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Key Points

- Almost half of global natural disaster events occur in Asia and the Pacific.
- The disconnect between disaster losses and disaster initiatives indicates that governments are unable to recognize the long-term economic impacts of disasters, especially on debt structures, or the role of hazard mitigation.
- Mainstreaming disaster risk management (DRM) into national development plans requires comprehensive assessments and analyses to achieve inclusive policy responses.
- The disaster risk financing and insurance (DRFI) model provides policymakers with an alternative way to create a financial safety net and obtain liquidity for timely disaster responses and rehabilitation.
- A mix of DRFI instruments can reduce costs associated with risk retention and risk transfer, and improve funding availability.

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Incorporating a Disaster Risk Financing and Insurance Framework into Country Management and Development Strategies

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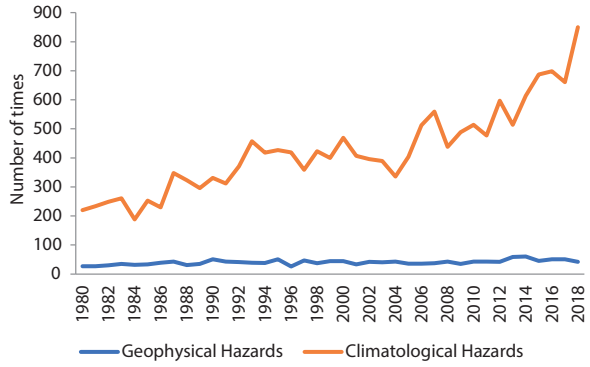
The Asian Development Bank's (ADB's) developing member countries (DMCs) frequently suffer significant catastrophic losses from natural disasters. Since 2004, over $500 billion has been lost, with total damages averaging $107 million in losses per day and affecting 2.1 billion people. The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) reported that almost half of the 281 natural disasters that took place worldwide in 2019, including earthquakes, storms, droughts, and floods, occurred in Asia and the Pacific.

The coastal DMCs and other small and vulnerable economies are highly exposed to natural hazards and the impacts of climate change. The number of extreme weather events caused by climate change, including rising sea levels, changing rainfall patterns, and rising temperatures, has continued to increase over the years (Figure 1). However, governments in Asia and the Pacific frequently respond inadequately to climate and disaster risks, in either the design of the programs or location of the investment. The lack of an effective and sufficient DRM mechanism can lead to significant losses, particularly in economies where the agriculture, fishery, and forestry sectors make up a sizable share thereof (International Labour Organization 2018). Climate change impacts and ecosystem disruptions can have severe effects on livelihoods and food security, which in turn can affect human well-being and migration dynamics, and create or exacerbate fragility and conflict (ADB 2017).

The disconnect between disaster losses and disaster initiatives indicates governments' inability to recognize the long-term economic implications of disasters, especially on debt structures, and the role of hazard mitigation in easing economic problems (Benson 2009; Collymore 2011). Disaster management has become a global policy challenge that requires a methodological assessment of how modern developments magnify the vulnerability of human communities to natural and other hazards (Cummins and Mahul 2009). The design of policy frameworks for disaster management must take into account the interlinkages of relevant factors, such as land-use decisions in the agricultural sector, capital investment needs, cost-efficient recovery measures, a shift in the focus of donor financial support, and dramatic increases in hazard exposure.

Figure 1: Extreme Weather Hazards



Source: Munich Re. 2019. Insurance Gap: Extreme Weather Risks. https://www.munichre.com/en/risks/extreme-weather.html#1979754853.

Background

Disaster shocks tend to hamper economic activities and increase government expenditure because many DMCs still lack capacity on prevention measures, preparedness actions, and response strategies. Instead, governments often rely on post-disaster financing instruments, including budget reallocations, borrowing, taxation, and international aid. As a result, governments may have to bear growing contingent liabilities from shouldering a significant share of disaster response and recovery costs, and from delayed disaster recovery and construction because of long waiting periods for available aid funds.

