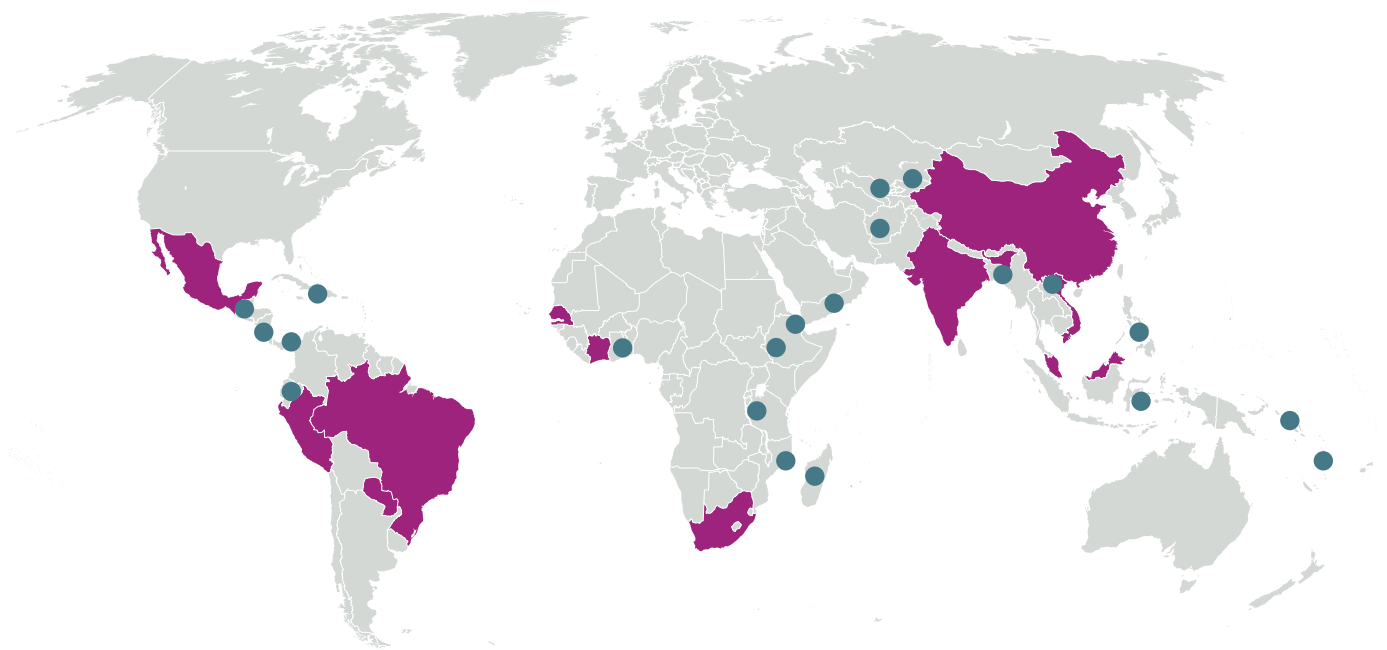
[Panama](#)

[Philippines](#)

[Togo](#)

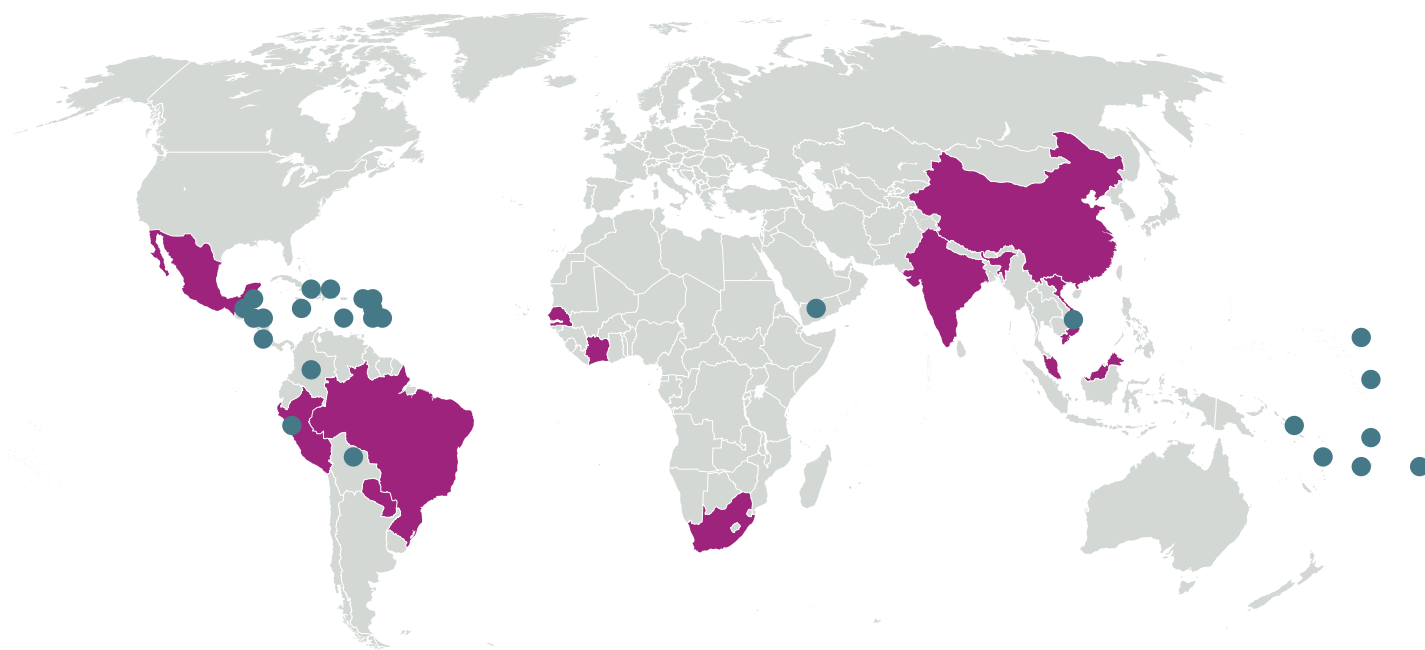
[Vanuatu](#)

[Yemen](#)



Disaster Risk Financing Country Notes

Antigua & Barbuda (2011)	Dominican Republic (2011)	Honduras (2011)	St. Vincent and the Grenadines (2011)
Belize (2011)	Ecuador (2011)	Jamaica (2011)	Samoa (2015)
Bolivia (2011)	El Salvador (2011)	Marshall Islands (2015)	Solomon Islands (2015)
Colombia (2011)	Fiji (2015)	Nicaragua (2011)	Tonga (2015)
Cook Islands (2015)	Grenada (2011)	Peru (2011)	Vanuatu (2015)
Costa Rica (2011)	Guatemala (2011)	St. Kitts and Nevis (2011)	Vietnam
Dominica (2011)	Haiti (2011)	St. Lucia (2011)	Yemen



② PROMOTING RESILIENT INFRASTRUCTURE

Reports & Publications



Tectonic Shift RIFT 2018 Report

This report summarizes the key priorities and findings discussed during the Regional Seismic Risk and Resilience Workshop in Nairobi from September 19-21. Representatives from the six East African Rift countries, together with technical experts from development institutions and academia, convened in Nairobi, Kenya, to assess the risks and enable action to strengthen institutional or policy frameworks for seismic risk management and to build the capacity of selected national and local governments in Sub-Saharan Eastern Africa in the East African Rift Valley.



Managing Risks for a Safer Built Environment in Kenya: Kenya Building Regulatory Capacity Assessment

This report provides an assessment of the building regulatory framework in Kenya, with the strategic objective of supporting the Kenyan government to improve building safety and resilience across the country.



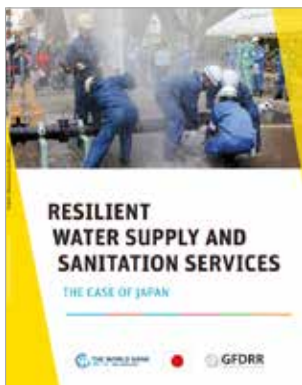
Armenia: Safer Schools Flyer (2018)

This flyer summarizes an assessment of the resilience of Armenia's schools, looking at five areas: hazard assessment, existing education infrastructure, implementation process, the regulatory environment, and the financial environment. It also provides five recommendations to improve the safety of the country's school buildings and students. The study was conducted in collaboration with the World Bank and GFDRR as part of the Global Program for Safer Schools to provide technical support to GPSS Armenia country team.



Project Brief: Resilient Industries (2018)

This Project Brief describes the program to support developing-country governments to increase the resilience of their key industries to climate-related and other natural disasters through a focus on business continuity planning (BCP). It also highlights two upcoming resilient industries case studies: BCP in Japan and BCP in Haiti, and provides a list of additional resources.



Resilient Water Supply and Sanitation Services: The Case of Japan (2018)

Japan has built the resilience of its water supply and sanitation (WSS) services through an adaptive management approach based on lessons learned from past natural disasters. This experience offers key insights for low- and middle-income countries seeking to sustain and build resilience of WSS services. Recommendations for policy makers and utilities seeking to sustain and build resilience of WSS services are provided in five categories: legal and institutional frameworks, systems planning, engineering designs and materials, asset management, and contingency programming.



Results in Resilience: Building Safer Schools in Turkey – Increasing disaster resilience for school-age children (2018)

Turkey is building earthquake-resistant schools across priority provinces over the next three years to ensure access to education to school-aged Syrian children and host communities. Lessons learned: Smart infrastructure investments can be leveraged to fulfill a wide range of community needs, and investments in disaster resilience can help tackle a range of complex development challenges.



Results in Resilience: Fisheries Livelihood Support in India (2018)

The governments of Tamil Nadu and Puducherry have adopted a comprehensive strategy to improve the sustainability and resilience of fisheries in their respective coastal regions. Lessons learned: Co-management bodies are a key tool toward building sustainable fisheries, and policy reforms must come with effective enforcement mechanisms.



Results in Resilience: Gender Inclusion in Post-Disaster Housing in India (2018)

The government of India and the government of the Indian state of Uttarakhand have integrated gender into their disaster response and recovery efforts through the Uttarakhand Disaster Recovery Project. This publication notes that women are disproportionately affected by natural disasters and a strong emphasis should be placed on ensuring gender inclusion in disaster recovery. Lessons learned: Giving women a voice in climate and disaster risk management boosts resilience, and improved data on gender is an important step toward building inclusive resilience.



Results in Resilience: Prioritizing Climate Resilient Transport in Belize (2018)

Collaboration between the government of Belize and stakeholders has improved data availability and reliability on roads to strengthen resilience to weather hazards. New data will protect up to 70 percent of citizens who live near major highways. Lessons learned: Collaborative strategies can combat data scarcity, and organizations that facilitate the decision-making process should participate in technical discussions.



Second Technical Knowledge Exchange on Resilient Transport: Summary Report (2018)

In January, 2018, the second Resilient Transport TKX was organized in Belgrade, Serbia, in partnership with the Belgrade country office, World Bank’s Resilient Transport Community of Practice (CoP) and Green Transport CoP, and GFDRR. To further build the resilient transport community to influence Bank Technical Assistance (TA) and operations, 11 country delegations and 65 participants attended the workshop. The exchange drew upon Serbia’s experience and international experts to showcase innovative approaches and practical advice for facing the challenges when addressing risk management planning for the transport sector.



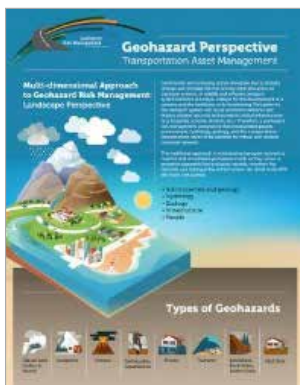
Solutions Brief: Resilient Water Supply and Sanitation Services (2018)

Japan has built the resilience of its water supply and sanitation services through an adaptive approach based on lessons learned from past natural disasters. This experience offers key insights for low- and middle-income countries seeking to reduce their vulnerabilities in essential service provision. This Solutions Brief includes lessons learned from Fukuoka City, Hiroshima City, Kobe City, Kumamoto City, Sendai City, and Tokyo.



Supporting Road Network Vulnerability Assessments in Pacific Island Countries (2018)

Pacific Island Countries are highly vulnerable to climate change and natural disasters, which can have devastating social and economic impacts when critical infrastructure is compromised. Governments need tools to guide investment and policy decisions by considering the effects of climate change and natural disasters. This article highlights the process and lessons learned from the Vulnerability Assessment and Climate Resilient Road Strategy of the Samoan road network and outlines a replicable approach for small island nations with acute capacity challenges that seeks to balance analytical rigor with the need for practicality.



Geohazard Perspective Transportation Asset Management (2017)

Geohazards are increasing across the globe due to climate change and increase the risk of long-term disruption to transport systems. A reliable and efficient transport system/network is a major catalyst for the development of a country and the backbone of its functioning. This infographic illustrates the multi-dimensional approach to geohazard risk management and notes both types of geohazard and issues for transport asset management.



Prioritizing Climate Resilient Transport Investments in a Data-Scarce Environment: A Practitioner's Guide (2017)

In Belize, the World Bank worked with the Government to increase the country's resilience to the impacts of natural hazards by improving key road segments in the road network. The prioritization process and lessons learned are presented and discussed in this Practitioners' Guide, which aims to provide guidance for the prioritization of climate-resilient investments in road infrastructure by presenting a general methodology, a conceptual framework, and a case study of the process that was conducted in Belize.



Resilient Infrastructure Public-Private Partnerships (PPPs): Contracts and Procurement (2017)

Building on the theoretical approaches to the key challenges outlined by Public-Private Infrastructure Advisory Facility (PPIAF), the World Bank's Global Infrastructure Facility (GIF) and the Tokyo Disaster Risk Management (DRM) Hub have initiated a knowledge project on "Resilient Infrastructure PPPs—Contracts and Procurement" to harness the knowledge and expertise gained from PPP projects. This report presents a case study of infrastructure PPP projects in Japan. Japan's experience in structuring resilient infrastructure PPPs offers policy recommendations and insights on how disaster and climate risks can be managed under PPPs.



Results in Resilience: Reducing Multi-Hazard Risks across Tajikistan (2017)

In Tajikistan, the Government is investing in improving infrastructure to connect communities, improve economic outcomes, and achieve a more resilient future for its citizens. Lessons learned: Risk-informed design of critical infrastructure in hazard-prone areas is essential for sustainable development, and community engagement with public works maximizes ownership and reduces the risk of infrastructure failure.



Solutions Brief: Making Schools Resilient at Scale: The Case of Japan (2017)

The experience of Japan in bringing its schools to earthquake-resistant standard offers key lessons for developing countries across policy development, program design, financing modalities, and program implementation. This Solutions Brief presents a program for earthquake-resistant school buildings with lessons learned for other countries.



Solutions Brief: Resilient Infrastructure PPPs: Contracts and Procurement: The Case of Japan (2017)

Japan is highly exposed to natural disaster risks ranging from earthquake, tsunami, cyclones, floods, and landslides to volcanic eruptions. Japan's experience in structuring resilient infrastructure public-private partnerships (PPPs) offers insights on how disaster and climate risks can be managed under PPPs. This Solutions Brief looks at key challenges, policy and legal frameworks for resilient infrastructure PPPs, project structuring, incentive mechanisms, and the role of insurance and financial institutions.



Solutions Brief: Road Geohazard Risk Management: Supporting Countries to Build Disaster Resilient Roads (2017)

Japan's experience in road geohazard risk management offers key lessons for the developing countries. This publication draws out best practices from Japan's experience in addressing the challenges in an integrated manner that ensures institutional coordination, and applying structural and non-structural measures. To support longer-term efforts, the concepts of road geohazard risk management planning can be mainstreamed within government strategies and development plans.



Technical Knowledge Exchange on Resilient Transport (2017)

On May 8–12, 2017, the World Bank Disaster Risk Management (DRM) Hub in Tokyo and the Resilient Transport Community of Practice (CoP) hosted a week-long Technical Knowledge Exchange (TKX) in Tokyo that convened clients and World Bank task team leaders (TTLs) from 16 countries to share concepts and practices on resilient transport, including systems planning, engineering and design, asset management, and contingency programming.



Central Asia Earthquake Risk Reduction Forum Proceedings (2016)

In order to share regional and international experiences on seismic risk management and improve knowledge and understanding of seismic risks on both national and regional scales, the World Bank held a Central Asia: Seismic Risk Session on May 12, 2014 in Almaty, Kazakhstan. During this session, representatives from Kazakhstan, Kyrgyz Republic, Tajikistan and Uzbekistan presented on each of the country's statuses on seismic risk and ongoing reduction and mitigation initiatives, and discussed the needs and challenges that they face.



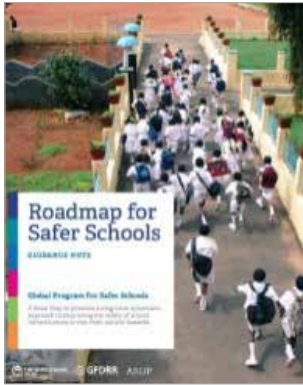
Making Schools Resilient at Scale: The Case of Japan (2016)

Since 2003, when Japan's Program for Earthquake-Resistant School Buildings accelerated, the share of earthquake-resistant public elementary and junior high schools has increased, from under half of schools in 2002 to over 95 percent in April 2015. Japan is sharing knowledge from this program with developing countries through its relationship with GFDRR. As a result of the program, the share of earthquake-resistant public elementary and junior high schools has significantly increased.



Program Profile: Global Program for Safer Schools (2016)

The Global Program for Safer Schools (GPSS) aims to make school facilities and the communities they serve more resilient to natural hazards, and minimize the resulting negative educational outcomes. It works to reduce the physical impact of disasters on school infrastructure and minimize the negative educational outcomes that result from disasters by improving the quality and enforcement of building codes, building institutional capacity for risk reduction, and integrating disaster risk reduction into the design, planning, and construction/retrofitting of schools. This profile looks at GPSS work in Peru and Nepal.



Roadmap for Safer Schools (2016)

This is a Roadmap to promote a long-term systematic approach to improving the safety of school infrastructure at risk from natural hazards. It is focused specifically on school infrastructure (which includes the school site and buildings). For investment opportunities to be effective and have maximum impact at community and national scales, it is important to coordinate this support with investments in school disaster management, risk reduction and resilience in education, and disaster preparedness in other sectors.



ISMEP Success Stories (2015)

This book commemorates 10 years of implementation of the Istanbul Seismic Risk Mitigation and Emergency Preparedness Project (ISMEP), which was prepared by the World Bank and the Government of Turkey, with support from GFDRR, in the aftermath of the devastating 1999 Marmara earthquake. It presents ISMEP objectives and the project profile, which involves the essential components of increasing the preparedness capacity in case of an emergency. This publication presents Turkish and English side by side.



Stories of Impact: Building Stronger Classrooms to Weather Disasters in Mozambique (2015)

The World Bank and GFDRR provided financial and technical assistance to support Mozambique's efforts to develop school safety guidelines for classroom facilities across the country. This project significantly strengthens the government's school expansion policy; as a result, an estimated 100,000 children in Mozambique are now able to remain in school in the aftermath of a disaster. Lessons learned: Joint initiatives lead to stronger results and more progress, and a focused, successful project can make a convincing case for expansion.



Stories of Impact: Reducing Risk and Supporting Recovery in Nepal (2015)

Following the initial April 25 earthquake, GFDRR helped enable the Government of Nepal to conduct a post-disaster needs assessment in collaboration with the Asian Development Bank, EU, Government of Japan, UN, the World Bank, as well as other partners, and with the financial support of Luxembourg. Lessons learned: A government-led assessment can lead the way to a strong recovery and reconstruction process, and vulnerable countries need to be ready in advance for when disaster strikes.



Stories of Impact: Disaster-Proofing the Transport Sector in Vietnam (2014)

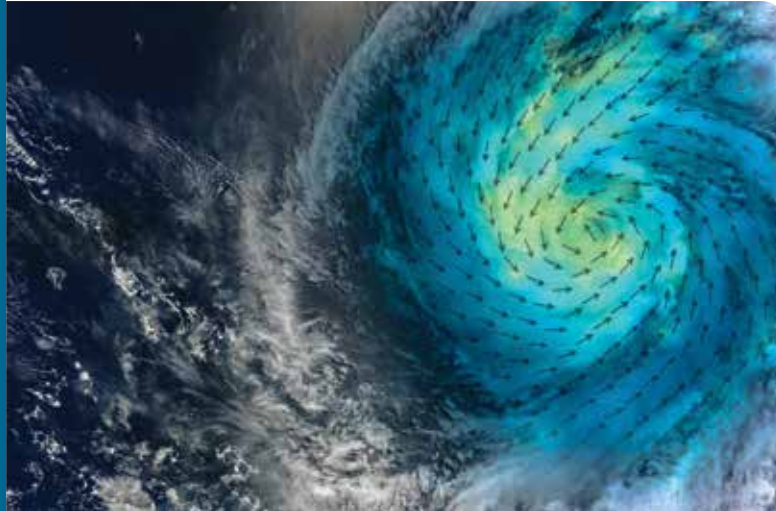
The government of Vietnam, with support from GFDRR and the World Bank, has made important strides in building the resilience of the transport sector against risk from natural disasters and climate change. The country has been working to protect vulnerable communities and minimize economic losses by increasing the resilience of rural roads, and ensuring continued connectivity during floods.



Stories of Impact: Protecting School Infrastructure against Earthquake Risks in Peru (2014)

GFDRR is working to strengthen Peru's structural and functional conditions of school infrastructure and reduce seismic vulnerability. Next steps include local men and women being trained to maintain rural roads, enabling them to earn extra income while making the roads more resilient for the rainy season. The routine maintenance, which includes planting trees for shoulder slope protection, minimizes risk of damage during future floods and creates a sense of shared ownership of the road.

STRENGTHENING HYDROMET AND EARLY WARNING SYSTEMS



Weathering the Change

How to Improve Hydromet Services in Developing Countries

Authors

David P. Rogers
Vladimir V. Tsirkunov
Haleh Kootval
Alice Soares
Daniel Kull
Anna-Maria Bogdanova
Makoto Suwa



Learn more in

*Weathering the Change: How to Improve Hydromet Services
in Developing Countries*

3 SCALING UP ENGAGEMENTS FOR THE RESILIENCE OF CITIES

Reports & Publications



City Resilience Program: Can Tho (2018)

CRP facilitates a dialogue between city officials and private investors with the aim to organize and structure a fair and transparent process of disposition of development rights in the high-potential areas of Can Tho's urban core. This process will entitle private investors to cover a portion of area-wide infrastructure upgrades, flood-protective measures and resettlement costs. This publication looks at opportunities along with achievements and next steps.



City Resilience Program: Capital Mobilization Toolkit (2018)

The City Resilience Program (CPR) provides for a structured, three-phased engagement process to analyze the participating city's potential for private sector financing and to prepare a concrete capital investment plan. The aim of CRP is to catalyze a transparent pipeline of well-prepared and bankable investment opportunities and improve access for private and institutional investors to crowd into new markets. In this sense, CRP seeks to act as the bankers of the city and facilitate strategic investments that address the vulnerabilities and risks faced by cities in a holistic way.



City Resilience Program: Program Brief (2018)

This publication provides an overview of the City Resilience Program (CRP). CRP aims to catalyze a transparent pipeline of well-prepared and bankable investments to enhance urban resilience, and to improve access for private and institutional investors to crowd into new markets. The program is an effort to assist city governments to build greater resilience to climate and disaster risks.



City Resilience Program: Progress and Achievements (2018)

The Progress and Achievements Brief describes the City Resilience Program (CRP) approach and provides updates on program milestones since June 2017. Thirty active city engagements are under way, and 11 cities have been selected for targeted market testing and capital planning exercises to identify and structure priority investments with private sector participation.



City Resilience Program: Technical Excellency for City Resilience (2018)

In order to consolidate and streamline technical support across sectors, the City Resilience Program convenes a number of technical working groups that engage across the wide range of sectors—including infrastructure, governance and systems, smart city technologies, and finance—that comprise urban resilience. The working groups provide ongoing technical advice and implementation support to project teams engaged in the cities, providing input to project design to ensure that city-level investments integrate best practices and innovation, and attain the highest standard in terms of quality, scope, and comprehensiveness.



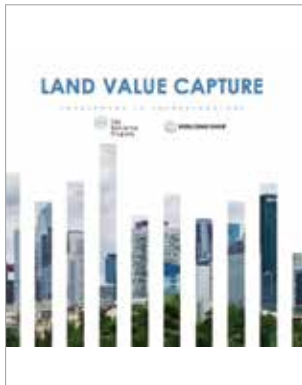
Converting Disaster Experience into a Safer Built Environment: The Case of Japan (2018)

This report describes Japan's incremental approach to developing, implementing, and facilitating compliance with building regulation over many decades. It explains Japan's unique path to developing a policy and legal framework as well as compliance mechanisms that grow out of this framework. The lessons this report highlights are relevant for policy makers, building governance practitioners, and project managers in developing countries who are interested in creating a safer built environment.



Credit Enhancement Practices: Part of the City Resilience Program's Capital Mobilization Toolkit (2018)

This publication defines credit enhancement practices in the context of the City Resilience Program. A general overview of these practices defines this financial instrument and notes its main objective, main function, and customary use. In most instances credit enhancement is a complex structured finance transaction requiring strong knowledge and financial capacity of the guaranteeing institution. The publication reviews benefits, covered risks, and forms of credit enhancement in infrastructure finance. It provides a case in focus illustrating partial credit guarantees. Credit enhancement practices are demonstrated with sample transactions from six countries or regions; examples of global credit enhancement facilities are provided.



Land Value Capture: Part of the City Resilience Program's Capital Mobilization Toolkit (2018)

This publication defines land capture value (LVC) in the context of the City Resilience Program. After introducing the concept of LVCs, it presents a range of mechanisms used by the public sector to capture land value gains and considers economic opportunities for local development. A detailed appendix provides selected LVC instruments including negotiated exactions, impact fees, leveraging public assets, sale of developmental rights, land pooling/readjustment, land value tax, betterment levies, and tax increment financing.



Public-Private Partnership: Part of the City Resilience Program's Capital Mobilization Toolkit (2018)

This publication defines public-private partnerships (PPPs) in the context of the City Resilience Program. It describes sample PPP structures and provides details of six PPP case studies: the Kigali Bulk Water Supply Project, the Bucharest Water and Sanitation Project, the New Cairo Wastewater Plant Project, the West Bank & Gaza Solid Waste Management Project, the Urban Solid Waste Management in Minas Gerais, and the Berhampur Solid Waste Management (not operative).



Results in Resilience: Comprehensive Urban Resilience Master Plan for Beirut – A roadmap for a resilient future (2018)

The Comprehensive Urban Resilience Master Plan for Beirut will provide city authorities with a strategy for addressing the city's vulnerabilities to shocks and stressors. Lessons learned: Engagement with a wide range of stakeholders is critical to getting a full picture of resilience gaps and challenges, and resilience planning must be viewed as a "living framework" that responds to evolving risks and hazards.



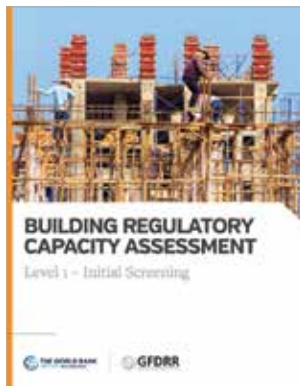
Results in Resilience: Open Cities Kathmandu Project (2018)

In earthquake-prone Nepal, the government has implemented the Open Cities Kathmandu Project, which builds seismic resilience by training civilians to map local areas. The project brought together multiple stakeholders to create usable information through community mapping techniques, applications, and tools that inform decision making. It also helped launch a local innovation lab, the nonprofit Kathmandu Living Labs. Government involvement can provide legitimacy for disaster risk management and urban planning projects, and technology and data projects must be long-term endeavors.



