

DISASTER RISK FINANCING AND INSURANCE PROGRAM (DRFIP)

WORLD BANK

TOWARD A REGIONAL APPROACH TO DISASTER RISK FINANCE IN ASIA

DRAFT DISCUSSION PAPER

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Executive Summary

Interest in exploring a regional disaster risk financing initiative for Asia is growing rapidly, but any such facility should respond to country priorities and build on ongoing work. Countries' needs differ across the region, as does their experience with implementing financial protection strategies and instruments. Some countries are global leaders in disaster risk financing, while others have started their efforts more recently. Informed by the World Bank's ongoing work supporting Asian countries, this note aims to connect international dialogue with experience on the ground to provide a basis for consultation with donor and private partners and countries, and to identify possible next steps.

Asian countries are highly exposed to disasters but hazards vary between countries. Flood is the most persistent hazard across the region, and drought affects agricultural production in most Asian countries. A number of countries are also exposed to tropical cyclone, earthquakes, tsunamis and volcanic eruption.

Large variations in exposure and vulnerability further amplify differences in disaster risk across the region. Countries with higher levels of economic development may see larger losses from damage to (public and private) assets and economic disruption. For countries with significant vulnerable populations, in particular poor people living in rural areas, the first priority after a disaster may be providing livelihood assistance.

These differences result in different priorities for financial protection. An initial review informed by ongoing World Bank engagements indicates three categories of priorities across Asian countries: improved access to rapid disaster response financing (and deployment of funds at the subnational level and to households); disaster risk insurance for public assets; and disaster risk insurance for private assets.

The design of a regional facility for disaster risk finance in Asia must accommodate the range of country needs. Any platform should offer solutions for country-specific priorities, allowing for the needs of both large and small economies. Such a platform could consider floods as a priority challenge, but should also offer solutions to protect against less frequent but more severe shocks, such as earthquakes and tropical cyclones. It needs to serve countries focused on livelihoods assistance as well as supporting reconstruction of homes and infrastructure.

A regional facility should build on ongoing work to develop national financial protection strategies against disasters. Financing mobilized within a regional facility should be connected to mechanisms in-country that enable the effective deployment of funds, such as disaster risk management funds, scalable social safety nets (such as cash transfer schemes), or subnational disaster risk financing initiatives. Equally, any proposed regional facility needs to pay particular attention to political and institutional arrangements, and needs to be implemented in partnership with a regional organization to be identified by participating countries.

This discussion paper proposes a preliminary structure to inform future discussions and consultations with donor partners and countries. The proposed structure would build on a platform for risk transfer to allow large economies to approach international markets directly and on a joint disaster risk insurance fund would allow smaller economies to gain from the benefits of risk pooling before approaching the international markets. This would be supported by a dedicated technical assistance facility.

Context

Asia is highly exposed to catastrophe events that cause damage and erode welfare and economic gains.

Financial protection strategies have been recognised by countries and their development partners as useful tools to protect countries from these effects and to thereby support them in reducing poverty and increasing shared prosperity. Disaster risk financing is not a new policy area for many countries in the region. A number of Asian countries are already global leaders in developing policies, systems, and instruments for financial protection against disasters, as Annex 1 illustrates. Others have started such efforts more recently but are following closely behind.

There is currently an active international dialogue on establishing a regional initiative for disaster risk financing for Asia. The topic of an Asian disaster risk financing facility has been raised in various forums, including the Association of Southeast Asian Nations (ASEAN), Asia-Pacific Economic Cooperation (APEC), G-7 InsuResilience, and the Founding Communique of the Vulnerable 20 Group of Ministers of Finance (V20).

