

Note to the UNFCCC Interim Executive Committee on Loss and Damage

Experiences from the World Bank Group

I. Key Messages

The Loss and Damage agenda provides an opportunity for the international community to bring together experiences from climate change adaptation and disaster risk management. It also provides an opportunity to address the immediate needs of the poor and vulnerable people suffering from recurrent climate-related shocks, leading to loss and damages to lives and livelihoods.

The World Bank Group has been supporting countries to build resilience and to manage climate-related disasters, both physically and financially. Three areas of relevant experiences to the Loss and Damage agenda are highlighted here: (i) Risk Identification; (ii) Financial Protection; (iii) Resilient Recovery and Reconstruction.

II. Background

In November 2013 at the Warsaw COP, the World Bank presented a contribution to the Loss and Damage agenda entitled “*Building Resilience: Integrating Climate and Disaster Risk into Development*” – *the World Bank Group Experience*¹.” The report concluded that:

1. *Building climate resilience will be essential to the global goals of ending extreme poverty and promoting shared prosperity.* The poorest and most marginalized populations commonly live in the highest risk areas, and are also the ones with least ability to recover from recurrent, low-intensity events, which can have crippling and cumulative effects on livelihoods. As the impacts from changing climate can undermine hard-earned development gains, they need to be minimized by reducing the magnitude of the hazard, diminishing exposure (by assisting the poor to live in safer areas) or decreasing their vulnerability to climate-related shocks.
2. *Climate and disaster resilient development should be the goal.* Risk reduction and better preparedness to deal with climate and disaster impacts can substantially decrease the cost of disasters. Yet despite its cost effectiveness over the long term, climate and disaster resilient development can require substantial start-up costs. Evidence from past Damage and Loss Assessments (DaLAs) following disasters indicate that safer structures require design changes that typically cost 10 to 50% more to build – and even more if transport or water networks need to be relocated². Reducing the creation of new risks by integrating climate and disaster resilience into development planning is more cost effective than

¹ <http://documents.worldbank.org/curated/en/2013/11/18513435/building-resilience-integrating-climate-disaster-risk-development-world-bank-group-experience-vol-1-2-main-report>

² GFDRR 2010 Damage, Loss and Needs Assessment. Guidance Notes, Volume 3. The World Bank. <http://www.gfdr.org/sites/gfdr.org/files/publication/Estimation%20Volume3-WEB.pdf>

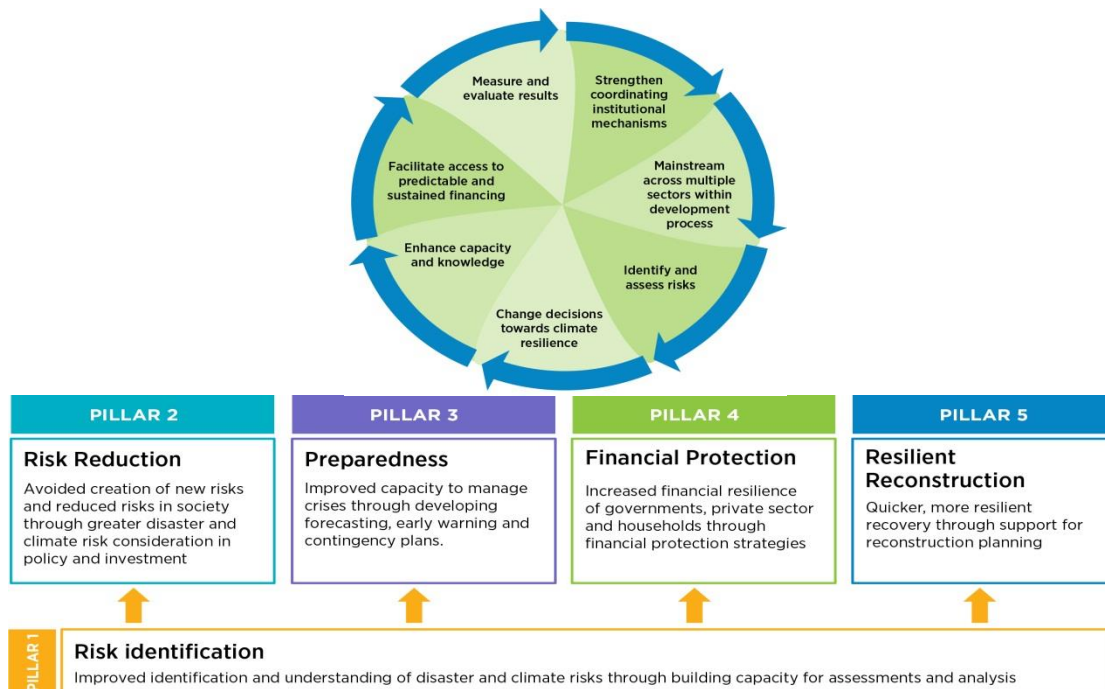
retrofitting at a late stage. Hence, climate resilience should form an integral part of national planning processes and development assistance, particularly for least developed and most vulnerable countries.