Results in Resilience: Urban Wetlands Management in Colombo (2018)

In response to devastating floods, the government of Sri Lanka has prioritized urban wetlands management in the Sri Lankan capital Colombo as a key pillar of its climate and disaster resilience strategy. Lessons learned: Clearly identifying and measuring co-benefits can present a strong case for urban wetlands management, and robust decision-making methodologies can handle uncertainty and support decision-making.



Building Regulatory Capacity Assessment Level One: Initial Screening (2017) Building Regulatory Capacity Assessment Level Two: Detailed Exploration (2017)

The Building Regulatory Capacity Assessment offers cities, as well as project managers working with development agencies, a new resource to assess building and land use regulatory systems, and facilitate the collection of critical information about the building regulatory framework in any given city or country. The assessment identifies critical gaps, and provides the necessary information to develop a baseline for formulating technical assistance to clients, as well as drawing findings that can be used to determine areas for improvement and investment.

Level 1: Initial Screening. <https://www.gfdr.org/sites/default/files/publication/building-regulatory-capacity-assessment-level-1-2017.pdf>

Level 2: Detailed Exploration. <https://www.gfdr.org/sites/default/files/publication/building-regulatory-capacity-assessment-level-2-2017.pdf>



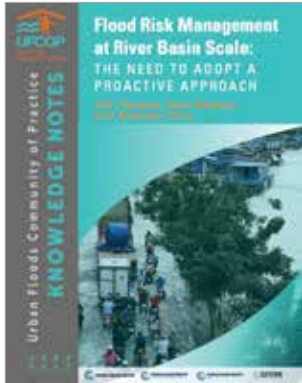
City Resilience Program: Brochure (2017)

The City Resilience Program (CRP) aims to consolidate the World Bank Group's city-level engagements across sectors by providing a platform for resilience- building investments with clients in areas of infrastructure, governance and systems, and finance. In addressing all of these elements, CRP seeks to catalyze a shift from a more siloed operational approach to a more comprehensive and ambitious approach that incorporates multidisciplinary packages of technical and financial services to build resilience. It also aims to move beyond traditional IDA and IBRD financing envelopes by raising other sources of capital.



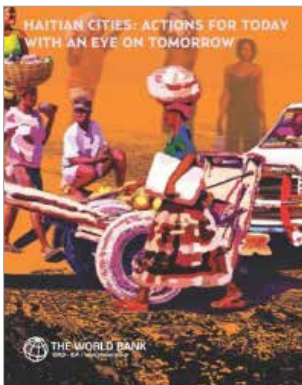
City Resilience Program: Profile (2017)

The development objective of the City Resilience Program is to catalyze a shift from a primarily siloed, single-stream city-level operations approach to longer-term, more comprehensive, multidisciplinary packages of technical and financial services, building the pipeline for “Bankable” projects at the city level that, in turn, build resilience. The program will build on the extensive wealth of experience from active and past technical assistance engagements and lending, in order to support project teams in delivering greater value to cities.



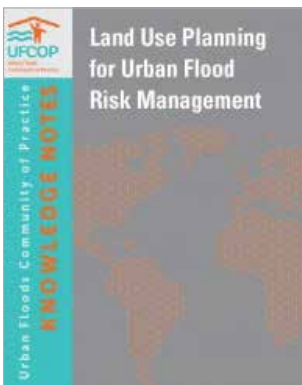
Flood Risk Management at River Basin Scale: The Need to Adopt a Proactive Approach (2017)

This Knowledge Note focuses on flood risks (especially river flood risks) to provide guidance to government officials, specialists, and other stakeholders across various disciplines involved in flood risk management. It discusses flood management options that can be implemented as part of a proactive approach, to avoid the disasters that may result from a “wait and see” approach. It describes the role of flood hazard and flood risk mapping in decision making and explores the distinct roles and comparative advantages of structural and nonstructural measures in managing flood risk and the data requirements of numerical simulation models.



Haitian Cities: Actions for Today with an Eye on Tomorrow (2017)

To better understand the factors that constrain the sustainable and inclusive development of Haitian cities, this Urbanization Review organizes the challenges along three dimensions of urban development, namely planning, connecting, and financing. To respond to these challenges, the Urbanization Review proposes three broad strategies, summarizes policy recommendations and puts forward specific actions that can be taken in the short, medium, and long terms, distinguishing between high-, medium-, and low-priority actions, as well as identifying the institutions leading the actions.



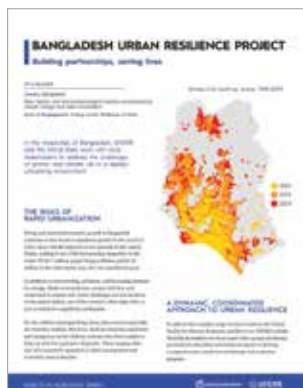
Land Use Planning for Urban Flood Risk Management (2017)

This Knowledge Note outlines the key land use principles that guide land use planning for flood risk management, presents an overview of land use solutions for managing flood risk, and identifies the challenges to developing and implementing flood risk-sensitive land use plans and highlights common barriers faced by decision makers and practitioners. Finally, the note ends with conclusions and offers recommendations for policy makers and practitioners.



Resilient Housing for Resilient Cities (2017)

This infographic presents the issue of establishing resilient housing for resilient cities, noting that there is a need to rebalance housing policies. It examines some solutions for cities and governments to ensure that housing is both resilient and affordable, and that home is a safe place for all their residents.



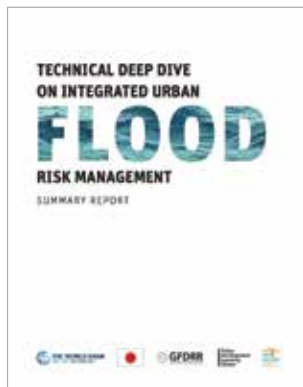
Results in Resilience: Bangladesh Urban Resilience Project (2017)

In the megacities of Bangladesh, GFDRR and the World Bank work with local stakeholders to address the challenges of seismic and climate risk in a rapidly urbanizing environment. To address this complex range of issues head-on, the Global Facility for Disaster Reduction and Recovery (GFDRR) and the World Bank worked over three years with a group of national government authorities and technical experts to develop a comprehensive, multi-sectoral disaster risk reduction program.



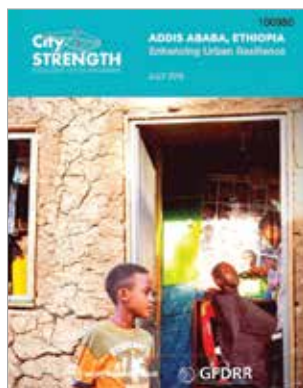
Solutions Brief: Transforming Disaster Experience into a Safer Built Environment: The Case of Japan (2017)

Japan’s experience in increasing the safety of the built environment through an incremental, context-specific approach to building regulation offers key lessons for developing countries seeking to mitigate disaster risk. Drawing on experience with successive earthquakes that have driven the incremental improvement of Japan’s building code, the report highlights 10 lessons from Japan for policy makers, building governance practitioners, and project managers in developing countries.



Technical Deep Dive on Integrated Urban Flood Risk Management (2017)

This is a summary report of the first Technical Deep Dive on Integrated Urban Flood Risk Management that took place on April 18–21, 2016. The workshop was co-organized by the World Bank Disaster Risk Management Hub, Tokyo, and the World Bank Tokyo Development Learning Center, in partnership with the government of Japan, the Urban Floods Community of Practice, and GFDRR. It offered firsthand knowledge-exchange opportunities for clients and World Bank staff from multiple countries, included expert presentations, and highlighted the identification and mitigation of flood risks as important means of safeguarding communities.



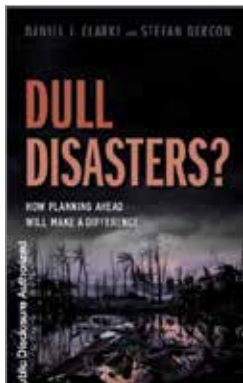
Addis Ababa, Ethiopia: Enhancing Urban Resilience (2016)

In February 2015, Addis Ababa invited a team of specialists from GFDRR and the World Bank Group to implement the CityStrength Diagnostic in close collaboration with local officials, technical staff, and stakeholders. The objective of this publication is to share the findings of the diagnostic and the priority actions and investments agreed with local leaders. It presents the most relevant and actionable information that emerged from the diagnostic process.



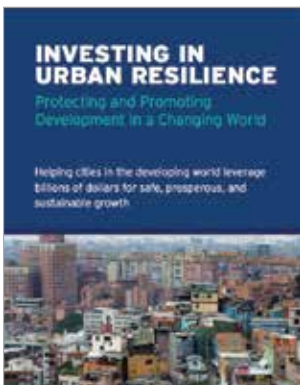
Program Profile: Building Regulation for Resilience (2016)

The Building Regulation for Resilience program, an integral part of the World Bank’s broader Resilient Cities agenda, seeks to develop a new stream of activities to increase regulatory capacity and in turn promote a healthier, safer, and less risky built environment in low- and middle-income countries. By leveraging good practice in building regulation as part of a strategy to reduce both chronic risk and disaster risk, it will set developing countries on the path to effective reform and long-term resilience.



Dull Disasters: How Planning Ahead Will Make A Difference (2016)

This book lays out the key problems that can cause extreme natural events to turn into natural disasters; takes the reader through a range of solutions that have been implemented around the world to address these problems; provides an overview of what works and what does not based on the evidence; and presents a framework that ties all of this together. This book aims to offer a fresh perspective, drawing various strands together for the first time, including the crucial issue of how disasters are financed, which is often overlooked.



Investing in Urban Resilience: Protecting and Promoting Development in a Changing World Brochure (2016)

By 2030, without significant investment to improve the resilience of cities around the world, climate change may push up to 77 million urban residents into poverty. Those are the findings of a new report by the World Bank and GFDRR released in advance of the United Nations Conference on Housing and Sustainable Urban Development (or Habitat III).



The Role of Green Infrastructure Solutions in Urban Flood Risk Management (2016)

With adverse impacts of floods growing, interest in a more integrated approach to urban flood risk management is growing as well. Green infrastructure (GI) solutions have emerged as a key component of this integrated approach. This Knowledge Note highlights the impact of floods on the urban poor. It includes case studies and recommendations on how to implement GI solutions. It also considers some impediments to implementation and illustrates how they might be addressed.



Stories of Impact: Making Senegal's Cities More Flood-Resilient (2016)

Two GFDRR and World Bank–supported projects have reduced vulnerability by building the disaster risk management of local communities—with equal participation of men and women in disaster planning as the key component. The project has resulted in more than 300 cyclone shelters so far, with 226 maintenance committees and 149 village-level emergency-response task forces that comprise both women and men.



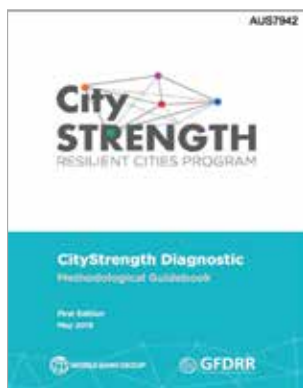
Stories of Impact: Making Senegal's Cities More Flood-Resilient (2016)

A GFDRR-supported PDNA helped pave the way for the government's Storm Water Management and Climate Change Adaptation Project (PROGEP), which aims to improve sewage and drainage infrastructure in urban areas. The project will help to consolidate Senegal's risk management capacity. Lessons learned: Make use of natural waterways and gravitational drainage to address flooding, and protect low-lying areas that are susceptible to flooding from informal settlement; community investments can help integrate drainage networks into urban areas.



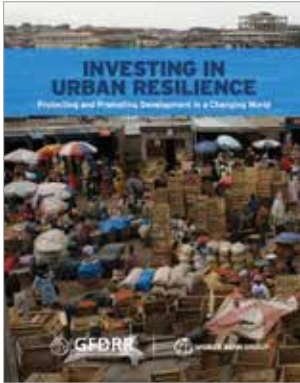
Building Regulation for Resilience: Managing Risks for Safer Cities (2015)

This report presents key lessons, experiences, and challenges to progress in building regulatory capacity for disaster risk reduction, and includes illuminating case studies of successes and failures. It sets forth practical measures, grouped into seven major priorities, to create a new momentum for bridging the implementation gap. Under the proposed agenda, the international community has an opportunity to leverage regulatory governance as a means of proactively protecting populations, avoiding disasters, and encouraging sustainable and resilient urban development.



CityStrength Diagnostic: Methodological Guidebook (2015)

The CityStrength Diagnostic was developed to help World Bank staff apply a new holistic approach to urban resilience to operations. It was designed to help facilitate a dialogue among stakeholders about risks, resilience, and the performance of urban systems. The CityStrength Diagnostic results in the identification of priority actions and investments that will enhance the city's resilience as well as increase the resilience-building potential of planned or aspirational projects. It promotes a holistic and integrated approach that encourages cross-sectoral collaborations to more efficiently tackle existing issues and to unlock opportunities within the city.



Investing in Urban Resilience: Protecting and Promoting Development in a Changing World (2015)

This report by the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR) explores the rationale for increasing investment in the resilience of cities and their citizens to natural disasters and climate change, recognizing that doing so will also help them cope with a broader range of shocks and stresses. It highlights the need and potential for investing in urban resilience in low- and middle-income countries, and looks at how cities can take action to build resilience, how the World Bank can help—and how, by investing together, we can protect hard-won development gains and create a safer, more prosperous future.



Program Profile: Resilient Cities (2015)

The Resilient Cities Program is a multi-year initiative to help cities strengthen their ability to prepare for and adapt to changing conditions, and to withstand and recover rapidly from disruptions related to climate change, natural disasters, and other systemic shocks. It aims to help cities adapt to a greater variety of changing conditions and withstand shocks as they grow increasingly vulnerable to natural hazards.



Stories of Impact: Strengthening Urban Resilience in Bangladesh (2015)

Bangladesh's path-breaking Urban Resilience Project, the product of a collaborative effort between the government, the World Bank, and GFDRR, equips key government agencies with state-of-the-art emergency management facilities and improves construction permitting processes. Lessons learned: Managing disaster risk and promoting urban resilience requires the engagement of a wide variety of experts, and multi-stakeholder consensus building is a long-term process that requires sustained support.



Stories of Impact: Urban Wetlands: A New Model for Urban Resilience in Colombo (2015)

In response to the May 2010 flood, the government of Sri Lanka sought technical and financial assistance from the Global Facility for Disaster Reduction and Recovery (GFDRR) and the World Bank Group to address the flood risk in the metropolitan capital with a population of more than 2 million. The Government is in the process of creating an urban wetlands system that will act as natural retention areas as well as provide recreational and open space areas to residents.



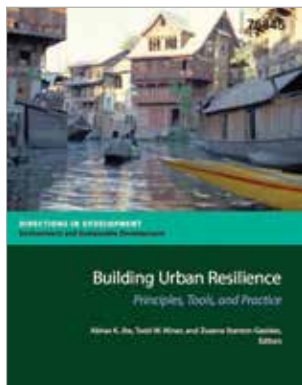
Can Tho, Vietnam: Enhancing Urban Resilience (2014)

In June 2014, a team of specialists from the GFDRR and the World Bank Group worked with stakeholders in Can Tho to identify the priority actions and investments that will enhance the city's resilience to the interlinked current and future challenges of chronic seasonal flooding, periodic flood disasters, riverbank erosion, saltwater intrusion, possible land subsidence, economic transition, and rapid urbanization. They explored options to transform planned or aspirational projects into initiatives that will also enhance the city's resilience.



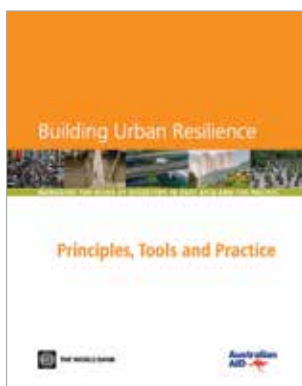
Stories of Impact: Enhancing Seismic Preparedness in Istanbul (2014)

Istanbul is highly prone to earthquakes. The city's high population, as well as commercial and industrial density, mean that frequent earthquakes can cause significant economic losses, damage, and human suffering. To protect the city from this risk, in 2005, the Governorship of Istanbul, with support from the World Bank and GFDRR, launched a comprehensive program to help the city prepare for and respond to earthquakes. Lessons learned: Setting up a strong, highly knowledgeable local team is key to successful project implementation; and increasing public awareness is critical to build public support for upgrading schools.



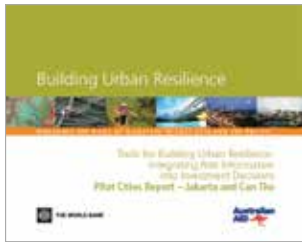
Building Urban Resilience: Principles, Tools and Practice (2013)

Cities face heavy losses of life and property from disaster unless governments take proactive measures. Building Urban Resilience is a practical guide for city planners and other practitioners on how to avoid the mistakes of the past when including disaster resilience in urban development. This handbook is a resource for enhancing disaster resilience in urban areas. It summarizes the guiding principles, tools, and practices in key economic sectors that can facilitate incorporation of resilience concepts into the decisions about infrastructure investments and general urban management that are integral to reducing disaster and climate risks.



Building Urban Resilience: Principles, Tools and Practice—Managing the Risks of Disasters in East Asia and the Pacific (2012)

This handbook is a resource for enhancing disaster resilience in urban areas. It summarizes the guiding principles, tools, and practice in key economic sectors that can facilitate the implementation of resilience concepts into decisions over infrastructure investments and general urban management. Resilience increases preparedness and the capacity to respond to a disaster and swiftly recover from its impacts. It has to be part of everyday urban development, medium- and long-term investment and planning, urban governance and hazard management. This report makes recommendations on how to enhance resilience, particularly in critical infrastructure and the social realm.



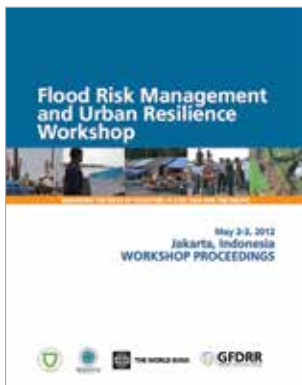
Building Urban Resilience: Tools for Building Urban Resilience: Integrating Risk Information into Investment Decisions: (2012)

This report explores practical approaches to building urban resilience, focusing tools and methodologies that can facilitate the use of risk information in public infrastructure investment and urban management decisions as integral elements of reducing disaster and climate risks. It demonstrates that risk-based methodology focused on building urban resilience can be implemented within a range of contexts. National, local, and city level governments need to invest in geospatial risk information and to make risk information available so that all relevant stakeholders can actively participate in disaster risk reduction and prevention.



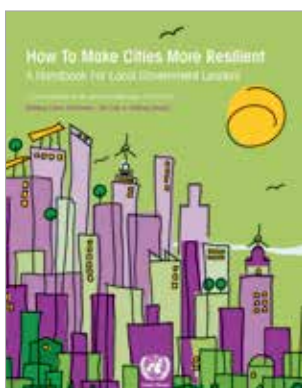
Cities and Flooding: A Guide to Integrated Urban Flood Risk Management for the 21st Century (2012)

This guide provides forward-looking operational assistance to policy makers and technical specialists, government officials, and concerned stakeholders in the rapidly expanding cities and towns of the developing world on how best to manage the risk of floods. It takes a strategic approach to managing flood risk, in which appropriate risk management measures are assessed, selected, and integrated in a process that both informs and involves the full range of stakeholders.



Flood Risk Management and Urban Resilience Workshop Proceedings (2012)

Held on May 2–3, 2012, in Jakarta, Indonesia, the workshop brought together over 50 policy makers from national and local levels from seven East Asian countries, as well as experts, donors, and partner organizations, to increase technical knowledge, share good practices from around the region, and foster a community of committed leaders dealing with flood risks. This training strengthened the knowledge of participants about the issues facing their cities and dwellers, informed them of measures being implemented by various countries in the region, and highlighted global best practices and lessons learned in the field of urban flood risk management.



How to Make Cities More Resilient: A Handbook for Local Government Leaders (2012)

This handbook is designed primarily for local government leaders and policy makers to support public policy, decision making and organization as they implement disaster risk reduction and resilience activities. It offers practical guidance to understand and take action on the “Ten Essentials for Making Cities Resilient,” as set out in the global campaign “Making Cities Resilient: My City is Getting Ready!” Applying the guiding principles of the Making Cities Resilient campaign and the information in this handbook will help cities and local governments to share learning, access information, develop indicators and performance, and measure and track progress.

4 STRENGTHENING HYDROMET AND EARLY WARNING SYSTEMS

Reports & Publications



Weathering the Change: How to Improve Hydromet Services in Developing Countries

This guide aims to help World Bank task teams and development practitioners—as well as National Meteorological and Hydrological Services (NMHSs), which are, or may be, involved in working with national governments—to improve the delivery of national meteorological and hydrological services to their citizens and economies. It touches on all actors involved in the production and delivery of these services, with an emphasis on the role of the public sector. The guide provides insights into how to improve the skill, efficiency, and cost-effectiveness of publicly funded NMHSs so that they can carry out their mandate to protect lives, livelihoods, and property, and are able to support economic development.



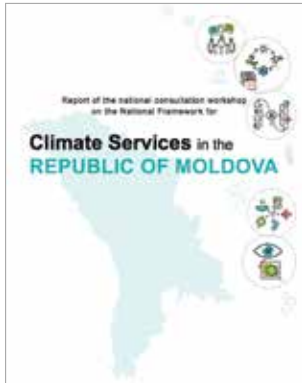
Strengthening Hydromet and Early Warning Services in Afghanistan: A Road Map

The purpose of this analytical work is to assess the principal government ministries, departments, and agencies as stakeholders and implementing partners of hydromet and early warning information and services. The driver of this Road Map is end-user needs and the articulated actions and milestones are its markers of success.



Results in Resilience: South Asia Regional Program for Hydromet Services and Resilience (2018)

The South Asia Regional Program for Hydromet Services and Resilience is supporting countries in the region better respond to natural hazards by strengthening their weather forecasting capabilities and hydromet services. The program has two main areas of action: national level preparedness, resilience, and services; and regional cooperation to strengthen resilience.



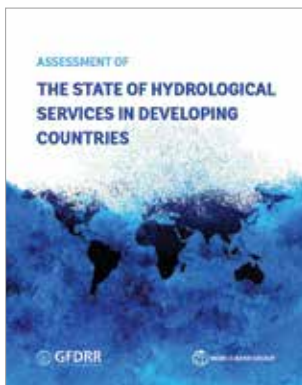
Climate Services in the Republic of Moldova (2018)

This report provides an overview of the national consultation workshop on the National Framework for Climate Services (NFCS) in Moldova that took place June 26–27, 2018, in Chisinau, Moldova. The workshop included presentations on the status quo, gaps and needs in Moldova; showcased the main players and producers of climate-related information; collected feedback from the participants through a rapid survey (“blitz poll”); and held plenary discussions, question-and-answer sessions, and smaller breakout groups.



Afghanistan: Establishing Critical Risk Information (2018)

To better understand natural hazard and disaster risk, the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR) are supporting the development of a comprehensive multi-peril hazard and risk assessment in Afghanistan, as well as a first-order analysis of the costs and benefits of resilient reconstruction and risk reduction strategies.



Assessment of the State of Hydrological Services in Developing Countries (2018)

The core business of Hydrological Services (HSs) is the provision of information about the water cycle and the status and trends of a country’s water resources. HSs aim to fulfill the state and public need for robust water monitoring, data management, and prediction, providing authoritative and actionable information on hydrometeorological trends and extremes. HSs also deliver socioeconomic benefits through improved water resources and disaster risk management. The WBG Water Partnership Program, the WMO, and GFDRR assessed Hydrological Services in such countries to better understand their status, performance obstacles, and investment needs.



Report on the Global Weather Enterprise Seminar (2018)

This report provides a summary of the outcome of discussions that took place at the Global Weather Enterprise (GWE) Seminar. The GWE Seminar was organized by the World Bank Group in collaboration with the World Meteorological Organisation (WMO), and was held in Washington, DC on November 28, 2017. In particular, the plenary “next steps” discussion attempted to isolate a number of key points and a number of possible actions that could be pursued following the seminar. This report provides a summary of these points and actions.



Results in Resilience: Enhancing Disaster Preparedness in Togo: Scaling up systems to improve disaster preparedness (2018)

A combination of drainage system and hydromet system improvements, coupled with an extensive awareness campaign, has improved disaster preparedness in Togo and increased regional access to disaster response resources. Lessons learned: Involvement of a wide range of stakeholders is essential for successful project implementation, and combining targeted local activities with regional awareness outreach can spread best practices across the region.



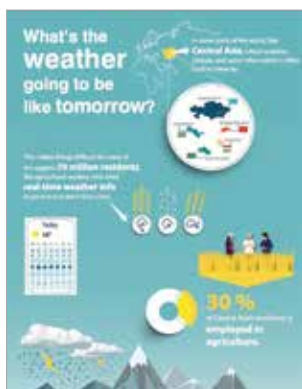
Results in Resilience: Strengthening Hydromet Services in Lesotho: Tackling water scarcity in a changing climate (2018)

By taking a comprehensive approach to climate risk analysis, Lesotho is better informed to manage its water resources—a key part of its economy. The project’s analysis allows the government to estimate resource needs and gaps in the coming decades. Lessons learned: Adapting to future challenges, including climate change, is a long-term process, and improving water management capacity can reduce risk from climate change.



Strengthening and Sustaining National Meteorological and Hydrological Services: Second Development Partners Conference (2018)

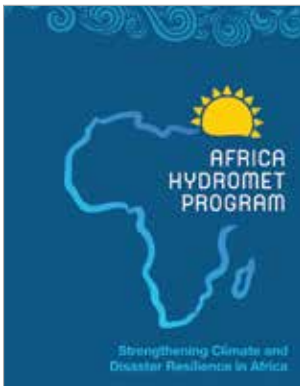
The second Development Partners Conference brought together representatives from the global hydromet community in a context of exponentially growing weather, climate, and water challenges that translate into increasing importance and demand for hydrometeorological services. Participants agreed that progress made since the first conference in 2016 was not sufficient and explored ways to move beyond business as usual to close the capacity gap between developed and developing countries.



What's the Weather Going to Be Like Tomorrow? (2018)

Extreme weather is rolling back development gains in Central Asia. Modernizing weather services can reduce climate and disaster risk. This infographic describes efforts to reduce climate and disaster risk in Central Asia. Through the Central Asia Hydrometeorology Modernization Project (CAHMP) the World Bank with technical support from GFDRR is helping build modern workstations, rehabilitate observation networks, enable access to satellite data and global computer models, and train experts on advanced software to enhance analysis, monitoring and forecasting.

(Available in Russian)



Africa Hydromet Program Brochure (2017)

The Africa Hydromet Program is an international partnership that aims to address the development challenge of repeated disasters and inadequate forecasting, and build climate and disaster resilience in Africa. The program envisages a total investment of approximately \$600 million for the modernization of 15 countries’ hydrological and meteorological services and systems, and for the strengthening of early warning and response systems that fortify African cities and build resilience against climate change and impending disasters.



Implementing Multi-Hazard Impact-based Forecast and Warning Services (2017)

A report on a workshop organized by China Meteorological Administration – Shanghai Meteorological Service and the Global Facility for Disaster Reduction and Recovery. It provided an opportunity for meteorologists, hydrologists and disaster managers from World Bank Group client countries to share experiences and learn about new practices in the delivery of warning services. Participant feedback indicates that it succeeded in sharing ideas on implementing impact-based forecast and warning services.



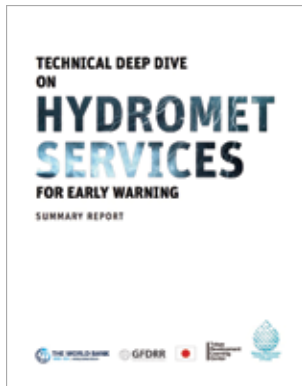
Regional Program for Hydromet Services and Resilience – South Asia: Program Brief (2017)

South Asia is highly prone to weather- and water-related disasters. While strengthening hydro-meteorological services and associated institutions at the country level is an essential first step, regional collaboration is crucial. The main objective of this program is to strengthen institutions, facilitate knowledge exchange, and enhance cooperation with respect to hydro-meteorological risks and hydromet services between South Asian countries.



