

URf

Understanding Risk & Finance Conference

Proceedings from the 2015 URf Conference



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Building Financial Resilience of African Nations and Communities to Climate and Disaster Risks



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Foreword

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.

Organized by the African Union (AU), the European Union (EU), the government of Ethiopia, the World Bank, and the Global Facility for Disaster Reduction and Recovery (GFDRR)—and in collaboration with a number of regional and international institutions—URf was part of the *Building Disaster Resilience in Sub-Saharan Africa* program, which is an initiative of the African, Caribbean, and Pacific Group of States that is financed by the EU and implemented by the AU, the United Nations Office for Disaster Risk Reduction, the African Development Bank, and GFDRR with the World Bank.

During the four-day event, 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. The following were among the topics and concerns they raised:

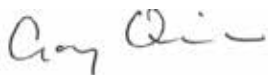
- ▶ **The potential impacts of El Niño in the region.** While some countries, such as Ethiopia, have efficient safety nets in place to absorb some of the shocks of weather events resulting from El Niño, preparation activities in others are not as advanced. A call was made by international and local actors to come together to intensify preparations for addressing the impacts of this weather system at the country level.
- ▶ **The need for continued investment in early warning and risk identification systems and for the sharing of knowledge across institutions.** Participants examined risk identification and preparedness capabilities with reference both to natural hazards and pandemics, with many discussions taking place on the challenges of the Ebola epidemic. Particularly instructive was the experience of Sierra Leone, which managed to end the outbreak in November 2015—the same month as the conference.
- ▶ **The challenges associated with assessing risk in data-poor environments and communicating risk information.** The availability of adequate data is essential to disaster risk assessment, which, along with effective communication of assessment findings, is, in turn, essential to disaster preparedness, risk reduction, financial protection, and resilient reconstruction.
- ▶ **The growing awareness across Africa of the need for effective risk financing and management solutions to contribute to long-term resilience building.** The general consensus among participants was that, by applying basic principles of financial planning and public financial management, countries can become more financially resilient to disasters and climate shocks.

- ▶ **Financial preparedness at both the country and individual levels.** Participants saw catastrophe risk pools as useful in helping countries improve access to and lower the cost of sovereign insurance, which can empower governments to ensure a rapid response by providing liquidity immediately after a disaster. Scalable social safety nets have promise as a means of disseminating targeted payouts to vulnerable households at the onset of a shock.
- ▶ **The importance of urban resilience as African cities rapidly expand.** There was an agreement that building resilience requires reducing vulnerability, building capacity, and improving urban planning. As cities move from the diagnosis of problems to the implementation of solutions, they will need strong leadership and coordination across all levels of government, as well as access to public and private resources.
- ▶ **The need for better coordination and partnership among actors and stakeholders in the field of disaster risk identification and financing.** Participants saw the role of public-private partnerships as critical. This was particularly so in the case of index-based insurance, where, some argued, a multi-stakeholder approach to investments in data and technology is key to ensuring the sustainability of initiatives that can help build individuals' resilience to disasters.
- ▶ **The concept of thinking locally and acting globally.** Participants saw that forming partnerships with local communities and understanding their preoccupations, vulnerabilities, and factors that affect their resilience is a key step in mitigating disaster risk and ensuring financial resilience. Government-to-government and regional coordination was also stressed.

During the conference, the power of social media to spread messages was evident, with over 950 tweets going out containing the hashtag #URfAfrica. In addition, a youth event brought in young leaders from the region to speak to students in person and to more online through a Google+ chat. The event demonstrated the potential for matching the power of physically convening with the power to reach multiple audiences (including youth) and to influence online discussions globally.

The proceedings presented here seek to convey some of the dialogues that took place during URf by providing summaries that build on the themes listed above.

URf marked the beginning of new partnerships and innovative advances in disaster risk assessment and financing in Sub-Saharan Africa. We look forward to continuing to work on these advances, and to collectively build resilience against the socioeconomic, fiscal, and physical impacts of disasters on the continent.



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First, we would like to thank our organizing partners: the African Union (AU), the European Union (EU), and the Government of Ethiopia. The conference was organized with financial support from the EU in the framework of the African, Caribbean, and Pacific (ACP)-EU Africa Disaster Risk Financing Initiative, managed by the Global Facility for Disaster Reduction and Recovery (GFDRR).

We would also like to give a special thank-you to all the organizations that led the policy, technical, and training sessions, including 5x15, the Addis Ababa University/Africa Center for Disaster Risk Management, Africa Risk Capacity, Ambiantal, Circumspecte, the Ethiopian Red Cross, the European Union, the Global Earthquake Model Foundation, the Indian Ocean Commission, the Red Cross Red Crescent Climate Center, the Regional Centre for Mapping of Resources for Development, Swiss Re, the United Nations Children's Fund, the United Nations Development Program, the United Nations Human Settlement Programme, the United Nations Office for Disaster Risk Reduction, the United Nations Office for Project Services, the United Nations Office for the Coordination of Humanitarian Affairs, and the World Food Programme.

A big thank-you goes as well to all the opening, closing, and keynote speakers: H.E. Tumusiime Rhoda Peace, Margareta Wahlström, Khalifa Sall, Ronald Mangani, Ambassador Brigitte Collet, Ede Jorje Ijjasz-Vasquez, H.E. Ahmed Shide, Stefan Dercon, Chris Lane, Mohamed Beavogui, H.E. Mitiku Kassa, Francis Ghesquiere, Anna Burylo, H.E. Diriba Kuma, Colin Bruce, Mukesh Kapila, Musa Eweru, Anne Juepner, Sunkarie Kamara, Mahboub Maalim, Florian Neutze, Alasan Senghore, Esther Baur, Henry Kerali, Gbeme Horace Kollie, Mads Oyen, OB Sisay, Ger Duany, Jason Braganza, Raouf Mazou, Deidre O'Sullivan-Winks, Antoine Ruvebana, Dennis Weller, Sharon Rusu, Dampha Almami, and Samuel Munzele Maimbo.

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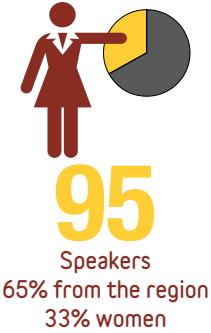


Abbreviations

ARC	African Risk Capacity
CCRIF	Caribbean Catastrophe Risk Insurance Facility
DRM	Disaster Risk Management
GEM	Global Earthquake Model
GFDRR	Global Facility for Disaster Reduction and Recovery
HSNP	Hunger Safety Net Programme
IGAD	Intergovernmental Authority on Development
IOC	Indian Ocean Commission
NUSAF	Northern Uganda Social Action Fund
PCRAFI	Pacific Catastrophe Risk Assessment and Financing Initiative
SIDS	Small Island Developing State
SWIO-RAFI	South West Indian Ocean Risk Assessment and Financing Initiative
UNHCR	United Nations High Commissioner for Refugees
UNISDR	United Nations Office for Disaster Risk Reduction

Facing page: Helina, (center), 25, is overseeing the construction of three apartment buildings in Addis Ababa, Ethiopia. Women working in construction used to be a rare sight in Addis but because of a construction boom, more women are wearing hard hats. World Bank research shows that sectors that are traditionally male-dominated provide an opportunity for women to earn higher returns. Photo: © Stephan Gladieu / World Bank

Overview of URf



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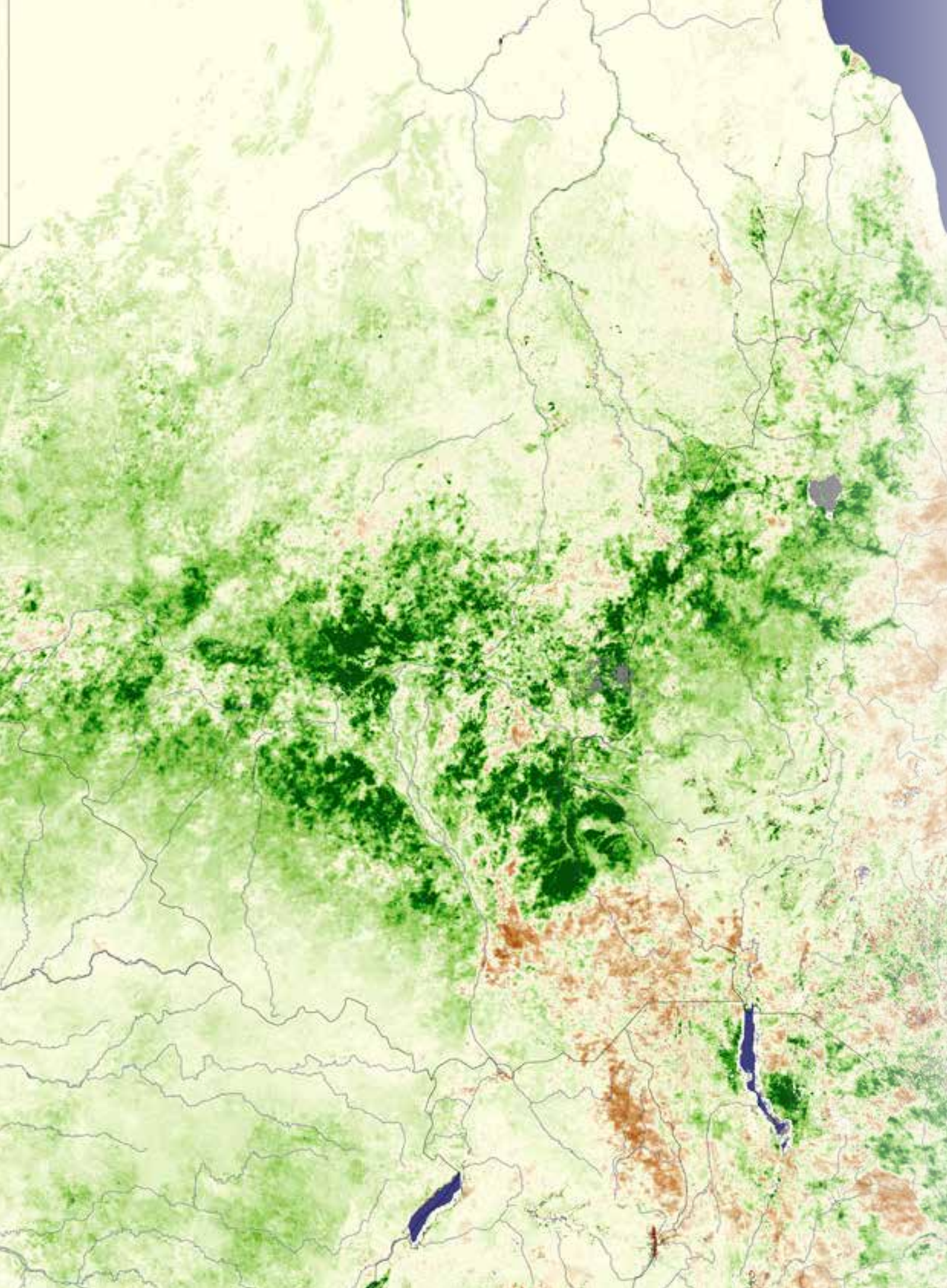
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Innovations in Risk Mapping

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Risk models and policy decisions are only as good as the data on which they are based. Recent years have seen a revolution in the geospatial and mapping sector, providing powerful and affordable technology that is increasingly being adopted throughout Africa. The users of this technology come from a broad spectrum, engendering collaboration among companies, governments, and civil society toward resolving key data gaps in support of improvements in policy, response, and resilience activities.