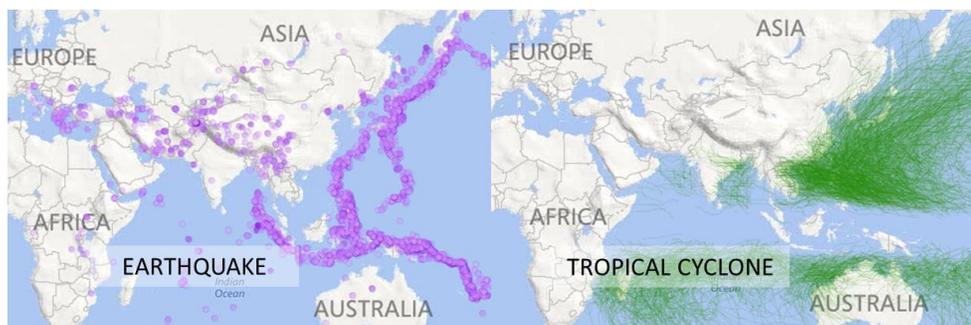
Building on the World Bank’s close partnership with and experience supporting many Asian countries, this discussion paper aims to connect international dialogue with the state of play on the ground.¹ It summarizes the main natural hazards faced across Asia, provides a quick review of the country needs that any regional initiative should address, and lays out preliminary ideas for a regional platform for disaster risk financing that takes these needs into account. As this is an early stage discussion paper, the primary audience of this paper are international development partners considering options to support regional risk financing solutions in Asia. This work aims to build on and inform, not duplicate, ongoing policy discussions such as under the umbrella of APEC, ASEAN, G7, and V20.

Asian countries are highly exposed to disasters, although the nature of hazards faced across the region varies significantly. Asia has seen some of the deadliest disasters in history (Sichuan earthquake in China, Cyclone Nargis in Myanmar, 2004 Indian Ocean tsunami) and some of the most costly (Tohoku earthquake and tsunami, the 2011 Thai floods). Flood is the most persistent hazard across the region: analysis indicates that average annual economic losses from Asian flood disasters could surge to US\$500 billion or more by 2050.² Half of all Association of Southeast Asian Nations (ASEAN) member states have experienced at least one flood event costing over US\$100 million in the past decade.³ Drought hazard is also widespread and affects agricultural production in parts of most Asian countries. The pattern of exposure to tropical cyclone and geophysical hazards of earthquake and volcanic eruption is more geographically specific (figure 1).

¹ The paper was drafted by Emily White, Benedikt Signer, and Olivier Mahul, (all World Bank-GFDRR DRFIP) under a partnership of the World Bank Disaster Risk Finance and Insurance Program and the Rockefeller Foundation to explore options for supporting the establishment of a regional disaster risk finance facility in Asia.

² R. J. Nicholls, S. Hanson, C. Herweijer, N. Patmore, S. Hallegatte, J. Corfee-Morlot, J. Chateau, and R. Muir-Wood, “Ranking Port Cities with High Exposure and Vulnerability to Climate Extremes,” OECD Environment Working Paper No. 1, Organisation for Economic Co-operation and Development, Paris, 2008; cited in Kai-Uwe Schanz and Shaun Wang, eds., *Insuring Flood Risk in Asia’s High-Growth Markets: A Geneva Association Research Report*, Geneva Association, Zurich, July 2015.

³ World Bank and Global Facility for Disaster Reduction and Recovery, “ASEAN: Advancing Disaster Risk Financing and Insurance in ASEAN Countries: Framework and Options for Implementation,” vol. 1, “Main Report,” World Bank, Washington, DC, 2012.

Figure 1. Historic and Modeled Hazard Risk from the Global Assessment Report 2015

Source: United Nations Office for Disaster Risk Reduction, Global Assessment Report on Disaster Risk Reduction 2015, Risk Data Platform CAPRAViewer for earthquake (historical catalogue, 1970–2014) and tropical cyclone (tracks 1969–2009).

This heterogeneity in hazard generates different post-disaster financing needs. While some countries may deal principally with costs for response and recovery after rapid onset disasters, others may need to fund livelihood assistance and food security responses to flood or drought-damaged crops, while others still may be dealing with reconstruction of critical infrastructure after earthquake, flooding, or storm damage. Some countries have to be prepared to deal with many different types of response costs.

Differences in economic development further amplify the post-disaster financing needs. The nature of costs arising from disasters varies according to the type of population, asset, or economic activity exposed. Countries with higher levels of economic development will have higher values of assets exposed, and are often concerned with large losses that occur through damage to infrastructure and economic disruption. Conversely, countries with large populations of vulnerable poor may be focused on post-disaster assistance that supports livelihoods, such as social safety nets. The 2011 Thailand floods, for example, caused an estimated US\$47 billion of damage and losses, of which 70 percent came through the manufacturing subsector. While post-disaster assistance for households was required, the largest financial challenges faced by the government related to reconstruction of physical assets after the initial emergency period, and to the significant drop in revenues due to manufacturing interruptions. On the other hand, the biggest single contributor to losses from the 2005 earthquake in Pakistan came from damage to private housing, which accounted for almost 50 percent of the total cost of reconstruction. Although there was damage to infrastructure and costs through economic sectors, the bulk of the costs arose from the large humanitarian response to aid the 3.5 million people rendered homeless.