In response to this situation, it is necessary to emphasize the key role of data, analytics, and modeling methodologies to assess and quantify disaster risk profiles and help strengthen physical and financial resilience against natural hazards most efficiently for risk prevention. Recognizing the importance of DRM capabilities and alternative risk financing and insurance schemes, the Asian Development Bank Institute organized a capacity building workshop in partnership with the Association of Southeast Asian Nations Secretariat, ADB, and Myanmar Insurance Commission. This workshop was intended to help government officials gain the knowledge required to design desired disaster risk finance tool kits and understand the process to select the most effective instruments under specific circumstances, and to strengthen DRM capabilities and complement the endeavors of alternative DRFI solutions together with distinguished experts from academia, the private insurance sector, and multilateral development banks. The discussion focused on the key role of data, analytics, and modeling methodologies in assessing and quantifying disaster risk profiles and helping to strengthen physical and financial resilience against natural hazards efficiently for risk prevention.

This policy brief features an innovative framework of disaster finance and insurance, including response measures, reduction, and preparedness, such as emergency relief, rehabilitation, and long-term reconstruction. This is fundamental to enable informed decisions about implementing a holistic DRM strategy and its governance, and to access the full range of available disaster finance instruments, such as those supporting risk reduction, risk retention, and ex-ante risk transfer.

Potential Risks and Disaster Exposure in Asia and the Pacific

Urbanization and Risk Accumulation

According to World Urbanization Prospects estimates, in 2018 there were 48 cities with populations of 5 million–10 million, and it is projected that by 2030, 60% of the world's population will live in megacities in Asia (United Nations Department of Economic and Social Affairs 2018). Increased urban populations and rapid urbanization in Asia have been key driving factors of Asia's development (ADB 2008); however, if a disaster happens in a city, this growth and concentration of economic activity may lead to extensive damage. Various studies indicate that the unplanned expansion of cities to accommodate rapid population growth can leave urban populations vulnerable to shocks. In addition, the failure of city authorities to regulate

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building standards and socioeconomic conditions leads to small-scale disasters on a daily basis. These everyday risks compound disaster risks from extreme natural hazards, resulting in a level of risk accumulation specific to urban areas, where human activities amplify risk (United Nations Development Programme 2010). This often increases the exposure of people and economic assets to hazards and creates new patterns of risk, making disaster management complex in urban areas.

Vulnerability of the Agriculture Sector

Disaster prevention and preparedness measures are key to ensuring agricultural sustainability and facilitating an emergency response. Nevertheless, the evidence shows that disaster risk reduction and DRM in Asian agriculture focus mainly on ex-post emergency responses rather than preventive actions. Traditionally, a country's government supports its farmers with emergency assistance when disasters cause widespread yield losses and pose a threat to food security. However, ad-hoc financial disaster relief is difficult to plan and puts considerable strain on national budgets, impelling governments to seek long-term risk management approaches. By shifting the financial risk, agriculture insurance plays an essential role as a risk-hedging tool for smallholder farmers and enables resilience in the sector.

Ocean Risk to Coastal Developing Regions

The Pacific small island developing states (SIDS) are among the most exposed to ocean risks. Dispersion and distance from economic centers limit economies of scope and scale, and consequently act as barriers to growth. SIDS' small market base and high degree of import reliance imply unstable, and probably unsustainable, economic growth. Infrastructure and transportation are costly, and SIDS are extremely vulnerable to natural hazards—a situation exacerbated by climate change. Pacific women and girls are especially vulnerable, with wide-ranging gender inequalities in access to employment, wage gaps, education, health outcomes, and gender-based violence both contributing to and exacerbated by economic shocks, disasters, and climate risks.