Innovating data access

Many countries across Sub-Saharan Africa face the challenge of accessing accurate and up-to-date official data and sharing them within their governments. Some are addressing this challenge, in part, by adopting open data policies through programs such as the Open Government Partnership,¹ which provide policy frameworks for public access to data. The technical platforms that allow the release of data to the

¹ <http://www.opengovpartnership.org/country/tanzania>.

public can also be used internally to improve access to data within these governments.

Bernard Muhwezi, head of geo-information services at the Uganda Bureau of Statistics, is putting these concepts into practice in the area of disaster risk mapping by unifying data sources from various agencies and placing them into an open source-driven spatial data infrastructure, using the GeoNode application and platform through <http://maps.data.ug>. GeoNode helps identify and provide insights into areas prone to hazards. The data and the technology to release them openly drive evidence-based disaster scenarios, the understanding of which aids in the provision of information badly needed by planners, managers, researchers, implementers, and funders to make better decisions in disaster prevention and response.

Leveraging community participation

The challenge of making data accessible will not be resolved just through the creation of technical platforms, such as Geonode; it

also lies in engaging communities. In Uganda's neighbor Tanzania, the primary city Dar es Salaam, with a population of around five million people, is one of Africa's fastest growing cities. The rapid pace of change and urbanization places a strain on the resources of the city's municipal councils, the consequences of which manifest as periodic flooding and other pressures on transportation and access to public services. In response to these pressures, the Dar es Salaam City Council is collaborating with a variety of organizations in academia and civil society, as well as the Red Cross and the World Bank Group, to survey the flood-prone areas of the city through a project called Ramani Huria.

Ramani Huria brings together university students and local community residents to conduct surveys of neighbors in flood-prone areas (figure 1). The surveys collect "hyper-local" information, such as drainage capacity, numbers of businesses, construction of buildings, water points, and other exposure layers. So far, Ramani Huria has mapped around 1.3 million residents of flood-prone communities,

Figure 1. Community mappers in Dar es Salaam, mapping a drain



The view from the skies

New technology, such as drones and remote sensing imagery, is providing more information for risk modeling and mapping than ever before, and its potential continues to increase, as the urbanization of Addis Ababa (shown in figures 4 and 5) illustrates. Although the current state of technology in earth observation allows for a maximum

the change in which is charted in figures 2 and 3. An added benefit is that its mapping activities have strengthened the relationship between municipal officials and the community, which is important with regard to disaster management and can be furthered by the use of community-driven tools, such as Ushahidi, a software platform for mapping crises.

Yet another benefit of Ramani Huria is that the data generated are openly available on [OpenStreetMap.org](https://openstreetmap.org)² and can be reused for purposes other than flood resilience activities, such as identifying water points within urban slums or the transportation network or offering a base map that can be used by private companies as well as government.

Figure 2. Mabibo Ward, Dar es Salaam, before mapping

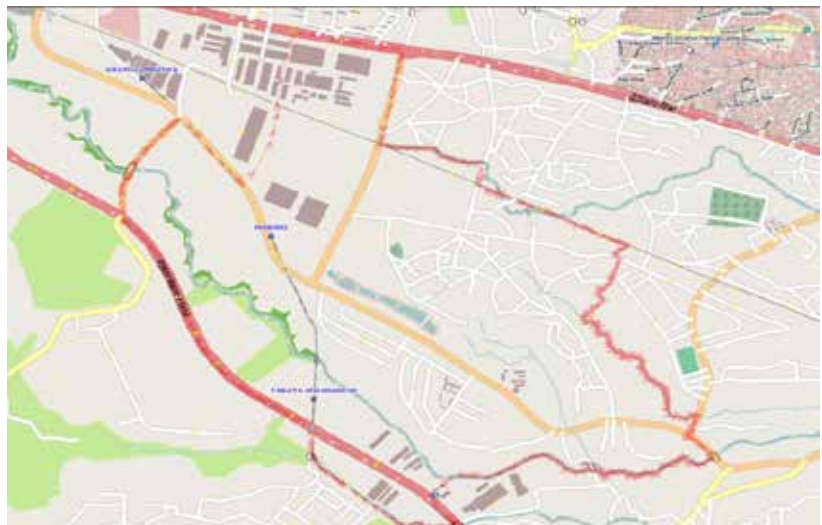


Figure 3. Mabibo Ward after mapping



² OpenStreetMap is a map database of the world from which anyone can download and use data.

Figure 4. Urbanization of Addis Ababa, 2010



Figure 5. Urbanization of Addis Ababa, 2015



one-month time window for capturing images of the entire planet from satellites, within the next few years the advance to daily global coverage will provide an annual span of images that will enable the detection of change as roads and houses are built. Datasets across multiple time periods will allow users to detect change by, for example, observing urban sprawl and development as

they are happening, or to identify potential improvements for agriculture. These capacities will provide timely data for decision makers at points of need.

While satellite imagery can provide coverage of large areas, drones can provide very high-resolution imagery of small areas and can be launched relatively quickly in low-tech environments,

as is demonstrated by figure 6, which shows a launch to survey Tandale, Dar es Salaam. The use of drones at times meets resistance, however, because they are known for their military applications. This is beginning to be resolved as drones demonstrate their capability for mapping and resilience activities—a start toward breaking down the negative preconceptions about them, says David Rovira: “The term ‘drone’ has to become accepted as something other than militaristic. Now we have drones for good.”

With their potential to avoid issues such as cloud cover and the ability to strictly define dates of capture, the use of drones helps change the process of collecting high-resolution temporal imagery. Drones are becoming increasingly simple and easy to operate, using a field-based mobile planning system, such as a tablet. Their outputs include orthophotos, three-dimensional point clouds, and digital elevation models, all of which are useful for identifying flood-prone areas and can aid local government officials and town planners in flood prevention.

Through the building and support of local communities of practice for the use of drones, they can be deployed rapidly during floods and other hazard events to provide quick assessments and direct resources, which would have been helpful during the 2015 earthquake in Nepal or the 2014 floods in Dar es Salaam. Building

Figure 6. A municipal officer using drones in Tanzania to identify flood-prone areas



communities of practice also begins to predispose policymakers to develop policies for drones in a positive, inclusive manner, while offering an opportunity to harmonize the drones' outputs with existing satellite-derived information.

Defining the Next Challenges

The challenges now faced in risk mapping involve, in part, the expansion of existing approaches. Currently, we are moving from sparse data environments to ones where data are available through community participation, the provision of daily satellite imagery, or the release of open data. Pioneering approaches are needed to the release of such data and to the development of new standards to facilitate sharing them.

This need poses the question of how governments will develop policies for the harmonization of new data sources. How, for instance, will volunteer-generated data, such as OpenStreetMap, or daily releases of satellite imagery complement or replace official datasets? Policy frameworks are needed to allow collaboration and innovation for the use of these new approaches at larger scales than the city of Dar es Salaam provides, and across countries and continents.

In conclusion, the innovations of drones, open data, and community participation offer a bright future for risk mapping. The new avenues for exploring the potential of how cities change daily provide new tools to decision makers, businesses, and communities for managing disaster risk and responding to disasters.

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Urban Resilience in Africa: Perspectives from Experts and City Officials

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Cities across Africa are vulnerable to shocks such as floods, cyclones, and epidemics, as well as manmade threats and stresses, including climate change, economic transformation, and rapid urbanization. “Urban resilience” describes the capacity of cities to function, survive, and thrive no matter what shocks or stresses they encounter. Simply put, a resilient city can adapt to changing conditions and withstand shocks while still providing essential services to its residents and continuing to move toward its long-term goals. Recognizing the potential of such shocks and stresses to bring cities to a halt and reverse years of socioeconomic development gains, organizations such as the World Bank and UN-Habitat are developing new methods and analytical tools that allow for systemic and evidence-based understanding of urban risks and planning for resilience.

On November 17, 2015, the Understanding Risk & Finance

Conference in Addis Ababa, Ethiopia, held a session entitled “Urban Resilience in Africa.” The participants included several mayors and city experts from within and outside the Africa region, and the aim was to discuss the concept of resilience and its challenges and opportunities with respect to African cities and to share practical experiences on approaches being taken at the city level to strengthen it. Moderated by Dr. Ibidun Adelekan, senior lecturer at Ibadan University of Nigeria, the session drew an overwhelming response from a large audience, who not only engaged in lively discussions but also raised many questions regarding the meaning of resilience for African cities and how it can be achieved.

Challenges and opportunities for building resilience in African cities

Rapidly urbanizing environments in Africa present both challenges and opportunities. Africa is the



fastest urbanizing continent in the world. With an average growth of 3.4 percent, its urban population is projected to reach 1.2 billion by 2050. This means 60 percent of all Africans will be living in cities, up from 40 percent in 2010.³

Such rapid rates of growth are commonly accompanied by food and water shortages, inadequate housing and infrastructure, and other problems. Increasingly,

³ UN-Habitat, *State of the World's Cities 2010/11—Cities for All: Bridging the Urban Divide* (London and Sterling, VA: Earthscan, 2010).

urban dwellers in Africa are living in informal settlements situated in areas of high hazard exposure, often without access to basic physical and social services and subject to eviction. In such conditions, urbanization can act as a driver of risk for disasters.

With such a large proportion of the urban environment yet to be built, however, African cities also present an unparalleled opportunity to avoid past mistakes and embed resilience in policies and planning. If authorities plan, develop, and maintain adequate social and physical infrastructure within the parameters of appropriate land

With such a large proportion of the urban environment yet to be built, however, African cities also present an unparalleled opportunity to avoid past mistakes and embed resilience in policies and planning.

use planning systems, urbanization can actually militate against risk.

The interdependence of urban risks requires an integrated approach to their mitigation. Urban areas are complex, with highly interdependent systems. Failing systems can lead to cascading impacts that can disrupt the availability of clean water, electricity, and communications. Combined with the high concentration of populations and investments at risk, such cascading events can quickly become catastrophic. The floods and subsequent petrol station explosion that took place

in Accra, Ghana, in June 2015 highlight one such case. People had taken shelter from heavy rain and flooding at a petrol station, where a generator turned on to restore power produced a spark that ignited leaking gas. The death toll from the resulting fires was approximately eight times the number of casualties from the flooding event itself.

The drivers of urban risk emerge from a complex interaction of local, regional, and global pressures, such as climate change, which often extend beyond the administrative bounds of a given city. Urban systems therefore demand special focus within a

new framework that works in an integrated manner.