Financial Protection against Disasters

To respond immediately and effectively following a disaster—and to minimize the human, economic, and fiscal costs that increase rapidly when response is delayed or inadequate—Asian countries need access to sufficient financial capacity. Having a strategy in place for financial protection against disasters allows governments to increase their financial response capacity post-disaster, and can improve financial inclusion for affected households and businesses by giving them financial tools to aid recovery. Established financial mechanisms can also reduce the impact of disasters on social and economic development by smoothing financial shocks and preventing governments and populations from resorting to adverse coping mechanisms

that disrupt development initiatives and productivity. Through these positive impacts, strategies for financial protection against disasters can help to protect welfare and economic gains, thereby contributing to poverty reduction and shared prosperity.

Countries have various financial options available to them for dealing with post-disaster losses, each suitable for different contexts and priorities. These include mechanisms that retain risk (e.g., budgetary mechanisms and credit that keep risk in the budget or on the balance sheet) and mechanisms that transfer risk (e.g., insurance or international assistance). These also include mechanisms arranged ex-ante that disburse funds quickly (such as contingent credit), and funding sources sought after disaster occurrence that may take longer to mobilise, but may provide a large volume of funds (such as reconstruction loans and grants from IFIs). Different needs require different financing mechanisms; an instrument that provides rapid liquidity to support emergency operations may not be appropriate for funding longer-term, large-scale reconstruction of damaged infrastructure. For example, a reserve fund financed through the fiscal budget could be cost-effective for dealing with frequently recurring flood events; but pre-funding larger losses from more extreme events through such a fund would not be cost-effective, given the opportunity cost of ring-fencing large reserves for infrequent use. To cite another example, insurance can be a costly way to fund more frequent but lower-impact events, since premiums increase with the expected frequency of payouts; but for less frequent, catastrophic events, insurance can be an effective way to increase financial capacity beyond the national means. The role of disaster risk financing and insurance for the post-disaster operational phases is further detailed in the paper: *Financial Protection Against Disasters: An Operational Framework for Disaster Risk Financing and Insurance (World Bank, 2014)*.

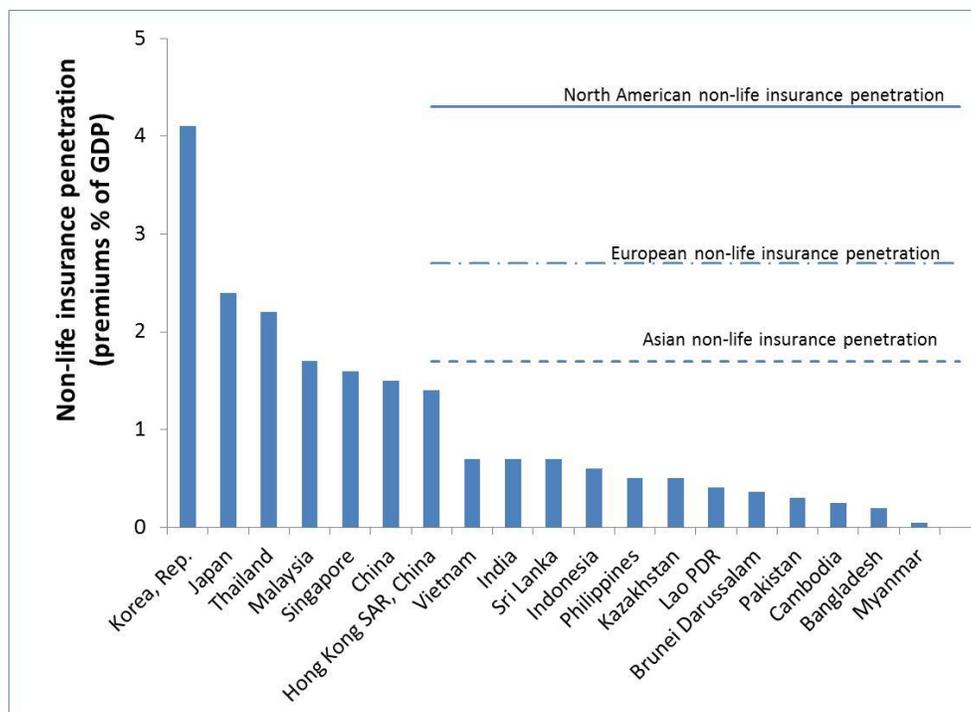
A strategy for financial protection against disasters needs to encompass both sources of financing and mechanisms for effective disbursement of financing in-country. Including these components ensures that resources for disaster response reach the people who need it the most, when they need it the most. Responsibilities for post-disaster spending may be shared between central and local governments, such that state- or municipal-level entities may lead the financial response on the ground. Structuring of subnational disaster risk financing is therefore as important as mobilization of funds. The government of Mexico acknowledges the importance of both in its fund for natural disasters (FONDEN), which is governed by clearly defined rules on allocation of post-disaster funding for recovery and reconstruction at the federal and state levels. The government of Ethiopia uses a social safety net (the Productive Safety Net Program) to deploy contingent financing mobilized at the national level down to affected households. In the event of a catastrophic drought, the safety net program can reach additional affected households using locally held contingency budgets and a federal-level contingent financing window.⁴