Solutions Brief: Hydromet Services: Modernizing Weather, Climate, and Hydrological Hazards (2017)

The experience of Japan in identifying, predicting, and managing the risks posed by hydrometeorological hazards offers key lessons for the developing countries to modernize their hydromet systems. To support the needs of developing countries in establishing a modernized hydromet service, the Japan - World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries commissioned two comprehensive background papers and a related summary report.



Technical Deep Dive on Hydromet Services for Early Warning (2017)

This is a summary of the Technical Deep Dive (TDD) on Hydromet Services for Early Warning, held on September 12–15, 2016, in Tokyo. The event, which brought together more than 40 officials from 11 developing countries, allowed developing country clients to learn from Japan’s approach to hydrological and meteorological (hydromet) hazards.



Cyclone Pam (2016)

Cyclone Pam was the worst disaster to hit the Pacific region in recent memory, causing huge damage and loss in Vanuatu. This infographic summarizes the cyclone’s consequences and the Vanuatu National Warning Center’s fast actions, which were critical in keeping the death toll relatively low. However, its economic impact was massive and an estimated \$296.3 million will be needed for recovery and reconstruction. The Pacific region is one of the most natural disaster-prone regions on Earth, but better preparation can make a huge difference.



Meeting Summary: Development Partners Roundtable (2016)

On 13-14 April 2016, the World Meteorological Organization and the World Bank’s Global Facility for Disaster Reduction and Recovery co-hosted a roundtable for development partners interested in strengthening hydrometeorological services to better support sustainable development worldwide. Key outcomes were a set of guiding principles for how best to support hydrometeorological modernization programs, and agreement around four “good practices” for how these principles could be implemented.



Modernization of Hydrological Services in Japan and Lessons for Developing Countries (2016)

Attempts to promote more advanced integrated management of river basins have provided the foundation of social and economic development in Japan today. Based on its long experience and River Law, Japan employs a unique river management system, in which river management authorities have centralized control over rivers in the country and provide hydrological services.



Modernization of Japan's Hydromet Services: A Report on Lessons Learned for Disaster Risk Management (2016)

This summary report aims to provide a knowledge base for policy and decision makers that will allow governments and sponsor organizations to understand the fundamental operations of weather, climate, and hydrological services (together constituting “hydromet” services) and consequently target effective funding, in particular to developing countries. It is a comprehensive analysis of Japan’s hydrological and meteorological services, and presents lessons learned in legal and institutional arrangements, advances in technology, and responses to major natural disasters.



Program Profile: European Union-South Asia Capacity Building for Disaster Risk Management (2016)

The European Union-South Asia Capacity Building for Disaster Risk Management Program, launched in 2015, is a five-year program that helps build the resilience of South Asia to weather and climate-related disasters by strengthening DRM and hydro-meteorological (hydromet) service capacity. The program plays a catalytic role in leveraging knowledge and financing by drawing on the best expertise in the field and working closely with a broad range of partners and stakeholders.



Review of InterMET Asia 2016 (2016)

InterMET Asia 2016 was the third annual event in the series. The primary focus of the event is on those applications and areas which are likely to become more important users of meteorological technology and value added information as a result of the growing frequency of extreme weather events and climate change. However, looking ahead, this will not be at the expense of more established users of hydromet information, notably aviation.



Stories of Impact: Communicating Flood Risk along Guyana's Coast (2016)

After catastrophic flooding in January 2005, the government of Guyana launched the Conservancy Adaptation Project to address flood risks in the country’s coastal areas, disseminating vital technical information and key knowledge on disaster risk measures. Lessons learned: Good communications and outreach is an important part of disaster recovery and prevention efforts; awareness raising and capacity building of policymakers can help avert future disasters; and coordination among stakeholders can be improved with better communications.



Stories of Impact: Strengthening Haiti's Preparedness for Weather and Climate Hazards (2016)

Assistance from GFDRR's Code for Resilience initiative provided training to Haitian students to develop SMS-Lapli, a program to help the new Hydromet Unit at the Ministry of Agriculture collect, analyze, archive, and disseminate rainfall data. Lessons learned: Local expertise represents a valuable resource to tap into for the development (and improvement) of hydromet and climate data management tools. GFDRR and the World Bank can play a critical role in helping to bring together government, the private sector, and academia, as well as catalyze partnerships to build local capacity and foster innovation.



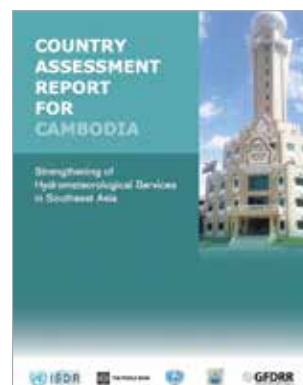
Program Profile: Africa Hydromet (2015)

The Regional Framework Program to Improve Hydrometeorological Services in Sub-Saharan Africa aims to improve hydromet services on the national, sub-regional, and continental levels in order to increase the accuracy of weather forecasts that can save lives and livelihoods. Ultimately, the wealth of new data enabled by this program can also be used to help stimulate local and regional economies, as valuable weather information benefits the agricultural sector, water resources, renewable energy, and more.



Stories of Impact: Mainstreaming Disaster Resilience in Vietnam (2015)

A combination of GFDRR's technical assistance and World Bank lending is mainstreaming disaster resilience in Vietnam, with large-scale impacts across a variety of sectors including transportation, urban and rural development, hydrological and meteorological monitoring services, and water resource management. Lessons learned: Engineering measures alone are not sufficient to tackle disaster risks, and integrated spatial planning is needed to counter trends that are driving urban flood risk.



Country Assessment Report for Cambodia: Strengthening of Hydrometeorological Services in Southeast Asia (2013)

This Country Assessment Report for Cambodia is part of a study that aimed to strengthen the hydro-meteorological services in South East Asia. GFDRR's Country Assessment Reports for Cambodia, Indonesia, Lao PDR, the Philippines, and Vietnam investigate the capacity of these countries' national hydrological and meteorological services. The reports recommend improvements via regional cooperation to reduce the impact of natural disaster and climate change.

5 DEEPENING FINANCIAL PROTECTION

Reports & Publications



Africa Disaster Risk Financing Initiative Activity Report 2016–2017: Building Disaster Resilience in Sub-Saharan Africa Program: Result Area 5 (2018)

This Activity Report summarizes activities of the Africa Disaster Risk Financing (ADRF) Initiative, also known as Result Area 5, from July 1, 2016 to June 30, 2017. It gives an overview of the achievements to date across its three operational components: creating the enabling data environment for risk financing, supporting countries in developing risk financing strategies, and facilitating regional risk financing and knowledge-sharing initiatives and identifies upcoming priorities and challenges. This report also identifies upcoming priorities and challenges.



Financial Protection against Disasters in Mozambique (2018)

Mozambique is prone to recurrent natural hazards, which have been increasing in number and magnitude since 1960. This report aims to analyze the current funding mechanisms for disaster management in Mozambique, to investigate the financing gaps, and to suggest next steps to be taken by the government for the preparation and implementation of a Financial Protection Strategy against Disasters. It discusses Mozambique’s risk profile and the economic impacts of disasters in the country in the last 20 years; reviews the current disaster budgetary process, and provides an overview of the disaster insurance market.

(Available in Portuguese)



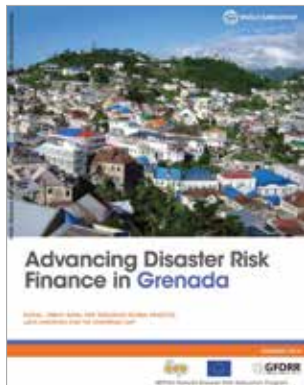
Focus event on the Africa Disaster Risk Financing Initiative: Sharing country experiences and knowledge in disaster risk financing (2018)

On 15 May 2018, more than 60 participants attended a focus event on the Africa Disaster Risk Financing (ADRF) Initiative. The core objective of the event was to bring together government officials and practitioners involved in the ADRF Initiative, and to enable them to share experiences, knowledge, and lessons learned on activities implemented in the realm of the Initiative.



Program Brochure: Africa Disaster Risk Financing Initiative: Building Disaster Resilience in Sub-Saharan Africa Program (2018)

This brochure provides an overview of the Africa Disaster Risk Financing (ADRF) Initiative—part of the wider ACP-EU program Building Disaster Resilience in Sub-Saharan Africa. The initiative expects to catalyze the uptake of innovative risk identification, assessment and financing tools within the development policy frameworks and agenda of several middle and low-income African countries.



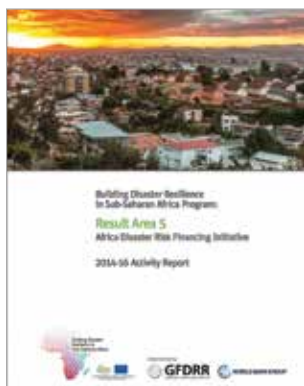
Reports on Advancing Disaster Risk Finance in Belize, Grenada, Jamaica, and Saint Lucia (2018)

Four reports on recommendations for advancing national disaster risk financing strategies for Belize, Grenada, Jamaica, and Saint Lucia were published in the frame of the Caribbean Disaster Risk Financing Technical Assistance (DRFTA) project. The reports are based on the assessment of the legislative, financial management, fiscal, and insurance market environment of the respective countries and propose potential considerations for the formulation of a country-specific comprehensive disaster risk finance strategy to the respective governments. Such a strategy would equip the respective Ministries of Finance with information and instruments to manage contingent liabilities posed by natural disasters.



Results in Resilience: Furthering Disaster Risk Finance in the Pacific (2018)

Following a successful pilot program, 14 Pacific Island Countries established a sovereign catastrophe risk insurance company for the region, increasing resilience and access to short-term funds needed for response immediately after disasters. Lessons learned: High-level support is essential to implementing financial protection strategies, and risk pooling can lead to improved dialogue and cooperation on budget protection.



Building Disaster Resilience in Sub-Saharan Africa Program: Result Area 5 – Africa Disaster Risk Financing Initiative (2017)

This is the 2014–16 Activity Report of the Africa Disaster Risk Financing (ADRF) Initiative, one of five components of the ACP-EU Program Building Disaster Resilience in Sub-Saharan Africa. The ADRF Initiative report outlines support brought to African governments to build their financial resilience to disaster and climate shocks, giving an overview of the achievements to date and identifying upcoming priorities and challenges. Available in French.



Disaster Risk Finance Analytics (2017)

The Disaster Risk Finance (DRF) Analytics program, part of the Disaster Risk Finance and Insurance Program (DRFIP), aims to strengthen the financial management of disaster risk by providing quantitative financial and economic information and tools for informed decision-making. It supports countries to manage the cost of disaster and climate shocks.



Disaster Risk Finance Country Note: Georgia (2017)

This Disaster Risk Financing Country Note is the first activity coming out of the World Bank’s support to the Government of Georgia on financial protection against natural disasters. It takes stock of existing mechanisms and instruments used to finance disaster response in Georgia and lays the foundation for the development of a comprehensive disaster risk financing strategy.



Results in Resilience: Comprehensive Financial Protection in the Philippines (2017)

In the Philippines, the government has prioritized risk reduction and financial protection to protect lives and communities, and minimize physical damage and economic losses from seismic and weather disasters. Lessons learned: Involving the ministry of finance can lead to greater adoption and coordination of government agencies’ DRM programs, and financial resilience mechanisms should be used to incentivize risk reduction action.



Colombia: Policy strategy for public financial management of natural disaster risk (2016)

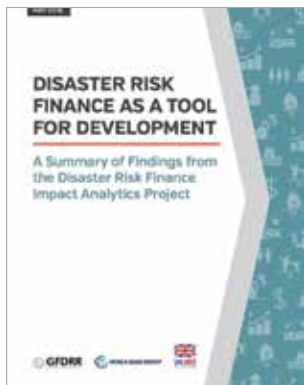
This document presents the priority policy objectives that have been established to assess, reduce, and manage scale risk due to natural disasters. It also describes the Ministry of Finance and Public Credit’s (MHCP) efforts to progress its policy objectives in the long term.

Available in Spanish



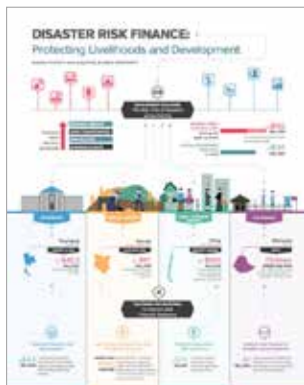
Disaster Risk Finance Country Note: Serbia (2016)

Following the catastrophic floods in 2014, the government of Serbia began an ambitious transformation of its disaster management system from one of response to one of prevention and mitigation. This DRF Country Note is the first activity to take stock of existing mechanisms and instruments to finance disaster response and lay the foundation for the development of a comprehensive disaster risk financing strategy.



Disaster Risk Finance as a Tool for Development: A Summary of Findings from the Disaster Risk Finance Impact Analytics Project (2016)

The Disaster Risk Finance Impact Analytics Project has made significant contributions to the understanding of how to monitor and evaluate existing or potential investments in disaster risk finance from a development perspective, and to the evidence base for where such investments have development impact. This note summarizes the findings of this project and presents the key messages of a book, a technical report, and 14 research papers.



Disaster Risk Finance: Protecting Livelihoods and Development (2016)

This infographic shows how disaster risk financing can contribute to ending poverty and boosting shared prosperity. It presents the high cost of disasters across society and possible solutions for countries to improve their financial resilience, looking at solutions for government, farmers/herders, home/business owners, and the poorest people via specific disasters (floods in Thailand, drought in Kenya, earthquake in Chile, and drought in Ethiopia).



Disaster Risk Financing Country Note – Philippines (2016)

It is estimated that on average the Philippines is hit by 20 typhoons each year, and earthquakes are common as well. The financial impact of these disasters hurts efforts to reduce poverty and promote sustainable economic growth in the country. Three strategic priorities would strengthen the country’s ability to absorb the financial impact of disasters across society: maintaining fiscal health at the national level; developing sustainable financing mechanisms for local government units; and reducing the impact on the poorest and most vulnerable.



Disaster Risk Financing and Insurance Country Snapshot – Mexico (2016)

Disaster risk financing (DRF) country snapshots offer a glimpse of DRF’s efforts and social impact in specific countries. Topics covered include DFR on analytics, natural disasters, and training and knowledge. This two-page overview summarizes some of the development challenges in Mexico and how disaster risk financing can help to solve them.



Disaster Risk Financing and Insurance Country Snapshot – Panama (2016)

Disaster risk financing (DRF) country snapshots offer a glimpse of DRF’s efforts and social impact in specific countries. Topics covered include DFR on analytics, natural disasters, and training and knowledge. This two-page overview summarizes some of the development challenges in Panama and how disaster risk financing can help to solve them.



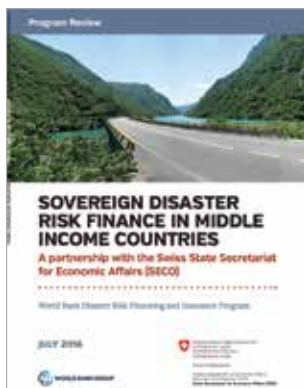
Fiscal Disaster Risk Assessment and Risk Financing Options: Sri Lanka (2016)

The objective of the report is to raise awareness of the fiscal impacts that natural disasters have on the budget of the Government of Sri Lanka. It is envisioned to be used as a planning tool for the potential development of a comprehensive disaster risk financing and insurance (DRFI) strategy that would equip the Ministry of Finance with additional instruments to manage the contingent liability posed by disasters. Its recommendations are a starting point for a collaborative discussion with the government on the potential development of a broad DRFI program.



Peru: A Comprehensive Strategy for Financial Protection against Natural Disasters (2016)

To strengthen the management of contingent fiscal risks that might result from natural disasters and to preserve the macroeconomic stability and sustainability of fiscal policy during such events, the Ministerio de Economía y Finanzas (MEF) has defined six priority strategic lines of action for evaluating, reducing, and managing disaster-related fiscal risk. This document describes the efforts that the MEF has made, is making, and will continue to make to implement strategic lines of action in fulfillment of the legal mandate given by Article 16 of the SINAGERD Law.



Sovereign Disaster Risk Financing in Middle Income Countries (2016)

Switzerland’s State Secretariat for Economic Affairs (SECO) and the World Bank’s Disaster Risk Financing and Insurance Program (DRFIP) launched a partnership to support middle-income countries (MICs) to strengthen their financial resilience against natural disasters. This Program Overview recognizes the promising outcomes in that the Program has seen in four years.



Stories of Impact: Integrated Disaster Risk Management and Resilience in Morocco (2016)

Since 2008, the Government of Morocco, GFDRR, the World Bank, and the Swiss Government have been working together to build a disaster risk management and resilience system for Morocco. The country has taken bold action to reduce the impact of disasters, including reforming its natural disaster response fund to make it a “Resilience Fund” focused on risk reduction and resilience investments, and approving a new disaster risk insurance law.



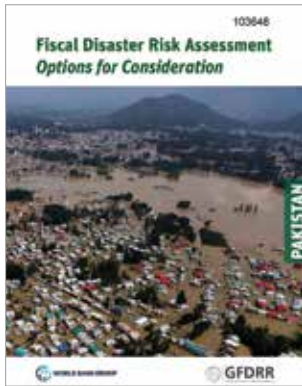
Toward a Regional Approach to Disaster Risk Finance in Asia (2016)

Asia is at high risk of catastrophic disaster and climate shocks that cause damage and erode welfare and economic gains. Financial protection strategies have been recognized by countries and their development partners as important tools to protect countries from these effects and to thereby support them in reducing poverty and increasing shared prosperity.



Development Solutions for Disaster Risk Finance: Sustainable Solutions for Financial Protection against Disaster and Climate Risks (2015)

This brief details the growing financial impact of disasters caused by natural hazards. Disaster Risk Finance (DFE) brings together the Analytical & Advisory, Financial, and Convening services of the World Bank Group. The brief lists Disaster Risk Finance products along with a description and example for each. DFR builds on close collaboration between Global Practices (GP) and Cross-Cutting Solution Areas (CCSA) to provide World Bank clients with One World Bank Group Solutions against natural disasters.



Fiscal Disaster Risk Assessment: Options for Consideration – Pakistan (2015)

This report aims to raise awareness of the financial impacts that disasters have on the budget of the Government of Pakistan (GoP) and to form the basis for a continued dialogue between the GoP and the World Bank on the potential development of a strategy for financing disaster losses. The study presents a series of complementary options for development of a national disaster-risk financing strategy. The recommendations are a starting point for a collaborative discussion with the GoP on the potential development of a broad Disaster Risk Financing and Insurance program.



Stories of Impact: Building Disaster Resilience in the Philippines (2015)

In the wake of devastating typhoons in 2009, GFDRR extended analytical support to the Government of the Philippines to formulate a disaster risk financing strategy, which has reduced the fiscal burden arising from the recurring costs of disasters and also streamlined relief and recovery activities. The Manila Flood Risk Master Plan includes cost prioritization proposals and adaptive measures to make the city and its 21 million residents safe from flood risks, and the government has begun considering additional investments in disaster risk management.



Stories of Impact: Building Financial Resilience against Natural Hazards in Panama (2015)

The Government of Panama has worked with the World Bank and GFDRR since 2010 to develop and implement a strategy to effectively manage the financial impact of natural disasters. Leveraging the international experience of these institutions on disaster risk financing, Panama has carried out a thorough public sector reform. In 2014, Panama implemented a comprehensive framework for disaster risk financing and insurance, becoming the first country in the world to adopt such a strategic framework.



Stories of Impact: Supporting Reforms towards Disaster Resilience in the Philippines (2015)

Since 2009, GFDRR and the World Bank have supported the government of the Philippines in mainstreaming disaster resilience through technical assistance, which strengthens pre-disaster planning and risk reduction interventions. They have also worked to implement a comprehensive disaster risk financing strategy. Lessons learned: Access to innovative financial DRM solutions encourages government-led advocacy to reduce climate vulnerability, and the Department of Finance's role in the both CatDDOs led to deep involvement and coordination of government agencies' DRM programs.



Unlocking the Triple Dividends of Resilience - Why Investing in DRM Pays Off (2015)

The risk of a disaster can cause economic losses even before they occur. This report showcases that investing in disaster resilience can yield a triple dividend by unlocking development potential due to reduced “background risk”, enjoying the co-benefits of investments to reduce risk even before a disaster does not happen for many years, and avoiding losses when disaster does strike.



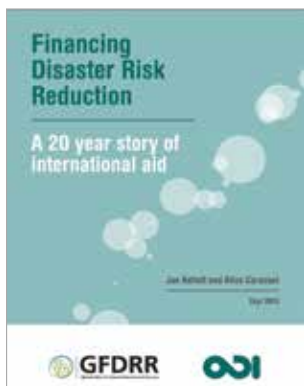
Financial Protection against Natural Disasters (2014)

This report takes stock of the global progress on financial protection against natural disasters over the previous decade and brings together the latest thinking on disaster risk financing and insurance. It is designed to inform the drafting of the Global Assessment Report on Disaster Risk Reduction 2015 as well as deliberations for the successor to the Hyogo Framework for Action.



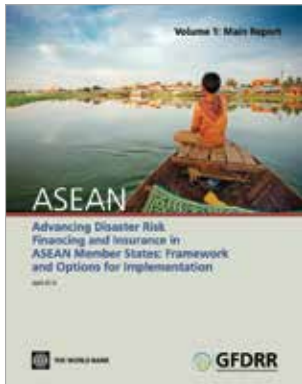
Stories of Impact: Strengthening Financial Resilience in the Pacific (2014)

In response to requests from 15 countries, the World Bank, GFDRR, and other partners formed the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) in 2007 to help mitigate disaster and climate change risk. The pilot program is a risk pooling mechanism that allows participating countries to purchase catastrophe risk insurance coverage as a group at a significantly lower cost than if each country purchased the insurance independently.



Financing Disaster Risk Reduction: A 20 Year Story of International Aid (2013)

The international financing of disaster risk reduction, representing the international community’s support to national governments in their efforts to protect development gains from disasters, is coming under increasing scrutiny. This report examines the international community’s record and priorities to date, and asks questions about the equity and adequacy of past efforts. It also points to the future of more rational, targeted investment in risk reduction.



Advancing Disaster Risk Financing and Insurance in ASEAN Member States: Framework and Options for Implementation (2012)

This report is a first collaborative effort to present a comprehensive body of knowledge on the state of disaster risk financing and insurance in ASEAN Member States and share examples of best practice and lessons from international experience. It aims to contribute towards a strengthened understanding and collective knowledge within the ASEAN region on disaster risk financing and insurance, and to encourage open dialogue between stakeholders on how strategies can best be developed to increase financial resilience against natural disasters.



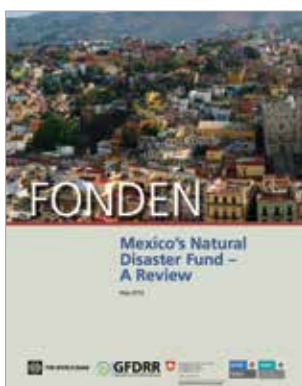
The Commonwealth Finance Ministers Report 2012-2013: Building Financial Resilience against Natural Disasters and Climate Change (2012)

The Commonwealth Finance Ministers Report 2012-2013 has published an article written by GFDRR staff. The article discusses the challenges created by natural disasters and climate change to fiscal account management and outlines steps that governments should take to overcome them. With the three steps set out in this paper, policy makers in Commonwealth nations have a framework that can assist the development of a sustainable and cost-effective fiscal management program against natural disasters.



Disaster Risk Management and Multilateral Development Banks (2012)

The Multilateral Development Banks (MDBs) are uniquely positioned to further advance the global disaster risk management agenda. In addition to integrating risk consideration in their own operations, MDBs have the opportunity to use their convening power to build strategic partnerships between governments, donor agencies, civil society, and the private sector. The range and reach of their services and programs provide incentives to proactively prevent and prepare for natural disasters.



FONDEN: Mexico's Natural Disaster Fund – A Review (2012)

Prepared jointly by the GFDRR Disaster Risk Financing and Insurance Team, the World Bank's Latin America Disaster Risk Management Unit, and the Government of Mexico, this report shares Mexico's considerable achievements on financial management of natural disasters with other governments. It outlines the evolution of FONDEN to date and highlights aspects of particular bearing and applicability to other disaster-prone countries. The report is of particular relevance to middle-income countries but also contains important messages for both high- and low-income countries.



Improving the Assessment of Disaster Risks to Strengthen Financial Resilience: A Special Joint G20 Publication by the Government of Mexico and the World Bank (2012)

Responding to a G20 mandate, this publication brings together the experiences of G20 countries in protecting their populations and assets against natural hazards. It includes contributions by 15 G20 members and invited countries (Argentina, Australia, Brazil, Chile, China, Colombia, France, Germany, Italy, Japan, the Republic of Korea, Mexico, Turkey, the United Kingdom, and the United States).



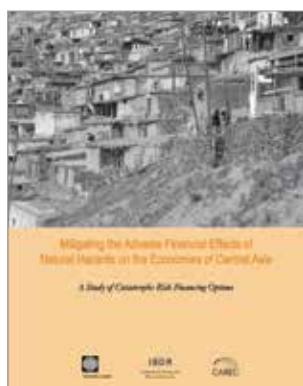
Indonesia: Advancing a National Disaster Risk Financing Strategy – Options for Consideration (2011)

This study presents options for a national disaster risk financing strategy in Indonesia, drawing heavily on international experience. It benefits from the international experience of the World Bank, which has assisted several countries in the design and implementation of sovereign catastrophe risk financing strategies. This study presents an optimal combination of risk-retention and risk transfer instruments that could help the government increase its immediate financial response capacity against natural disasters and better protect its fiscal balance.



International Financing for Disaster Risk Management: The 20-Year Story (2011)

This infographic summarizes the international aid choices and priorities that have been made since the Hyogo Framework for Action (HFA) was endorsed. It discusses Financing Disaster Risk Management, a report that was due out in 2013. Development partners are feverishly deliberating on setting disaster risk goals for the post-2015 development agenda. Irrespective of these discussions, natural disasters continue to devastate lives and livelihoods across the world and erode the development gains achieved over many decades of hard work.



Mitigating the Adverse Financial Effects of Natural Hazards on the Economies of Central Asia: A Study of Catastrophe Risk Financing Options (2009)

This study comprises a review of government post-disaster safety nets as well as those provided by the private insurance market in the five countries of Central Asia, namely Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The main objectives of the study are two-fold: to establish the extent of the financial vulnerability of governments and households to natural hazards in the five countries of Central Asia and to suggest a range of practical solutions and policy recommendations with a view to reducing the financial vulnerability of the region to disasters caused by natural hazards.

6 BUILDING SOCIAL RESILIENCE

Reports & Publications



Parametric Insurance: Brief (2018)

Parametric insurance products make payments based on the intensity of an event and/or the amount of loss calculated in a pre-agreed model. They offer rapid disbursements when a triggering event occurs and a policy is activated, helping to limit the financial impact of devastating events such as tropical cyclones, earthquakes and extreme rainfall. Available in French and Spanish.



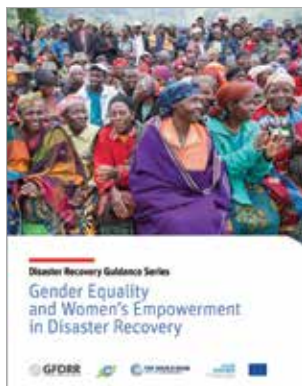
Catastrophic Risk Insurance Program in Central America and the Caribbean (2018)

The Central America and Caribbean Catastrophe Risk Insurance Program was developed to improve affordability of high quality sovereign catastrophe risk transfer for countries, and to enhance the capacity of Ministries of Finance for developing and implementing disaster risk financing and insurance strategies. Available in French and Spanish.