Mainstreaming Disaster Risk Management into Development

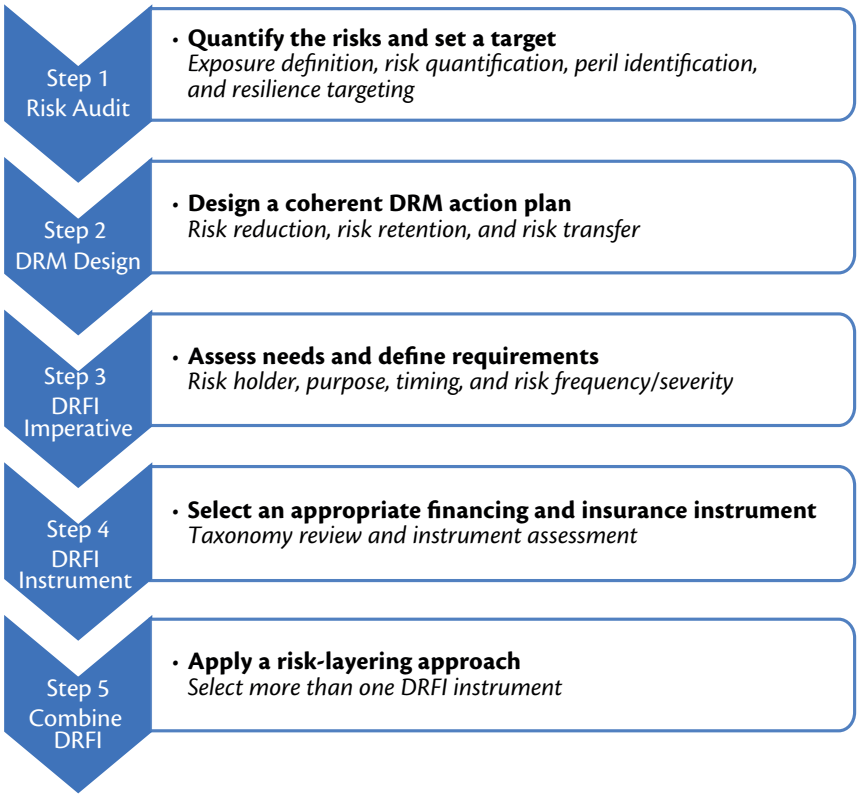
It is necessary to recognize and integrate the negative impacts of disaster risks on economic development in disaster risk reduction measures as a part of national development plans. Governments must identify risks and social vulnerabilities before taking steps to mitigate them, such as by strengthening building codes, retrofitting existing buildings, and ensuring the existence of social protection systems that can be scaled up to meet emergency needs (UNESCAP 2013). It is also necessary to make financial preparations by accumulating domestic savings and foreign reserves, and/or by transferring some risks through commercial insurance. Mainstreaming such measures into national development plans requires comprehensive analyses to quantify catastrophic impacts on an economy and vulnerable groups and sectors. These analyses will facilitate the adoption of appropriate measures to strengthen DRM and gradually remove vulnerability while treating risk reduction as an integral part of the development process.

Innovative Framework of Disaster Risk Financing and Insurance

It is imperative to reduce and better manage climate and disaster risks. Setting up a disaster management plan before disasters arise is key to achieving these goals. Policymakers can specify actions to undertake for risk reduction and appoint persons in charge to implement each specified action in response to the results of the disaster. DRFI presents an alternative for policymakers looking to adopt a financial safety net to deal with catastrophic damages. Establishing this type of financial pool will ensure funding availability in a timely fashion after a disaster to minimize the humanitarian cost.

The disaster risk toolkit is proposed to provide practical guidelines for the establishment of DRFI along with a specific approach for selecting appropriate financial instruments in different scenarios. These instruments can play different roles by providing different amounts of resources to different actors at different speeds. A financial instrument should be customized for a specific event in a certain area or region. Policymakers

Figure 2: Initial Steps for Selecting Disaster Risk Financing and Insurance



DRFI = disaster risk financing and insurance, DRM = disaster risk management.