The private sector plays an important role in absorbing post-disaster costs and in ensuring that households receive financial assistance post-disaster. The private sector's importance was exemplified by the 2011 Thailand flooding disaster. According to World Bank estimates, the disaster caused TB 1.4 trillion of total economic losses (approx. US\$40 billion), with domestic insurers absorbing losses of around 25 percent of this amount. One key government response to the disaster was to establish a national Natural

⁴ The contingent financing window was established in 2010 and was budgeted at US\$160 million for five years through donor assistance.

Catastrophe Insurance Fund as a back-stop for insurers. The fund was designed to help insurers cover costs should another major natural disaster event strike again. This response through the private sector would not have been appropriate in a context of much lower insurance penetration (see figure 2). The government of Turkey has also focused on using the private sector to provide disaster-affected households with financial assistance. The Turkish Catastrophe Insurance Pool is a national program of affordable earthquake insurance that functions as a public-private-partnership. It was established following the devastating 1999 Marmara earthquake, and now covers millions of homeowners in Turkey.

Figure 2. Non-life Insurance Penetration as a Percentage of GDP in Asia (selected economies)



Source: Based on 2014 data from Swiss Re Sigma and 2013 and 2014 data from AXCO.

Disaster Risk Finance in Asia

Several Asian countries are already active in strengthening their financial resilience, and any regional initiative should build on existing work. Some countries have already been working on national strategies to better manage the cost of disasters. Annex I provides a summary of progress made by a subset of Asian countries, as identified through ongoing World Bank engagements. This summary is not meant to be exhaustive and should be expanded following further consultations with countries and other (donor and private) partners. Knowledge gained through World Bank support to countries, dialogue in the region, and recent disasters suggests that countries' current priorities for use of financial instruments can be placed in three broad categories: access to rapid disaster response financing (and deployment of rapid response funds at the subnational level and to households); property catastrophe risk insurance for public assets; and property catastrophe risk insurance for private assets. Rapid response financing here refers to financing released within days or weeks of a disaster occurring. Contingent instruments tend to offer this feature,

such as the World Bank's contingent credit (Cat DDO⁵) offering, insurance products such as the Pacific Catastrophe Insurance Pilot, contingent grant windows such as the federal-level contingent financing window linked to the Ethiopia productive safety net program described below, and donor emergency response facilities.

Access to rapid response financing is a priority issue for economies at risk of severe shocks, such as large earthquakes and tropical cyclones (e.g. Indonesia, the Philippines, Nepal, Myanmar); but it is also important for economies that are exposed to recurrent flooding but have limited resources to respond (e.g. Myanmar, Cambodia, the Lao People's Democratic Republic, Sri Lanka). The Philippines has already implemented and used disaster-contingent credit instruments with the World Bank (a Catastrophe Deferred Drawdown Option, or Cat DDO; US\$500 million) and with the Japan International Cooperation Agency (JICA) (SECURE; \$500 million); it has just finalized a second World Bank Cat DDO (US\$500m) and also is evaluating sovereign catastrophe risk insurance as an option. Indonesia has carried out analysis to develop a national strategy for financial protection against disasters, including a possible disaster reserve fund. Myanmar, Cambodia, and Lao PDR are in the early phases of exploring a sub-regional pooling of risk similar to the Caribbean Catastrophe Risk Insurance Facility (CCRIF) or the Pacific PCRAFI catastrophe insurance program. Sri Lanka has recently put a disaster-contingent credit product in place with the World Bank (Cat DDO). Meanwhile, among the lessons learned from the devastating April 2015 earthquake in Nepal was an identified gap in rapid response financing and effective mechanisms to deploy funding once it is received.