Five Actions for Disability-Inclusive Disaster Risk Management (2018)

A recent survey of the literature and experience identified five broad actions that development institutions and governments, as well as their partners and stakeholders, can take to improve disability-inclusive disaster risk management. These are treating persons with disabilities as valued stakeholders in DRM; removing barriers to their full participation; increasing awareness of governments and partners to the needs of persons with disabilities; collecting data disaggregated by disability; and ensuring that “build back better” ensures accessibility.



Gender Equality and Women's Empowerment in Disaster Recovery: Disaster Recovery Guidance Series (2018)

This Guidance Note aims to provide action-oriented guidance to local and national government officials and key decision makers who face post-disaster challenges and to assist them in incorporating gender-responsive recovery and reconstruction efforts across all sectors through robust gender assessments that lead to concrete needs identification and gender-specific recovery strategies and frameworks. It also addresses the different challenges that women face in post-disaster recovery and reconstruction and provides guidance on how to turn a post-disaster situation into an opportunity to enhance gender equality and women's empowerment.



Resilient Cultural Heritage and Tourism: Solutions Brief – Supporting Countries to Safeguard the Irreplaceable (2018)

Making cultural heritage more resilient helps safeguard the irreplaceable. To minimize the risks of disasters to heritage and stakeholders, policymakers and site managers can integrate disaster risk management (DRM) into cultural heritage and tourism management. This Solutions Brief identifies people and places at risk; describes the GFDRR's approach, provides specific examples of its work in Myanmar, the Philippines, and Bhutan; and provides examples and lessons from Japan. It further notes networks of experts and available resources as well as emerging areas of focus.



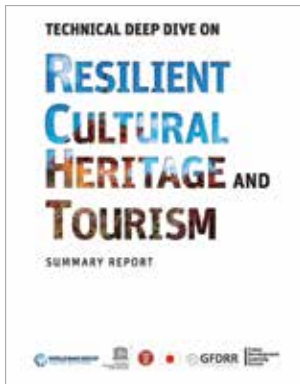
Results in Resilience: Building Community Resilience in the Solomon Islands: Helping communities manage disaster and climate risk (2018)

Against the backdrop of intensifying climate and disaster risk, the Solomon Islands is building resilience at the community level through the Community Resilience to Climate and Disaster Risk in Solomon Islands Project (CRISP) project. Lessons learned: Partnerships can help overcome the challenge of operating in remote areas, and a participatory planning process can help ensure that women are involved in the preparation and implementation of community-level activities.



South-South Learning Forum 2018: Summary Report – Building Resilience through Adaptive Social Protection (2018)

The South-South Learning Forum (SSLF) is the flagship event of the World Bank Group's Social Protection and Jobs Global Practice. It was held in February in Frankfurt, Germany, and was attended by more than 250 people from more than 68 countries. The SSLF 2018 focused on building household resilience through Adaptive Social Protection, which places an enhanced focus on better enabling social protection to address the impacts of all manner of shocks on the households they affect. This summary report briefly outlines the information presented at the Forum, the main takeaways that emerged from the discussions, and the questions for further engagement and research going forward.



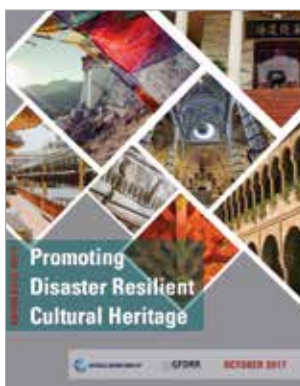
Technical Deep Dive on Resilient Cultural Heritage and Tourism: Summary Report (2018)

This Technical Deep Dive (TDD) aimed to inform countries' investments by bringing together experts and practitioners from both disaster risk management (DRM) and cultural heritage and tourism (CHT) disciplines, and focused on finding solutions to key concerns identified by participants. This summary walks us through the TDD, which covered six topics and key takeaways: fundamentals of disaster risk management for cultural heritage, management of cultural heritage sites, earthquakes and associated secondary hazards, hydrometeorological hazards, including storms and flooding, engaging communities to preserve cultural heritage, and connecting to tourism.



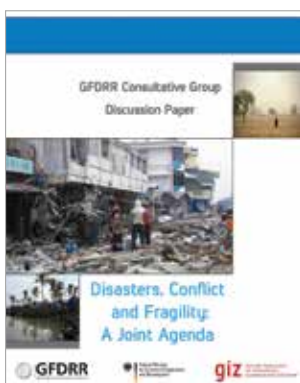
Disability Inclusion in Disaster Risk Management (2017)

The world's one billion persons with disabilities disproportionately impacted by the immediate and long-term effects of natural hazards. Achieving disability-inclusive DRM can empower persons with disabilities to take their rightful place as agents of change, and as active contributors to the development and effective implementation of DRM policies, plans and standards. This paper provides information to assist World Bank and GFDRR staff in effecting disability-inclusive DRM. It is based upon desk reviews of existing practice, as well as consultations with experts in the field of disability-inclusive DRM.



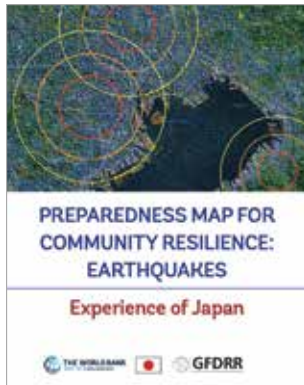
Promoting Disaster Resilient Cultural Heritage (2017)

Cultural heritage is vulnerable to the adverse impacts of natural disasters, and climate change is adding to the urgency of addressing this challenge. Countries around the world are employing a variety of measures to safeguard cultural heritage against disaster risks, drawing on relevant conventions, policy frameworks, and guidance. This Knowledge Note provides key definitions and context, presents common challenges and a framework for managing disaster risk faced by cultural heritage, summarizes good practice and lessons learned, presents case studies that highlight innovative approaches and solutions, and summarizes key recommendations.



Disasters, Conflict, and Fragility: A Joint Agenda (2016)

At the Fall 2015 meeting of the Consultative Group of the Global Facility for Disaster Reduction and Recovery (GFDRR) (Berlin, 28–29 October, 2015), the GFDRR Secretariat was asked to prepare a discussion paper on the nexus between natural disasters, conflict, and fragility in order to guide GFDRR activities in the future. This version of the paper is jointly sponsored by the GFDRR and the Government of Germany.



Preparedness Map for Community Resilience: Earthquakes – Experience from Japan (2016)

This manual focuses on Japanese Seismic Preparedness Maps, one of the tools used in Japan to communicate earthquake risks for better preparedness at the community level. Produced by local governments, these maps aim to help communities prepare for future potential seismic events with information on hazard and risk levels, estimated damages, and evacuation routes and sites.



Stories of Impact: Building Capacity for Drought Resilience in Tanzania (2016)

In the vulnerable districts of Same and Kishapo in Tanzania, a grant (awarded to UNICEF in the framework of the GFDRR-managed Africa Caribbean Pacific-European Union Natural Disaster Risk Reduction Program) enabled communities to learn to identify, address, and report on disaster risks and vulnerabilities. The project enabled UNICEF to increase awareness of disaster risk reduction and support community pilot programs to increase resilience during periods of low rainfall. The two districts have since enhanced their capacity to mitigate the impact of drought conditions.



Stories of Impact: Gender Inclusion in Post-Disaster Housing Reconstruction in India (2016)

The GFDRR and World Bank–supported Uttarakhand Disaster Recovery Project, launched in response to flash floods and landslides from unprecedented rainfall in June 2013, is designed to give women in Uttarakhand, India—many of whom single-handedly manage their homes, crops, and livestock—an equitable say in financing home reconstruction. Lessons learned: Giving women a voice in climate and disaster risk management boosts resilience, and improved data on gender is an important step towards building inclusive resilience.



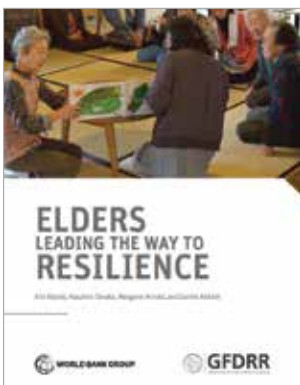
Building Social Resilience: Protecting and Empowering Those Most at Risk (2015)

This paper synthesizes recent World Bank analyses of strategies to build resilience and of national policies and operational platforms meant to assist the poor in managing disaster and climate risk. It focuses on the need to address the underlying causes of vulnerability to reduce the impacts of disasters on poor communities. The paper highlights practical ways of funneling disaster and climate risk financing directly to those most in need and approaches to empower poor communities to drive their own risk management efforts based on their development goals.



Community-Led Partnership for Resilience (2015)

This report documents a number of case studies where grassroots women’s organization are working in partnership with their local or national governments to effectively manage disaster and climate risk in poor communities. The report aims to demonstrate the value of facilitating community-led partnerships for strengthening disaster and climate resilience.



Elders Leading the Way to Resilience (2015)

This report describes and assesses the experience of Ofunato, Japan, which was devastated by the 2011 Great Eastern Japan Earthquake. After the earthquake, older people wanted to do something useful to help Ofunato recover. With facilitation by the NGO Ibasho, elders and other community members planned and built the Ibasho Café, which now acts as a hub that is restoring the fabric of a community still badly damaged by the disaster. With elders leading its operation, the space is strengthening social capital and resilience while also changing people’s mindsets about aging.



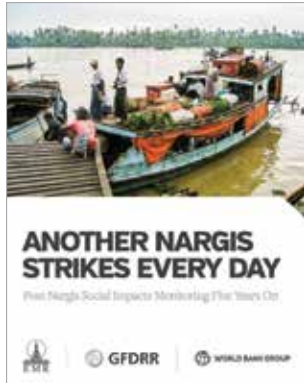
Stories of Impact: Building Resilient Communities across Indonesia (2015)

The Government of Indonesia, with support from GFDRR and the World Bank, has empowered vulnerable communities and strengthened urban resilience against a wide range of risks triggered by natural disasters and climate change. Given the scale and geographic complexity of the country, enhancing community resilience in urban settings is an important priority for Indonesia. The government has been collaborating with community leaders to increase awareness of disaster risk mitigation and scale up preventive measures including eco-resilient settlements, safer evacuation routes, and landslide mitigation techniques.



Stories of Impact: Encouraging Women’s Contribution to Resilient Cities (2015)

The World Bank and GFDRR organized a Women Entrepreneurship Resilient Cities competition in Djibouti, Beirut, and Cairo to promote the creation of women-led risk management start-ups. A grant from GFDRR has helped mobilize \$200,000 from partnering investment funds and venture capitalists to help women-led start-ups and provide mentoring to winning start-ups for one year at the end of the competition. More than 150 teams have entered the competition. An accompanying public awareness campaign is expected to reach over 300,000 people in the region through social media channels.



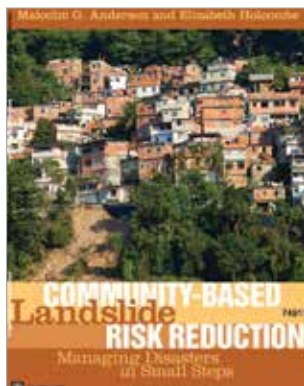
Another Nargis Strikes Every Day - Post-Nargis Social Impacts Monitoring Five Years On (2014)

Three rounds of Post-Nargis Social Impacts Monitoring (SIM) accompanied the post-disaster recovery period from 2008–10. By focusing on a limited set of villages, SIM provided in-depth information on how village life was changing post-Nargis and insights into how aid responses could best help Delta communities. This fourth round (SIM 4) provides a snapshot of village economic and social life five years after Cyclone Nargis struck. It assessed two areas: socioeconomic conditions and social relations and institutions.



Stories of Impact: Community-Based Disaster Risk Reduction in Niger (2014)

The World Bank and GFDRR, with support from the ACP-EU Program, have financed an almost \$1 million disaster risk reduction project in Niger to build capacity of local communities for early warning and response. The project will continue to be scaled up, ultimately training more than 7,000 people and supplying a population of over 1.2 million with updated monitoring systems, risk reduction training programs, and further capacity building in 2015. These fundamental measures will help enable other disaster risk reduction and humanitarian efforts throughout Niger.



Community-Based Landslide Risk Reduction: Managing Disasters in Small Steps (2013)

This book has two main aims: to demonstrate to international development agencies, governments, policy makers, project managers, practitioners, and community residents that landslide hazard can often be reduced in vulnerable urban communities in the developing world, and to provide practical guidance for those in charge of delivering Management of Slope Stability in Communities (MoSSaiC) on the ground. The shared knowledge of milestones assists in achieving project ownership and encourages the likelihood of successful project continuity, implementation, and post-project outcome assessment.

Available in Spanish

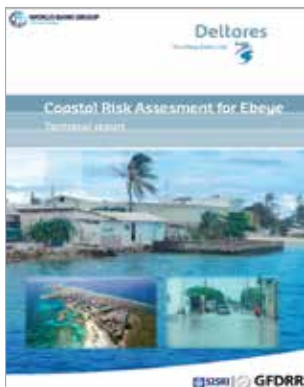


International Disaster Risk Reduction Day 2012: Gender Inclusion for Social Resilience – RESILIENT RECOVERY A Key Factor in Disaster Reduction, Relief and Recovery (2013)

This report offers a brief review of the concept of social resilience, especially in relation to natural disasters and with specific attention to women and girls as victims of disasters and active participants in disaster prevention and response. It next provides a summary of a conference that took place at the George Washington University’s Elliott School of International Affairs on October 11, 2012, marking the United Nations International Day for Disaster Reduction and its 2012 theme, Women & Girls: The [In]visible Source of Resilience. Last, it summarizes how social resilience can create more secure societies in a changing world.

7 ADDRESSING CLIMATE RISK AND PROMOTING RESILIENCE TO CLIMATE CHANGE

Reports & Publications



Coastal Risk Assessment for Ebeye: Technical Report (2018)

The Republic of the Marshall Islands (RMI) is an atoll archipelago in the central Pacific Ocean. Because of their size and topography, these islands are prone to natural hazards originating from the sea. Moreover, the impact of those hazards is likely to increase dramatically because of sea level rise and climate change. This report is a hazard assessment for the two islands of Ebeye and Majuro and a relative coastal risk assessment for the island of Ebeye, which is the basis for identifying priorities areas of interventions.



Results in Resilience: Assessing Fiji's Climate Vulnerability (2018)

The Government of Fiji has pioneered an innovative approach—a Climate Vulnerability Assessment (CVA)—to assessing and quantifying the impacts of climate change which will help the Pacific Island country chart a resilient development path. Drawing on expertise from across a variety of areas – economic modelling, social protection, health, and infrastructure – the CVA also assessed the impact of climate change on Fiji's economy, livelihoods and poverty levels, health and food security, as well as potential impacts of sea level rise on coastal areas and low lying islands.



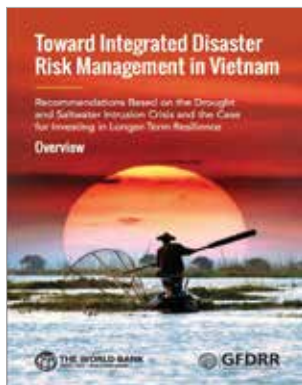
Results in Resilience: Integrated Disaster Risk Management in Morocco (2018)

In an effort to mitigate impacts from natural hazards, the government of Morocco has moved forward with an integrated approach to disaster risk management. Lessons learned: Upstream technical and analytical work pays off, managing multiple risks effectively requires an integrated approach, and technical assistance and analytical work alone are not sufficient to achieve results in risk reduction.



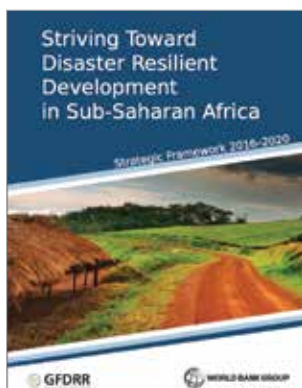
Results in Resilience: Comprehensive Disaster Risk Management in Serbia (2017)

After catastrophic flooding, the Government of Serbia takes proactive steps to better predict and lessen the impact of future disasters. These include a broad resilience strategy, risk-informed investments, preserving progress, and compiling actionable information. Lessons learned: A changing climate means that governments need to create forward-looking resilience strategies, and aligning legal and institutional frameworks before a disaster strikes results in a more efficient response.



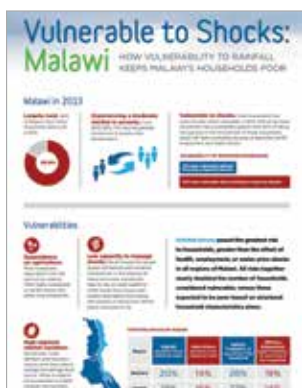
Toward Integrated Disaster Risk Management in Vietnam: Recommendations Based on the Drought and Saltwater Intrusion Crisis and the Case for Investing in Longer-Term Resilience (2017)

This report takes a deeper look at the 2015–2016 drought and saltwater intrusion (SWI) crisis faced by Vietnam, identifies the gaps across key sectors, and recommends the principal short- and longer-term actions needed for integrated disaster risk management. The recommendations are based on global experiences in good governance with intersectoral coordination in disaster forecast and early warning, and in community empowerment in water resource management and agricultural production.



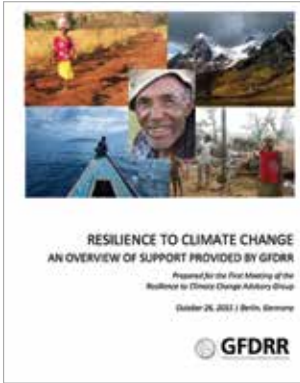
Striving Toward Disaster Resilient Development in Sub-Saharan Africa: Strategic Framework 2016–2020 (2016)

This strategic framework presents the programmatic approach for supporting Africa toward climate and disaster-resilient development in 2016–2020. This report takes stock of the World Bank’s efforts in this area, and sets future directions for scaling up. This strategic framework presents the programmatic approach for supporting Africa towards climate and disaster-resilient development in 2016–2020.



Vulnerable to Shocks: Malawi (2016)

In 2013, Malawi’s modest poverty gains were in jeopardy due to high variability of rainfall and other shocks; Malawi’s poorest households, who depend on rain-fed agriculture, were the most vulnerable. This infographic was adapted in November 2016 from the study “Vulnerability to Poverty in Rural Malawi.”



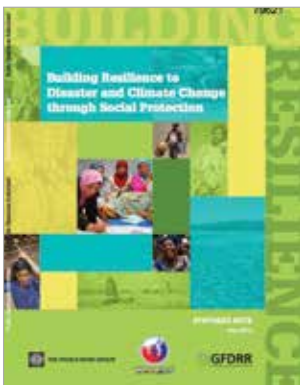
Resilience to Climate Change: An Overview of Support Provided by GFDRR (2015)

Section I of this summary review examines the scope of Resilience to Climate Change across the active FY15 GFDRR portfolio. Section II reports on recent achievements. Section III reports on emerging new initiatives supporting climate resilience, Section IV summarizes the remaining challenges, and Section V proposes a way forward and terms of reference for the Advisory Group on Climate Resilience.



Stories of Impact: Addressing Climate Risks in Sri Lanka (2015)

Technical assistance from GFDRR and the World Bank informed recent steps to enhance Sri Lanka's disaster resilience, including a \$110 million investment toward reducing immediate and future physical risks as well as provisions for accessing \$102 million in the immediate aftermath of a natural disaster. To reduce the adverse impacts of flood and drought events and adapt the country's stock of infrastructure to extreme climate shocks, GFDRR, the World Bank, and the government developed the Comprehensive Approach to Climate Risk Management program. The program will significantly contribute to building long-term resilience.



Building Resilience to Disaster and Climate Change through Social Protection: Synthesis Note (2013)

This toolkit provides guidance on how to prepare social protection programs to respond to disasters and climate change. The toolkit consists of a synthesis document and a set of online materials, comprising five Guidance Notes, five case studies, two technical notes, and a video; it offers guidance on both ex ante and ex post social protection measures to mitigate and reduce the impact of disasters and climate change and to accelerate recovery. It provides examples of good practice experiences and practical guidance for the practitioner in that direction.



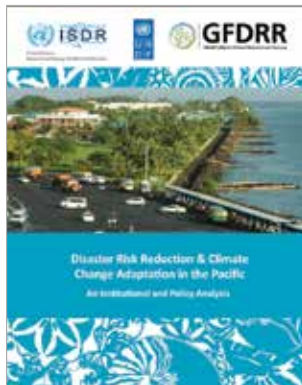
Building Resilience Integrating Climate and Disaster Risk into Development (2013)

This report presents the World Bank's experience in climate and disaster resilient development, and contends that such development is essential to eliminating extreme poverty and achieving shared prosperity by 2030. The report recognizes, however, that such development requires additional start-up costs, which pay off in the long run if done correctly. Given this, the report argues for closer collaboration between the climate resilience and disaster risk management communities, and the incorporation of climate and disaster resilience into broader development processes. Selected case studies illustrate promising approaches, lessons learned, and remaining challenges.



East Asia Pacific: Region at Risk (2013)

East Asia Pacific is the most disaster-stricken region in the world. Many megacities are densely populated, with slums growing fast in high-risk areas. Already, the region alone sustained 61 percent of global disaster loss in the past 20 years. The infographic shows the risks and how investing in disaster risk reduction and emergency management make good economic sense.



Disaster Risk Reduction and Climate Change Adaptation in the Pacific (2012)

This study provides an analysis of the current level of integration of DRR and CCA in the region, with an emphasis on the policy and institutional environment. The report outlines some of the barriers to integration and makes recommendations on how they can be addressed. The analysis presented includes seven Pacific island countries (Cook Islands, Federated States of Micronesia, Fiji, Palau, Samoa, Tonga and Vanuatu), however, a more detailed analysis was undertaken of only four of those countries (the Cook Islands, Fiji, Palau and Vanuatu).



Turn Down the Heat: Why a 4°C Warmer World Must Be Avoided (2012)

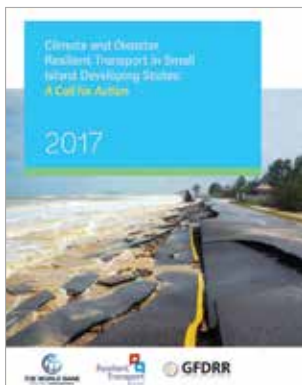
This report provides a snapshot of recent scientific literature and new analyses of likely impacts and risks that would be associated with a 4°C warming within this century. It is a rigorous attempt to outline a range of risks, focusing on developing countries and especially the poor. A 4°C world would be one of unprecedented heat waves, severe drought, and major floods in many regions, with serious impacts on ecosystems and associated services. But with action, a 4°C world can be avoided and we can likely hold warming below 2°C.



8 Ways GFDRR will help make the world more resilient by 2021 (2018)

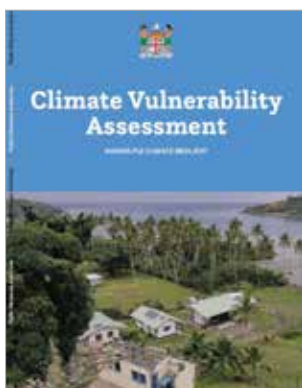
This flyer summarizes eight areas in which GFDRR will help make the world more resilient by 2021: science and innovation for DRM, resilient infrastructure, city resilience, hydromet and early warning systems, financial protection, community resilience, resilience to climate change, and resilient recovery.

RESILIENCE TO CLIMATE CHANGE SMALL ISLAND STATES RESILIENCE INITIATIVE Reports & Publications



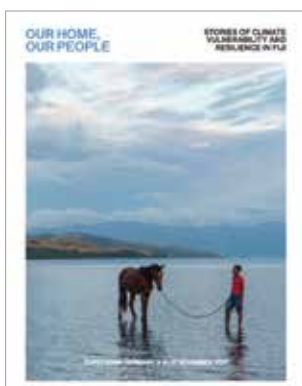
Climate and Disaster Resilient Transport in Small Island Developing States: A Call for Action (2017)

The transport sector plays a central role in the vulnerability of small island developing states (SIDS), and resilient transport policies can significantly reduce future losses in assets and well-being. This report proposes solutions to integrate climate and disaster risk considerations in transport infrastructure lifecycle management and, in this way, enhance the resilience of transport systems. It proposes a path forward for replicating best practices and deploying resilient transport infrastructure in SIDS.



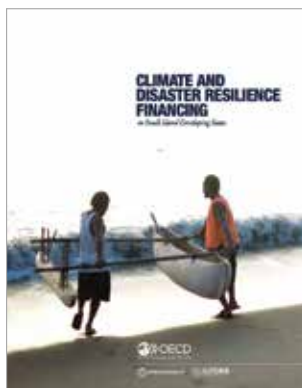
Fiji Climate Vulnerability Assessment (2017)

The Fijian Government led the preparation of Fiji's first-ever Climate Vulnerability Assessment ('CVA'), with support from the World Bank and GFDRR, to put facts and numbers behind the climate experiences of the Fijian people. The CVA will inform Fiji's development planning and investment decisions for years to come, and provides a specific blueprint that quantifies the resources necessary to climate-proof Fiji, giving a full account of the threat that climate change poses to the country's national development.



Our Home, Our People (2017)

Our Home, Our People is a storytelling project produced by the Fijian Government, in partnership with the World Bank, Global Facility for Disaster Reduction and Recovery (GFDRR), and the ACP-EU Natural Disaster Risk Reduction Program. It explores climate change vulnerability and resilience in Fiji through the stories of four people. Their memories, hopes, fears and resilience reveal to audiences how rising sea levels and extreme weather impact Fijian people today, and what support is required in the future.



Climate and Disaster Resilience Financing in Small Island Developing States (2016)

This joint World Bank/GFDRR/OECD report is the first attempt at quantifying the flow and patterns of concessional finance in support of climate and disaster resilience in SIDS. The report, coordinated in GFDRR by the SISRI team, aims to inform policy and decision makers, in both SIDS recipient governments as well as among funding providers, and promote a more effective provision and use of financing for resilience funds.



PCRAFI [Pacific Catastrophe Risk Assessment and Financing Initiative] Program: Phase II (2016)

This note focuses on efforts to enhancing the financial resilience of Pacific Island Countries against natural disaster and climate risk. The current Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) program, phase II builds on the initial phase of PCRAFI, a joint initiative of the World Bank, SPC, and the Asian Development Bank with financial support from the Government of Japan, the Global Facility for Disaster Reduction and Recovery (GFDRR) and the European Union. Launched in 2007, PCRAFI aimed to provide the PICs with disaster risk assessment and financing tools for enhanced disaster risk management and climate change adaptation.



SISRI [Small Island States Resilience Initiative] Knowledge Notes: Managing Population Retreat from At-Risk Areas (2016)

Relocating populations away from at-risk areas is a challenging process, but increasingly necessary in Small Island States where communities face where communities face imminent hazards to life and property due to factors such as sea-level rise, coastal erosion and flood risks. A participatory process of population retreat can save lives and enhance the livelihoods of community lives. São Tomé and Príncipe and Samoa offer valuable lessons on how to manage such a process.



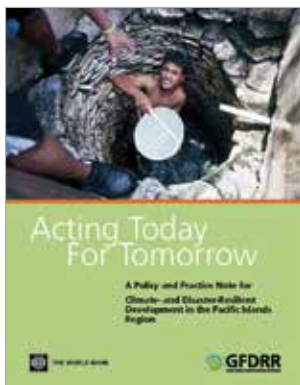
SISRI [Small Island States Resilience Initiative] Knowledge Notes: Building Resilience through Social Protection (2016)

Small Island States can work towards adaptive and responsive Social Protection systems at varying levels of maturity and sophistication. By aligning Social Protection provision with resilience objectives, countries could more effectively help vulnerable households adapt to climate change, prepare for disasters, and restore livelihoods quickly should a disaster strike. This Knowledge Note highlights good practices in climate and disaster resilience in Small Islands States, looking at various types of programs and using examples from St Vincent and the Grenadines, Jamaica, Haiti, Salomon Islands, and Vanuatu.



Program Profile: Small Island States Resilience Initiative (2015)

The Small Island States Resilience Initiative (SISRI) was launched at the United Nations Small Island Developing States Conference in Samoa (September 2014) to support Small Island States in reducing climate and disaster risks to their people, economies and ecosystems. Through support from a World Bank team and external experts specialized in the needs of Small Island States, SISRI will help build technical and institutional capacity to manage climate and disaster risks, and apply innovative financial instruments that address key constraints to resilience.