Source: Meenan, C., J. Ward, and R. Muir-Wood. 2019. Disaster Risk Finance—A Toolkit. GIZ ACRI+ Commissioned Report. Bonn and Eschborn: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH. https://indexinsuranceforum.org/sites/default/files/Publikationen03_DRF_ACRI_DINA4_WEB_190617.pdf.

in developing countries must be more involved and pay attention to the DRFI toolkit at all management levels—local, national, and regional (Figure 2).

Step 1: Quantify the risks and set a target

To handle catastrophic damages effectively, it is crucial to quantify regional disaster risks by conducting capacity building programs on risk identification. The region's governments must gain knowledge and a better understanding of the nature and impact of disaster and climate risks. Assessments, modeling, and mapping are tools to identify and quantify these risks. Furthermore, resilience targets must be set for successful risk audition, the monitoring process of the progress, and achievement.

Step 2: Design a coherent disaster risk management action plan

Once the risks are quantified, governments can develop risk management strategies comprising three actions: risk reduction, risk retention, and risk transfer. These actions should be applied together to meet defined resilience targets. A specific combination of these actions will provide customized context and information derived from the cost–benefit analysis and participatory engagement processes with local communities in vulnerable and high-risk areas.

Risk reduction is a key element of DRM to alleviate the severity of a potential disaster's impact, reduce the number of deaths and/or injuries, and minimize the destruction of properties and infrastructure. Risk

reduction activities are determined according to specific circumstances and require sound economic analysis and participatory engagement. However, risk reduction activities alone are unlikely to reduce residual risks to meet resilience targets.

To manage residual risks, risk retention and risk transfer are needed to accommodate risk reduction activities. Risk retention includes responses to disaster risks that internalize hazards with a calculated acceptable level of losses. This activity involves sovereign disaster risk financing with longer-term cost implications as costs are held and repaid by a risk holder. After a disaster, the risk holder can directly finance some incurred costs using available funds, usually the national budget. In addition, the risk transfer mechanism helps remove a portion of disaster risk in return for an annual insurance premium payment, particularly for lower-frequency and higher-severity disasters. After a disaster, if the payment terms of the instrument are met, the risk transfer provider will pay the funds to the risk holder.

Step 3: Assess needs and define requirements

It is imperative to understand the financial needs associated with the disaster risk financing process. The assessment can be structured around four key questions, as follows:

1. What are the capacity and needs of a risk holder?

   Disaster risks fall on a wide range of groups, including individuals, communities, municipalities, and sovereign governments. In some cases, the humanitarian and development community may choose to hold risks to alleviate damages caused by a disaster. Different risk holders have different risk profiles, that is, different risk appetites, capacities, knowledge, and financial ability to access and/or use different financial instruments.

2. On what will the funds be spent?

   The ultimate purpose of DRFIs is to fund or facilitate resource flows toward a diverse range of activities that reduce disaster impacts on people. This can be further disaggregated into (a) funding directed at protecting and managing the impacts of risk on lives and livelihoods; (b) funding directed at reducing damage from such events on assets, and facilitating the reconstruction of assets and the services they provide after a destructive event; and (c) funding covering the immediate operational and humanitarian responses to a disaster.

3. When is funding needed?

   Disaster risk financing or funding is usually needed in three phases. Funding is needed to develop and improve the mechanism for risk assessment and evaluation as ex-ante preparation. This mechanism is based on long- or near-term forecasts that facilitate risk prevention and reduction. The second phase involves immediate responses when disaster strikes to limit catastrophic damage and offer urgent help to disaster victims. The last phase requires a longer-term, typically larger, but less urgent, need for funding for rehabilitation and recovery. Different financial instruments must be customized and offered to meet funding needs on different timescales.

4. What level of risk is being addressed?

   Some risks manifest frequently, even annually, while other risks arise much less frequently but have more severe impacts when they do. A risk profile is an important foundation for determining which financial instruments are desirable.