Understanding risks and identifying priority actions—A first step

Diagnostic tools that support a cross-sectoral, multi-stakeholder approach provide a first step in enabling cities to identify and tackle existing risks efficiently and unlock opportunities. In Chókwè, Mozambique, city officials piloted UN-Habitat's City Resilience Profiling Tool, designed to enable local governments to identify multiple risks facing their cities over short-, medium-, and long-

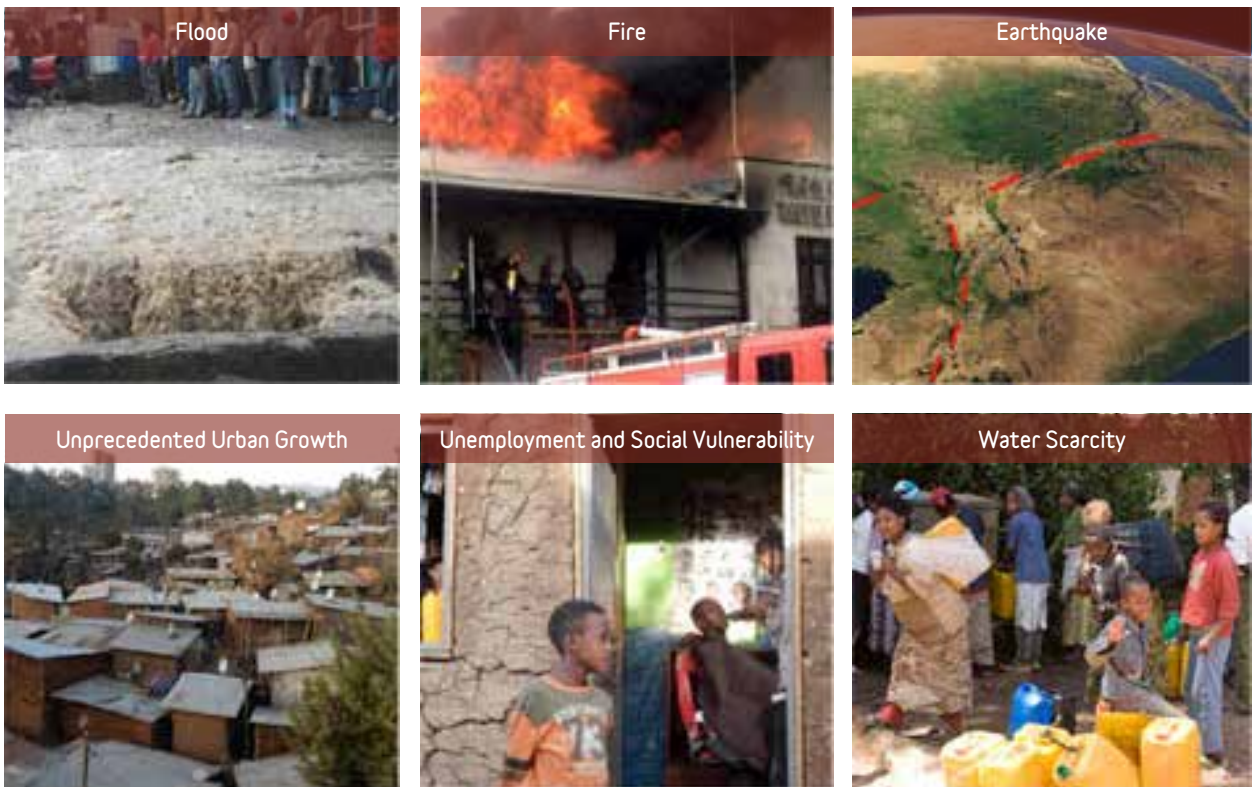
term horizons and, critically, to understand their interconnection. A small city with a population just over 55,000, Chókwè is extremely vulnerable to flood and cyclone hazards; large portions of the town were completely inundated by floods in 2013. Through use of UN-Habitat's profiling tool, Chókwè developed a City Resilience Action Plan, which helped empower local authorities and raise public awareness and enhanced the participation of urban residents in decision making to address the identified risks.

In Addis Ababa, the World Bank piloted its CityStrength Diagnostic Tool to identify priorities for investment and appropriate areas for action to improve urban resilience. Addis Ababa has a population of over 3.3 million and is one of the fastest growing urban economies in Africa, but it is afflicted by high unemployment and poverty, struggles to deliver basic services to a large proportion of its population, and frequently faces floods, fires, and water scarcity. Throughout the process of developing its action plan, engagement in open dialogue with specialists and key urban stakeholders about risks, urban growth, delivery of basic services, and vulnerable groups improved decision makers' understanding of the city's challenges and opportunities and led to the identification of specific, actionable projects to enhance resilience in Addis Ababa (figures 7 and 8).

Figure 7. Engagement process while developing the City Resilience Action Plan in Chókwè, Mozambique.



Figure 8. Key shocks and stresses in Addis Ababa identified during the City Strength Diagnostic.



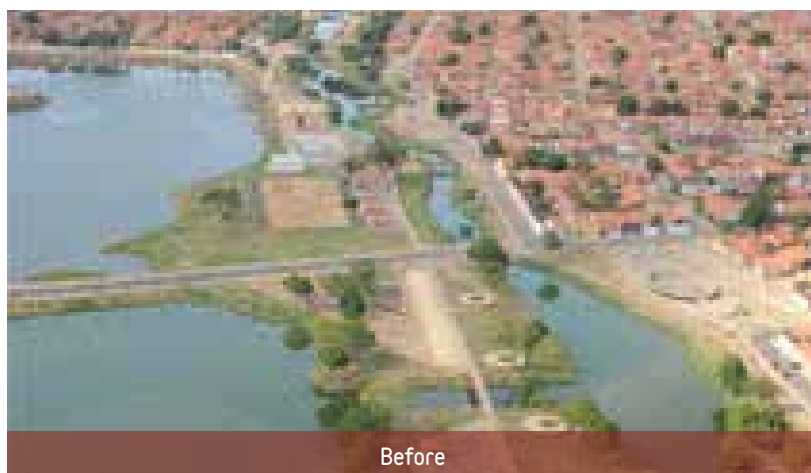
Investment in resilience

The acute and cumulative effects of disasters generate major economic and fiscal losses at the individual, community, and national levels. These events

can undermine hard-earned development gains, trap the poorest and most vulnerable in poverty, and exacerbate inequality. The city of Teresina, Brazil, a previously flood-prone city of 844,000 residents, has been investing in resilience

through a multi-sectoral urban water management project. Using an integrated approach to reducing urban flooding, the project has included not only the construction and improvement of drainage infrastructure, but also the creation of green areas to

Figure 9. Improvements to urban infrastructure build resilience in Teresina, Brazil, following the integrated urban water management multi-sectoral project (Photos: City of Teresina).



mitigate the effects of flooding, improvement of water supply and sanitation services, and the regeneration of urban areas to promote economic development and leisure opportunities (figure 9). As a result of the investment, the city has seen appreciation of land values and development of the local economy.

Building resilience requires not only awareness of the risks the city faces, but also the taking of action to reduce vulnerability and increase capacity. As cities move from the diagnosis of problems to

the implementation of solutions, they will need strong leadership and coordination across all levels of government, from local to national; the scaling up of bottom-up, locally managed funds, such as community saving groups; engagement of the private sector; and technical expertise to develop a range of innovative financial instruments.

Conclusions

In an increasingly urban world, the major resilience challenges of this century—poverty

reduction, natural hazards and climate change, environmental sustainability, and social inclusion—will be won or lost in cities. As Mayor Ato Deriba Kuma of Addis Ababa declared, “Our cities are projected to play an increasing role in the economic transition Strengthening urban resilience to multiple shocks and stresses will therefore prove crucial to the success of this transition and to ensure improved living conditions for residents.” With commitment from leaders, partners, and citizens, African cities are not only destined to lead the resilience agenda, but also to spearhead the economic and social transformations necessary for reducing poverty and boosting shared prosperity.

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What Risks? A Sample Set of Risk Assessments from across Africa and How to Use Them

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Disaster risk assessment informs disaster preparedness, risk reduction, financial protection, and resilient reconstruction. Estimates of affected population and economic loss provide the basis for disaster risk management (DRM) and decision making in multiple sectors. They help in prioritizing DRM activities and identifying the most effective mitigation strategies. Additionally, by quantifying changes in disaster risk through time, we improve the potential for judicious planning decisions to mitigate future risk.

Socioeconomic change and urbanization have brought about rapid changes in people's exposure and vulnerability to natural hazards in Africa, while the full impacts of climate change have yet to be experienced

Socioeconomic change and urbanization have brought about rapid changes in people's exposure and vulnerability to natural hazards in Africa, while the full impacts of climate change have yet to be experienced in the region.

in the region. The increasing number of risk assessments being undertaken to address these issues have varied in scale from local (covering one city or river catchment) to national (covering a whole country) to regional (encompassing multiple countries). Some focus on a single hazard, while others try to account for the multiple hazards prevalent in most African countries. Floods, landslides, and droughts are relatively frequent in many regions, while cyclones, earthquakes, and volcanoes also occur in limited areas.

During the session, participants discussed a number of challenges to implementing risk assessments and communicating risk information in the Africa region and outlined various ways to address them. The assessments

presented demonstrated several of the more common challenges. On the national and subnational levels, examples were provided by a flood analysis in northern Malawi, an account of the development of the Rwanda National Risk Atlas and a local analysis of landslide in Uganda. At the regional level, there were discussions around the benefits and challenges associated with risk assessment undertaken as part of the multi-country South West Indian Ocean Risk Assessment and Financing Initiative (SWIO-RAFI), and the collaborative earthquake risk assessment in Africa.

Lack of capacity and data scarcity

Session participants discussed various issues related to capacity and data sharing. Among them was the perception that local capacity to conduct risk assessments is lacking within countries. To address this, governments often collaborate with international organizations

and hire international consultants to conduct the assessments. While this approach can bring in the required expertise, it often diverts limited funding to contract management, as opposed to building the countries' own capacity.

In some cases, capacity and expertise do, indeed, exist within countries, in particular in academia, and governments and international organizations should not miss the opportunity to expand local expertise.

Besides shortages in local capacity, many of the different hazard, exposure, and vulnerability data required for effective risk assessment are not readily available. Participants recognized international expertise as valuable for developing new datasets or establishing data collection and curation programs. The availability of local experts and capacity-building activities to maintain data collection as an ongoing activity remains vital, however, as does the strengthening of information management systems, including development of a coordinated database for the collection, storage, and sharing of data.

In summary, any engagement with external collaborators should seek to maximize local capacity building in terms of data, resources, and expertise by including strong partnerships throughout the project. Governments should seek to build capacity in projects by requiring true collaboration

between local researchers and external consultants, thus taking full advantage of international expertise not only to benefit the current project but also to build in-country expertise for future projects. One key advantage to doing so is that it ensures the sustainability of projects, as the local expert can continue implementing the plans after consultants have departed. Over time, reduced reliance on international input can result in increased ownership and experience and investment of resources into further developing local expertise—something that was recognized at the session by the representatives of international organizations, who also highlighted the need for greater collaboration between international and local stakeholders in global and regional risk assessments.