Acting Today for Tomorrow: A Policy and Practice Note for Climate- and Disaster-Resilient Development in the Pacific Islands Region, with Supporting Research, Analysis, and Case Studies (2012)

Pacific island countries continue to be among the most vulnerable in the world: they combine high exposure to frequent and damaging natural hazards with low capacity to manage the resulting risks. Their vulnerability is exacerbated by poorly planned socioeconomic development and climate change. This report provides case studies, data, and analysis to make a case for climate- and disaster-resilient development. It outlines the consequences of not acting today to reduce risk, important lessons from the last decade, and what must be done to move toward resilient development in Pacific island countries.

8 ENABLING RESILIENT RECOVERY

Reports & Publications



Transport Sector Recovery: Opportunities to Build Resilience (2018)

This Guidance Note is intended to provide action-oriented guidance to government officials facing post-disaster recovery challenges related to the transport sector. It provides action-oriented guidance to government officials facing post-disaster recovery challenges related to the transport sector. It frames the scope of recovery work, including the administrative elements for setting up a planned and organized recovery of the transport sector, the implementation activities required to restore the transport network, and recommendations for investing in systems preparedness and physical asset resilience.



Rapport d'Évaluation Rapide des Dommages et Besoins: Post-Cyclone Sagar (2018)

(in French)

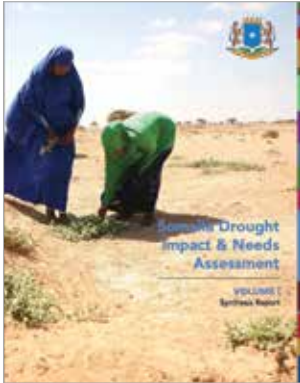
Ce rapport présente les résultats de l'évaluation rapide des dommages causés par le cyclone tropical Sagar sur la ville de Djibouti et dans les secteurs les plus affectés, et propose des recommandations et une estimation préliminaire des besoins de relèvement et de reconstruction.



Metodología para la construcción de agendas sectoriales para la reducción del riesgo de desastres en Ecuador (2018)

(in Spanish)

The sectoral agendas for disaster risk reduction are instruments that inform planning in the sector to help reduce disaster risks.



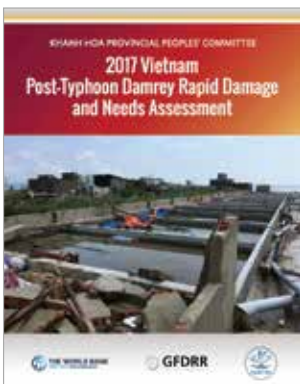
Somalia Drought Impact & Needs Assessment: Volume 1, Synthesis Report (2018)

The first of its kind in Somalia, the Drought Impact & Needs Assessment (DINA) identifies long-term, durable solutions to address the root causes of the recurrent crises. The DINA aims to provide an assessment of drought damage and loss impacts so that current and future drought impacts can be quantified and an estimation of recovery and resilience needs developed. DINA findings and recommendations will inform the development of a Recovery and Resilience Framework (RRF), which will provide the policy, institutional, and financial basis to guide the transition from humanitarian relief to recovery and long-term development.



Urban Flood Risk Management in the Pacific: Tracking Progress and Setting Priorities (2018)

This Knowledge Note describes a benchmarking method developed to track the progress of Pacific Island Countries toward best-practice flood risk management (FRM). Eight priorities for advancing current practice in PICs are proposed; the first critical step is to establish in each country a multisectoral forum for the holistic and integrated governance of FRM. This Knowledge Note describes the development of a benchmarking tool to assess current FRM practices and trajectories.



2017 Vietnam Post-Typhoon Damrey Rapid Damage and Needs Assessment (2018)

This report briefly describes Typhoon Damrey and its impacts and provides a detailed breakdown of the key affected sectors and the extent of damage sustained in Khanh Hoa in the aftermath. It identifies the reconstruction and recovery needs, reviews its macro-economic impact and government response, and recommends a clear recovery strategy. In view of the strong commitment by Khanh Hoa to engage in the disaster risk management program, this report is highly relevant in integrating disaster resilience into all development initiatives in order to minimize future climate risks in the province.

(Available in Vietnamese)



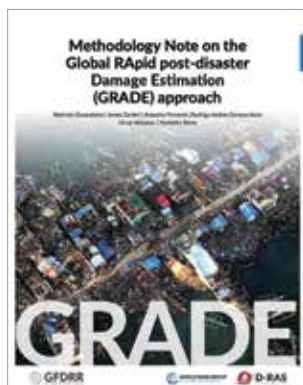
Building Back Better: Achieving Resilience through Stronger, Faster, and More Inclusive Post-Disaster Reconstruction (2018)

The 2017 *Unbreakable* report made the case that disaster losses disproportionately affect poor people, who have limited ability to cope with disasters, and estimated that their impact on well-being is equivalent to consumption losses of about \$520 billion a year around the world—outstripping previous estimates of pure asset losses by as much as 60 percent. This report shows how the benefits of building back better could be greatest among the communities and countries that are hit by disasters most intensely and frequently. For a selection of small island states, stronger, faster, and more inclusive recovery would lead to an average reduction in disaster-related well-being losses of 59 percent.



Meandering to Recovery: Post-Nargis Social Impacts Monitoring Ten Years After (2018)

On May 2, 2008, Cyclone Nargis struck Myanmar’s Ayeyarwady Delta, killing over 140,000 people, tearing apart families, destroying homes, and shattering livelihoods. In the months and years following, communities worked to rebuild. By focusing on 40 Nargis-affected villages, five rounds of social impacts monitoring (SIM) have tracked how village life has changed both post-Nargis and in more recent years. This fifth round (SIM 5) provides a snapshot of village economic and social life in 2017 and analyzes change over more than nine years since Nargis.



Methodology Note: The Global RAPid post-disaster Damage Estimation (GRADE) approach (2018)

This technical note describes the utility and outputs of the Global RAPid-post-disaster Damage Estimation (GRADE) approach for governments and other key stakeholders who are involved in post-disaster damage assessment, relief, and recovery phases. The Methodology Note explains the rationale behind GRADE’s development that aims to address specific damage information needs in the first few weeks after a major disaster and how it complements the more comprehensive post-disaster needs assessment (PDNA) process.



Post-Disaster Needs Assessment: Lessons from a Decade of Experience (2018)

The Post-Disaster Needs Assessment (PDNA) is an internationally accepted methodology for determining the physical damages, economic losses, and costs of meeting recovery needs after a natural disaster through a government-led process. This review focuses on 10 areas of inquiry and draws on a sample of 14 PDNAs, representing a range of socioeconomic settings, geographic regions, country circumstances, and types of disasters.



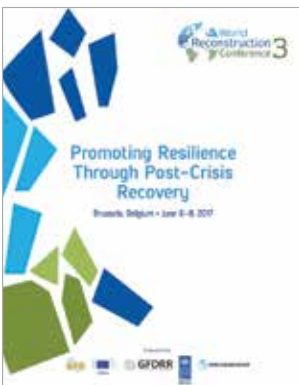
Post-Disaster Rapid Assessment: Tonga – Tropical Cyclone Gita, Tonga (2018)

Tropical Cyclone (TC) Gita passed over the Tongatapu and ‘Eua island groups around 11 pm on Monday, February 12, 2018. The total economic value of the effects caused by TC Gita was estimated to be approximately T\$356.1 million (US\$164.1 million). This is equivalent to 37.8 percent of the nominal gross domestic product (GDP) in Tonga. This post-disaster rapid assessment summarizes damages and losses to several different sectors, human and social impacts, and recovery and reconstruction needs. It then discusses a way forward based on criteria-based prioritization of recovery needs across competing sectors.



Post-Disaster Recovery Plan: Sri Lanka, Floods and Landslides, May 2017 (2018)

This Post-Disaster Recovery Plan specifies priority recovery needs and financial requirements identified by the government of Sri Lanka following the May 2017 floods and landslides. It is expected to ensure that recovery is resilient and supports the development agenda of the country, and emphasizes that recovery efforts not only rebuild what was there, but will also ensure Building Back Better as a necessary condition to build a resilient nation and contribute to sustainable development.



Promoting Resilience through Post-Crisis Recovery: Proceedings and Knowledge Report of the 3rd World Reconstruction Conference (2018)

With the goal to identify effective and forward-looking approaches to achieve resilient post-crisis recovery in which climate and disaster risk reduction, fragility, and conflict considerations are mainstreamed, the third World Reconstruction Conference (WRC3) focused on “Building back better in recovery, rehabilitation and reconstruction,” Priority 4 of the Sendai Framework for Disaster Risk Reduction. This report offers the opportunity to capture the breadth of knowledge that was shared during June 6–8, 2017, in Brussels, Belgium.



Results in Resilience: Building Back Better in Bosnia and Herzegovina (2018)

In Bosnia and Herzegovina, close local and regional coordination allowed for quick recovery from devastating floods. In response to the flooding in 2014, a Recovery Needs Assessment (RNA) was launched; this helped quantify damages and, equally important, provided timely technical assistance to launch decisive reconstruction efforts. Lessons learned: recovery planning must include considerations for reducing the inequalities that create vulnerability, and decision-makers can increase ownership and accountability by partnering with local governments to identify rehabilitation measures.



Results in Resilience: Mainstreaming Disaster Resilience in Vietnam (2018)

The government of Vietnam has implemented a comprehensive approach to disaster risk management which prioritizes engagement with local communities. Three million people have benefited from community-based projects. Lessons learned: Engineering measures alone are not sufficient to tackle disaster risks; integrated spatial planning is also needed to counter trends that are driving urban flood risk.



Results in Resilience: Supporting Resilient Post-Earthquake Recovery in China – Building Back Better in the Aftermath of Disaster (2018)

Following the 2008 Wenchuan earthquake, the Wenchuan Earthquake Recovery Project helped to restore essential infrastructure, health, and education services; promote disaster risk reduction; and enhance local capacity to manage recovery. Recognizing the need to strengthen resilience to disasters in southwestern China, the government and its partners adopted a “Build Back Better Plus” approach to reconstruction. Lessons learned: Strong government leadership, both national and local, can go far in making recovery efforts more effective; a flexible approach to implementation enables the project to accommodate evolving needs on the ground.



National Disaster Recovery Framework: Malawi – Volume II: Drought (2017)

Malawi has in the past consecutive two years experienced disasters that caused severe devastation in all sectors. This National Disaster Recovery Framework (NDRF) is a living document for guiding recovery and reconstruction. Recovery efforts defined within the NDRF are guided by a central vision and goal: to sustainably improve the resilience of communities affected by the floods and drought, support prolonged food security of vulnerable populations, and restore the livelihoods of disaster-affected communities. Following the 2015 floods, an initial vision and goal were determined; these have been updated in response to the 2015/16 drought.



Stories of Impact: Amplifying Serbia's Financial Resilience against Natural Hazards (2017)

Building on its National DRFI strategy that was established in the wake of historic floods, Serbia will take advantage of the Catastrophe Deferred Drawdown Option (Cat-DDO)—the first mechanism of its kind in the Europe and Central Asia Region—to better manage budget volatility associated with disasters. This innovative instrument can be triggered after a government declares a state of emergency, allowing it to respond quickly to emergency needs by supporting transparent and efficient post-disaster damages assessments of public infrastructure and mobilizing immediate post-disaster funding, without disrupting ongoing resources from longer-term development programs.



Stories of Impact: Fisheries Livelihood Support in India's Coastal Regions (2017)

In India's coastal regions of Tamil Nadu and Puducherry, over 200,000 families depend on fishing and related activities for their livelihoods. Recent events like the 2004 tsunami, Cyclone Nilam in 2010, and the Chennai floods of 2015 have shown that fishery-dependent communities in the coastal areas are vulnerable to natural disasters and climate change and also to the rapid degradation of marine environment. A GFDRR-supported project aims to improve the sustainability and resilience of coastal fisheries, benefiting 300 families' livelihoods, with 400 additional families projected to benefit from the project.



Crisis Assessment Series: Syria (2016)

The Syrian crisis has devastated the country and set it back decades in terms of development. The objective of this assessment was to estimate the effects of the crisis on the population, infrastructure, and service delivery, and understand the preliminary recovery needs. The GFDRR team also developed an accuracy rating metrics better understand the confidence level of the final damage data. The GFDRR team led the project with the key objective to be the silo breakers eliciting a multitude of sector specialists from the World Bank Global Practices.



Crisis Assessment Series: Gaza Strip (2016)

The Palestinian Authority (PA), with the support of key donors, requested the Gaza Detailed Needs Assessment (DNA). The DNA aimed to articulate the Gaza Early Recovery and Reconstruction Plan 2014-2016 and develop a medium- to long-term recovery plan by formulating and prioritizing programming interventions across sectors, and guiding institutional and implementation arrangements. Specific objectives were to validate the immediate damages of the conflict; estimate the expected economic losses; and develop a detailed strategy for the recovery and reconstruction process.



Crisis Assessment Series: Nigeria (2016)

The Recovery and Peace Building Assessment (RPBA) informed a collective vision and strategy on peace building and recovery, and provided a framework for coordinated and coherent support to assist conflict affected people in the North-East. The assessment covered the six states of Borno, Yobe, Adamawa, Gombe, Taraba, and Bauchi, and provided an overarching framework for stability, peace building, and recovery. The final report provided recommendations in three areas: restoring critical infrastructure and services; peacebuilding and social cohesion; and economic recovery.



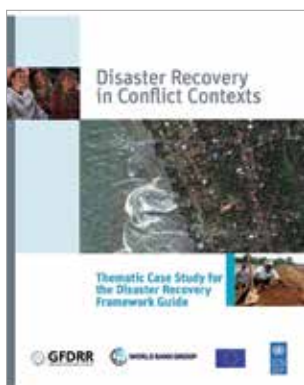
Crisis Assessment Series: Ukraine (2016)

In view of the continuing conflict, the Eastern Ukraine Recovery and Peacebuilding Assessment (RPA) was launched in October 2014 as a two-stage process. The first stage was a rapid assessment completed in March 2015 that assessed government-controlled areas. It provided an analytical and programmatic baseline for recovery efforts and identified urgent interventions. It also supplied the basis for a subsequent, more detailed phase of the assessment.



Crisis Assessment Series: Yemen (2016)

Due to the ongoing conflict, the assessment was primarily remote-based, using an innovative mixture of satellite imagery and social media analytics, supplemented by field reports and local government data whenever possible. Market expertise was solicited to utilize remote assessment techniques to perform the analysis. A preliminary report that identifies: (1) quantitative estimates of the physical damages to key public and private assets in selected sectors; (2) the impact of the crisis on associated service delivery; and (3) a preliminary analysis of stabilization interventions and their respective sequencing.



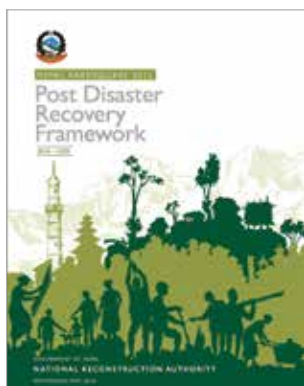
Disaster Recovery in Conflict Contexts: Thematic Case Study for the Disaster Recovery Framework Guide (2016)

This document focuses on how recovery frameworks must be informed within a disaster-conflict nexus. At a structural level, a recovery framework for disasters in a conflict context resembles other disaster recovery frameworks. However, that should not overshadow the critical need for conflict sensitivity through a nuanced consideration of the local political context, the two-way relationship between intervention/action and conflict, and how both will inform the recovery effort.



Disaster Recovery Framework: Tropical Cyclone Winston (2016)

Tropical Cyclone (TC) Winston, an extremely destructive Category 5 cyclone, struck Fiji on 20th February 2016. This Disaster Recovery Framework (DRF) sets out a Vision and Guiding Principles for medium-term recovery over the next two years (from mid-2016 to mid-2018). Recovery needs were identified in the Post Disaster Needs Assessment and have been further elaborated and prioritised in this Disaster Recovery Framework.



Nepal Earthquake 2015: Post-Disaster Recovery Framework 2016-2020 (2016)

The Post-Disaster Recovery Framework (PDRF) lays out strategic recovery objectives and summarises in an integrated manner the policy decisions, institutional arrangements, financing and financial management strategies, as well as implementation and monitoring systems that are being put in place to plan and manage recovery and reconstruction. It also sets out sector priorities that will contribute to the achievement of the strategic recovery objectives.



Stories of Impact: Building Back Better in Bosnia and Herzegovina (2016)

After heavy flooding in May 2014, which affected more than 25% of the nation’s population, the Governments of Bosnia and Herzegovina launched a Recovery Needs Assessment (RNA), with support from GFDRR, the World Bank, the EU, and UNDP. The assessment helped inform a recovery plan that has thus far benefited more than 180,000 people—nearly half of whom are women—through rehabilitated infrastructure and flood protection.



Stories of Impact: Building Climate and Disaster Resilience in Timor-Leste (2016)

With support from the GFDRR-managed Africa Caribbean Pacific-European Union Natural Disaster Risk Reduction Program (ACP-EU NDRR), Timor Leste established a program focused on generating and using quantified data to assess risk along the Dili-Ainaro and other linked road corridors. The program consisted of several complementary elements: data collection, analysis, development of tools, and training local officials to enable them to continue this work.



Stories of Impact: Prioritizing Climate Resilient Transport in Belize (2016)

GFDRR is working with the Government of Belize to boost the climate resilience of Belize’s road network and transport sector. Engaging 35 agencies and a wide range of stakeholders, the innovative project gathered and analyzed data to ensure that road planning and maintenance is risk-informed and more efficient. The methodology developed and piloted in Belize has been shared with transport and disaster risk specialists in Africa, Latin America and the Pacific to inform future resilient transport efforts globally.



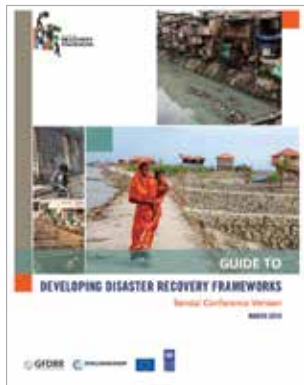
Stories of Impact: Roads to Recovery in Myanmar (2016)

After heavy rains from July through September of 2015 resulted in intense flooding and landslides, the government of Myanmar, GFDRR, the World Bank, and more than 17 partner organizations conducted a post-disaster needs assessment (PDNA) to provide a comprehensive overview of the damages, losses, and recovery priorities, informing national and sectoral recovery and reconstruction strategies. The assessment was crucial in mobilizing resources for recovery, including through the first-ever use of the World Bank’s Immediate Response Mechanism.



What Did We Learn? The Shelter Response and Housing Recovery in the First Two Years after the 2010 Haiti Earthquake (2016)

The World Bank, GFDRR, and their partners joined forces beginning in 2013 to analyze what was learned from the 2010 Haiti earthquake shelter response and housing recovery experience. This report – based on research and reflections among people and organizations involved in the international community’s urban shelter and housing assistance efforts following the 2010 Haiti earthquake – is the outcome of that process.



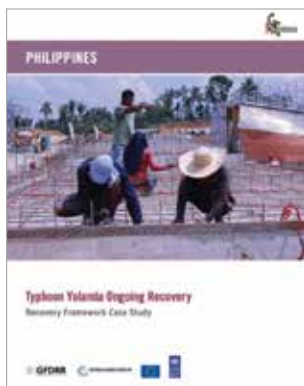
Guide to Developing Disaster Recovery Frameworks: Sendai Conference Version (2015)

This guide provides the essential information to assist policy makers and other stakeholders in formulating a framework for the medium- to long-term post-disaster recovery. This framework will help in articulating the recovery vision; defining the recovery strategy; prioritizing actions; fine-tuning planning; and providing guidance on financing, implementing, and monitoring the recovery. The framework also is a tool that helps in learning and self-evaluation, leading to continuous improvements over the course of the recovery implementation.



Program Profile: Disaster Recovery Framework (2015)

The Disaster Recovery Framework program gathers best-practices from a variety of stakeholders to ensure that affected countries recover efficiently and build back better after a disaster. The DRF Guide supports governments in planning, prioritizing, financing, and implementing recovery programs to ensure resilience. Focused on medium to longer-term recovery efforts, a disaster recovery framework is design to help policymakers, financial managers, and others accomplish the full range of recommendations from post-disaster assessments.



Recovery Framework Case Study: Philippines: Typhoon Yolanda Ongoing Recovery – Revised Final Version (2015)

This case study documents the processes, standards and criteria employed for recovery planning following Typhoon Yolanda. It highlights good practices from the ongoing post-Yolanda recovery process that the Philippine government can institutionalize and share with the international community.



Resilient Recovery: An Imperative for Sustainable Development (2015)

This report documents the challenges and progress around the world in integrating disaster risk reduction measures into post-disaster recovery and rehabilitation, and introduces the new way forward for achieving sustainable development gains through resilient recovery process. It recommends policies and practices for strengthening disaster recovery systems that will help countries protect hard-earned developmental gains. In a context where the intensity and frequency of disasters continue to rise, we hope that this report can inform paths towards resilient recovery, and strengthen the ability of communities to recover faster and better from disasters.



Stories of Impact: Identifying Risk and Guiding Recovery Efforts in Malawi (2015)

In January 2015, Malawi experienced some of the most devastating flooding in its history. In the aftermath, the Government of Malawi conducted a post-disaster needs assessment (PDNA), with support from the EU, UN, GFDRR, and the World Bank, to help inform \$80 million in World Bank financing to help restore agricultural livelihoods, reconstruct critical public infrastructure, enhance food security, and improve disaster response and recovery capacity.



Stories of Impact: Safeguarding against Disasters in Ethiopia (2015)

Ethiopia’s Productive Safety Net Program allows the most vulnerable individuals to establish a safeguard system to protect their household savings from future drought risks. The program, which finances key elements of Ethiopia’s DRM system, provides food or cash transfers to households in chronically food insecure districts in exchange for labor-intensive public works, while labor-poor households receive unconditional “direct for support” cash transfers. As part of this program, the World Bank and GFDRR are supporting the development of clearer early warning indicators and support for contingency planning and financing in Ethiopia.



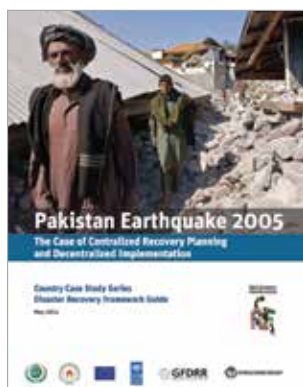
Stories of Impact: Shaping Ukraine’s Recovery (2015)

After the unrest escalated beginning in early 2014, the Government of Ukraine sought to better understand its impact and how to recover. At the government’s request, GFDRR, in partnership with the World Bank, the EU and UN, helped assess the damage of Ukraine’s conflict-affected areas. Work began in late 2014 and consisted of a joint needs assessment for recovery and peacebuilding undertaken by these institutions. Lessons learned: A conflict situation constricts the scope of assessment, and political developments can provide unique challenges.



Stories of Impact: Supporting Resilient Recovery in Vanuatu after Cyclone Pam

Following the destructive Tropical Cyclone Pam that swept across the Pacific nation in March 2015, GFDRR and the World Bank quickly mobilized to respond. Based on the damage impact assessment findings, the government prepared a robust National Recovery and Economic Strengthening Plan, completed in May 2015. The damage assessment helped to leverage World Bank financing for Vanuatu totaling \$70 million, to finance infrastructure rehabilitation and reconstruction, as well as support economic and private sector recovery, and enhance climate and disaster resilience.



Disaster Recovery Framework Guide: Pakistan Earthquake 2005: The Case of Centralized Recovery Planning and Decentralized Implementation (2014)

This study in the Country Case Study Series details efforts by the Pakistani government to develop a public subsidy program for housing reconstruction after the devastating 2005 earthquake that left 73,000 dead and destroyed 600,000 homes. The mountainous region made reconstruction particularly difficult, and the approaching harsh winter created the need for swift reconstruction. This study, based on a comprehensive literature review and interviews with key stakeholders, presents the highlights of the post-earthquake reconstruction process. It outlines the decision-making processes in recovery planning and extracts best practices and key lessons learned from the experience.



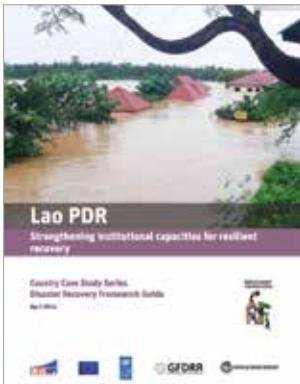
Recovery Framework Case Study: Bangladesh: Planning and Implementation of Post-Sidr Housing Recovery: Practice, Lessons and Future Implications (2014)

This case study was conducted in 2014 to document the lessons learned from the housing recovery operation carried out in the wake of Cyclone Sidr that hit Bangladesh in 2007. In a first, housing was considered an integral component of a principle-led recovery that sought to reach out to the most vulnerable sections of society. The recovery operation has brought about a visible change in the housing recovery practices of Bangladesh. Thus, the post-Sidr recovery operation offers important lessons for Bangladesh and other countries in shaping effective post-disaster recovery guidelines.



Recovery Framework Case Study: Haiti Earthquake 2010: Recovery from a Mega Disaster (2014)

This case study highlights the coordinated efforts of the Haitian government and the international community to assess total damage and loss and to implement a plan for post-earthquake recovery and reconstruction, to be incorporated into the country's long-term development goals. The case study focuses on the policies and practices of recovery from that time until the present. This document summarizes only the key findings from the case study.



Recovery Framework Case Study: Lao PDR: Strengthening Institutional Capacities for Resilient Recovery (2014)

This case study examines Lao PDR's progress in working towards developing a National Disaster Recovery Framework following a series of tropical storms, including Typhoons Ketsana and Haima/ Nok Ten and the 2013 flood events. It assesses the disaster recovery process across four areas: institutional arrangements to implement and manage recovery; policy, planning, and prioritization; designing, costing, and financing recovery; and monitoring and evaluation. The overarching objectives are to inform the global guidelines and to provide a basis for operationalizing the Disaster Recovery Framework in the local Lao PDR context.



Recovery Framework Case Study: Mozambique: Recovery from Recurrent Floods 2000–2013 (2014)

Economic gains in Mozambique are significantly undermined as a result of recurrent water and weather related hazards; consequent economic losses are estimated to average 1.1 percent of GDP annually. Worse, natural disasters such as floods and cyclones have a lasting impact that affects disproportionately the poorest. This report details the country's efforts to transition from emergency response to incorporate disaster recovery considerations into the country's development plans following devastating flooding.



Recovery Framework Case Study: Senegal: Urban Floods – Recovery and Reconstruction since 2009 (2014)

Following severe flooding in 2009, a post-disaster needs assessment (PDNA) conducted by GFDRR concluded that there was an urgent need to address the underlying causes of recurrent floods. A strategy for the medium and long-term reduction of flood risks was recommended, based on a combination of structural and non-structural measures. The PDNA helped inform a strategic action plan for recovery and reconstruction in Senegal following the 2009 severe flooding. This case study examines the good practice and challenges in implementing a Disaster Recovery Framework in Senegal.



Recovery Framework Case Study: Yemen: Tropical Storm, October, 2009 (2014)

In October 2008, a major tropical storm produced one of the worst adverse natural events ever to affect the Republic of Yemen. The Yemen experience highlights the challenges that regional, national, and international recovery institutions face when dealing with a disaster event in a country with high levels of political, security, demographic, and socioeconomic challenges. This case study details efforts, in coordination with the international community, to design and implement an effective post-disaster recovery program following the 2008 tropical storm.