Post-disaster rapid response financing may be mobilized for very different purposes across countries. For some, rapid response financing is valuable as bridge financing that helps to avoid budget disruption. For others, it allows urgent action (e.g., emergency services, financial assistance to affected populations) in the face of severe budget constraints. How such financing is used will largely be determined by the size of the economy and by budget flexibility.

Countries may opt to connect rapid response financing instruments to subnational disaster risk financing mechanisms, such as local-level disaster funds in Pakistan and the Philippines, or the scalable social safety nets used in Ethiopia. Subnational-level strategies for financing disaster risk are particularly relevant in Asia, given the region's increasing urbanization and megacities. For example, strategies at the municipal level can be designed to make allowances for the uneven distribution of exposure within Asian countries. Some of the larger economies (the Philippines, Pakistan) are focusing on programs for subnational disaster risk financing that better structure how funds flow to provinces or local government units. The government of the Philippines is in advanced technical preparation of a program of subnational catastrophe risk financing that will allow local government units to better structure liability and fiscal transfers, including through a joint catastrophe insurance fund. The government of Pakistan has legislated for the creation of provincial funds for disaster risk management administered by provincial governments. Technical work is currently planned to operationalize at least one of these subnational funds. The idea of

⁵ A pre-arranged credit facility linked to DRM policy objectives offered under the World Bank's Development Policy lending.

state-level financial mechanisms for emergency response to complement state disaster funds has been proposed for India as part of technical discussions, although this is in very early stages of consideration.

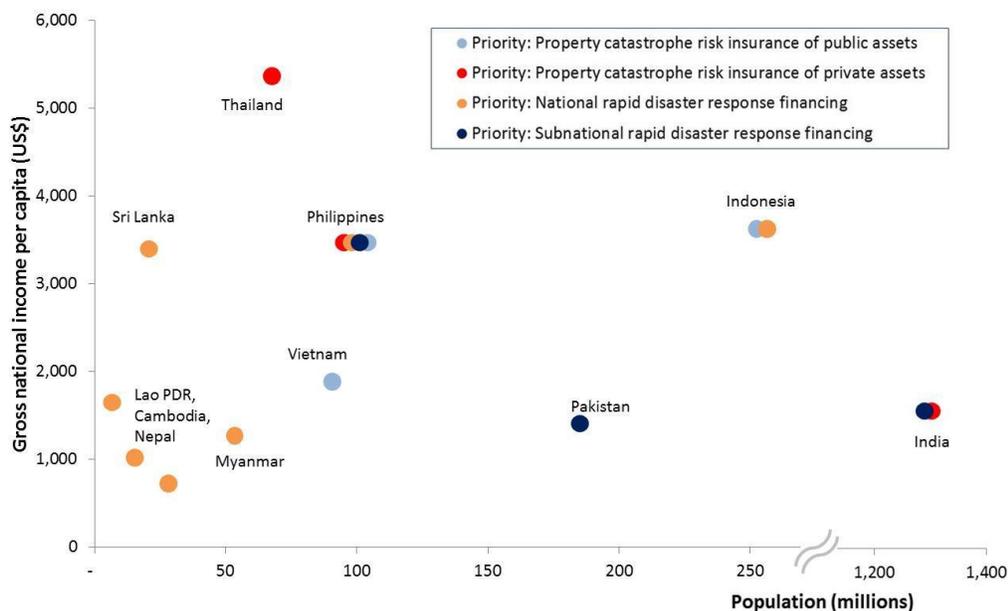
Property catastrophe risk insurance for public assets is a focus for a growing number of countries as they invest in new infrastructure and buildings. In Indonesia and Vietnam, for example, governments are beginning to develop public asset insurance programs. Property catastrophe risk insurance for public assets has already been utilized in the Philippines, and the government is seeking to increase insurance uptake even further.