Communication of outputs

While many sophisticated outputs are produced from risk assessments, all too often this information is not employed to its full potential in policy or planning because of a lack of effective communication. Results of risk assessments too often are not released publicly, or they are published in specialist literature, such as scientific journals. A recent trend is to share risk assessment data via risk profiles—short documents using maps, charts, and tables of values to illustrate risk. This method of

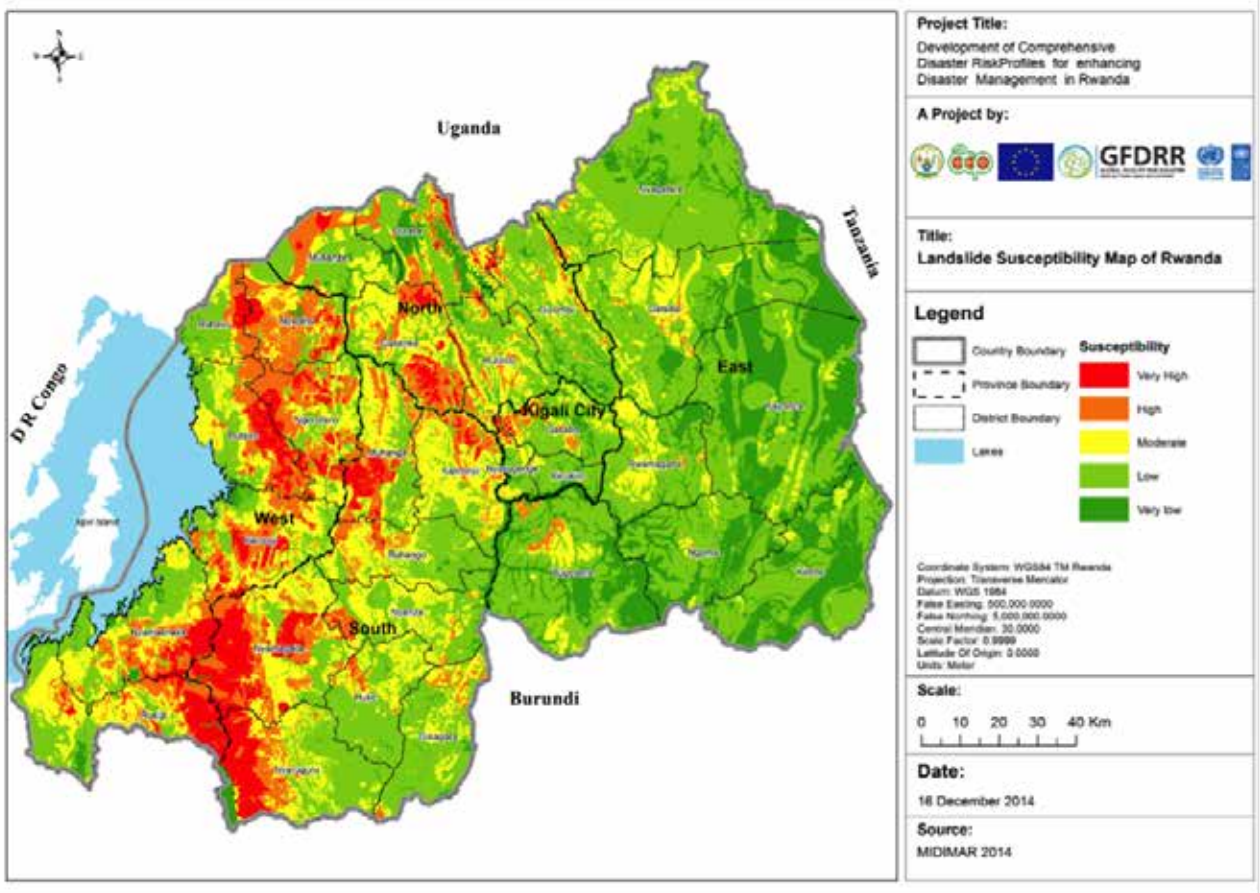
presenting risk is common among disaster risk institutions, including UNISDR, GEM, and GFDRR. The Ministry of Disaster Management and Refugee Affairs (MIDIMAR) in Rwanda has developed a more thorough presentation of risk assessment outputs by producing an atlas, which provides maps showing hazard and risk for the whole country alongside tabulated impacts and text descriptions (Figure 10). Such a large document has the advantage of being able to provide more context for the results.

Regardless of how the information is delivered, data producers should engage users from the early stages of a risk assessment to maximize their understanding and application of outputs; to ensure outputs are delivered in a way that provides better understanding to nonexperts; and to empower communities to use the risk information.

Lack of ownership

A common barrier to developing effective risk management policies based on the evidence of risk assessments is that, often, an assessment and its associated outputs lack ownership. This can happen if a risk assessment is produced without a defined purpose. To ensure the results of risk assessments are put to good use, the assessments' goals and purposes should be defined at the very beginning of the project, and end users should be engaged at the project design stage so

Figure 10. Landslide Susceptibility Map of Rwanda, excerpted from the National Risk Atlas of Rwanda. Reproduced with the kind permission of the Ministry of Disaster Management and Refugee Affairs, Government of Rwanda.



the communication products can be tailored to them. When communicating risk information, it is important to deliver more than just outputs; data providers must also explain the assessment process and, crucially, how to respond to or adapt policies based on the conveyed results.

Formalizing the risk assessment process

To ensure risk assessment outputs are incorporated into disaster risk management policies, the presenters proposed that the procedure be formalized within governments. If risk assessment

becomes an essential component of regular budgetary processes, the results are more likely to be incorporated into contingency plans; the assessment process will have greater continuity; and policymakers will be more motivated to take action based on the information. Furthermore, risk assessment will be treated as an important task and resources allocated accordingly if a relationship is established between risk assessment and investment growth.

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The town of Mafraq in the north of Jordan had 90,000 inhabitants before the Syrian crisis, with the influx of refugees its population has swelled to 200,000. The Zaatari refugee camp is now the fifth largest city in Jordan. Photo credit: William Stebbins / World Bank



Crisis Complexity: Partnering to Improve Resilience in the Face of Rising Humanitarian Needs

Bianca Adam, Disaster Risk Financing and Insurance Program, World Bank Group

Ger Duany was born in 1978 in the town of Akobo in what is now South Sudan.

Like thousands of other boys during the 1983–2005 civil war, he became separated from his family and was forcibly recruited as a child soldier, afterward spending many years in refugee camps in Ethiopia and Kenya. Today, more than three decades after the civil war began, Ger is an actor and a regional goodwill ambassador for the United Nations High Commissioner for Refugees (UNHCR). He was recently reunited with his mother and other members of his family who still live in a refugee camp in Ethiopia that has become a permanent settlement.

Unfortunately, the story of Ger and his family is not unique, and global displacement figures have now reached a staggering sixty million people—the highest level of forced displacement since the aftermath of the Second World War.

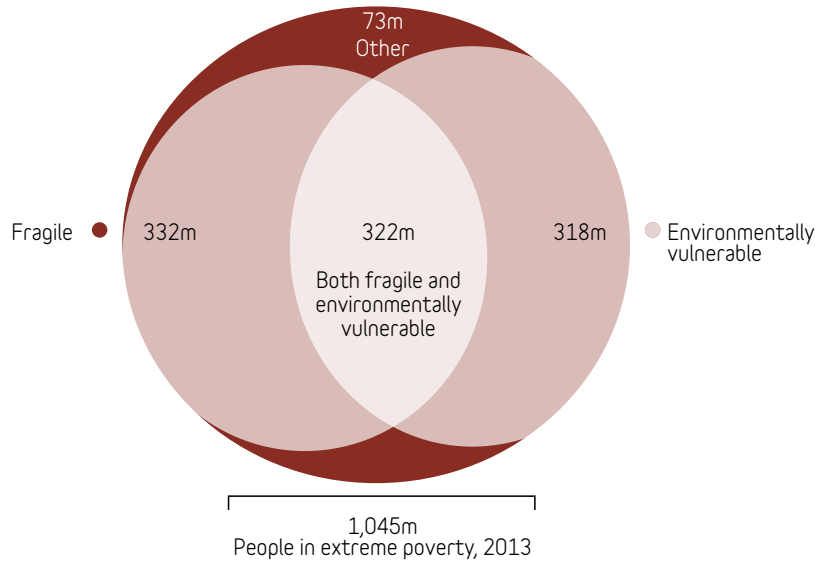
Poverty and vulnerability go hand in hand

Poverty and vulnerability to crises are intrinsically linked. According to the 2016 Global Humanitarian Assistance Report, an estimated 93 percent of the people living in extreme poverty today are in countries that are politically fragile or environmentally vulnerable or, in many cases, both (see figure 1).

Growing needs

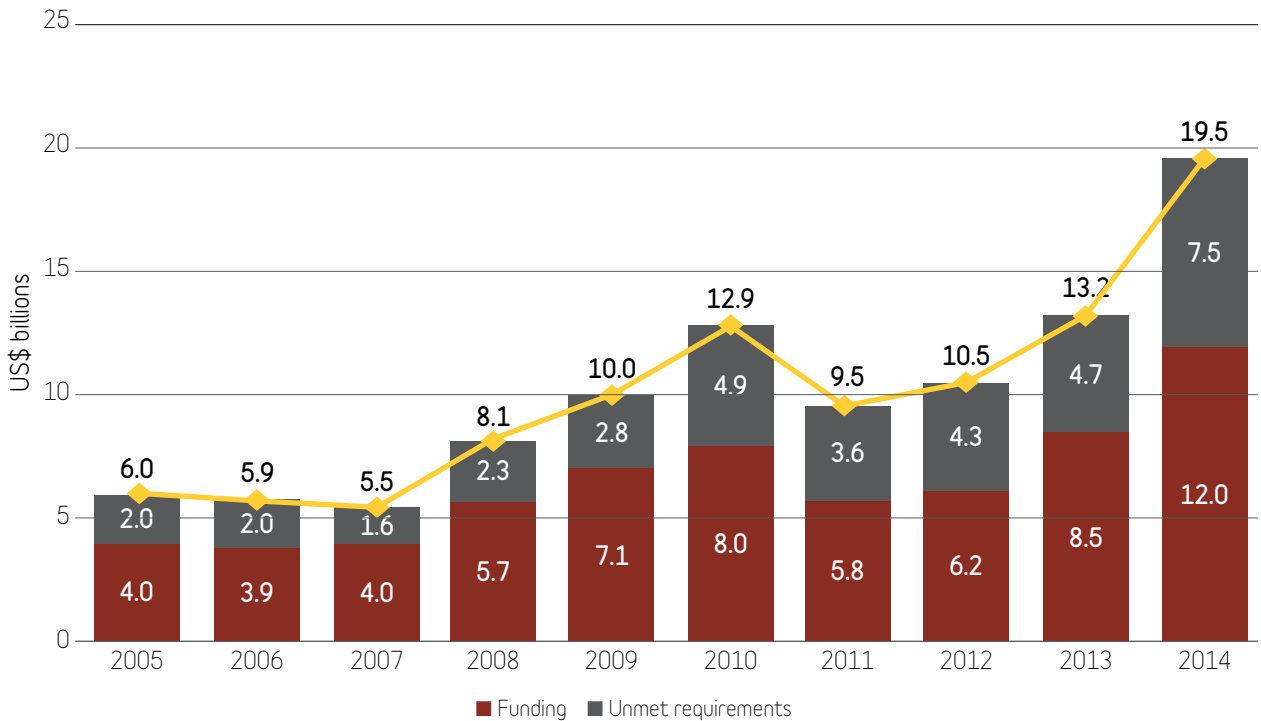
In 2016 alone, 125 million people are expected to need humanitarian assistance. Funding has increased with the growing need, reaching a record US\$24.5 billion in 2014. Nevertheless, resources were not sufficient to address the need that year, with US\$7.5 billion's worth of requirements going unmet (see figure 2).

Figure 1: 93 percent of the extremely poor live in countries that are fragile, environmentally vulnerable, or both



Source: Global Humanitarian Assistance, *Global Humanitarian Assistance Report 2015*, <http://www.globalhumanitarianassistance.org/report/gha-report-2015>.

Figure 2: UN appeals provide the best measure of humanitarian needs.



Source: Global Humanitarian Assistance, *Global Humanitarian Assistance Report 2015*, <http://www.globalhumanitarianassistance.org/report/gha-report-2015>

Crises are a short-term problem . . . or are they?

As the average duration of displacement has reached seventeen years, it is clearly no longer a temporary condition. Long-term displacement carries a high cost to host governments and communities, increasing the demand for food, water, sanitation, education, and health care. What often begins as a short-term humanitarian emergency turns into a lengthy development challenge. Thus, applying development solutions in a crisis helps set a longer-term vision for economic development, which in turn prevents the recurrence of displacement and reduces dependence on humanitarian aid.

Linking humanitarian and development action

Building resilience is, therefore, crucial, as is addressing the root causes of crisis and meeting the long-term needs of the people affected by it. The message that resounded among the speakers at the session was the need for better linkages and shared responsibility between humanitarian and development actors. And while additional resources are certainly useful to meet growing challenges, the focus must also be on leveraging

innovation and finding efficiencies to make the most of the resources available.