Recovery and Reconstruction Planning in the Aftermath of Typhoon Haiyan (Yolanda) (2014)

This report summarizes the “just-in-time” advice provided by the World Bank to the Government of the Philippines immediately after Typhoon Haiyan (Yolanda). The Bank helped the National Economic and Development Authority develop the Reconstruction Assistance on Yolanda (RAY) plan, providing recommendations and sharing international good practice on recovery and reconstruction. The recommendations highlight the importance of taking into account multiple hazards in the Philippines (earthquakes, volcanic eruptions, and landslides, in addition to typhoons) in the recovery and reconstruction process to bring communities, buildings, and infrastructure to higher multihazard resilience standards.



Stories of Impact: Assessing Post-Disaster Needs in Nigeria (2014)

After severe flooding in 2012, Nigeria asked GFDRR and other key partners to conduct a comprehensive Post-Disaster Needs Assessment (PDNA). The assessment thoroughly analyzed the social and economic impact of the flooding and provided the crucial framework for rapid response and recovery efforts. This initial PDNA helped to establish Nigeria’s national capacity for disaster recovery. It has become a model for future assessments and is also helping enable government agencies and other organizations to respond more rapidly to future disasters.



Stories of Impact: Building Back Better in Tonga after Cyclone Ian (2014)

After Tropical Cyclone Ian swept through the Pacific Island nation of Tonga in 2014, causing significant damage to housing and critical infrastructure, the government and GFDRR, with funding from the African Caribbean Pacific-European Union Natural Disaster Risk Reduction Program (ACP-EU NDRR), worked to rapidly assess the damage and implement a recovery program that would strengthen the housing and transport infrastructure sectors against future natural hazards.



Stories of Impact: Building the Foundation for Resilience in Serbia (2014)

Following extremely heavy rainfall in May 2014, Serbia experienced its most severe flooding in more than a century. Following a recovery needs assessment (RNA) supported by GFDRR, the government launched a National Disaster Risk Management Program to build resilience, reduce disaster risks, and mobilize recovery funding for priority sectors. GFDRR, the World Bank, and other partners supported Serbia’s efforts to move from a focus on response towards prevention and preparedness. Technical assistance was channeled to priority areas.



Stories of Impact: Building Coastal Resilience in India

Effective disaster risk management significantly reduced casualties from Cyclone Phailin, and GFDRR is supporting the strengthening and scaling up of these efforts through the National Cyclone Risk Mitigation Project (NCRMP). Nearly 1 million coastal residents were relocated in a massive evacuation effort ahead of Cyclone Phailin, partly enabled by the shelters and emergency roadways, as well as frequent mock drills and extensive community-level preparation. Lessons learned: Successful disaster risk reduction can dramatically reduce casualties from natural hazards, and resilience is about more than the preservation of human life.



Stories of Impact: Managing Drought, Sustaining Growth in Djibouti (2014)

With funding and guidance from GFDRR, Djibouti established a vulnerability and risk assessment and communication platform comprised of hydrological early warning systems, flood and drought early warning systems, and seismic and floods vulnerability and risk assessment—the first of its kind in Africa. The government has also reached out to GFDRR to develop a country-wide and multi-sector resilience strategy to promote investment. This may include assisting Djibouti in implementing risk management techniques in novel sectors such as cyber-security and public health.



Stories of Impact: Rapidly Assessing Flood Damage in Uttarakhand, India (2014)

The devastating 2013 monsoons in the state of Uttarakhand triggered the collapse of a glacial lake dam and caused heavy flooding and landslides. GFDRR supported the government to conduct a Joint Rapid Damage Needs Assessment for the region soon after the disaster, completing a thorough analysis of damage to a variety of social and economic sectors in just over a week and providing the necessary foundation for recovery efforts to begin.



Stories of Impact: Resilient Recovery in Samoa after Cyclone Evan (2014)

Following the powerful Tropical Cyclone Evan that swept across the island of Samoa in July 2012, GFDRR, with funding from the African Caribbean Pacific–European Union Natural Disaster Risk Reduction Program, worked to assess damages, launch a comprehensive disaster recovery and reconstruction plan to make the transport and agriculture sectors more resilient, and strengthen the country’s financial capacity to manage future shocks from natural disasters. The long-term strategy is to increase the resilience of Samoa’s vulnerable population and sectors through continued engagement with the government.



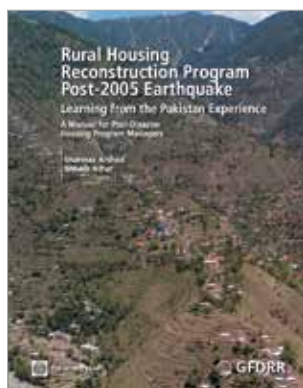
Stories of Impact: Stakeholders Engage to Build Belize’s Climate Resilience (2014)

With the increasing incidence of climate-related disasters, the Government of Belize is working to improve its resilience by transforming the country’s approach to economic and social development with a national plan that cuts across all sectors of the economy. The plan incorporates socioeconomic considerations including vulnerability, poverty, and education. It integrates climate resilience and disaster risk management into every aspect of the country’s development planning, with the goal of ensuring long-term sustainable growth throughout Belize.



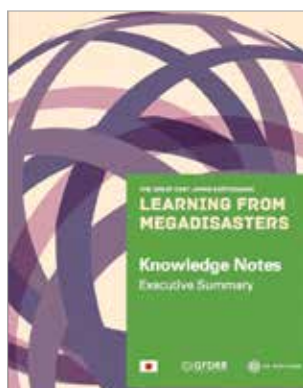
Stories of Impact: Weathering Future Storms in the Seychelles (2014)

When Tropical Cyclone Felleng battered the multi-island country of Seychelles with heavy rain in January 2013, the government, with support from the World Bank and the African Caribbean Pacific–European Union Natural Disaster Risk Reduction (ACP-EU NDRR) Program, worked to assess the damages and ensure that recovery efforts mitigate the effects of future natural hazards. Lessons learned: Lack of compliance with building regulations increased the impact of the disaster, and working together is essential to building back better.



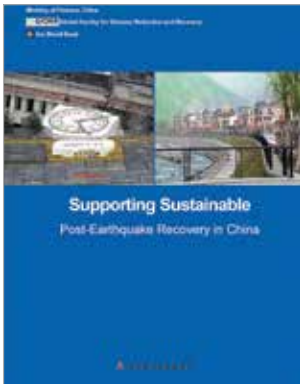
Rural Housing Reconstruction Program Post-2005 Earthquake: Learning from the Pakistan Experience—A Manual for Post-Disaster Housing Program Managers (2013)

This is a manual for professionals tasked with responding to post-disaster housing reconstruction needs. It uses Pakistan’s 2005 post-earthquake Rural Housing Reconstruction Program as a case study, drawing on experiences and lessons learned to provide recommendations for future post-disaster housing reconstruction programs. It also provides a strong results-based outlook through a results framework that links desired impacts, program level and intermediate outcomes, and outputs into a coherent whole.



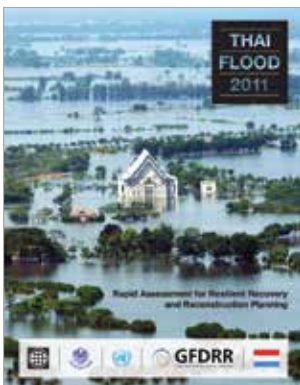
Learning from Megadisasters: Knowledge Notes Executive Summary (2012)

The Great East Japan Earthquake (GEJE) of March 11, 2011, was the first disaster ever recorded that included an earthquake, a tsunami, a nuclear power plant accident, a power supply failure, and a large-scale disruption of supply chains. This project collected and analyzed information, data, and evaluations performed by academic and research institutions, nongovernmental organizations, government agencies, and the private sector from GEJE with the objective of sharing Japan’s knowledge on disaster risk management (DRM) and post-disaster reconstruction with countries vulnerable to disasters.



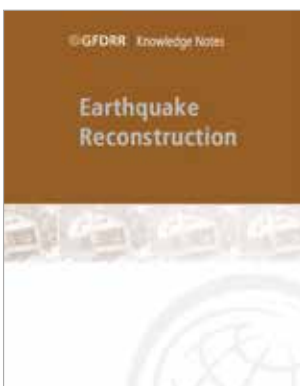
Supporting Sustainable Post-Earthquake Recovery in China (2012)

This study evaluates and outlines the government response in terms of reconstruction following the May 12, 2008 magnitude 8.0 Wenchuan earthquake in China's western Sichuan province that killed over 69,000 people and destroyed most of the buildings and infrastructure in affected areas. The report looks at rural reconstruction, urban and rural housing, public service facilities and infrastructure, industrial recovery, off-site reconstruction of counties and towns, and the organization implementation system.



Thai Flood 2011: Rapid Assessment for Resilient Recovery and Reconstruction Planning (2012)

In response to prolonged and widespread floods throughout Thailand in 2011, the Royal Thai Government, in conjunction with the World Bank and other development partners, undertook this rapid assessment of their impact in 26 of the 66 affected provinces. It used a comprehensive and internationally established methodology for determining needs for post-disaster recovery and reconstruction in 18 main sectors. It proposed short-, medium-, and long-term measures for sustainable post-disaster reconstruction. Drawing on global good practices, the report suggests ways to improve the resilience of the country's infrastructure and its communities.



Earthquake Reconstruction: Knowledge Note (2011)

The Knowledge Notes prepared for the Government of Haiti covered a number of key areas in earthquake reconstruction, including Seismic Safety Assessment of Buildings; Debris Management; Environmental and Social Assessment; Experience with Post Disaster Income Support Programs; Land Tenure; Managing Post-Disaster Aid; Rebuild or Relocate; Transitional Shelter. The notes provided just-in-time advice by introducing options for disaster recovery. GFDRR has decided to develop Knowledge Notes for different disasters and make them available to policy makers and practitioners potentially facing post-disaster situations. "Earthquake Reconstruction" is the first of the series.



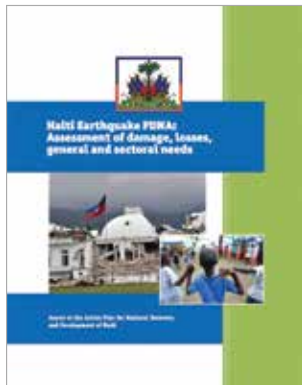
World Reconstruction Conference (WRC) Proceedings 2011 (2011)

The World Bank, GFDRR, and UNISDR organized the 2011 World Reconstruction Conference (WRC) as a part of the Third Global Platform for Disaster Risk Reduction. It was the first global conference to focus on natural disaster recovery and reconstruction. The presented papers introduce the substantive background information for the various thematic sessions. The findings of the discussions will feed into the finalization of the papers as self-standing knowledge note publications and learning modules. They will also serve as background reference for the preparation of the World Reconstruction Report.



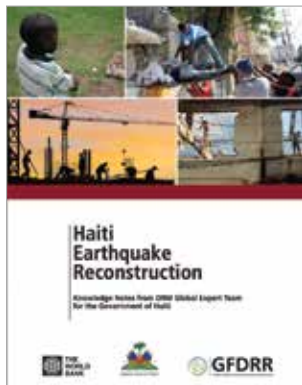
2010 Haiti Earthquake: Post-Disaster Building Damage Assessment Using Satellite and Aerial Imagery Interpretation, Field Verification and Modeling Techniques (2010)

This report provides a detailed account of how technology, inspiration, and collaboration were used to quickly assess the damage caused by the January 12, 2010 Haiti earthquake that killed close to a quarter of million people and devastated its capital city. It documents the analyses completed by the ImageCat team and contains a series of recommendations that are focused on better use of the technologies described in this report and a roadmap on how some of the products can be used for pre- and post-event planning.



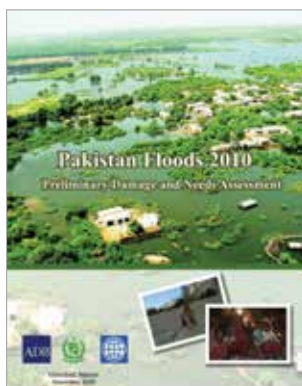
Haiti Earthquake PDNA: Assessment of Damage, Losses, General and Sectoral Needs (2010)

This report presents the results of the post-disaster needs assessment (PDNA) conducted in Haiti from February 18 to March 24 2010, which assesses damages, losses, general needs across sectors including health, education, and other development areas. This assessment has been designed to go further than traditional post-disaster assessments. The objective has been to lay the foundations for a fresh start in the country’s development efforts, as well as to reconstruct the damaged areas and contribute to a long-term national strategic development plan, in order to begin rebuilding Haiti.



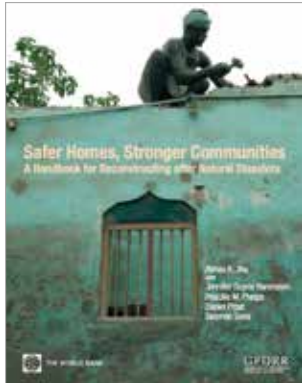
Haiti Earthquake Reconstruction: Knowledge Notes from DRM Global Expert Team for the Government of Haiti (2010)

This publication provides a series of “knowledge notes” put together by GFDRR’s disaster risk management global expert team on behalf of the Government of Haiti. The notes provide just-in-time advice and options for Haiti’s disaster recovery, making expert advice and global best practices available to the government by mobilizing the World Bank Global Expert Team (GET) (and also procuring external expertise where in-house expertise was not available) to prepare Knowledge/ Good Practice Notes on ten identified, ‘burning’ post-disaster recovery and reconstruction issues in a time-bound manner.



Pakistan Floods-2010: Preliminary Damage and Needs Assessment (2010)

At the request of the government of Pakistan, the World Bank and the Asian Development Bank launched a damage and needs assessment exercise in August of 2010 to assess and quantify flood damage, losses and resulting needs in order to address medium- to long-term post-flood reconstruction. It has a companion report entitled “Pakistan Floods Emergency Response Plan,” which has been prepared by the United Nations. These two reports have been coordinated to ensure consistency and facilitate coordination.



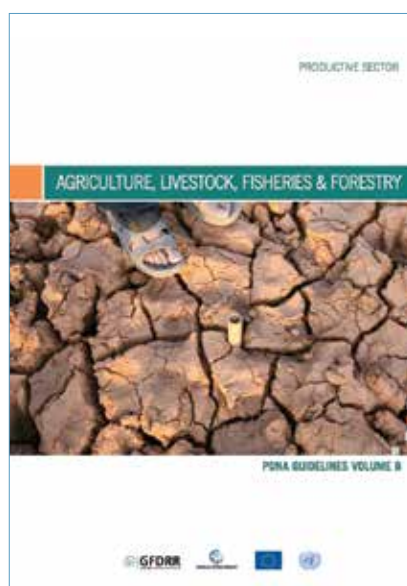
Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters (2010)

This handbook was developed to assist policy makers and project managers engaged in large-scale post-disaster reconstruction programs make decisions about how to reconstruct housing and communities after natural disasters. As it demonstrates, post-disaster reconstruction begins with a series of decisions that must be made almost immediately. Despite the urgency with which these decisions are made, they have long-term impacts, changing the lives of those affected by the disaster for years to come.

Post-Disaster Needs Assessment (PDNA) Guidelines

POST-DISASTER NEEDS ASSESSMENTS VOLUME A: GUIDELINES (2013)

The overarching purpose of this guide is to provide technical support to practitioners as they plan for and implement the needs assessment and design the recovery framework. It is hoped that the guide will allow for a consistent and coherent approach to the post-disaster assessment, provide an objective and comprehensive estimate of recovery needs, while facilitating quick decision-making and action.



PDNA GUIDELINES VOLUME B

PDNA Guidelines Volume B presents specific guidelines for each of the following sectors and topics:

- | | |
|--|-----------------------------------|
| Agriculture, Livestock, Fisheries and Forestry | Governance |
| Commerce | Health |
| Community Infrastructure | Housing |
| Culture | Macroeconomic Impact of Disasters |
| Disaster Risk Reduction | Manufacturing |
| Education | Telecommunications |
| Employment, Livelihood and Social Protection | Tourism |
| Environment | Transport |
| Gender | Water & Sanitation |



Post-Disaster Needs Assessment: 2018 Floods, Lao PDR



Dominica: PDNA following Hurricane Maria, September 18, 2017



Sri Lanka Rapid PDNA: Floods and Landslides, May 2017



Sierra Leone Rapid Damage and Loss Assessment: August 2017 Landslides and Floods



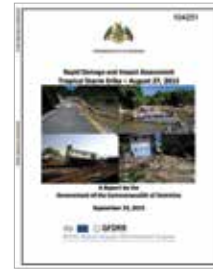
Vietnam 2016 Rapid Flood Damage and Needs Assessment



Seychelles Post Disaster Needs Assessment: Tropical Cyclone Fantala



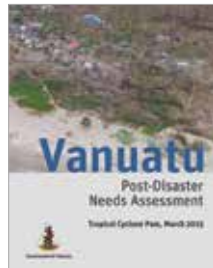
Fiji Post-Disaster Needs Assessment (Tropical Cyclone Winston) with funding from ACP-EU



Dominica 2015: Rapid Damage and Impact Assessment



Fogo Volcanic Eruption 2014-2015



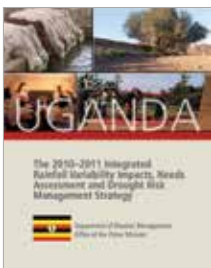
Vanuatu Tropical Cyclone Pam



Tbilisi 2015 Floods



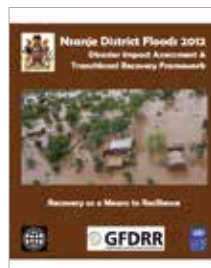
Seychelles 2013 Floods



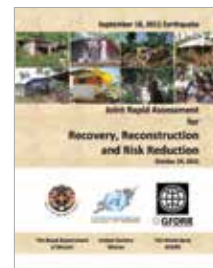
Uganda 2010-11 Drought



Fiji Tropical Cyclone Evan 2012



Malawi 2012 Flood



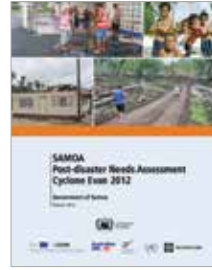
Bhutan 2011 Earthquake



Lao PDR 2011 Typhoon



Thailand 2011 Flood



Samoa PDNA - Cyclone Evan 2012



Djibouti 2011 Drought



Lesotho 2011 Flood



Kenya 2011 Drought



Pakistan 2011 Flood



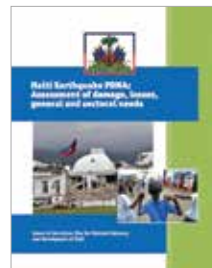
Benin 2010 Flood



Guatemala 2010 Tropical Storm



Moldova 2010 Flood



Haiti 2010 Earthquake

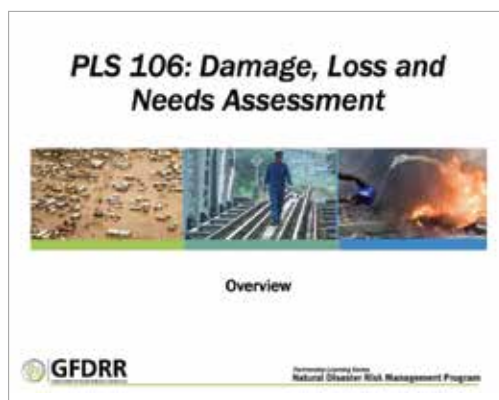
DAMAGE, LOSS, AND NEEDS ASSESSMENTS: KNOWLEDGE

The damage, loss and needs assessment (DaLA) methodology, developed by the Economic Commission for Latin America and the Caribbean (ECLAC) in the 1970s, has evolved as a globally recognized and applied tool to quantify the impacts of disasters, and to determine the necessary financial resources to achieve full reconstruction and recovery. The following DaLA-related knowledge products have been created for practitioner training.



[DaLA Guidance Notes \(3 Volumes\)](#)

Available in Arabic, Chinese, English, French, Russian, Spanish, the DaLA Guidance Notes were prepared by GFDRR to help practitioners and staff from national and international agencies to assess the impact of disasters and to develop the recovery and reconstruction framework.



[PLS 106 Training Materials](#)

This introductory DaLA course introduces the damage, loss and needs assessment methodology.

REGION AND COUNTRY RESEARCH



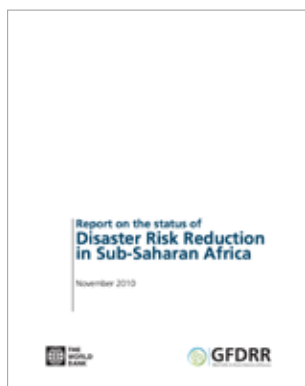
Disaster Risk Management in South Asia: A Regional Overview (2013)

The number of disasters in South Asia has quadrupled over the past four decades, resulting in cumulative damages of over US\$25 billion in the past five years alone. Despite this increase, regional awareness and understanding of disaster risk by people and governments remains low. To promote engagement in disaster and climate risk management practices, this report informs readers about the elements that are driving increases in disaster risk in SAR



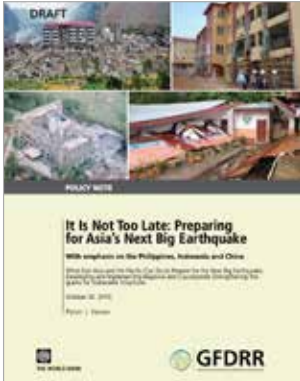
Strong, Safe, and Resilient: A Strategic Policy Guide for Disaster Risk Management in East Asia and the Pacific (2013)

This report provides a disaster risk management framework for the most disaster-stricken region in the world, including policy action and investments that take into account the communities most at risk as well as the needs of the poor and most vulnerable. It outlines the challenges and opportunities and new priorities for the Disaster Risk Management field. It takes stock of the most important activities, highlights examples of global good practice and innovative products, and makes recommendations for reducing risks and building resilience in the short, medium, and long run.



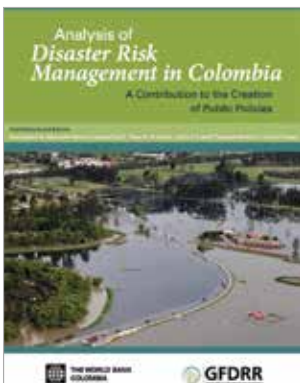
Disaster Risk Reduction in Sub-Saharan Africa (2010)

Over the last four decades, Sub-Saharan Africa has experienced more than a thousand disasters. This report covers how Sub-Saharan Africa's disaster profile is closely linked to the vulnerability of its population and economies and their often-low capacity to cope with natural hazards. It provides an overview of projects and activities linking DRR to major sectors from agriculture to urban development. Success stories and background information in the supporting boxes provide additional insights.



It Is Not Too Late: Preparing for Asia's Next Big Earthquake—with Emphasis on the Philippines, Indonesia and China (2010)

This report focuses on how to prepare the Asia region for the next major earthquake. It is only a few decades, at most, before a major earthquake occurs near a metropolitan area. The region is generally not prepared for such an event but much can be done before a disaster strikes. This report looks at the key challenges in earthquake risk management and what should be done by governments about them.



Analysis of Disaster Risk Management in Colombia: A Contribution to the Creation of Public Policies (2011)

Colombia has been a pioneer in Latin America in developing a comprehensive vision in risk and disaster management, which has resulted in a relative decrease in casualties. However, damage to property, infrastructure, and livelihoods continues to increase.

Available in Spanish



Central Asia and Caucasus Disaster Risk Management Initiative (2009)

The countries of Central Asia and the Caucasus have a history of devastating disasters that have caused economic and human losses across the region. Almost all types of natural and technological hazards are present, including earthquakes, floods, landslides, mudslides, debris flows, avalanches, droughts and extreme temperatures. This desk review presents an initiative that aims at reducing Central Asia and the Caucasus' vulnerability to the risk of disasters, in line with the Hyogo Framework for Action 2005–15.

EVALUATIONS AND PROGRESS REPORTS



Inclusive Community Resilience: A Program Review (2017)

The Inclusive Community Resilience program (the ICR program) was established in May 2015 to enhance community capacity for disaster and climate risk management by influencing country investment programs that put resources directly in the hands of poor households and communities (e.g., Community-Driven Development and Social Protection). This review assesses the relevance, effectiveness, and efficiency of the ICR program following internationally agreed OECD-DAC evaluation criteria.



Reviewing the Impact of Capacity Building in GFDRR (2017)

GFDRR devotes up to 24 percent of its resources to capacity-building efforts. This study assesses the effectiveness of capacity building across the GFDRR portfolio. The report evaluated projects active in fiscal years 2014 and 2015 (FY14 and FY15), focusing on human capacity building – developing and sharing knowledge and skills, as well as consensus and network building.



GFDRR Synthesis Evaluation Report (2017)

During January 20th and 21st of 2016, the city of Vienna hosted the first Understanding Risk Conference for a developed country, URAT. The conference brought together for the first time policy makers, risk modelers, insurance, risk communicators, academia, and practitioners (private and public sectors) from all the corners of Austria to meet, learn, and share best practices in disaster risk management and adaptation to climate change.



Country Updates: GFDRR Engagement in Focus Countries 2007-2012 (2012)

This Country Update provides a snapshot of GFDRR programmatic engagement in 29 focus countries. Inputs to the country updates were provided by the country GFDRR Disaster Risk Management (DRM) Specialists, the World Bank's DRM Regional Coordinators, projects' Team Leaders, regional DRM teams, and Country Management Units.

VIDEOS & MULTIMEDIA

[Risk and time: Communicating disaster risk through sculpture](#)

By giving life to numbers, art can play a critical role in communicating disaster risk. At Understanding Risk Finance Pacific, a captivating data sculpture designed by Pablo Suarez served as a reminder of the importance of innovative risk financing for achieving disaster resilience.

[Leveraging Nature-Based Solutions for Resilience](#)

By using natural systems to provide critical ecosystem services, nature-based solutions (NBS) can provide a cost-effective and flexible approach for disaster risk and water resource management. In partnership with GFDRR, the World Bank has already integrated NBS in around 100 projects across 60 countries.

[Small Island States Resilience Initiative \(SISRI\)](#)

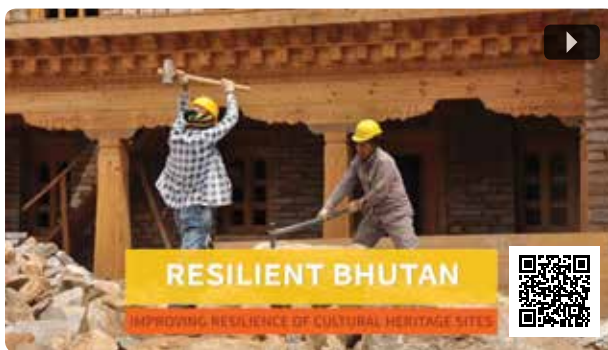
The Small Island States Resilience Initiative (SISRI) is helping small island states build larger pipelines of resilience investments to withstand the impacts of climate change – from safeguarding coastal areas to building safety nets that protect citizens after disaster strikes.



Enhancing Weather, Climate, and Water Information Services across Central Asia

Climate change threatens to increase temperatures across Central Asia by 4 degrees Celsius or more by the end of the century, bringing increasingly frequent and severe impacts from extreme weather. Improving weather, climate and hydrological services—by putting accurate, timely and understandable predictions into the hands of decision-makers and the public—can save lives and guide forward-looking investments. The Central Asia Hydrometeorology Modernization Project has among other activities helped rehabilitate 87 weather stations and 19 river stations across the Kyrgyz Republic and Tajikistan, improving weather forecasting in these countries by up to 30 percent.

Russian version



[Improving the Resilience of Bhutan’s Cultural Heritage Sites \(2018\)](#)

Bhutan’s cultural heritage has suffered the wrath of disasters for centuries. In this context, the Royal Government of Bhutan has made it a priority to sustain both tangible and intangible aspects of its culture with dedicated offices under the Department of Culture of Ministry of Home and Cultural Affairs (MOHCA), which work closely with local governments to monitor and prepare for risks, disaster response, and post-disaster recovery for cultural heritage sites.



[Learning from Japan’s Experience to Prepare for Disasters in the Kyrgyz Republic \(2018\)](#)

On October 5, 2018, the Kyrgyz Republic commemorated National Disaster Risk Reduction Day to remind citizens about “dormant” disaster risks and ensure the country stands ready to anticipate the next one. Around 5,000 people representing fire and health services, school teachers and students, as well as emergency services, participated in disaster simulation drills.