3. *Much is already known on how to build resilience, but better integration between climate resilience approaches and disaster risk management is required.* From 1980 to 2012, some 87% of the reported disasters, 74% of the losses (US\$2.8 trillion) and 61% of lives lost (1.4 million) were caused by weather extremes. Given these synergies and the similarity of instruments used, it is important to bring together the institutions with responsibility for climate resilience and disaster risk management. Field experience suggests that this often happens seamlessly on the ground, yet institutional resistance towards integration at national and international levels continues to exist. To prevent fragmentation of scarce local capacity and global resources, the two disciplines should be progressively harmonized. The Loss and Damage agenda provides an opportunity to achieve this aim.

III. World Bank Group Experience

Over the last few years, the World Bank has helped build synergies between climate and disaster resilience efforts, in a growing portfolio that amounted to commitments of US\$4.4 billion in fiscal year 2013. Some 80 percent of the World Bank investment projects that supported climate resilience also had disaster risk management co-benefits, reflecting the fact that the majority of climate resilience activities focus on reducing the risk of extreme weather events. A smaller proportion of disaster risk management projects (54 percent) supported climate resilience, reflecting the importance of disaster recovery and reconstruction, financial protection and management of seismic risk in stand-alone disaster risk management operations.

Figure 1: Process of integrating climate resilience into development and an operational framework, including the set of instruments and tools for managing climate and disaster risk



1. Risk Identification

Recognizing, assessing, and understanding risk are the first steps towards reducing its effects. Many risk assessments are too technical or vague to answer the questions that decision makers face. By developing information for a purpose, sharing it widely, and communicating it well, policymakers and the public can better understand their risks and the trade-offs involved in choosing particular options – such as whether to build infrastructure to resist a 1 in 20 or a 1 in 100 year storm surge in a given coastal area.

The World Bank is currently supporting 43 countries to carry out risk assessment activities. In most cases, this is supported through the Global Facility for Disaster Reduction and Recovery (GFDRR) which provides grant-financed technical assistance or analytical and advisory services. These assessments help client countries to better understand their exposure to adverse natural events, and guide policy and investment decisions. To date, more than 1,300 geospatial datasets have been created through open-source data sharing platforms.

Examples of WBG support

Hazard mapping: Manila is exposed to frequent flooding, including the 2009 typhoons that brought extensive rainfall, putting most of the city underwater. After economic losses totaling \$4.4 billion or 2.7 percent of the country's gross domestic product, the World Bank assisted the government in preparing an integrated flood management master plan based on flood hazard mapping. In 2012, the government formally endorsed an \$8.6 billion investment plan to better protect Manila's population and economic assets from flood risk. At a much smaller scale, hazard mapping has also been prepared for vulnerable coastal communities of São Tomé and Príncipe and coastal cities in Mozambique, showing areas at risk from sea-level rise and river flooding. This is now being used to help identify safer areas for gradual settlement expansion.

Geo-referencing assets: The World Bank recently assisted the Pacific region (through the Applied Geoscience and Technology Division of the Secretary of the Pacific Community) to establish a Pacific risk information open platform that helped geo-reference more than two million buildings. This information is now being used to guide investment operations in the Solomon Islands and Vanuatu, and serves as a foundation for the Pacific Catastrophe Risk Insurance Pilot (see Financial Protection section for further details). Trained volunteers are being used to map critical assets in other vulnerable countries, such as the recent mapping of 350 health facilities and 2,256 schools in Nepal, and 30,000 buildings in Sri Lanka.