Panelists highlighted a series of ideas for strengthening such linkages to reduce the short-term costs and help capture the long-term gains:

- ▶ Upfront collaboration in advanced and integrated risk assessment and preparation
- ▶ A complete rethinking of the risks faced by those who are forcibly displaced in middle- and low-income countries—by environmental vulnerabilities, natural disasters, conflict, food price shocks, pandemics, and so on—and clear assignment of responsibility for taking on and financing these risks among the public and private sectors, host governments, and donor agencies
- ▶ A reform of peace operations and diplomatic engagement, led by the United Nations and others, to prevent and resolve conflicts and help sustain peace
- ▶ Increased government leadership, where possible, and greater use of national systems for delivery
- ▶ An end to the “camp” mentality—that is, to the inadequate support of refugees in protracted

displacement because of a “care and maintenance” approach that leaves unaddressed the impact on host communities

- ▶ Greater use of cash in places where it can purchase needed goods and services, with amounts adjusted to reflect inflation
- ▶ Collaboration with the private sector and social entrepreneurs to ensure most refugees and internally displaced persons (IDPs) have mobile phones and possibly Internet connectivity as platforms for information gathering, service delivery (including mobile cash), and data gathering, which would increase their economic opportunities

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Applying development solutions in a crisis helps set a longer-term vision for economic development, which in turn prevents the recurrence of displacement and reduces dependence on humanitarian aid.



The Power of Insurance: Driving Financial Resilience for Governments and People

Richard Poulter, Disaster Risk Financing and Insurance Specialist,
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How can the private sector help individuals build their resilience to disasters?

According to a 2012 study conducted by the Bank for International Settlements, the macroeconomic costs of disasters are driven by the uninsured part of catastrophe-related losses, while if insurance coverage exceeds 60 percent, catastrophes can be “inconsequential or even positive for economic activity.”⁴ Insurance markets in Africa, however, are in their infancy, especially for losses related to natural disasters. The resulting “protection gap” leads to the majority of disaster-related losses being borne by the most vulnerable members of society.

⁴ D. von Peter, S. von Dahlen, and S. Saxena, “Unmitigated Disasters? New Evidence on the Macroeconomic Cost of Natural Catastrophes,” BIS Working Paper No. 394, <http://www.bis.org/publ/work394.pdf>.

The panel discussion focused on experiences and ideas that might shed light on how the private sector can help close this gap, most notably in the agriculture sector, which employs an average of 65 percent of the population of countries in Africa.⁵ The following summarizes the main findings and conclusions of that discussion.

Developing insurance for the most vulnerable in Africa has been challenging due to a combination of high up-front investment and administrative costs, low financial literacy and understanding of insurance, poor data for pricing premiums, limited availability of reinsurance for pilot programs, and a lack of confidence in insurers’ willingness and ability to pay claims. These challenges have resulted in coverage initially being offered only to large-scale

⁵ World Bank, “Fact Sheet: The World Bank and Agriculture in Africa,” 2013, <http://go.worldbank.org/GUJ8RVMRL0>.

farmers, which has left already vulnerable small-scale farmers fully exposed to a variety of potential shocks.

The development of index-based crop insurance has, in recent years, transformed insurers' ability to offer products to individuals and small-scale farmers. While index-based insurance continues to be a vital method of offering financial protection to some of the most vulnerable members of society, ensuring commercial viability is key to maintaining private sector interest in such schemes. The private sector faces several hurdles that must be overcome to achieve this:

- ▶ **Scalability:** With very low premiums, insurance companies can only afford the high administration costs they bear if they have the ability to sell their products to a large number of individuals. One way they are overcoming this challenge is by supplying insurance products through a variety of alternative delivery channels, such as microfinance institutions, seed companies, government agencies, mobile phone operators, and research institutions. A common obstacle, however, is the lack of a regulatory framework

for supplying the products through these many different channels.

- ▶ **Data:** The data many countries across Africa have on historical disaster losses and past crop yields are very poor, which makes it difficult for insurers to price their products appropriately. Although recent technological advances, such as the use of satellite data collection, have made many new products feasible, insurers face "basis risk"—the possibility that the indexes on which they base their claim payments do not accurately reflect the losses incurred. Further investments in data collection and analysis are needed for better ground-truthing and to ensure products continue to be affordable and meet policyholder needs.
- ▶ **Profitability:** In almost every successful agricultural insurance program, government or donor assistance has reduced upfront costs to insurers of investments that often have characteristics of public goods (for example, investments in customer education, demand analyses, a, and research), or has reduced premiums to

policyholders through subsidies, or both. For any private sector insurer, entering the index-based insurance market is an investment: profitability may not be achieved in the short term, but it is necessary in the medium term to ensure sustainability. Donor or government support at the outset is vital to overcome the initial barriers to entering the market.

Development partners can help insurers achieve commercial viability—and thereby assist the private sector in continuing to provide much-needed financial protection for vulnerable individuals—in four areas:

1. **Awareness raising and education:** Development partners play an important role in raising awareness of insurance as a disaster management tool and increasing the understanding of how insurance works.
2. **Supporting the role of the government:** The most successful agricultural insurance schemes in Africa and elsewhere around the world have involved a significant level of support from the government to overcome some of the challenges identified above. Development partners are well placed to support public-private partnership (PPP) approaches to developing

While index-based insurance continues to be a vital method of offering financial protection to some of the most vulnerable members of society, ensuring commercial viability is key to maintaining private sector interest in such schemes.

markets for index-based insurance.

3. **Engaging in research and innovation in product design:**

Development partners have an important role to play in investigating which products work and which do not, and why. Applying scientific research to understanding markets and clients can lead to targeted investments to improve product quality and affordability—both key to the success of index-based products.

4. **Building local capacity:** Often actuarial functions such as product design, pricing, and reserving are performed outside the country

where the scheme will be implemented. The transfer of skills and knowledge from development partners to the institutions implementing the products is key to ensuring their ongoing success.

The conclusion is clear: the private sector has a vital role to play in providing financial protection from disasters. The social welfare and economic benefits of such schemes are evident, but ensuring their sustainability is not easy. The development of index-based insurance is a multi-stakeholder effort, and support from the public sector is vital. With investments in capacity building, awareness raising and education, data to ensure products meet policyholder needs,

and advancements in technology facilitating access to a new and bigger client base, index insurance is an important means by which the private sector can help individuals become more resilient in the face of increasing climate extremes.

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Governments in the Lead on Financial Preparedness: Lessons from around the World

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A growing number of governments have begun looking at managing the financial impact of natural disasters in more systematic ways by developing comprehensive financial protection strategies. Often anchored in the finance ministry, such strategies look at disasters as a contingent liability to the government that can be better managed in advance. These governments recognize that by applying basic principles of financial planning and public financial management, they can increase their financial resilience against disasters and climate shocks. By taking steps toward becoming active risk managers rather than emergency borrowers, countries can secure access to the money required for disaster response before events strike. This ensures rapid availability of the cash to finance response and recovery efforts.

As several countries in Africa are intensifying their efforts on this agenda, it is important to consider

lessons learned from across the world. The following describes the experiences of four countries in different parts of the world that have made significant progress in financial planning for disasters—Morocco, the Philippines, the Seychelles, and St. Lucia—and looks to distill some key messages for other countries.

Case study—St. Lucia

A small island state exposed to multiple natural hazards, St. Lucia has experienced on average about US\$40 million in losses from disasters every year for the past twenty-five years. Risk models show that for earthquakes and tropical cyclones alone, St. Lucia should set aside about 0.5 percent of its current gross domestic product (GDP) every year—approximately \$7.6 million. Extreme events can far exceed this. In 2010 Hurricane Tomas devastated the country, causing damage and losses of \$336 million, equivalent to 43 percent of GDP.

Recognizing this high vulnerability to natural hazards, and the fiscal vulnerability faced by a small concentrated economy, St. Lucia's government is gradually building and putting into place a combination of financial instruments to protect against disasters. As a member of the Caribbean Catastrophe Risk Insurance Facility (CCRIF), the government can receive quick budget support following severe disasters. Acknowledging that an insurance solution cannot cover all risk, the government is looking to combine the protection offered by CCRIF with contingent credit for more frequent events and include disaster response as a line item in the budget. This would provide cost-effective coverage for events of differing severity and frequency.

Case study—the Philippines

The Philippines is one of the most vulnerable countries in the world,

with an average of eight to nine typhoons making landfall every year. The capital, Manila, sits on top of an active fault line and has been estimated to be at risk of an earthquake of up to magnitude 7.2. This could lead to more than 34,000 deaths, 100,000 injuries, and 170,000 houses destroyed. Less severe but more frequent flooding is on the increase, often driven by inadequate infrastructure and growing population density.

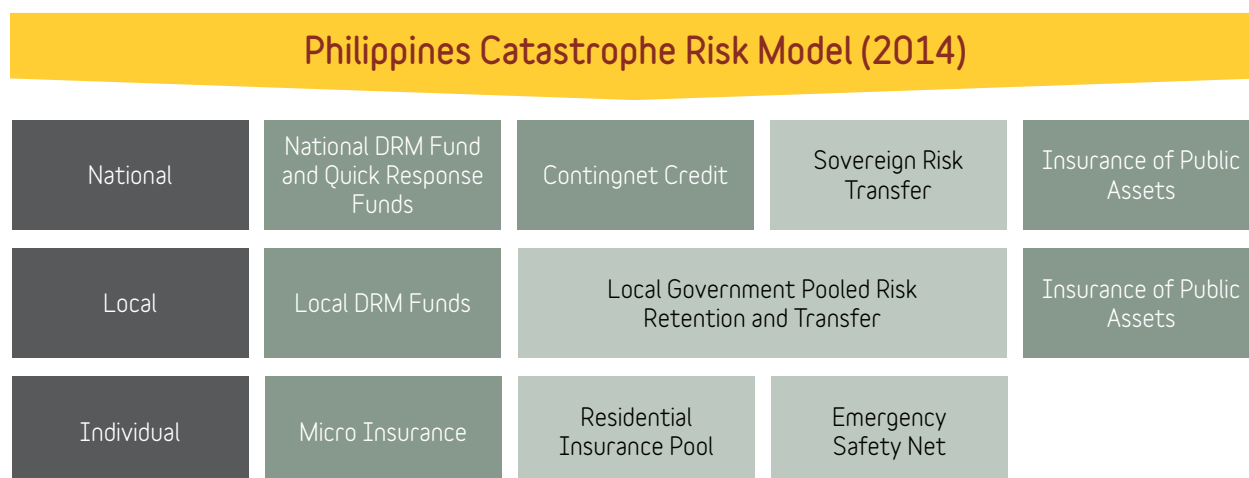
Following the devastating impacts of Typhoon Haiyan in 2013, the Department of Finance set out to take a more proactive stance in building financial resilience. It framed a financial protection strategy to cover the whole society comprehensively by protecting the fiscal balance and defending the sovereign credit rating at the national level, empowering governments to be more self-sufficient in disaster response at the local level, and protecting households and the

most vulnerable residents at the individual level. The government has since worked toward incorporating already existing financial instruments into this overall strategy and putting new ones in place to fill gaps it identified (see figure 1).

Case study—Morocco

Morocco is exposed to floods, potentially devastating earthquakes, and droughts that affect agricultural production. In recognition of these vulnerabilities and the social tensions they might trigger, the government began to review its overall approach to managing risk, with risks from natural hazards as its first priority. Building on a nationwide risk assessment, it set out to overcome institutional fragmentation in risk management and shift to a proactive, transparent approach, driven jointly by the Ministry of Interior and the Ministry of Finance.

Figure 1. DRFI in the Philippines—Blue denotes already in existence, white under implementation.