Step 4: Select the appropriate disaster risk finance instrument

Selecting the appropriate disaster risk finance instrument depends on the need and phase of the disaster event. To support risk reduction activities, key instruments and incentives are often proposed through loans, microcredit, bonds, grants, subsidies and tax breaks, crediting, and impact bonds. The key financing instruments for risk retention are budget contingencies, reserve funds, and lines of contingent credit. Risk transfer instruments include insurance and its different forms, including mutual insurance, Takaful, microinsurance, agriculture insurance, and risk pools, as well as catastrophe bonds.

Step 5: Apply risk layering

To create an efficient DRM strategy, a risk-layering approach should be applied with an appropriate set of combined DRFI instruments. Combining instruments widens coverage for risk holders and their partners. Attention is increasingly focusing on how to capture this risk reduction in a way that increases the incentive to reduce risks. As for risk retention and risk transfer instruments, a risk-layering strategy can reduce costs and improve funding availability.

Disaster Risk Financing Implementation in Asia and the Pacific

Association of Southeast Asian Nations Disaster Risk Financing and Insurance for Urban Areas

Southeast Asia is developing an urban disaster risk financing strategy to help manage significant risks from typhoons and massive floods. The initial focus is risk management for municipally owned physical assets and properties, including roads, water and energy infrastructure, schools and hospitals, and public spaces. The Association of Southeast Asian Nations has endorsed the ASEAN Disaster Risk Financing and Insurance Roadmap to ensure financial resilience to disasters and climate change. Three elements are being developed to strengthen this roadmap: (i) risk assessment, (ii) capacity building to equip policymakers with ex-ante risk management and financing solutions, and (iii) a risk advisory for DRFI strategies and solutions. These activities aim to establish and operationalize regional DRFI solutions and potential regional financial pools for disaster resilience.

The Thai Top-Up Rice Insurance Scheme

Natural disasters, such as floods and droughts, frequently disrupt Thailand's rice production. To cushion the rural population against destructive weather conditions, the Government of Thailand launched its disaster relief program a decade ago to provide financial assistance to farmers affected by disasters. However, financial assistance provided through this program is not sufficient to compensate rice farmers fully for their losses.

This nationwide, multi-peril crop insurance scheme aims to boost farmers' ability to recover from disaster shocks quickly. The insurance scheme mechanism works by providing a supplementary payment in addition to the financial assistance from the government through the disaster relief program. The Top-Up Insurance Scheme applies to farmers who have bought the insurance and whose farm is located within a designated disaster area (the region is divided into different areas based on risk exposure level). Premium rates differ based on the area.

Contingent Disaster Financing for Small Island Developing States

In 2019, ADB introduced contingent disaster financing (CDF) as a new financing mechanism to help its DMCs strengthen disaster preparedness and provide support via quick-disbursing funds following natural disasters. This new form of financing support is aligned with the operational priority of ADB's Strategy 2030 to tackle climate change, build climate and disaster resilience, and enhance environmental sustainability.

In principle, CDF is a quick and flexible source of funds for DMCs affected by disasters until funds from other sources become available. The scope of CDF covers disasters triggered by natural hazards such as typhoons, floods, earthquakes, droughts, and tsunamis. A key feature of CDF is its support for essential policy reforms to strengthen disaster preparedness, such as governance and institutional arrangements, to be completed before a natural disaster occurs. Once CDF is approved for a country, it remains active until a disaster strikes. This enables the country to access the approved funds promptly to help relieve fiscal constraints for urgent relief and recovery efforts and to avoid disruptive reallocations from priority budget programs. Where necessary, the CDF disbursements can be accompanied by follow-up assistance through ADB's other emergency or regular lending instruments to support recovery and reconstruction. The post-program partnership framework is designed to help countries prepare for disasters, with technical assistance and support for future disaster resilience offered by ADB.

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