Risk Modelling: The Central America Probabilistic Risk Assessment (CAPRA) is a free and modular platform for risk analysis and decision making, which applies probabilistic techniques to hazard and loss assessment (including multi-hazard analysis). Initiated with seed funding from GFDRR in Nicaragua, CAPRA has grown into a partnership between the World Bank, the Inter-American Development Bank, UNISDR, the Coordination Center for the Prevention of Natural Disasters in Central America, and six Central American countries. CAPRA can also be used for cost-benefit analysis and to help design risk-financing strategies. Colombia, El Salvador, Dominica, Panama, Ecuador, Costa Rica and Peru are currently preparing major public investment plans, based on risk assessments conducted through CAPRA. In Colombia, for example, risk modeling in three cities resulted in quantitative risk information on buildings in the education, health and housing sectors.

Developing decision-support tools: The Indonesian Scenario Assessment for Emergencies (InaSAFE) is a free, open-source software which produces natural hazard impact scenarios for better planning, preparedness, and response. The freeware allows users to combine data from many sources to explore the impacts that a single hazard would have on specific sectors, e.g., number and location of schools affected by 1 in 50 year return intensity flood. This allows users to run a risk impact simulation to show the vulnerability of given population or assets to a specific hazard and make more informed policy decisions: for example, how many houses might be affected by a 50-year return, compared to a 100-year return flood; and what might be the fatalities/injuries from such an event. This allows decision makers, for example, to determine whether to invest in a higher or lower protection dyke, or to encourage gradual population retreat from the exposed area. These simulations also allow decision makers to use models to estimate the amount of contingency funds that should be allocated annually in the budget or the amount of insurance coverage they should purchase. An easy-to-use field guide for InaSAFE and open data platforms has just been produced. A number of countries (e.g. Mozambique and Madagascar) are requesting support to develop initiatives similar to InaSAFE.