Shopkeeper in Medina, central Tangiers. Photo credit : Arne Hoel / World Bank

In 2009, the government established a fund to reduce the impacts of natural disasters, managed by the Ministry of Internal Affairs and financed with initial seed capital and then annual state budget allocations (US\$20 million a year). This largely reactive fund for reconstruction is now being transformed into a national resilience fund. To bring the private sector into effectively managing disaster costs, the government is also designing and implementing a national insurance program for protection against natural disasters for homeowners and businesses. A dedicated solidarity fund will compensate uninsured households affected by catastrophic events.

Case study—the Seychelles

The Seychelles is affected predominantly by hydrometeorological disasters, which are expected to grow in

frequency and severity because of climate change. The country, however, also faces other hazards, such as the 2004 tsunami that caused losses of US\$30 million. As a small group of islands with a fragile ecosystem, the Seychelles also faces biological hazards. The perception of the effectiveness of its risk management has

direct consequences for the country's economy, which is highly dependent on tourism.

Small, recurrent losses from low-impact disasters are mostly managed by the government budget. Three financing sources provide funds for post-disaster response. These are an annual budget contingency based on past budgetary analysis of disaster events (US\$4 million in 2015); a National Disaster Relief Fund to raise local and international funds for post-disaster assistance; and a World Bank contingent line of credit loan as an additional source of cash. To increase overall resilience, line ministries are integrating risk reduction into investment planning, and they contribute to overall disaster management through their core functions (for example, the Ministry of Health contributes through health risk surveillance and control).



Wind turbines near Victoria town, Seychelles. Photo credit: dvoevnore

Planning ahead and diversifying the financial instruments available to the government through a financial protection strategy can reduce reliance on donor support and empower the government to take quick actions and protect its citizens.

Key messages

The experiences described in these case studies highlight a number of key messages:

Financial protection ensures that the government has the resources available to meet disaster response funding needs as they arise. Planning ahead and diversifying the financial instruments available to the government through a financial protection strategy can reduce reliance on donor support and empower the government to take quick actions and protect its citizens.

While financial preparedness for disasters may seem to imply a complex, long-term agenda, simple measures can provide quick, tangible improvements to post-disaster outcomes. Actions that are small and modest but manageable and rapid are often preferable to start with. These can then grow into a

more complex system through iterations and refinement of what has worked.

Ownership by a strong government agency is crucial. The legal and institutional environment can be important to supporting the development of financial protection solutions. Significant progress has often been achieved when a ministry of finance has recognized the key role financial decision makers have to play in bringing about better financial preparedness against disaster and climate shocks.

Appropriate risk information is important to officials who need to make informed decisions. While this can take the form of a large-scale catastrophe risk model, gathering risk information need not be a costly and long-term endeavor. For example, much can be achieved through a better understanding of historical disaster impacts.

Disaster risk financing and insurance is a new policy field around the world. But some governments have already gathered important experiences and lessons learned. African countries that are closely following suit in economic growth and development could consider these lessons as they develop their own strategies to help protect their populations and fast-accumulating development gains against disaster and climate shocks.

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Scaling Up Social Safety Nets in Response to Disasters: The critical role of national programs

Barry Patrick Maher, Senior Disaster Risk Financing and Insurance Specialist, World Bank Group

The severe impact of natural disasters on the poorest people can have long-lasting consequences for socioeconomic development. Rapid urbanization—often unplanned—and the impacts of climate change increase the vulnerability of developing countries to natural disasters. With limited capacity to absorb such shocks, the poorest are hit the hardest and can find themselves resorting to extreme coping mechanisms with adverse long-term consequences, such as taking children out of school, selling assets, or reducing consumption.

Quick post-disaster assistance to vulnerable households is essential to protect their welfare. Current mechanisms, including many humanitarian responses, are slow to reach people in need and depend on external actors. Since 1990, 16 percent of the more than US\$56 billion in post-disaster aid coming from the international community has been used to fund purely short-term food-aid

efforts,⁶ which, studies show, can suffer from delays in mobilization.⁷

Innovative solutions are needed to speed up responses so they are more timely and predictable. Scalable social safety nets could address this challenge, as they can be structured to provide timely, efficient, and targeted payouts when the early signs of shock become apparent. This means countries could rapidly increase financial assistance to affected households, either immediately following a shock or—in the case of events like drought—when early signs of onset become apparent.

⁶ Global Facility for Disaster Reduction and Recovery, “Disaster Aid Tracking,” AidData, 2016, <http://gfdrr.aiddata.org/dashboard>.

⁷ For example, see Courtenay Cabot Venton, Catherine Fitzgibbon, Tenna Shiterek, Lorraine Coulter, and Elizabeth Dooley, *The Economics of Early Response and Disaster Resilience: Lessons from Kenya and Ethiopia*, Economics of Resilience Final Report, Department for International Development, United Kingdom, June 2012, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/67330/Econ-Ear-Rec-Res-Full-Report_20.pdf.

Case Studies

Presentations of national safety net programs from three African countries showcased how governments are using safety net programs as a response mechanism to protect the poorest people against shocks.

Sunya Orre from the Government of Kenya (GoK) described the Hunger Safety Net Programme (HSNP), an unconditional cash transfer program that has been providing regular, timely, and electronic cash assistance to beneficiaries who are exposed to drought, which has a large negative impact on their development and can lead to large financial costs. GoK is now also using the HSNP as a distribution mechanism for post-disaster assistance to the poor, enabling early action from government to avoid a crisis. GoK recognizes the cost of the mechanism is a key constraint and is working to develop risk-financing instruments to manage it. Key lessons include the value of GoK’s mass registration and bank

account-opening exercise, which enables rapid scale up; the primary importance of early warning to early action; and the importance of local politics, acknowledging that scientific and speedy approaches do not ensure political acceptability.

Martin Owor from the Government of Uganda (GoU) discussed the Northern Uganda Social Action Fund (NUSAF) III project, which looks to address the impact of disasters on the poor in the northern region of the country. Through a public works component, NUSAF III provides beneficiaries with seasonal transfers in return for their labor, with the objective of sustaining and increasing their assets and smoothing consumption during lean seasons. GoU now plans to use the public works component as a delivery channel to increase financial assistance to affected households upon identification of a shock event, using the established targeting and payment systems to select and transfer funds. Key lessons from the NUSAF experience include the importance of institutional capacity building; the need to invest in data systems to collect information on disasters; and the importance of monitoring and communication technology.

Sarah Coll-Black, senior social protection specialist for the World Bank, talked about Ethiopia's Productive Safety Net Programme (PSNP), which provides cash and food transfers

to households suffering from both chronic and transitory food insecurity, with the objective of strengthening livelihoods and building community assets. PSNP, part of Ethiopia's five-year development agenda, aims to enable its beneficiaries to engage in productive activities that enhance resilient livelihoods, ranging from rehabilitating land and water resources to developing community infrastructure, including rural road rehabilitation and the building of schools and clinics. One key lesson to be drawn from PSNP is that a comprehensive coordination system must be in place among all relevant institutions by the time a disaster hits. PSNP is setting up a coordination agency that allows the different social protection, disaster risk management, and climate change authorities to learn from one another and identify opportunities for cooperation.

Challenges and Recommendations

The following challenges and recommendations arose from the session:

1. Enhanced coordination and accountability among all the actors—including development, donor, and humanitarian—in national programs and systems is important, with Governments playing a central role.
2. Clarity must be obtained on who carries what risk

and how, when, and for how long. This is especially true for scalable safety nets. Experience to date suggests such clarity can be achieved through investing in government systems, preparedness, delivery mechanisms, and early warning systems to adopt a rules-based approach to scaling the safety net.

3. Any scalable social protection scheme can be effective only if the underlying data sources that trigger scale-up responses provide accurate, timely, and transparent information. Uganda's NUSAF III project will look to combine satellite-based remote sensing data with ground-collected indicators to ensure the scalability mechanism is activated only in cases when the early warning indicators exceed a predefined threshold.
4. In fragile and conflict-affected states where establishing a government-led safety net may not be possible, the international community has a key role to play. Given an estimated 90 percent of humanitarian appeals from 2014 arose from conflict situations, establishing long-term plans to address the needs of the poor and vulnerable in such situations will be important.
5. There are no one-size-fits-all solutions. All scalable



Typhoon Haiyan Damage, Tacloban. Photo credit: Tigeryan

safety net programs must be tailored to the profile of natural hazards, the potential impact on the local population, and the existing infrastructure and economic structure, priorities of Governments and key partners as well as the legal and institutional circumstances.

Conclusion

Establishing safety net programs is costly, can be challenging, and requires political will. That said, a growing body of evidence shows large cost savings can be achieved by channeling post-disaster assistance through safety net programs; according to research from the UK Department for International Development, every U.S. dollar spent on disaster resilience has resulted in benefits of \$2.80 in Ethiopia and \$2.90 in Kenya in the form of

reduced humanitarian spending, avoided losses, and development gains.⁸ As the frequency and severity of disasters continue to increase, scalable safety nets must be embedded in a larger, interdisciplinary framework linking social protection, disaster risk reduction, climate change, and humanitarian response programs to encourage a joint effort toward building resilience before shocks hit.

The world may be entering a phase in which ending poverty and boosting shared prosperity will be challenging. With climate change, El Niño events, and fragility and conflict growing in intensity, risks seem to be increasing. In addition, the global community faces financing challenges: the humanitarian system is under severe financial pressure, with 40 percent of UN appeals left unmet in 2014, aid budgets shrinking

⁸ Ibid.

and subject to closer scrutiny, and a slowing global economy. Scalable safety nets represent an opportunity to achieve the triple win of risk resilience, reduction, and response by developing robust systems, preferably government owned, to channel assistance to the poor and vulnerable rapidly when a crisis unfolds.

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Dark hallways filled with patients seeking treatment at Liberia Government Hospital, in Tubmanburg, Liberia on June 23, 2015.
Photo credit © Dominic Chavez/World Bank

After Ebola: The Future of Pandemic Risk Management

Bianca Adam, Disaster Risk Financing and Insurance Program,
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At the beginning of 2014, the World Health Organization (WHO) officially declared an Ebola outbreak in West Africa. Three contiguous countries—Guinea, Liberia, and Sierra Leone—took the brunt of the health emergency, which caused at least 11,315 deaths. With the outbreak over in most countries, experts are now taking stock of what worked and what did not in dealing with the crisis and are analyzing lessons learned.

Not the first, nor the last

Like other hazards, pandemic risk has threatened humankind throughout history. From the Black Death of the fourteenth century to the ongoing HIV/AIDS pandemic and the recent outbreaks of severe acute respiratory syndrome (SARS), we have many examples of the ravaging effects of fast-spreading diseases.