Property catastrophe risk insurance for private assets is becoming a focus for countries where a growing middle class and small businesses are at risk of property damage from disasters. Thailand, for example, set up a National Catastrophe Insurance Fund to shore up the domestic insurance industry following the devastating 2011 flooding. The Philippines is also in the early stages of exploring ways to reach more households and businesses with catastrophe risk insurance through the insurance market.

Any regional risk financing solution should build on the national priorities of individual Asian countries and should aim to strengthen them. Figure 3 shows an initial assessment by World Bank of where countries are currently focusing their engagement in disaster risk financing and what their needs are. Any proposal for a regional risk financing platform should be evaluated against such priority areas and revised jointly with countries in order to provide improved access to the following:

- Rapid disaster response financing for the national government, complementing existing resources
- Rapid disaster response financing for subnational entities
- Insurance of public assets to transfer risk from the government to dedicated risk carriers
- Private property catastrophe insurance markets that provide access to affordable and sustainable catastrophe risk insurance for homeowners and enterprises

Figure 3. Identified Country Priorities on Disaster Risk Financing



Source: World Bank GFDRR Disaster Risk Financing and Insurance Program (2015)

Toward a Regional Disaster Risk Finance Facility for Asia

A regional facility for disaster risk finance for Asian countries could contribute substantially to financial resilience in the region. International experience shows that regional collaborations have opened up access to financing sources that would not otherwise be available to countries, and have helped countries to smooth the volatility of the cost of disasters and to better structure their financial response. Initiatives such as the Caribbean Catastrophe Risk Insurance Facility (CCRIF) and the Pacific PCRAFI insurance program have also demonstrated that regional platforms on disaster risk financing and insurance have the potential to confer benefits well beyond increased access to financing. These regional initiatives have also served as forums for sharing of knowledge and best practice, as vehicles for shared investment in public goods to support understanding of risk, and as engines of political momentum—driving engagement and progress in the subject area.

In Asia, this platform should be flexible enough to accommodate the different post-disaster financing needs arising from the heterogeneity in natural hazards, exposure, and vulnerability across the region. The platform would have to accommodate the needs of both large and small economies (see box 1). Such a platform could prioritize the needs of countries dealing with flood, given that flooding is the most prevalent hazard in the region, but would also have to address the needs of countries struggling with losses from infrequent severe shocks such as earthquakes and tropical cyclones. To add value to countries' efforts in building financial resilience, it would need to serve countries focused on assisting vulnerable rural populations as well as countries focused on reconstructing homes and infrastructure.

Box 1: Small versus Large Economies: Financial Capacity for Major, Infrequent Events

Countries in Latin America and the Caribbean are highly exposed to losses from earthquake, tropical cyclone, and flooding, but their experiences in seeking to access external financial capacity for post-disaster spending have differed depending on their size. Mexico—an upper-middle-income country with a relatively large economy—sought to place a large amount of risk and was able to do so through a single approach to the international markets. Mexico's fund for natural disasters (FONDEN) is therefore backed by an excess-of-loss reinsurance program that provides in excess of US\$400 million of financial capacity, while a catastrophe bond provides US\$300 million of additional capacity.

For smaller countries seeking to place smaller amounts of risk, a single approach to the markets may not be feasible or cost-effective. The Caribbean Catastrophe Risk Insurance Facility has helped Caribbean—and more recently COSEFIN—countries to access external financial capacity for post-disaster spending arising from hurricanes and earthquakes. Sixteen Caribbean countries have pooled their risk in CCRIF, which is essentially a joint reserve mechanism that accrues premiums and joining fees from countries^a and pays out to members when a disaster occurs. As an aggregator of risk, the facility has been able to access risk-bearing capital on the international markets in the form of both reinsurance and catastrophe swap contracts. Although individual country policies with CCRIF are typically of the order of tens of millions of dollars, the reinsurance and catastrophe swap program provides over US\$100 million of coverage. Countries have benefited from lower premiums, from the diversification benefits of risk pooling, and also from shared transaction costs.

a. The facility was originally established with the technical assistance of the World Bank, and with initial funding of more than US\$60 million from donors to provide claims-paying capacity in the early years.