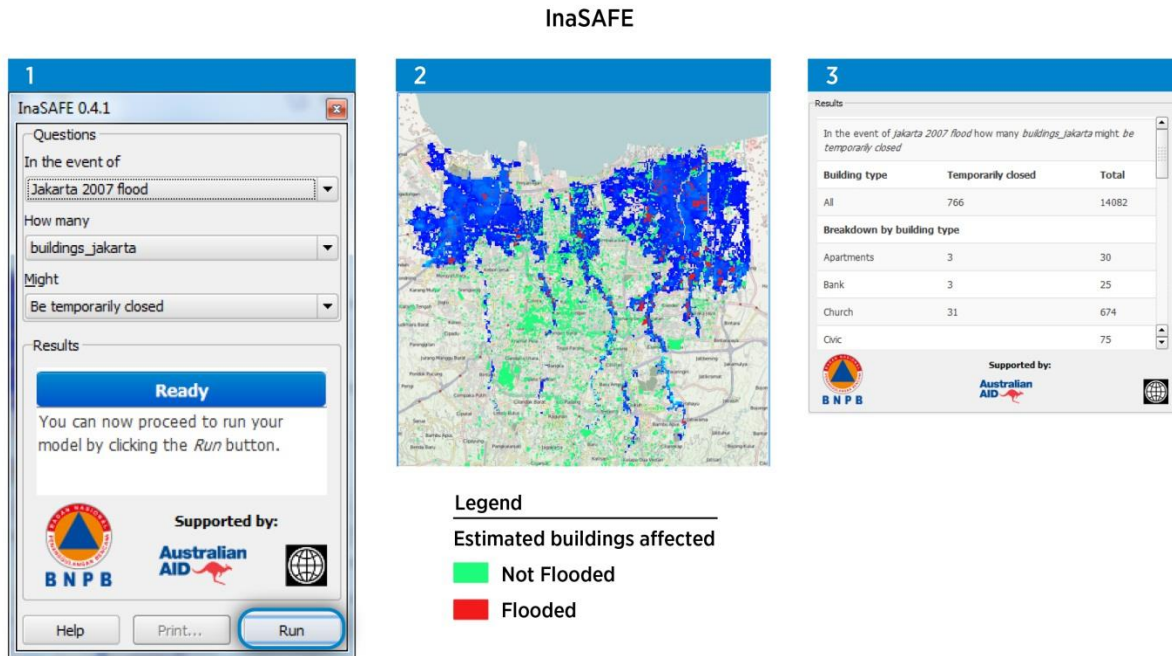


Figure 2: The InaSAFE Open-Source Software

Open-data platforms: In Mozambique satellite imagery and spatial datasets were used to carry out rapid impact assessment of the 2013 floods that displaced 185,000 people. This led to a restructuring of the World Bank's involvement in Mozambique and on an additional \$70 million earmarked for rehabilitation and recovery from the floods. The spatial data and satellite imagery is hosted on an open data platform (Moz-Adapt) which supports data sharing between government, academic stakeholders and the general public. Similar open data platforms exist in Sri Lanka, the Caribbean and the Pacific Island region.

2. Financial Protection

Financial protection allows for accelerated mobilization of funds to help quickly prepare and respond to shocks (*risk retention*) or transfer their cost to others such as insurers (*risk transfer*). This set of instruments – which can be tailored to meet national or regional needs – can collectively help countries to increase their financial resilience to climate-related disasters and reduce their impacts. Crucially, for many low income countries that suffer from recurrent events, it can provide the resources to quickly repair damaged structures and avoid infrastructure collapse that often results from recurrent impacts. Small contingency funds can also be mobilized at the local level, in advance of forecasted droughts or intense rains as was done in Ethiopia.

Currently, the World Bank provides advisory services to design and implement national strategies in more than 40 countries, focusing on disaster risk financing and insurance through public and private partnerships. Many countries use innovative approaches to transfer risk from government balance sheets to capital markets that allows governments to manage and reduce their contingent expenditure. The range of instruments used is shown schematically on Figure 3. Some specific examples are given below.

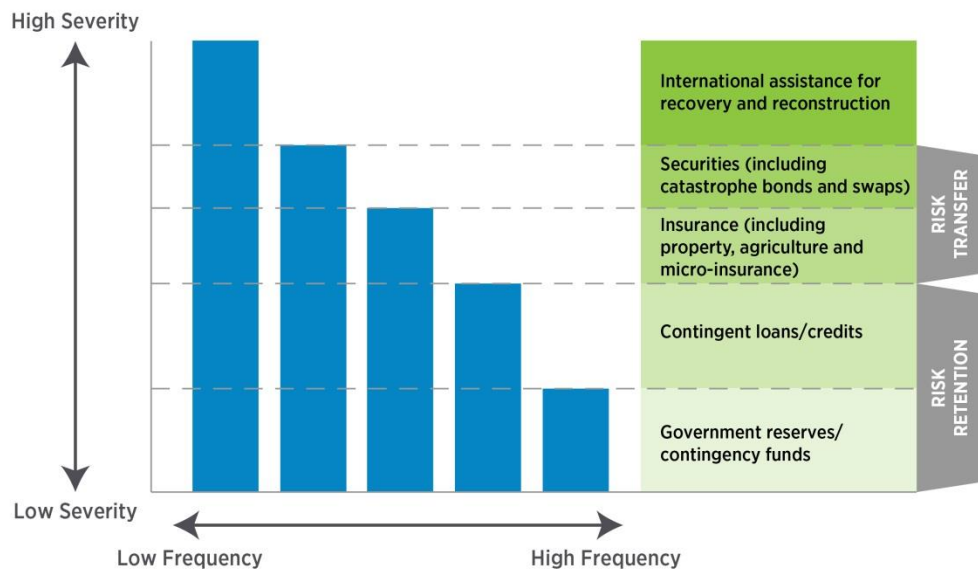


Figure 3: Financial protection instruments to increase the financial resilience of countries to natural disasters and tailored to meet varying disaster risk profiles