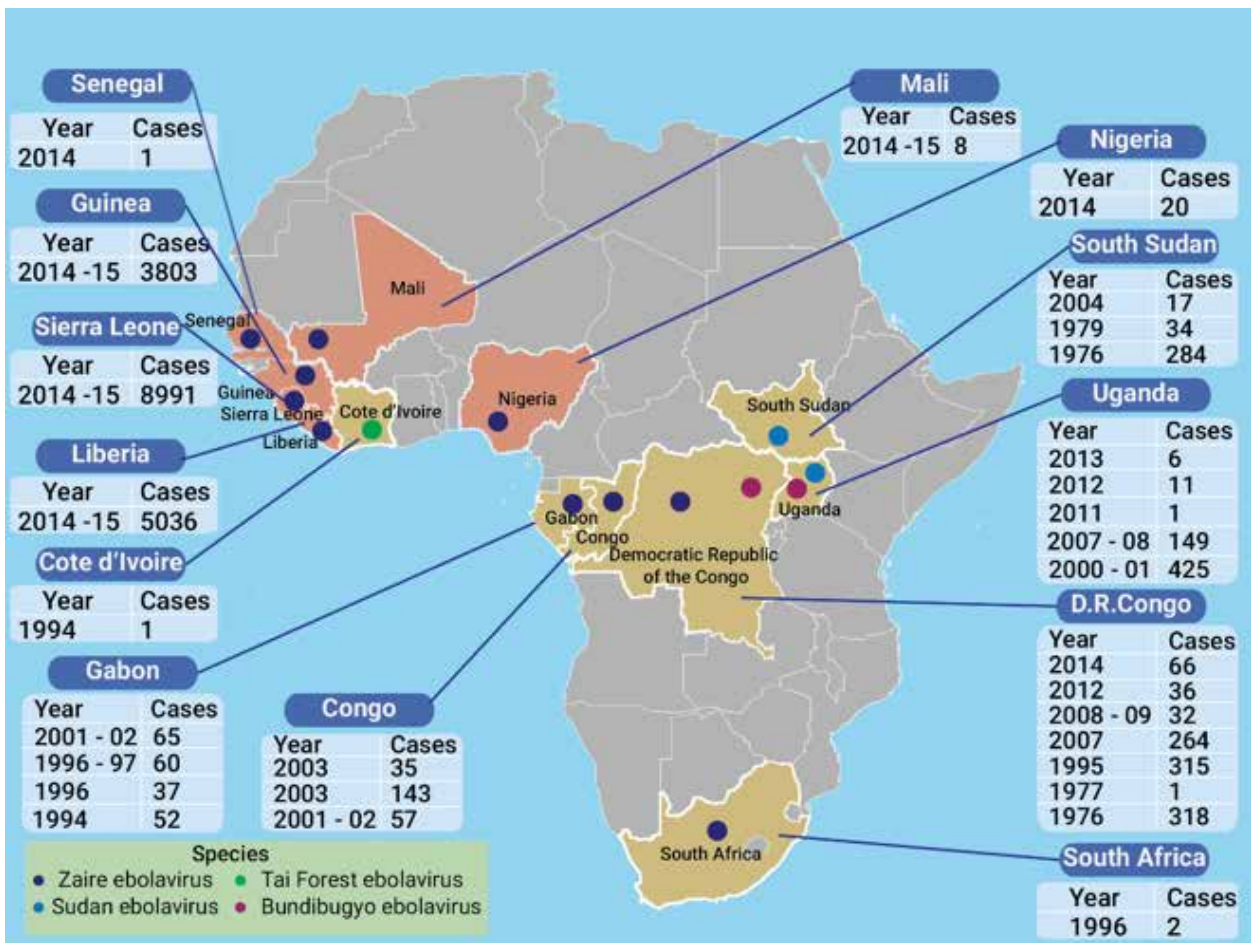
And while the magnitude of the most recent Ebola outbreak was unprecedented, this was not

the first to hit the continent. Africa has seen a number of (nonpandemic) Ebola outbreaks since 1976 (see figure 1). In 2000, for example, Uganda experienced over four hundred cases.

Ebola in Sierra Leone

Sierra Leone was the first of the three most severely affected countries to declare victory when the end of the outbreak was announced in November 2015, but the road to “resilient zero”—that is, the point of achieving and sustaining zero new transmissions—was not easy. The epidemic swept through the country, with 8,704 confirmed cases spread across all of its fourteen provinces. An emergency on this scale overwhelmed Sierra Leone’s weak health sector, with its physical infrastructure damaged by ten years of civil war and its two hundred doctors for a population of seven million. The unprecedented crisis required unprecedented measures, and, in October 2014, President Ernest Bai Koroma created the National Ebola Response Centre (NERC)

Figure 1. Ebola outbreaks in Africa 1976–2015 (World Health Organization)



to lead the response and achieve “resilient zero.”

What next? Some reflections

The session benefited from the insights of representatives of affected countries and international organizations who were on the frontlines of the response to the Ebola outbreak, as well as some from the private sector who are pioneering innovative solutions to improve future pandemic response. The conversation highlighted some key reflections arising from the recent outbreak:

It is vital to be prepared and act fast. Preparedness capabilities are key for early detection, verification, response to, and mitigation of pandemic risks. National health services in Sierra Leone were not equipped to respond to the outbreak, and help from international partners arrived too late. Countless lives could have been saved had the response been faster.

Strong leadership and effective coordination are central to effective response. The rapidly changing response made it difficult to maintain alignment

with partners on all key decisions and actions.

Rapid and predictable access to adequate resources is crucial. Without adequate resources for risk monitoring and rapid response, pandemic threats cannot be effectively mitigated.

Behavioral changes are key but challenging to bring about. Influencing the behavior of people to reduce overall caseload is very difficult and requires strong engagement at the community level, where women in particular can be powerful agents of change.

Strong leadership and effective coordination are central to effective response. The rapidly changing response made it difficult to maintain alignment with partners on all key decisions and actions.

The media also play an important role in delivering targeted messaging and ensuring accurate information is reported.

Health systems need to be strengthened. Greater investments and efforts are needed for health systems to help prevent, detect, and respond to potential infectious disease threats.

The need for fast, comprehensive, and well-resourced response was echoed throughout the discussions. Pandemic risk insurance emerged as a

promising solution to ensure fast availability of financial resources, but it should not be seen as a substitute for ex ante investments in preparedness and the strengthening of health systems. Rather, it complements these efforts and provides additional resources in the event of a large-scale emergency such as the recent outbreak. The idea is currently being developed, with the World Bank Group, the World Health Organization, and private sector partners, including Swiss Re, exploring the technical aspects of a Global Pandemic Insurance Facility to be launched in 2016.

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Leaders from the three West African countries most-affected by the Ebola crisis to discuss the critical issues, needs, and possible solutions to address the impacts of the crisis. Shown: Ngozi Okonjo-Iweala, Finance Minister, Nigeria. Photo credit: Grant Ellis / World Bank



Rethinking Risk Management Approaches and Practices in Africa

Jean-Baptiste Migraine, Disaster Risk Management Specialist,
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Africa is highly vulnerable to droughts, floods, climate change, forced displacement, political instability, chronic poverty, conflicts, and pandemics. Each single shock associated with these risks can have a significant impact on economic and social development, which can trap communities and individuals in a vicious cycle of poverty. Managing risks requires long-lasting political leadership and acute technical knowhow, as well as crosscutting risk management with adequate linkages between preventive and emergency interventions. Experience in risk management has progressed tremendously over the past decade, with lessons having been learned regarding the need to combine emergency and long-term actions and to engage multiple sectors across multiple governance levels. The management of these risks requires close cooperation across humanitarian and development sectors that often operate in isolation. The session highlighted

various aspects of vulnerabilities in Africa and provided examples of how to rethink the current risk management approaches and practices for a more integrated risk management and financing framework.

Case studies, challenges, and recommendations

Participants at the session shared lessons from a number of specific experiences, including the response to the Ebola crisis in Western Africa and, more specifically, in Sierra Leone (2014–15); preparedness for flooding in Uganda related to El Niño (2015–16); and efforts to develop resilience in the Horn of Africa. Risks in Africa are interdependent in highly complex ways, exhibiting different “trends” and presenting very unpredictable successions of crises. Capacities to cope are unequally distributed, and natural hazards tend to bring higher impacts than in other parts of the world.

Although a total of about US\$1 billion was successfully mobilized over less than eight days for emergency response to the recent Ebola crisis, implementation of concrete activities for the benefit of vulnerable populations took a very long time.

Although a total of about US\$1 billion was successfully mobilized over less than eight days for emergency response to the recent Ebola crisis, implementation of concrete activities for the benefit of vulnerable populations took a very long time. Lengthy negotiation processes fraught with administrative and logistical issues were responsible for the delay.

In Sierra Leone, the Ministry of Health and Sanitation initially established emergency operation centers (EOCs) in the most affected districts. Subsequently, the government decided to set up a structure that could be replicated at all levels across the country and created the National Ebola Response Centre (NERC) as a coordinated entity led by the Ministry of Defense. District Ebola response centers (DERCs) were created to manage and coordinate response at the district level. The transition between the EOCs and the DERCs posed a challenge, suggesting that a unique and well-defined governmental organizational structure should be adopted for future crises to avoid the difficulties of making the transition from one emergency response structure to a different one, each under a different ministry of the government.

Session participants also did the following:

- ▶ Recommended the setting of prequalified agreements, with institutions playing a role in emergency response, as an essential measure to ensure more effective response and better predictability. Decision makers need greater capacity to respond to emergencies, and it can best be developed through the implementation of preparedness, prevention, and disaster risk-financing activities.
 - ▶ Analyzed the preparedness process for flooding related to El Niño in Uganda and demonstrated how preventive measures, coordinated by the government and with strong participation from civil society organizations and the Uganda Red Cross, can reduce the impacts of flooding nationwide.
 - ▶ Emphasized the need to factor disaster risk management components into all government programs, investments, or developments and to involve all sectors of government in the preparation and execution of disaster risk policies.
- ▶ Highlighted the importance of having a regional approach to disaster risk management in Africa that can address challenges and facilitate decision making for towns sharing boundaries with different countries. Participants discussed how policies, approaches, and financing could be coordinated to best advantage among member states of the Intergovernmental Authority on Development (IGAD) to ensure inclusion of the different elements of risk management in different planning processes at the regional level.
 - ▶ Confirmed communities as the first responders in emergencies and identified effective national coordination mechanisms as key for effective community and civil society participation in risk reduction processes in situations where coordinating activities tends to compete with implementing them, and practitioners tend to have limited time for coordination.

Conclusions

Session participants highlighted the need to address risks in a more holistic manner, with due consideration of both stable and fragile countries. Humanitarian and development actors have the potential to design solutions and make funding available for the innovative integrated



A portrait of Ebola survivors Mariatu Munu and her daughter on March 12, 2015 in Freetown Sierra Leone. Unimaginably 13 of 14 family members were infected with Ebola, 10 died, 7 of those were children. Photo © Dominic Chavez/World Bank

risk management approaches advocated during the session, and the following tools presented at the conference, among others, are currently being piloted:

- ▶ Early warning coupled with forecast-based financing
- ▶ Emergency response and contingency plans assigning responsibilities to different stakeholders
- ▶ Longer-term land use planning and building codes to limit the creation of new risks
- ▶ Insurance and risk transfers to ensure more rapid recovery

The session confirmed the need for and discussed challenges to such a holistic approach to risk management at all levels of governance, from local authorities to international organizations.

The Understanding Risk community will continue tracking good practices in Africa and present progress at a side event at the upcoming Venice Understanding Risk Forum.

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Building Resilience through Risk Financing: Cross-Sharing Experiences with Island States and Other Countries

Animesh Kumar, Deputy Regional Coordinator (Africa), United Nations Office for Disaster Risk Reduction (UNISDR)

Although risk transfer and financing are recognized as effective tools for disaster risk reduction, awareness and understanding of their potential for informing decisions on risk financing for disasters are limited among decision makers, including both those in disaster risk reduction and disaster management and those in finance planning communities. The need is increasing for a conjoined understanding of risk-informed planning, development, and investments.

The sharing of experiences, challenges, and good practices from across Africa on risk management approaches provided insights from accumulated experience in this field to both public and private sector entities, including those in less developed countries that are currently

exploring the introduction of effective risk transfer and financing solutions. The session focused especially on the Island States but brought together case studies from other countries as well to explore these experiences.