[Learning from Japan’s Experience to Prepare for Disasters in the Kyrgyz Republic \(Russian Version\) \(2018\)](#)





[Bhutan: Hydromet Services and Disaster Resilience Regional Project \(HSDRRP\) \(2018\)](#)

The Bhutan Hydromet Services and Disaster Resilience Regional Project (HSDRRP), supported by GFDRR and the World Bank, aims to strengthen Bhutan’s capacity for hydromet services and disaster preparedness.



[A Climate Change Virtual Reality Experience Goes Home: ‘Our Home, Our People’ Returns to Fiji \(2018\)](#)

Using 360-degree Virtual Reality (VR) storytelling, ‘Our Home, Our People’ tells the human stories behind the Fiji Climate Vulnerability Assessment, a report produced by the Fijian government, GFDRR and World Bank that put significant new detail on what climate change actually means for Fiji’s economy. In April 2018, members of the production crew returned to the communities involved to present them with the film.



[Understanding Flood Vulnerability in Niger through Drones, Open Street Mapping and Flood Modeling \(2018\)](#)

(In English): Understanding Flood Vulnerability in Niamey, Niger, through Innovation with Drones, OpenStreetMap, and Open flood Modeling.

(In French): Comprendre la Vulnérabilité aux inondations à Niamey, Niger, au travers de l’innovation, avec des drones, OpenStreetMap, et Open Flood Modeling.



[Small Island States Resilience Initiative \(SISRI\) \(2018\)](#)

Small island states face severe vulnerabilities as a result of climate change and natural disasters. Through SISRI, GFDRR is helping step up the rate of progress to safeguard these unique environments by providing technical support, helping maintain a community of practice, and helping island nations harness predictable and long-term funding to ensure their resilience.



[Drone applications for a resilient Seychelles \(2018\)](#)

A team in the climate-vulnerable Seychelles, which is confronting sea level rise and coral reef degradation surveyed vulnerable coastal areas on the islands of Mahé and La Digue. The effort was guided by and will be used to inform initiatives led by government to mitigate disaster risk. The exercise successfully captured data for 11 critical sites on Mahé and 70 percent of La Digue—covering 30 square kilometers of the Seychelles' coastal area. The imagery collected with drones can be used for many purposes, from planning to flood modelling.



[Central Asia Hydrometeorology Modernization Project \(Russian\) \(2018\)](#)

A geographically diverse region, Central Asia faces a range of natural hazards which are now being intensified by climate change. With the support of GFDRR and the World Bank, countries across the region are bolstering their weather forecasting and early warning efforts through the Central Asia Hydrometeorology Modernization Project (CAHMP).



[Turkey Education Infrastructure for Resilience Project](#)

Funded by the EU and implemented by GFDRR and the World Bank, the School Construction Projects under the Facility for Refugees in Turkey project aims to support the Government of Turkey in improving access to education for Syrians under Temporary Protection (SuTP), as well as their host communities, by expanding disaster-resilient education infrastructure in priority provinces. The Ministry of National Education will construct approximately 56 formal and informal education facilities, reaching more than 40,000 direct beneficiaries.



[Climate Risk and Early Warning Systems \(CREWS\) initiative \(2017\)](#)

The Climate Risk & Early Warning (CREWS) Initiative supports LDCs and SIDS to significantly increase the provision of the weather and climate services and the capacity to generate and communicate effective, impact-based multi-hazard, gender-informed, early warnings systems to protect lives, livelihoods, and assets.



[Central Asia Hyrometeorology Modernization Project \(2018\)](#)

A geographically diverse region, Central Asia faces a range of natural hazards that are now being intensified by climate change. With the support of GFDRR and the World Bank, countries across the region are bolstering their weather forecasting and early warning efforts through the Central Asia Hydrometeorology Modernization Project (CAHMP).



[Climate Change in Fiji in VR: 'Our Home, Our People' \(2017\)](#)

'Vei lomani' is a Fijian expression meaning 'love in action', and it is a value at the heart of Fijian life. And it is in the spirit of 'vei lomani' that Fijians are coming together to respond to the impacts of climate change. Experience the story of Catalina, Rai, Asmita and Rupeni in 360° VR, and explore more at [www.veilomani.com](#). 'Our Home, Our People' is best viewed with a VR headset and headphones.



[ThinkHazard!: Is your project resilient to natural hazards? \(2018\)](#)

ThinkHazard.org is a free, easy-to-use, open-source tool that helps project planners identify natural hazards in their project area and understand how to reduce their impact. With a breakdown of 11 hazard risks down to the district level, ThinkHazard! helps project planners and managers ensure that their project is resilient—now and in the future.



[Building Safer Houses in Northern India \(2017\)](#)

In June 2013, a heavy deluge caused devastating floods and landslides in India's state of Uttarakhand located in the Himalayan foothills. The disaster—the worst in the country since the 2003 tsunami—hit more than 4,200 villages, damaged 2,500 houses, and killed 4,000 people. Since 2013, the World Bank has helped the people of Uttarakhand restore their homes, build better roads, and better manage future disaster risks through the Uttarakhand Disaster Recovery Project.



[Building Seismic Resilience in Megacities: Turkey and the Philippines Exchange Knowledge \(2017\)](#)

In September 2017, the World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR) through the Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries supported a knowledge exchange between Turkey and the Philippines focused on the challenge of building seismic resilience in megacities with high urbanization.



[Investing in Urban Resilience \(2016\)](#)

Home to 55 percent of the world's population, cities contribute an astounding 80 percent of global GDP. Each year, urban areas are growing by an average of more than 75 million people—more than the population of the world's 85 smallest countries combined. But cities' high density of people and assets—precisely the characteristic that drives their economic productivity—also makes them extremely vulnerable to disasters. By 2030, without significant investment to improve the resilience of cities around the world, climate change may push up to 77 million urban residents into poverty.



[Building Regulation for Resilience \(2016\)](#)

Building codes and land use planning have proven to be the most effective tools for improving health and safety in cities and reducing disaster risk. With rapid urbanization and climate change exacerbating disaster risk in cities around the world, a new World Bank/GFDRR program—Building Regulation for Resilience—aims to improve effective building regulation implementation and compliance in vulnerable countries.



[Code for Resilience \(2016\)](#)

To strengthen community resilience to natural disasters through innovation, GFDRR's Innovation Lab supports Code for Resilience, an initiative that partners local technologists with disaster risk management experts to create digital and hardware solutions for disaster risk management and other civic-minded activities.



[Panamá: Ordenar el territorio para gestionar el riesgo \(2016\) \(in Spanish\)](#)

Con el apoyo del Banco Mundial a través de una donación de GFDRR, el Ministerio de Vivienda y Ordenamiento Territorial (MIVIOT) y el Municipio de Boquete han puesto en práctica medidas para reducir los riesgos ante desastres a nivel nacional y local. Por un lado, el MIVIOT aprobó en 2015 una normativa nacional para tomar en cuenta el riesgo de las comunidades al hacer planes de ordenamiento; mientras que el municipio de Boquete implementó en marzo 2016 un acuerdo para reducir los riesgos por inundaciones y deslizamientos en el distrito.



[Understanding Disaster Risk \(2016\)](#)

Impacts from natural disasters are on the rise, and disasters pose a growing threat to both economies and people's lives. We need to be able to identify risks rapidly, rigorously, and regularly. Open-source technology is making this easier than ever, allowing people all over the planet to pitch in.



[Supporting Multi-Purpose Cyclone Shelters \(2016\)](#)

In India, a World Bank Group project supported by GFDRR aims to increase the resilience of coastal communities to a range of cyclone events or disasters. The project aims to help communities in Odisha, Andhra Pradesh, Tamil Nadu, Puducherry, West Bengal, Kerala, Karnataka, Goa, Maharashtra and Gujarat, adapt to impacts of a changing climate.



[Open Data for Resilience \(OpenDRI\) Initiative \(2016\)](#)

With disaster risk increasing due to ongoing urbanization, population growth, and climate change, we need better data to focus our efforts. At present, some data is missing and other data is inaccessible. OpenDRI, a GFDRR initiative, is working to change the way we collect, share, and use data, applying open data practices to help reduce vulnerability to natural hazards worldwide.



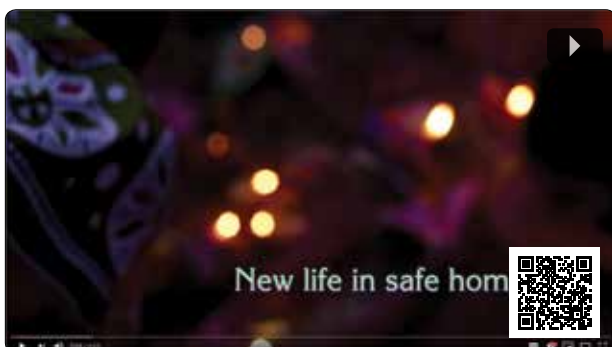
[Learning From Japan- How to Prepare for Natural Disasters \(2015\)](#)

Earthquakes, tsunamis, storms: Being well prepared for natural disasters is key to overcoming their impact on people and economies. Learning from the Japanese model of disaster preparedness is on top of the agenda for World Bank Group President, Jim Yong Kim. Kim is attending the third UN World Conference on Disaster Risk Reduction in Sendai, Japan.



[Women Entrepreneurship Program \(2015\)](#)

GFDRR, the World Bank, and IE Business School have launched a start-up competition to transform women-led ventures in the Middle East and North Africa into sustainable business opportunities. The disaster risk management work that the World Bank has done over the last six years has seen an increased demand from women who want to be involved in these programs. The women entrepreneurship program aims to make cities more resilient and competitive.



[New Life in Safe Homes \(2015\)](#)

The World Bank Group Project for Odisha, supported by GFDRR, is restoring and improving housing and public services in targeted communities. The project's main components include: 1) Resilient housing reconstruction and community infrastructure in the districts of Ganjam, Puri, and Khordha; 2) Urban infrastructure in Berhampur; 3) Capacity building in disaster risk management to support Odisha State Disaster Management Authority (OSDMA); and 4) Project implementation support.



[Managing the Impacts of Climate Change on Poverty \(2015\)](#)

Poor people are already at high risk from climate-related shocks, including crop failures from reduced rainfall, spikes in food prices after extreme weather events, and increased incidence of diseases after heat waves and floods. Without rapid, inclusive and climate-smart development, together with emissions-reductions efforts that protect the poor, there could be more than 100 million additional people in poverty by 2030, particularly in Africa and South Asia.



[Community-Based Disaster Risk Management in Tamil Nadu \(2016\)](#)

With the support of GFDRR and the World Bank, a community-based approach to disaster risk management is helping communities in Tamil Nadu, India build resilience to natural hazards.



[CREWS - Climate Risk Early Warning Systems \(2015\)](#)

The international community is coming together to support developing countries build early warning systems that can help them reduce the human and economic costs of natural disasters.



[Keeping Indonesia's Capital Safer from Floods \(2015\)](#)

Jakarta is very vulnerable to flooding. As the rainy season continues, the Jakarta government hopes its efforts to dredge the city's rivers and rehabilitate its floodways will make Indonesia's capital safer from flooding. The video includes stories of Jakarta residents told in their own words.



[Disaster Risk Finance Across the Globe \(2016\)](#)

This animated video tells the story of a young family living in a region impacted by natural disasters. It shows how Disaster Risk Finance initiatives help this family and other stakeholders across the globe.



[Resilient Recovery at GFDRR: The Way Forward for Sustainable Development \(2015\)](#)

Resilient recovery is an imperative for sustainable development. Through the roll-out of the Disaster Recovery Framework, GFDRR is working to strengthen readiness and capacity for recovery planning, implementation, and monitoring across all stakeholders.



[Bolstering Resilience to Floods and Storms in Vietnam \(2014\)](#)

More than 70 percent of the population is at risk of natural hazards. Destruction of roads inhibits disaster emergency response, leaving many communities isolated and trapped. Vietnam, with the World Bank and GFDRR, are conducting research and trials on the resilience of vulnerable rural roads. The project engages the local community in building and maintaining climate-resilient roadways.



[ACP EU Natural Disaster Risk Reduction Program—English \(2015\)](#)

An introductory video of African, Caribbean and Pacific Group of States Natural Disaster Risk Reduction Program (ACP EU NDRR). It covers ACP EU's work to support Disaster Risk Management and Climate Change Adaptation activities in ACP countries through technical assistance, capacity building and advisory/analytical work. The program also supports ACP countries in the aftermath of a disaster with post disaster needs assessments (PDNA), rapid-response technical assistance, capacity building and the development of sustainable recovery.



[Disaster Risk Reduction in the Kyrgyz Republic \(2014\)](#)

GFDRR is providing active support to reduce disaster risk in the Kyrgyz Republic, a Central Asian country which is highly susceptible to natural disasters.



[ACP EU Natural Disaster Risk Reduction Program–French \(2015\)](#)

An introductory video of the African, Caribbean and Pacific Group of States Natural Disaster Risk Reduction Program (ACP EU NDRR). It covers ACP EU's work to support Disaster Risk Management and Climate Change Adaptation activities in ACP countries through technical assistance, capacity building and advisory/analytical work. The program also supports ACP countries in the aftermath of a disaster with post disaster needs assessments (PDNA), rapid-response technical assistance, capacity building and the development of sustainable recovery.



[Tackling Urban Flooding Risk by Sharing Knowledge \(2014\)](#)

Urban flooding causes widespread devastation, economic damage, and loss of human lives. Between 2012 and 2014, a series of knowledge-sharing workshops on Flood Risk Management and Urban Resilience were organized in Jakarta, Seoul, and Manila, with support from the Government of the Republic of Korea through GFDRR. The workshops brought together government officials, experts, academics, partners, and stakeholders to share technical and practical knowledge on integrated urban flood risk management and disaster resilience to strengthen the capacity of national and local agencies.



[Philippines: Lessons on Disaster Recovery \(2014\)](#)

A year after Typhoon Haiyan (Yolanda) devastated central Philippines, a global guide on post-disaster recovery is being developed by many countries, including the Philippines, to help build back better. This video summarizes the typhoon's destructive impact and reviews the government's efforts for recovery, with an emphasis on the ways partnerships continue to be forged to help communities start over and build back better.



[Sri Lanka Climate Resilience Improvement Project \(2014\)](#)

Sri Lanka is highly vulnerable to natural hazards, as demonstrated by the 2004 Indian Ocean tsunami. Sri Lanka has embarked on a comprehensive disaster risk management program to reduce adverse impacts of climate change and adapt infrastructure stock to extreme climate shocks. It is the first South Asian country to access an innovative form of World Bank financing that provides immediate payouts after a major catastrophe.



[Belize's National Climate Investment Plan \(NCRIP\) \(2013\)](#)

Belize is one of the most vulnerable countries in the world to adverse effects of climate change, and weather-related events cause annual economic losses on average 3.94 percent of GDP. The government is continuing its efforts to improve its climate resilience. The Ministry of Finance and Economic Development spearheaded a nationally led, participatory process to identify key investments for a National Climate Resilience Investment Plan (NCRIP). It received technical assistance from the World Bank using financial support from the Africa, Caribbean and Pacific – European Union (ACP-EU) Natural Disaster Risk Reduction Program, managed by GFDRR.



[Disaster Risk Management in South Asia: Country Profiles \(2013\)](#)

Despite increasing disaster risk in South Asia Region, awareness and understanding remains low. Exposure and vulnerability to natural hazards and their consequential impacts are not yet at the forefront of development agendas. To promote engagement in disaster and climate risk management practices, this video discusses elements driving increases in disaster risk, the nature of the hazards, and the drivers of current and future disaster loss. It provides an overview of activities that can reduce vulnerability.



[About the GFDRR-funded DRM Program in Djibouti \(2013\)](#)

As part of the GFDRR-funded DRM program in Djibouti, the Comprehensive Approach to Risk Assessment in Djibouti (CARAD) was launched in 2009. Since then, it has completed a new national preparedness plan; upgraded the alarm system in the Ambouli wadi to a full-scale Early Warning System; established a DRM e-learning laboratory that has trained 40 people to date; acquired 5 hydrometeorological stations, and completed an urban risk assessment and communication platform.



[Mozambique Fly Over \(2013\)](#)

A fly over of Mozambique as part of an assessment of recent flooding in the Limpopo River Basin. The video highlights just how vulnerable the country remains to massive flood events, and features before and after images of the flood affected areas.



[Djibouti: Chronicle of Climate Change \(2013\)](#)

From droughts to floods, natural hazards have long imposed significant human and economic costs in Djibouti which have hindered the East African country's development progress.



[Country Program: Togo and Integrated Disaster and Land Management \(IDLM\) Project \(2013\)](#)

The main objective of the IDLM Project is to decrease Togo's vulnerability to disasters in targeted areas in Togo. It is being implemented by the Technical Secretariat of the National Platform for Disaster Risk Reduction, under the Togolese Ministry of Environment and Forest Resources, with funding from the EU-funded ACP-EU Natural Disaster Risk Reduction Program, GFDRR, the Least Developed Countries Fund for Adaptation to Climate Change, and Terrafrica.



[Building Climate Resilience: A Case for Caribbean Collaboration \(2013\)](#)

This is a short video co-produced by GFDRR and the World Bank Latin America and Caribbean team, and financed by CIF and the South-South Trust Fund, on how regional collaboration is helping to protect lives and livelihoods in the Caribbean.



[ISMEP-Istanbul Seismic Risk Mitigation and Emergency Preparedness Project \(2011\)](#)

The ISMEP project will contribute to the long-term program to save lives and reduce social, economic and financial impacts in the event of future earthquakes. This is expected to be achieved through: enhancing the institutional and technical capacity for disaster management and emergency response; strengthening critical public facilities; and development of risk assessment methodologies to enhance enforcement of building codes.

EVENTS



[Risk and time: Communicating Disaster Risk Through Sculpture](#)

By giving life to numbers, art can play a critical role in communicating disaster risk. At Understanding Risk Finance Pacific, a captivating data sculpture designed by Pablo Suarez served as a reminder of the importance of innovative risk financing for achieving disaster resilience.



[Knowledge Partnership Day/Intra-ACP Focus Day Highlight Video](#)

On 8 and 9 November 2018, a Knowledge Partnership Day and Focus Day on the Africa Caribbean Pacific-European Union Natural Disaster Risk Reduction (ACP-EU NDRR) Program took place in Brussels. Over 90 delegates from ACP countries, international organizations, and NGOs shared challenges and solutions on achieving inclusive disaster risk management and mainstreaming DRM and climate change adaptation in ACP countries. The events were organized by the ACP Group of States, the European Commission and the World Bank/GFDRR.



[Open Cities 1st Regional Meeting – Kickoff for Community Mapping – Kampala, Uganda](#)

The Open Cities Africa kickoff hosted the largest gathering of teams in Open Cities history in Kampala, Uganda. For a week in June 2018, eleven Open Cities project teams represented by 55 delegates convened as a cohort to receive training in innovative, open, and participatory data collection and mapping processes to support management of urban growth and disaster risk.



[Open Cities 2nd Regional Meeting – Tool Design for Urban Resilience – Dar Es Salaam, Tanzania](#)

In August 2018, teams of African policymakers and geoscience experts met to conceptualize tools to better communicate and mitigate a range of disaster risks facing the continent. The convention of 45 delegates marked the second regional meeting of Open Cities Africa, a program engaging local government, civil society, and the private sector to develop the information infrastructures necessary to meet 21st century urban resilience challenges.



[The Future of Resilience: Banking on Cities \(2018\)](#)

A high-level panel of experts, officials and investors offered their insights into how cities can mobilize private financing for resilient development. Moderated by international journalist Femi Oke, the panel featured Elizabeth Yee, Vice President of City Solutions, 100 Resilient Cities; Jessica Shannon, Partner, PwC; Jennifer Musisi, Executive Director, Kampala Capital City Authority; and Vazil Hudák, Vice President, European Investment Bank. World Bank CEO Kristalina Georgieva opened the session while Patricia Espinosa, Executive Secretary of UNFCCC, delivered keynote remarks.



[Understanding Risk Finance Pacific – Highlights \(2018\)](#)

The Understanding Risk Finance (URF) Pacific forum took place in Port Vila, Vanuatu, from October 16–19, 2018. The event brought together policy makers, financial risk managers, and development partners from the region and around globe to strengthen regional collaboration on climate and disaster risk finance in the Pacific. More than 20 technical, policy, and interactive training sessions showcased innovative approaches in government action, community engagement, and private sector solutions.



[Understanding Risk Balkans – Highlights \(2018\)](#)

Understanding Risk Balkans brought together over 350 attendees from 46 countries to exchange ideas, lessons learned and best practices on identifying, assessing and communicating risk. This video provides highlights from that event, presenting short clips from some of the speakers and participants, touching on many areas of the “very exciting time we live in.”



[Understanding Risk Balkans – Opening Video \(2018\)](#)

From September 17–19, 2018, hundreds of disaster risk management experts and practitioners will be in Belgrade to exchange ideas for gathering, assessing, and communicating disaster risk. This video lists some of the challenges of climate and disaster risk faced by the Balkans, both historically and into the future. It notes that smart disaster risk policies are being implemented throughout the region, putting the understanding of risk into context.



[Understanding Risk: Through the Years \(2018\)](#)

Since its first meeting in 2010, the Understanding Risk (UR) conference has become one of the leading fora for sharing innovations and best practice in the creation, communication, and use of disaster risk information. This video provides a look at the list of UR conferences that have taken place in many countries over the years.



[UR2020 in Singapore \(2018\)](#)

Join us in Singapore, May 18–22, 2020, for UR's 10th anniversary! This is an invitation and introduction to the UR 10-year anniversary conference, which will take place in 2020 in Singapore—the first time it will have been held in Asia. Nathaniel Tan, Communications and Partnerships Manager at Lloyd's Register Foundation Institute for the Public Understanding of Risk, discusses the reasons that Singapore is a perfect fit for this conference. An interview by Simone Balog-Way, Manager of the Understanding Risk Forum.



[Highlights: UR2018 in Mexico City \(2018\)](#)

Check out the highlights of the 2018 Understanding Risk Forum! For five days in May 2018, UR2018 brought together members of the Understanding Risk community—an open, global community of disaster risk management (DRM) experts and practitioners. From every continent, over 1,000 scientists and technologists, policy makers and private-sector representatives, academics and civil-society organizers discussed the latest tools and innovative approaches for collecting, communicating, and using risk information.



[City Resilience Program: Comprehensive Financial Solutions for City Resilience Conference \(2018\)](#)

The Comprehensive Financial Solutions for City Resilience Conference, organized by the World Bank Group's City Resilience Program, brought together city officials, private sector experts, donors, and investors to prepare for ambitious investments in urban resilience. The aim of the conference was to allow city leaders think through innovative ways to crowd in private sector resources to invest in urban resilience.



[City Resilience Program: Shark Tank \(2018\)](#)

At the Comprehensive Financial Solutions for City Resilience Conference, city leaders had a chance to complete a rapid capital assessment, which evaluated their city’s underlying condition for attracting private capital, and a project poster. The leaders then presented their projects, which were critiqued by financial experts in a “shark tank” event.



[World Reconstruction Conference 3 \(WRC3\) Closing Video \(2017\)](#)

As urbanization, migration, and climate change accelerate, the impact of disasters is on the rise – and the need for resilient recovery has never been greater. Over 800 experts and practitioners joined together June 6-8, 2017, in Brussels, to share best practices and lessons on recovery and explore how it can reduce future risk and promote sustainable poverty reduction.



[Resilience Dialogue – The Disaster That Never Happened: Can Resilient Infrastructure Save the World? \(2017\)](#)

This instance of the Resilience Dialogue series took an in-depth look at the role that quality infrastructure, including nature based solutions, will play in protecting communities from compounding climate and disaster risk. Over the next 20 years, we will build more infrastructure than the last 2,000 – locking in either risk or resilience for future generations.



[AMCOMET Africa Hydromet Forum \(2017\)](#)

The forum brought high-level representatives from across Africa to provide strategic insight on improving hydrological, meteorological, and early-warning services to achieve climate and disaster resilience as part of the region’s sustainable development strategy.





[Sheryl Sandberg's opening address for the Resilience Dialogue \(UR 2016\)](#)

Sheryl Sandberg (COO of Facebook and Founder of Lean In) kicks off the Resilience Dialogue on technology, disaster risk, and the gender divide. A special event of the 2016 Understanding Risk Forum in Venice, Italy, this high-level plenary brought together grassroots women's voices, senior science and technology advisors, and international development leaders to discuss gender challenges and opportunities in disaster resilience, science, and policy.



[UR2016 Highlights](#)

In case you couldn't make it to Venice, here are a few highlights from the 2016 Understanding Risk Forum. The five days were filled with over 50 sessions, including training events, workshops, technical sessions and plenaries, focusing on how we can all better create, communicate and use disaster risk information.



[Resilience Dialogue: Technology, Disaster Risk, and the Gender Divide \(2016\)](#)

Women and girls are often most vulnerable and in need of support and protection in the face of disaster and climate risk, but also can act as powerful agents of resilience in their communities. Promoting women's empowerment in disaster recovery not only contributes to more effective and efficient recovery, it also establishes opportunities for women and communities to shape more sustainable development.



[FCV Forum 2016 Resilience Dialogue: Disaster Risk and Conflict \(2016\)](#)

This round of the Resilience Dialogue series explores the nexus of disaster risk and conflict situations. These two development challenges share many roots and consequences, from exacerbating poverty rates to forcing displacement. This discussion takes an in-depth look at the similarities and differences of recovery in natural disaster scenarios and conflict situations, and explores how many of the same institutions and preparedness measures that have been used to build climate and disaster resilience can play a substantive role in reducing fragility and violence.



[Resilience Dialogue FF16 intro \(2016\)](#)

This is the introductory video to Resilience Dialogue: Disaster Risk and Conflict which explores the nexus of disaster risk and conflict situations.



[Resilience Dialogue: Bringing Resilience to Scale for Post-2015 Goals \(2015\)](#)

The global challenge of scaling up disaster and climate risk programs to advance post-2015 resilience goals was front and center at the latest Resilience Dialogue.



[Resilience Dialogue Sendai \(2015\)](#)

The World Bank/GFDRR, the Government of Japan, the European Commission and USAID hosted a special round of the Resilience Dialogue series as part of the World Conference on Disaster Risk Reduction (WCDRR). To better safeguard aid and development against disasters, this high-level dialogue explored how to scale up and sustain funding and implementation of disaster and climate risk programs to advance post-2015 resilience goals.



[Understanding Risk 2014 Highlights \(2014\)](#)

The Understanding Risk Forum is the premier global conference on disaster risk assessment, aimed at bringing together diverse communities -- including policymakers, academic researchers and the private sector -- engaged in building resilience against hazards that threaten the world's most vulnerable communities. The 2014 Forum, which drew nearly 900 participants from around the world, focused on "producing actionable information," and will showcase innovative technology and risk assessment tools that can be scaled globally.



[World Reconstruction Conference 2 – Closing Video \(2014\)](#)

The World Bank-managed GFDRR—in partnership with the EU and UNDP—hosted the World Reconstruction Conference 2 to share lessons learned in post-disaster recovery and reconstruction. This closing video features interviews with participants who speak passionately about the role of resilient recovery in the post-2015 development framework.



[The 4th Resilience Dialogue - Disaster and Climate Resilience in the Post-2015 Development Framework \(2013\)](#)

Disasters and climate risks were not addressed as part of the original framework of the Millennium Development Goals (MDGs). However, the painful experience of the past years has shown that resilience is a necessary ingredient for the achievement of poverty reduction and sustainable development goals, and should therefore be integrated in the development framework that will replace the MDGs.



[Overview: Advanced Training on Spatial Data Management \(2013\)](#)

The Advanced Training on Spatial Data Management took place in February 2013 at the University of West Indies in Trinidad and Tobago. This week-long training provided both spatial data managers and IT specialist an in depth review of spatial data management and sharing tools, particularly open-source tools and programming language to customize the GeoNode.