Examples of WBG support

Government Reserves (risk retention): The World Bank has supported Mexico in developing its Fund for Natural Disasters (FONDEN), which started out as a government budgetary reserve in 1996, but has since then evolved into a more sophisticated financial protection mechanism. This includes mechanisms to support rapid rehabilitation and reconstruction of public infrastructure, low income housing and specific ecosystems. FONDEN consists of two complementary budget accounts, the original Program for Reconstruction and the Fund for Disaster Prevention (FOPREDEN), designed to promote stronger prevention and risk management activities. FONDEN is funded through the Federal Expenditure Budget, at a

minimum of 0.4% of the annual federal budget or about US\$800 million. The FONDEN Program for Reconstruction channels resources to specific reconstruction programs and acts as the contracting authority for risk transfer mechanisms, including market-based insurance and catastrophic bonds, such as the US\$315 million bond issued in 2012.

Contingent financing mechanisms (risk retention): The World Bank is now offering a growing number of contingent financing instruments. In particular, the Development Policy Loans with a Catastrophe Deferred Drawdown Option (CAT-DDOs) have proven to be an effective contingent financing instrument. The CAT-DDO is a pre-approved line of credit to IBRD borrowers that helps governments to rapidly access resources following a disaster, providing a much needed immediate source of liquidity at lower rates than those of market-based sovereign insurance mechanisms. To have access to this contingent credit, countries must show that they have engaged in a comprehensive disaster management and risk reduction program. Since the instrument's inception in 2008, seven countries -Colombia, Costa Rica, El Salvador, Guatemala, Panama, Peru and the Philippines – have accessed this instrument, for a total amount of \$1.3 billion, and discussions are ongoing in a number of additional countries.

Regional risk pooling (risk transfer): The World Bank is advising groups of countries on regional financial protection programs, and – through the Treasury Department – acting as intermediary for risk transfer solutions between them and the financial markets. Work is currently ongoing to expand the scope of the Caribbean Catastrophe Risk Insurance Facility—currently covering 16 Caribbean countries against cyclone and seismic risks—to cover Central American countries and the risks of excess rainfall. Following the Caribbean example, the World Bank has also assisted Pacific island countries to launch the Pacific Catastrophe Risk Insurance Pilot in 2013, in partnership with the Secretariat of the Pacific Community and the Government of Japan. This pilot program covers six Pacific island countries—the Cook Islands, the Marshall Islands, Samoa, the Solomon Islands, Tonga, and Vanuatu— and has secured \$67 million from insurance markets to protect against tropical cyclones, earthquakes and tsunamis (a first payment was recently made to Tonga following the January 2014 cyclone). A similar scheme is being explored for the Indian Ocean island countries, in partnership with the Indian Ocean Commission and through the African Union in Sub-Saharan Africa.

Promote insurance markets (risk transfer): In addition to providing intermediation services, the World Bank is supporting client countries to develop market-based insurance for climate-related disasters. It has included, for example, support to the Southeastern Europe Catastrophe Risk Insurance Facility, to help Albania, the former Yugoslav Republic of Macedonia, and Serbia to develop their domestic catastrophe risk insurance markets. It is also supporting a new initiative to scale up disaster risk insurance in lower-income countries. Four countries—Bangladesh, Haiti, Kenya, and Senegal—have been identified as initial pilots to stimulate insurance penetration. Under the Pilot Program for Climate Resilience, the private-sector arm of the World Bank Group (IFC) is also exploring the viability of agricultural insurance in countries such as Nepal and Zambia.

3. Resilient Recovery and Reconstruction

With the risk awareness of governments and people at its highest in the aftermath of disaster, recovery and reconstruction planning presents an important opportunity to change risk

behaviors and promote better adaptation practices. The World Bank has supported affected countries (such as the Philippines in the wake of typhoon Haiyan) to build resilience through technical assistance on recovery planning, as well as financing of the recovery process.