Case Studies

Representatives from Ethiopia, Madagascar, Niger, and Saint Lucia shared country experiences, lessons, and good practices on risk knowledge tools that have formed the basis for risk financing.

Member states of the Indian Ocean Commission (IOC), including Madagascar, have benefited from the Islands Project, implemented jointly in the region by the IOC, the Global Facility for Disaster Reduction and Recovery (GFDRR), and the United Nations Office for Disaster Risk Reduction (UNISDR).

Highlighted by all these case studies is the need to develop and implement a comprehensive risk knowledge package to make actors and stakeholders aware of the importance of ensuring investments in risk financing and to enhance awareness where it exists.

While Madagascar has developed through this project a model for risk knowledge to inform public investment strategies, Niger has developed hybrid risk profiles and is in the process of using these. Ethiopia has developed multiple risk information tools, including local-level risk profiles, and has a functioning risk financing mechanism linked to its productive safety net mechanism. All three countries have disaster loss accounting systems on a standard online platform (www.desinventar.net), which provides an insight into historical disaster records and associated damages and losses.

Saint Lucia provided a diverse example from a Caribbean Small Island Developing State (SIDS). Through an integrated disaster risk management approach, Saint Lucia has implemented structural and nonstructural measures to safeguard physical investments and reduce vulnerability, while financing support for climate adaptation at the private sector and household levels.

Highlighted by all these case studies is the need to develop and implement a comprehensive risk knowledge package to make actors and stakeholders aware of the importance of ensuring investments in risk financing

and to enhance awareness where it exists. The package, as implemented by these countries, includes disaster loss accounting (comprising knowledge of past disasters), risk profiles and probabilistic risk models (to make projections about future disasters), and the use of these two tools to inform risk-sensitive planning and investment decisions.

Challenges

Key challenges to the use of risk transfer and financing as effective tools for disaster risk reduction include the following:

- ▶ Understanding of risk financing is limited across countries by inadequate knowledge about risk.
- ▶ Despite the proven efficacy of risk prevention and reduction, countries and development partners continue to pay more attention to disaster preparedness and response.
- ▶ Financial protection and risk prevention require long-term plans and steps. Authorities often prefer quick-result options, however (hence, the inclination toward disaster response).
- ▶ Policy and institutional linkages among related

and complementary fields, like disaster risk reduction, climate change adaptation, and social protection, are limited.

- ▶ Countries' technical expertise to develop and apply risk assessment tools is limited.
- ▶ Governments hesitate to invest in prevention. As prevention is not visible, it is increasingly difficult to convince constituencies and budget holders of the need for it.

Recommendations

The following recommendations will help countries address these challenges:

- ▶ Countries at similar risk levels should develop as viable options joint strategies and programs to share risks and associated costs.
- ▶ Financial institutions (such as insurance companies) should be kept fully on board at every stage of development of risk management frameworks.
- ▶ A risk financing mechanism should be developed and implemented as a common vehicle to link social protection, disaster risk reduction, and climate change adaptation programs, thus enhancing investment coordination and community ownership.
- ▶ Strategic program investment frameworks

should be developed to guide investments.

- ▶ Institutional integration and coordination should be enhanced by the creation of a disaster risk reduction (DRR) coordination agency at the highest level of government.
- ▶ National platforms should be strengthened as viable bases for effective institutional coordination and partnerships.
- ▶ Structural measures should be integrated with nonstructural measures (for example, community awareness) for effective risk reduction and building of resilience.
- ▶ The range of options for financing disaster risk should be expanded, and it should be contextualized to local and national needs.

Conclusions

Public and private investment in disaster risk prevention and reduction is essential to enhancing resilience. Such measures are cost effective and instrumental to saving lives, preventing and reducing losses, and ensuring effective recovery and rehabilitation. The Sendai Framework calls for disaster risk management policies and practices to be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics, and the environment.

Hence, attaining the right understanding of disaster risk through appropriate tools and technologies is essential to developing and effectively implementing risk financing tools.

Such an understanding will guide structural and nonstructural measures while building and leveraging community awareness. Coordination across sectors and institutions is vital for effective resource utilization, and government commitment to risk prevention and reduction is vital to enhancing resilience.

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Women farmers in a community hard hit by drought in Kenya. Photo credit: Flore de Preneuf / World Bank

Protecting Development Gains: The Power of Risk Pooling and the G7's InsuResilience Initiative

Simon Young, CEO, African Risk Capacity Insurance Company Ltd

Regional risk pools in Africa, the Caribbean, and the Pacific are growing. In addition to providing affordable and fast-paying insurance coverage for countries, these pools create a platform for better risk information, risk management, and regional collaboration. They can be instrumental in achieving the recent G7 target of covering up to 400 million more people by climate risk insurance by 2020.

Climate change is already having an impact on the poor, many of whom are heavily dependent on agriculture for their livelihood. The expected rise in the frequency and intensity of extreme weather events will, therefore, become a major issue for developing countries. Their vulnerable populations will require the better protection risk pooling could help provide.

In recent years, regional insurance pools have developed worldwide to protect countries against climate variability and, in some cases, geophysical risks. Since 2007, the Caribbean Catastrophe Risk Insurance

Facility (CCRIF) has been insuring Caribbean countries against earthquakes, hurricanes, and, more recently, excessive rainfall, and it is now expanding to cover Central America. The Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) has facilitated insurance for Pacific Island states against tropical cyclones and earthquakes starting in 2012. And, since 2014, the African Risk Capacity (ARC) has provided insurance cover for African Union member states against catastrophic drought, and it will soon cover flood and tropical cyclone risk.

The power of risk pooling: Experience from the Caribbean and the Pacific

The benefits of catastrophic risk insurance pools have been clearly demonstrated. Participating countries that are exposed to recurrent climate shocks can gain access to liquidity quickly in the aftermath of disasters in the form of index-based insurance payouts.

This enables a swift response and avoids the loss of development gains that result from delayed relief interventions. Pooling risk regionally reduces the price of such insurance significantly for each country as the pools benefit from the natural diversification of weather risk, and a bigger portfolio of risk attracts better pricing in the international risk markets.

Risk pooling can, furthermore, have an impact on a country's sovereign credit rating, which determines the cost of international borrowing. In a recent report, Standard & Poor's indicated it intends to include a vulnerability index in its sovereign risk assessments in the short to medium terms. A lack of robust disaster risk financing mechanisms to manage vulnerability could lead to a downgrade of up to two and a half notches for some countries.⁹ Financial protection tools such as

⁹ Standard & Poor's Ratings Services, Storm Alert: Natural Disasters Can Damage Sovereign Credit Worthiness, McGraw Hill Financial, September 2015, <http://unepfi.org/pdc/wp-content/uploads/StormAlert.pdf>.

risk pools could mitigate potential negative effects.

The idea of risk pooling led to the establishment of CCRIF and PCRAFI. In both the Caribbean and the Pacific Islands regions, the exposure to tropical storms and earthquakes is high. For example, the annual probability of a hurricane striking Jamaica is over 20 percent. And ten countries in the Pacific are among the top thirty worldwide considered most vulnerable to natural disasters.¹⁰

While risk pools do not mitigate the physical impact of disasters, they can soften the blow financially and can do so quickly. Since 2008, CCRIF countries have received thirteen disaster-linked payouts totaling more than US\$37 million, and PCRAFI countries have received two payouts of more than \$3 million since 2013. As the payout triggers are based on objective, quantitative data available immediately after an event, the payments have been among the first to provide liquidity for disaster response, arriving within a few days to a couple of weeks after the catastrophes.

Risk pooling for Africa: The African Risk Capacity

Building on experience with risk pools globally and the use of index products to manage drought risk, ARC Ltd. was established as an insurance facility that provides coverage against drought and other natural catastrophes to African Union member states under the umbrella of the African Risk Capacity, a Specialized Agency of the African Union. ARC's objective is to provide funding directly to African governments in the event of a shock more reliably and quickly than traditional humanitarian aid.

A member state that takes out insurance from ARC Ltd. is required to have a predefined contingency plan identifying how the funds would be used in case of payout. In the event a payout is triggered, ARC funds are delivered to the insured country's government within two to four weeks of the end of the season. Taking ownership of the implementation process, the government is required to spend the funds according to the contingency plan that ideally is implemented within 120 days of an ARC payout, and/or on activities that prompt or enable other activities ensuring a faster and more effective overall response. Mali's plan, for example, specifies that an ARC payout after a drought would be spent on food distribution, cash transfers, and livestock feed.

In ARC's first year of operation, covering the 2014-15 agricultural seasons, three out of four insured countries were affected by drought in the Sahel. The drought triggered three payouts, requiring ARC Ltd. to disburse \$26 million to the affected states: Mauritania, Niger, and Senegal. ARC's second pool, for the 2015-16 policy year, includes eight countries.

Some of ARC's challenges include the need to work with African Union member states to assess and address their disaster risk adequately, to improve early warning systems in place, and to build contingency plans that will allow countries to respond quickly to disasters. The ARC Agency therefore focuses on working jointly with member states to improve their capacity for disaster risk management. An additional, ongoing challenge is the ability of member states to set aside dedicated premium payment resources when faced with competing demands on government budgets. ARC's aim is for governments to embed premium payments in their national budgets and national strategies to ensure long-term ownership of disaster management.

ARC is actively expanding its portfolio of financial products. Responding to member state demand, it has announced the launch of flood and tropical cyclone coverage as well as insurance for pandemic risks, such as Ebola. In addition, ARC has

¹⁰ United Nations University, WorldRiskReport 2014, Alliance Development Works, Bonn, Germany, 2014, <http://ehs.unu.edu/news/news/world-risk-report-2014.html#files>.

A member state that takes out insurance from ARC Ltd. is required to have a predefined contingency plan identifying how the funds would be used in case of payout.

launched the Extreme Climate Facility (XCF), which will issue catastrophe bonds to provide adaptation financing to member states affected by longer-term climate events in Africa. Still in the development phase, these bonds will crowd in investor financing and pay out to member states based on objective weather-based indices.

An Effective Mix of Risk Retention and Risk Transfer Is Needed

Effective risk management is more than just risk financing. When risk is transferred, it is not the end of the story, as governments must still absorb risk and shocks, as well as provide effective disaster response measures in light of the severe impacts of the shocks. Therefore, in addition to creating good disaster response capacity, a financial risk management framework is necessary to define which risks will be transferred and which will be retained.

The need for such a framework is exemplified by Malawi, which is exposed both to drought and floods. The government retains

some risk, with 2 percent of the national budget allocation scheduled by law for unforeseen expenditures, including those linked to disasters, while other risk is transferred. As early as 2005, Malawi experimented with weather-based index crop insurance that was to pay out to farmers when rainfall was less than anticipated. This was followed by a weather derivative in 2008-9 that would provide funding to the government in case low rainfall led to low maize production. Finally, Malawi purchased drought insurance through ARC Ltd. in 2015.

Benefits beyond Climate Risk Insurance

Through risk transfer solutions, valuable risk information is collected that can also be used for other purposes. In the case of PCRAFI, a risk information database was created which informed urban planning in Vanuatu. It was also used by domestic insurance providers to improve their standard insurance products to include disaster risks and by macroeconomists to determine the accuracy of their stress testing with regard

to natural disasters. Even non-PCRAFI members have used the data. One example is New Zealand Aid, which used the information to target its development policies in the Pacific region.

In conclusion, as witnessed in Africa, the Caribbean and the Pacific, regional risk pooling can be a cost-effective mechanism to provide timely and reliable funding for emergency relief efforts to disaster-affected countries. In addition, such pools can provide a platform for related capacity building measures and also improve the availability of risk information that can be employed for other purposes beyond climate risk insurance.

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