[Financing Disaster Risk Reduction: International Aid over 20 Years \(2013\)](#)

Francis Ghesquiere, former head of GFDRR, presents a thorough review of natural disaster related international financing over the last 20 years primarily based on the Disaster Aid Tracking (DAT) database developed by GFDRR on the AidData platform. The database is the most comprehensive attempt to identify natural disaster related financing within international humanitarian and development assistance.



[2012 Understanding Risk Forum Closing Ceremony by Ken Terry \(2012\)](#)

This video features closing comments by Ken Terry, National Disaster Management Centre, South Africa at the 2012 Understanding Risk Forum. The conference showcased new disaster risk management tools for decision-makers, strengthened regional and global partnerships, and built technical capacity in the Africa region through a series of training events.



[Sendai Dialogue Day 2 - Disaster Risk Management in a Changing World \(2012\)](#)

This video highlights the second day of the Sendai Dialogue on Disaster Risk Management when World Bank President Jim Yong Kim and IMF Managing Director Christine Lagarde came to Sendai. The Sendai Dialogue brought together key stakeholders to build a global consensus on the need to better prepare for disasters around the world.



[IMF/World Bank Annual Meeting 2012: The Resilience Dialogue \(2012\)](#)

The Resilience Dialogue, hosted by the European Union, the Government of Japan and the World Bank/GFDRR, put urgency to the task of building resilience in communities and countries around the world.



[International Conference on Crisis Mapping Event \(2012\) \(2013\)](#)

Neils Holms-Nielsen, Disaster Risk Management Latin America and Caribbean Regional Coordinator, The World Bank, welcomes participants to the 2012 International Conference on Crisis Mapping.



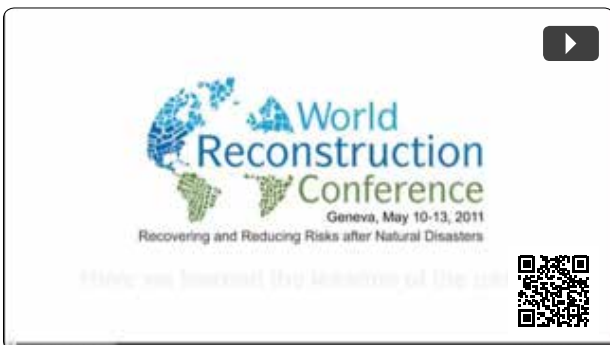
[World Reconstruction Conference \(WRC\) 2011: High Level Policy Panel \(2012\)](#)

The World Reconstruction Conference (WRC) was the first large-scale global conference focused on natural disaster recovery and reconstruction. Organized by the World Bank and the United Nations, the Conference was May 10-13, 2011 within the Third Global Platform for Disaster Risk Reduction in Geneva.



[2012 Understanding Risk Forum \(2012\)](#)

At the 2012 Understanding Risk Forum in Cape Town, South Africa, disaster risk practitioners, engineers and other scientists outlined a series of tools used to manage the risks associated with floods and droughts. Among them: open data, early warning systems, GIS mapping, SMS technology, even social safety nets. Hundreds of people from all over the world joined the conference and even featured on CNBC was Francis Ghesquiere, former Head of GFDRR and the World Bank's disaster risk management (DRM) team.



[World Reconstruction Conference \(WRC\) 2011: Have We Learned? \(2012\)](#)

As the practice of resilience and disaster risk management continues to evolve, have we learned the lessons of the past? This video features the key theme of the 2011 World Reconstruction Conference.

INTERVIEWS



[Satellite Remote Sensing for Damage and Loss Assessment: Lessons from Guatemala's Fuego Eruption](#)

In the aftermath of last year's Fuego volcanic eruption in Guatemala, satellite remote sensing proved to be critical to World Bank and GFDRR efforts to assess damage and losses from the devastation. Learn more in this Q&A with Lizardo Narvaez, Senior Disaster Risk Management Specialist, World Bank Group and Rodrigo Donoso, Disaster Risk Management Consultant, World Bank Group.



[Q&A: Tackling Urban Resilience Challenges in the Middle East and North Africa](#)

In this video interview, Karima Ben Bih and Philipp Petermann, both urban resilience specialists with the World Bank's Social Urban Rural and Resilience Global Practice (GSURR), shed light on some of the urban resilience challenges facing the Middle East and North Africa region, and the Bank's ongoing work to address these challenges, in partnership with GFDRR.



[Gender Equality in Disaster Recovery: Why It Matters and How to Do It](#)

How can we integrate gender equality and women's empowerment in disaster recovery and why is it important to do so? Check out this Q&A on our recent guidance note with Melody Joy Benavidez, Disaster Risk Management Consultant at the World Bank, and Cristina Otano, Senior Operations Officer and Gender Coordinator at the Global Facility for Disaster Reduction and Recovery (GFDRR).



[Q&A: Building Back Better in the Transport Sector](#)

When disaster strikes, how can transport officials identify entry points for building resilience and building back better? Check out this Q&A with Melody Joy Benavidez, Urban Resilience Consultant at the World Bank and Akiko Toya, Junior Professional Officer at the Global Facility for Disaster Reduction and Recovery (GFDRR).



[The gender gap in the disaster risk management sector: why it matters](#)

In a video blog marking International Women's Day, Caren Grown, the World Bank Group's Senior Director for Gender, highlights the importance of addressing gender gaps in disaster risk management.



[Bontje Marie Zangerling at #WBMapathon: Co-creating geospatial data for resilience in Cameroon](#)

Bontje Marie Zangerling, Urban Specialist at the World Bank, talks about how the Open Cities Africa Project, supported by the World Bank and GFDRR, is working with local mapping communities to collect geospatial data for urban resilience in Cameroon. An interview by Erika Hernandez, Disaster Risk Management Consultant at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Lee Schwartz at #WBMapathon: Challenges and opportunities in open source mapping](#)

Lee Schwartz, The Geographer at the U.S. Department of State, shares his thoughts on some of the key challenges and opportunities in the open source mapping space. An interview by Nicolas Pondard, Disaster Risk Management Specialist at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Marianne Fay at #WBMapathon: How the World Bank uses mapping to tackle development challenges](#)

More than ever before, the World Bank is mobilizing open source mapping to help tackle critical development challenges around the world, says Marianne Fay, Chief Economist for Sustainable Development at the World Bank. An interview by Emma Phillips, Senior Disaster Risk Management Specialist at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Rachel Levine at #WBMapathon: Protecting vulnerable communities through open source mapping](#)

Rachel Levine, GIS Training and Operations Coordinator at the American Red Cross, explains how the Missing Maps initiative is helping humanitarian organizations meet the needs of vulnerable people. An interview by Mathijs Van Ledden, Senior Disaster Risk Management Specialist at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Charles Fox at #WBMapathon: Geospatial technologies for sustainable development at work in the World Bank](#)

Charles Fox, Special Assistant to the Chief Economist for Sustainable Development, World Bank, spells out three ways in which the World Bank uses geospatial technology to advance sustainable development across the globe. An interview by Mathijs Van Ledden, Senior Disaster Risk Management Specialist at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Mikel Maron at #WBMapathon: Machine learning no substitute for human understanding of map data](#)

Mikel Maron, Community Team Lead at Mapbox, shares his insights on how map data can make a difference in disaster response, and makes the case that machine learning is no substitute for a human understanding of this data. An interview by Nicolas Pondard, Disaster Risk Management Specialist at the Global Facility for Disaster Reduction and Recovery (GFDRR), on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Carrie Stokes at #WBMapathon: Bringing young people together to map for resilience](#)

Carrie Stokes, Geocenter Director and Chief Geographer at USAID, sheds light on how the Youth Mappers initiative, which is supported by the U.S. aid agency, brings young people together to map for resilience. An interview by Nicolas Pondard, Disaster Risk Management Specialist at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Dina Ranarifidy at #WBMapathon: Community mapping for resilience in the Republic of Congo](#)

Dina Ranarifidy, Urban Specialist at the World Bank explains how the Bank is working with local communities to map for resilience in the Republic of Congo. An interview by Zirra Banu, Operational Communications Consultant at the World Bank, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Sandra Hart at URf Pacific: The challenge and opportunity of cash transfers in the Pacific \(2018\)](#)

Sandra Hart, Pacific Cash Transfer and Livelihoods Advisor for Oxfam, sheds light on the potential of cash transfers to promote community resilience, as well as the barriers that need to be overcome to bring these to scale. An interview by Sumati Rajput, DRM Specialist with GFDRR, on the sidelines of Understanding Risk Finance Pacific (URfPacific).



[Pohiva Tu'i'onetoa at URf Pacific: The promise of catastrophe risk insurance in the Pacific \(2018\)](#)

Instrumental in boosting the financial resilience of Pacific island countries, the Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) now needs to expand its reach, according to Pohiva Tu'i'onetoa, Tonga's Minister of Finance and National Planning. An interview by Olivier Mahul, Global Lead and Program Manager, DRFI Program of the World Bank Group, on the sidelines of Understanding Risk Finance Pacific (URfPacific).



[Pablo Suarez at URf Pacific: Why communicating disaster risk to policymakers matters \(2018\)](#)

Pablo Suarez, team member for Understanding Risk, explains how communicating disaster and climate risks to policymakers can help ensure that policymaking addresses the needs of the most vulnerable communities. An interview by Bianca Adam, Disaster Risk Finance Specialist, World Bank Group, on the sidelines of Understanding Risk Finance Pacific (URfPacific).



[Ralph Regenvanu at URf Pacific: How int'l community can follow Vanuatu's lead on climate change \(2018\)](#)

Ralph Regenvanu, Vanuatu's Minister of Foreign Affairs, International Cooperation & External Trade, breaks down how the small island state is taking the lead in the fight against climate change, and urges the international community to follow suit. An interview by Samuel Maimbo, Head, Finance for Development Unit & Senior Adviser for the Office of the Managing Director & CEO's Office, World Bank Group, on the sidelines of Understanding Risk Finance Pacific (URfPacific).



[Savina Carluccio at UR Balkans: Enhancing infrastructure resilience at every scale \(2018\)](#)

Savina Carluccio, Project Lead on the Resilience Shift, explains how the initiative is working to enhance resilience at every scale – including at the level of a city, an infrastructure system, and an individual asset. An interview by Ko Takeuchi, Senior Disaster Risk Management Specialist with the World Bank, on the sidelines of Understanding Risk Balkans.



[Georgiana Ilie at UR Balkans: How open data and storytelling can inspire action to build resilience \(2018\)](#)

Drawing on her own experiences as a journalist, Georgiana Ilie, Reporter and Senior Editor of DoR Magazine in Romania talks about how open data, combined with storytelling, can galvanize action to build resilience. An interview by Maryia Markhvida, Researcher, Stanford Urban Resilience Initiative, on the sidelines of Understanding Risk Balkans.



[Imra Hadzic at UR Balkans: Why we need to engage the youth in disaster risk management \(2018\)](#)

Young people have a key role to play in disaster risk management, explains Imra Hadzic, Flood Risk Management Consultant and Member of the Water Youth Network. An interview by Assel Paju, senior communications officer with the World Bank Group, on the sidelines of Understanding Risk Balkans.



[Žaklina Gligorijević at UR Balkans: The case for understanding risk in urban planning \(2018\)](#)

Žaklina Gligorijević, Lead Planner of the Strategic Planning Department at the Belgrade Urban Planning Institute makes the case for why urban planners in Belgrade and other cities should integrate the understanding of risk into what they do. An interview by Joanna Masic, Senior Urban Specialist with the World Bank, on the sidelines of Understanding Risk Balkans.



[Radu Văcăreanu at UR Balkans: Code compliance no silver bullet for seismic risk \(2018\)](#)

Compliance with seismic codes does not mean that buildings across the Europe and Central Asia are safe from earthquake hazards, according to Radu Văcăreanu, Professor of Structural Reliability and Risk Analysis, Technical University of Civil Engineering, Bucharest. An interview by Ashna Mathema, Senior Urban Development Specialist with the World Bank, on the sidelines of Understanding Risk Balkans.



[Lejla Hadzic at UR Balkans: The healing power of cultural heritage \(2018\)](#)

Cultural heritage can help people and communities heal in the aftermath of disaster, says Lejla Hadzic, Executive Director of Cultural Heritage without Borders, Albania. An interview by Yann Kerblat, Disaster Risk Management Analyst, World Bank, on the sidelines of Understanding Risk Balkans.



[Michael Staudinger at URBalkans: Hydromet technologies key to addressing weather extremes in Balkans \(2018\)](#)

While extreme weather seems to be becoming the ‘new normal’ in the Balkans, advances in hydrometeorological (hydromet) technologies could help the region address this challenge, according to Dr. Michael Staudinger, Director General of Austria’s Central Institute for Meteorology and Geodynamics (ZAMG). An interview by Daniel Kull, Senior Disaster Risk Management Specialist, World Bank, on the sidelines of Understanding Risk Balkans.



[Karl-Heinz Vogel at URBalkans: The next phase of the EU’s post-flood assistance to Serbia \(2018\)](#)

The European Union’s assistance to Serbia following the devastating floods four years ago does not end with the recovery and reconstruction, stresses Karl-Heinz Vogel, Attaché – Focal Point for Disaster Prevention for the Delegation of the European Union in Serbia. An interview by Rossella Della Monica, Disaster Risk Management Specialist with the Global Facility for Disaster Reduction and Recovery (GFDRR), on the sidelines of Understanding Risk Balkans.



[Aida Hadzic-Hurem at URBalkans: Citizen engagement for resilience in Bosnia and Herzegovina \(2018\)](#)

Citizen engagement is driving efforts to build resilience in Bosnia and Herzegovina, explains Aida Hadzic-Hurem, Disaster Risk Reduction Project Manager for UNDP Bosnia and Herzegovina. An interview by Simone Balog-Way, Manager of the Understanding Risk Forum, on the sidelines of Understanding Risk Balkans.



[Marko Blagojevic at URBalkans: How Serbia transformed its approach to disaster risk management \(2018\)](#)

Serbia has fundamentally transformed its approach to disaster risk management following the devastating floods of 2014, says Marko Blagojevic, Director of the Serbian Government’s Public Investment Management Office. A video interview by Dubravka Stanic, Disaster Risk Management Analyst with the World Bank Group, on the sidelines of the Understanding Risk Balkans conference.



[Sameh Wahba at URBalkans: Why understanding disaster risk matters for sustainable development \(2018\)](#)

Sameh Wahba, Director of the World Bank's Social, Urban, Rural and Resilience Global Practice, sheds light on the importance of understanding disaster and climate risks for sustainable development. An interview by Tafadzwa Dube, Disaster Risk Management Specialist at the World Bank, on the sidelines of Understanding Risk Balkans.



[Rubem Hofliger at UR2018: Leveraging private sector solutions for managing disaster risk \(2018\)](#)

Rubem Hofliger, Swiss Re Mexico's Senior Vice President for Global Partnerships, makes the case that a comprehensive approach to disaster risk management requires a joint effort by both the public and private sector. An interview by Joaquin Toro, Senior Disaster Risk Management Specialist at the World Bank, on the sidelines of the 2018 Understanding Risk Forum.



[Ahmad Wani at UR2018: How artificial intelligence can help promote social inclusion \(2018\)](#)

Ahmad Wani, CEO of One Concern, shares a few insights about how artificial intelligence can be used as a tool for combatting social exclusion and building resilient communities. An interview by Fabio Pittaluga, Senior Social Development Specialist with GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Nell Watson at UR2018: Protecting vulnerable communities through artificial intelligence \(2018\)](#)

Nell Watson of Singularity University's AI & Robotics Faculty talks about the power and potential of artificial intelligence as a tool for empowering vulnerable communities. An interview by Fabio Pittaluga, Senior Social Development Specialist with GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Aldo Ramírez Orozco at UR2018: Managing risk in infrastructure planning \(2018\)](#)

Aldo Ramírez Orozco, General Manager of the Strategic Decision-Making Center at the Monterrey Institute of Technology and Higher Education (ITESM) shares a few insights on risk assessment in infrastructure planning. An interview by Julie Rozenberg, Economist with the World Bank Group’s Sustainable Development practice, on the sidelines of the 2018 Understanding Risk Forum.



[Javier Sanchez at UR2018: The nexus between cybersecurity and disaster risk management \(2018\)](#)

Javier Sanchez, CTO of the MER Group, explains how the disaster risk management community can respond to the emerging challenge of cybersecurity. An interview by Elad Shenfeld, Senior Disaster Risk Management Specialist with GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[James Balog at UR2018: How blending art and science can help us understand risk \(2018\)](#)

James Balog, Founder and President of the Earth Vision Institute and Extreme Ice Survey, talks about how blending art and science can help us better understand disaster risk. An interview by Simone Balog-Way, Disaster Risk Management Analyst at GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Vineil Narayan at UR2018: Adapting Fiji’s development strategy to the impacts of climate change \(2018\)](#)

Vineil Narayan, Climate Finance Specialist with Fiji’s Ministry of Economy, shares how the country’s recent climate vulnerability assessment has helped the Fiji government adapt its development strategy to the impacts of climate change. An interview by Naraya Carrasco, Senior Disaster Risk Management Specialist with GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Thomas Lennartz at UR2018: The DRM funding gap in fragile, conflict, and violence-affected countries \(2018\)](#)

For every US\$100 spent on humanitarian aid in fragile, conflict, and violence-affected countries, only US\$1.30 is spent on disaster risk management, according to Thomas Lennartz, Disaster Risk Management Specialist with GFDRR. An interview by Joe Leitmann, Lead Disaster Risk Management Specialist with GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Kara Siahaan at UR2018: How forecast-based financing can help communities before disaster strikes \(2018\)](#)

Kara Devonna Siahaan, Senior Officer for Forecast-based Financing with the International Federation of Red Cross and Red Crescent Societies, explains how climate science could be used to help get resources where it's needed even before disaster strikes. An interview by Pablo Suarez, Associate Director for Research and Innovation for the Red Cross Red Crescent Climate Center, on the sidelines of the 2018 Understanding Risk Forum.



[Raed Arafat at UR2018: Preparing for the next earthquake in Romania \(2018\)](#)

Romania is making progress on earthquake preparedness, but much more remains to be done, says Raed Arafat, the country's State Secretary for Emergency Situations. An interview by Alanna Simpson, Senior Disaster Risk Management Specialist at the World Bank, on the sidelines of the 2018 Understanding Risk Forum.



[Marija Bijelic at UR2018: Integrating risk financing into Serbia's disaster response \(2018\)](#)

In partnership with the World Bank, Serbia has rapidly integrated risk financing into its disaster risk management strategy following the catastrophic flooding of 2014, according to Marija Bijelic of the Government of Serbia's Public Investment Management Office. An interview by Sumati Rajput, Policy Analyst with GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Lucien Blackmoore at UR2018: Dominica’s path to resilient recovery \(2018\)](#)

With the support of the World Bank, Dominica is now on a steady path to resilient recovery following last year’s devastation from Hurricane Maria, according to Lucien Blackmoore, Permanent Secretary for the Ministry of Housing and Lands of the Commonwealth of Dominica. An interview by Keren Charles, Disaster Risk Management Specialist at the World Bank on the sidelines of the 2018 Understanding Risk Forum.



[Stephan Crawford at UR2018: Communicating climate risk through music \(2018\)](#)

Stephan Crawford, Founder and Executive Producer of the ClimateMusic Project, talks about how music can be a powerful tool for communicating the risks of climate change. An interview by Emma Phillips, Disaster Risk Management Specialist at GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Jorge Familiar at UR2018: How Mexico developed a culture of resilience \(2018\)](#)

Jorge Familiar, World Bank Vice President for Latin America and the Caribbean, recounts how Mexico developed a culture of resilience in response to the devastating 1985 Mexico City earthquake. An interview by Alanna Simpson, Senior Disaster Risk Management Specialist at the World Bank, on the sidelines of the 2018 Understanding Risk Forum.



[Nathaniel Tan at UR2018: Disaster risk community must engage the public](#)

Nathaniel Tan, Communications and Partnerships Manager at Lloyd’s Register Foundation Institute for the Public Understanding of Risk, explains why it’s critical for the disaster risk community to engage the public in order to achieve sustainable development. An interview by Simone Balog-Way, Disaster Risk Management Analyst at GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Bessie Schwarz at UR2018: How remote sensing technology can monitor flooding in real time](#)

Bessie Schwarz, Co-founder and CEO of Cloud to Street, explains how remote sensing technology can be used to monitor flooding in real time. An interview by Emma Phillips, Disaster Risk Management Specialist at GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Cynthia Scharf at UR2018: The conversation around geoengineering must include the risk community](#)

Cynthia Scharf of the Carnegie Climate Geoengineering Governance (C2G2) Initiative makes the case that the ongoing conversation around geoengineering, the deliberate manipulation of the Earth's natural systems to counteract climate change, must include the disaster risk community. An interview by Emma Phillips, Disaster Risk Management Specialist at GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Giovanni Boccardi at UR2018: Cultural heritage is the "glue that binds people together"](#)

Giovanni Boccardi, Chief of the Emergency Preparedness and Response Unit for the Culture Sector of UNESCO, on why cultural heritage is critical to understanding disaster risk. An interview by Barbara Minguez Garcia, Disaster Risk Management Consultant at the World Bank, on the sidelines of the 2018 Understanding Risk Forum.



[Iain Stewart at UR2018: "Stories are absolutely key" in communicating risk to communities](#)

Iain Stewart, Professor of Geoscience Communication at the University of Plymouth, talks about the importance of storytelling in communicating risk to communities. An interview by Alanna Simpson, Senior Disaster Risk Management Specialist at the World Bank, on the sidelines of the 2018 Understanding Risk Forum.



[Dara Dotz at UR2018: How rapid manufacturing of humanitarian supplies can empower communities](#)

Dara Dotz, CoFounder and Principal Designer of FieldReady, shares insights about how rapid manufacturing of humanitarian supplies can help communities build resilience. An interview by Emma Phillips, Disaster Risk Management Specialist at GFDRR, on the sidelines of the 2018 Understanding Risk Forum.



[Nuala Cowan at #WBMapathon: Building an open data for resilience ecosystem at OpenDRI](#)

Nuala Cowan, Senior Disaster Risk Management Consultant at the Global Facility for Disaster Reduction and Recovery (GFDRR), shares a few insights on how the Open Data for Resilience Initiative (Open DRI) is helping build a global ecosystem of open data for resilience and disaster risk management. An interview by Erika Hernandez, Disaster Risk Management Consultant at GFDRR, on the sidelines of the Open Data for Resilience Initiative (OpenDRI) Mapathon at the World Bank.



[Open Cities Africa: Collaborative mapping to build resilient societies](#)

Vivien Deparday. Through the Open Cities Africa project, GFDRR's Open Data for Resilience (OpenDRI) Initiative is building skills, data, and networks to support disaster risk management and urban planning across Africa.



[Roundtable on Dam Safety and Management Related to Seismic Hazards – Part 2 \(2016\)](#)

Roundtable on Dam Safety and Management Related to Seismic Hazards, Japan-World Bank Program for Mainstreaming Disaster Risk Management in Developing Countries, World Bank Disaster Risk Management Hub Tokyo, March 11, 2016



[Translating Words Into Action: We Must Build Resilience Into Development \(2015\)](#)

World Bank Vice President and Special Envoy for Climate Change Rachel Kyte speaks from the World Conference on Disaster Risk Reduction underway in Sendai, Japan, about the need for greater investment in resilience. As the conference was taking place, a Category 5 cyclone swept across Vanuatu, leaving destruction in its wake.



[GEM Interview with Alanna Simpson, former Head of Innovation Lab of GFDRR \(2015\)](#)

Alanna Simpson was invited to the OpenQuake Release event as a representative of GFDRR; a World Bank-managed partnership. In this video, she gives her first impressions about GEM, OpenQuake and its potential for disaster risk reduction.



[The Role of Insurance in Disaster Risk Reduction \(2015\)](#)

This video is about the mandate of the GFDRR, and the role insurers can have with governments and national economies in reducing disaster risks.



[The Role of Insurance in Post-Disaster Management \(2014\)](#)

Francis Ghesquiere, Manager for the World Bank's Disaster Risk Management Practice Group and Head of GFDRR (Global Facility for Disaster Reduction and Recovery) Secretariat talks about the upcoming 2nd World Reconstruction Conference and the role of insurance in the process of helping governments post-disasters.



[Francis Ghesquiere, GFDRR, at AusAID \(2013\)](#)

Francis Ghesquiere, Manager of the World Bank’s Disaster Risk Management Practice Group and Head of the Global Facility for Disaster Reduction and Recovery (GFDRR) Secretariat, visited AusAID, Canberra on September 27, 2012. Mr. Ghesquiere shared his experience of mainstreaming disaster risk reduction (DRR) in different country and regional contexts and explained its place in the current debate on how to build resilience to natural hazards and other shocks.



[Sobre CAPRA con Francis Ghesquiere, GFDRR \(en español\) \(2013\)](#)

La iniciativa CAPRA del Banco Mundial - para la prevención y mitigación de desastres naturales en America Latina - presentada por Francis Ghesquiere, GFDRR.



[Interview with Rachel Kyte \(2012\)](#)

Rachel Kyte, World Bank Vice President for the Sustainable Development Network, talks about the key messages that came out of the Sendai Dialogue.



[Interview with Tim Sebastian: World Reconstruction Conference \(WRC\) 2011 \(2012\)](#)

[Journalist Tim Sebastian shares some of the key messages from the 2011 World Reconstruction Conference. He stressed the importance of improving international coordination to address global resilience challenges.](#)



[Interview with Kristalina Georgieva \(2012\)](#)

Kristalina Georgieva, EU Commissioner for International Cooperation, Humanitarian Aid and Crisis Response, speaks about the key messages that came out of the Sendai Dialogue.

PDNA LEARNING VIDEOS



[Elders Leading Resilience \(2015\)](#)

This video shows how community elders were empowered to help the community recover after the great earthquake in Ofunato, Japan, in 2011. It assesses the experience of the Ibasho approach on post-disaster recovery and strengthening social capital.



[Bangkok: Urban Expansion 1990-2010 \(2015\)](#)

This animation showcases two decades of urban expansion in Bangkok.



[Kampala: Urban Expansion 1990-2010 \(2015\)](#)

This animation showcases two decades of urban expansion in Kampala.



[Shanghai: Urban Expansion 1990-2010 \(2015\)](#)

This animation showcases two decades of urban expansion in Shanghai.

SELF-PACED E-LEARNING



[Introduction to Disaster Risk Management \(self-paced\)](#)

This introductory course familiarizes development practitioners with contemporary concepts and practices in disaster management and discusses the paradigm shift from re-active to pro-active approaches in this cross cutting field of development.



[Decision Making under Deep Uncertainty](#)

This course describes an innovative methodology to deal with these uncertainties: Decision Making under Deep Uncertainty, and how to use it to make robust decisions for long term investments in a changing world.



[Introduction to the Open Data for Resilience Initiative](#)

This short course provides an overview of the approach and toolset developed by the Open Data for Resilience Initiative, including tools for sharing geospatial data, community mapping, and more.



[Introduction to Damage, Loss and Needs Assessment \(DaLA\)](#)

Introductory Damage Loss and Needs Assessment course is a six modules course which reviews the conceptual framework of DaLA as well as the sectoral aspects of conducting an assessment.



[Project-Specific Contingent Emergency Response Component \(CERC\)](#)

This course provides an overview of project specific Contingent Emergency Response Components (CERCs) of WBG loans. The course presentations focus on the actions that should be taken by the borrower and the Bank when preparing, activating and implementing CERCs.



[Risk and Opportunity: Managing Risk for Development](#)

This is an extensive 22-part series of videos and podcasts that explore how humans manage and respond to risk, and the implications for development.



[Understanding Risk](#)

This e-learning course will explain how risk characteristics are identified, how this information is used to assess overall risk, and how this information is used to address risk.



[Safe and Resilient Cities \(Self-paced\)](#)

The course will expose city officials and practitioners to cutting edge tools on vulnerability assessments, policies and programs, stock-taking and gaps analysis, and financial access. The discussion will also focus on decision making under uncertainty to identify options and establish priorities, making the city more resilient to climate change impacts and natural disasters.



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