Examples of WBG support

Post Disaster Needs Assessments: Building upon the 2008 Joint Declaration on Post-Crises Assessments and Recovery Planning, the World Bank works closely with the United Nations and the European Union to support Post Disaster Needs Assessments (PDNAs). This helps estimate damages, economic losses, and forward-looking needs. By using an internationally recognized methodology, PDNAs also help government and donors to better orient resources towards the recovery. Since 2007, GFDRR has helped support 32 PDNAs, which have informed 61 recovery projects with a value of US\$3.36 billion, benefiting an estimated 71 million people. Assessments carried out in Djibouti (2011) Madagascar (2008), Morocco (2012), Yemen (2008), and Senegal (2009) led to the establishment of risk reduction projects in the housing, infrastructure, energy, urban, water and agriculture sectors, for example. In Madagascar, the assessment contributed to the adoption of improved safety norms for public buildings, transport and irrigation infrastructure.

Rapid Assessments: Client countries are increasingly requesting the World Bank to support rapid post-disaster assessments, in time to inform recovery planning and investments. This helps lock in resources for recovery and reconstruction at the time they are available, as well as capitalize on the window of opportunity that exists in the immediate aftermath of disasters to promote stronger resilient measures. Following Typhoon Haiyan in the Philippines, for example, assistance was provided to a rapid assessment of damage to infrastructure and other critical assets using geospatial information and field volunteers using OpenStreetMap, geo-referenced public asset data, and field reports. The World Bank is also assisting the government in designing a comprehensive recovery and reconstruction plan following the principles of building back better, and to establish a resilient fund. A \$500 million Development Policy Loan was released within a few weeks of the disaster, and is being followed by a \$480 million project for community-based infrastructure and social services.

Similar rapid assessments were carried out in the Horn of Africa in 2011, resulting in a US\$1.88 billion Response Plan. This was partially funded by the Crisis Response Window, a concessional finance window under the International Development Association (IDA) which is additional to country allocations, and helped provide US\$107 million supplementary financing to the Productive Safety Nets Project in Ethiopia. Similar allocations were made in 2013 for Mozambique following the Limpopo floods.

Recovery Framework: GFDRR is helping to develop a Disaster Recovery Framework Guide in partnership with the United Nations Development Programme (UNDP) and the European Union. The Guide, set to be published in late 2014, aims to incorporate the assessments into recovery planning, and influence long-term development paths in affected countries.

IV. Challenges and Further Work

While clear progress has been made, many challenges remain in promoting climate and disaster resilient development, particularly in getting the institutional frameworks and incentives

right. Experience shows that an integrated, multi-stakeholder and multi-sectoral approach takes time and may entail slow disbursements initially, but it generally results in stronger stakeholder buy-in and higher sustainability over the long term. This is a process which both donors and recipient countries need to recognize. At the same time, lead institutions must have the necessary authority to coordinate multiple sectoral ministries, often older and more powerful than the environmental or civil protection agencies that have led climate change and disaster risk management agencies in the past. Experience indicates this is best done by an agency located at the highest possible level of government, able to influence also the critical budget and planning processes.

Perverse incentives and vested interests also favor short-term responses over long-term prevention, and construction over much-needed maintenance. These (dis)incentives affect donors and recipient governments alike. Limited data and institutional and technical difficulties preventing free flow of information also constrain the ability of many countries to promote climate and disaster resilient development. As a first step, improving the understanding of development risks from a changing climate is necessary. A second step involves promoting informed decisions, and developing financial protection instruments to fund risk reduction, as well as residual loss and damage. A better standardization of losses and damages associated with past events would also help collect more consistent information, and distinguish between development deficits and potential climate change impacts. Finally, climate and disaster risk management need to be integrated much more closely with poverty alleviation programs.

The WBG experience can potentially contribute to a number of areas in the Warsaw Decision on loss and damage. The examples highlighted in this Short Note include approaches, good practices, technical advice and implementation support that contribute to the *knowledge and understanding of comprehensive risk management approaches to address loss and damage*. *Coordination and synergies among stakeholders* is key to support provided through the WBG for risk identification, financial protection and resilient recovery and reconstruction in many countries. *Enhancing action and support, including finance, technology and capacity-building and provision of technical support and guidance* is an integral part of much of the WBG support; a long-term engagement and programmatic support helps develop capacity for designing and implementing policies, tools and investments. There is scope for further work in many of these areas and also potential for collaboration with UNFCCC.