The success of any regional risk financing facility will depend in equal measures on political and institutional arrangements as its technical foundation. Any proposal for a regional risk financing facility will need a strong regional partner organization to support the political and policy coordination between participating governments. This could take various forms. For example, a regional organization could serve as a convening body to ensure coordination, could host a small technical secretariat for policy coordination while the facility maintenance is outsourced to specialist service providers, or could establish a regional facility as an affiliate body of the regional organization. An appropriate organization (or organizations) and their respective roles will need to be identified in consultation with interested governments.

A regional facility for Asia should build on existing work at the national level to develop strategies for financial protection against disasters and to ensure effective deployment as well as mobilization of funds. Financing mobilized within a regional facility must be connected to mechanisms in-country that disburse funds, such as scalable social safety nets/cash transfer schemes or subnational disaster risk financing mechanisms like those planned in Pakistan and the Philippines. And any regional platform should offer opportunities to develop resilience beyond mobilization of funds—by serving as a platform for capacity building, common investment, and dialogue.

The proposed structure would enhance national strategies (figure 4), and funds mobilized through the facility could pass through national reserve funds and potentially into local-level disbursement mechanisms such as scalable social protection networks (as in Ethiopia) or down to subnational government entities (such as cities or provinces). Groups of subnational entities such as cities could also approach the platform directly as part of a national strategy, for collective coverage.

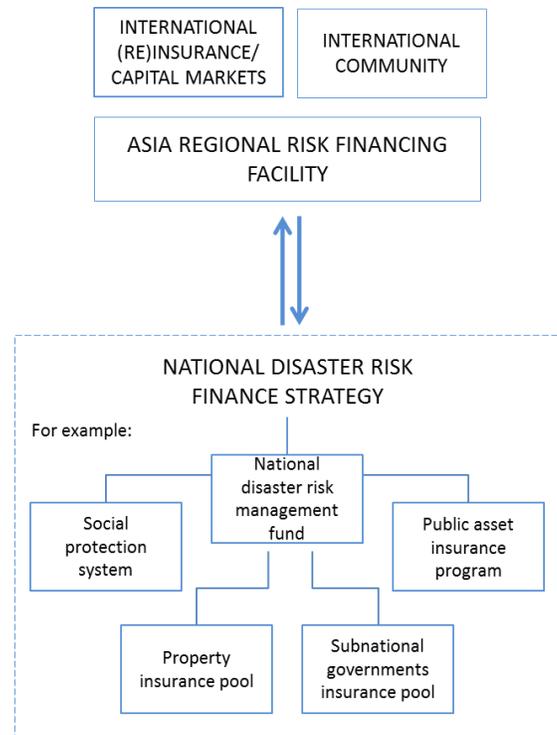


Figure 4. Possible Interaction between National DRF Strategy and a Regional Facility

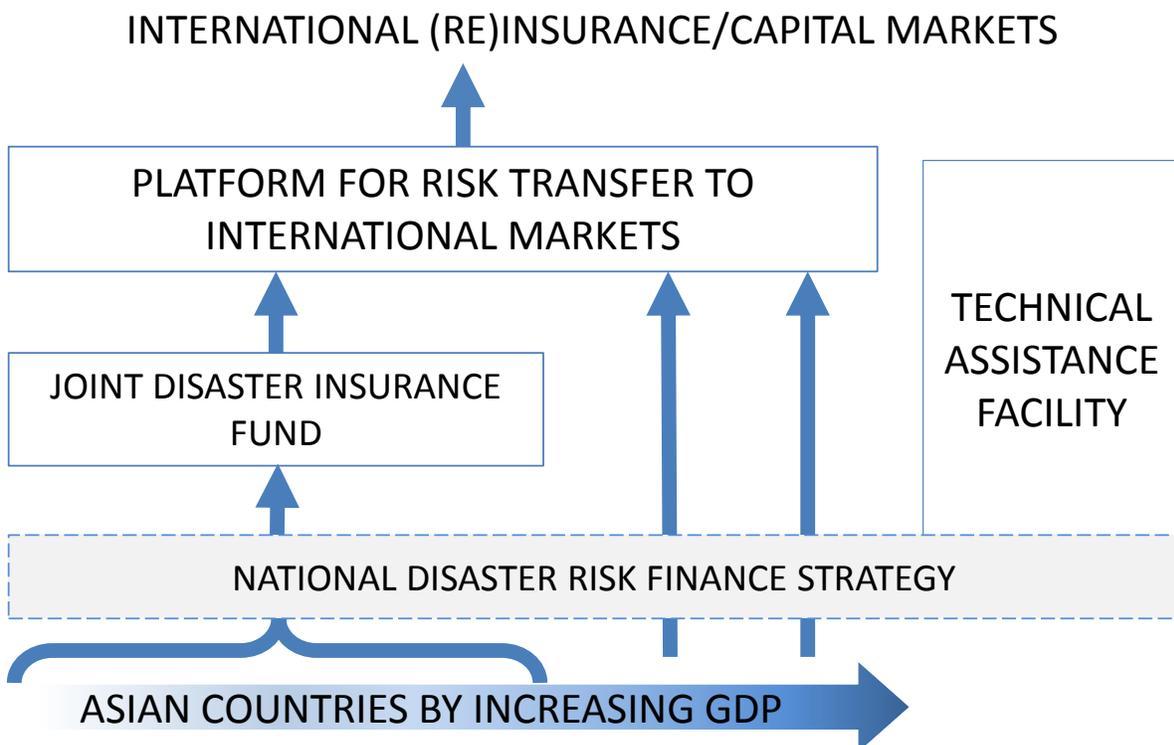
Desired outcomes from a regional facility should include:

- **Improved understanding of risk.** Standardization of risk data and policy terms across countries is key for the establishment of a regional facility. This initiative can provide an incentive for economies to work together to better understand their risks and to invest in risk data, which can then also serve to inform risk reduction and prevention. This could also lead to the development of global public goods, such as regional risk database and regional cat risk models, to support the establishment and operations of such a facility.
- **Comprehensive financial protection.** A regional facility could be an umbrella to national strategies, offering additional options for financing to supplement national capacity, and working in complement to mechanisms in-country to disburse financing (such as cash transfer schemes) and thereby reach affected households and businesses. This regional mechanism could be used to drive the design and implementation of comprehensive national strategies.

- **Improved financial disaster planning.** A facility could promote the development/improvement of national contingency planning to allow for a timely and cost-effective use of funds post disaster.
- **Reduced reliance on disruptive budget reallocations or uncertain humanitarian assistance.** A facility could provide rapid funds in the immediate aftermath of a disaster. The facility could include a joint reserve mechanism alongside risk transfer to access international market capacity.
- **Cost savings through diversification of catastrophe risks.** Through catastrophe risk pooling across countries with different risk profiles, such a facility could achieve significant diversification benefits, reflected in lower costs for risk financing. Lower cost for participants will come from diversification through pooling, not from cross-subsidisation. Risk-based pricing would be applied for participants.
- **Access to financial capacity in the international markets.** A facility could provide a platform for access to international (re)insurance or capital markets for individual countries looking to place large amounts of risk or for clusters of smaller economies looking to achieve economies of scale by working together. A vehicle for insurance of public assets could also be considered.

Figure 5 shows a possible structure for such a facility, which aims to capture the above objectives. It combines individual approaches for larger economies with joint approaches for smaller economies. As well as the individual financial components and technical assistance facility shown, the facility would also comprise a forum for key stakeholders (such as Ministries of Finance) to participate in knowledge-sharing and to foster political momentum in the field.

Figure 5. Proposed Structure for a Regional Disaster Risk Financing Facility for Asia



The joint disaster insurance fund would be best suited for smaller economies, with uncorrelated but similar risk, looking to gain from the benefits of risk pooling. A model similar to that of the CCRIF, where countries enter into an insurance contract with the facility and pay a premium for access to rapid liquidity as bridge financing post-disaster, could be considered.

The risk transfer platform could function as a clearinghouse for transferring sovereign disaster risk in Asia to the international markets. It would allow large economies to approach the market directly and smaller economies to approach the market as a group, as the Pacific countries have. Standardized contracts could be used as well as a standardized process for readying countries for transacting. An approach for collectives of subnational entities (such as cities) to this platform could also be considered.

The technical assistance facility would be the home of public goods such as catastrophe risk models that would support the above components. It could also assist countries with their national strategies for financial protection, and specifically with mechanisms for disbursing funds in-country to better reach affected households and businesses.

A transparent, rules-based disbursement mechanism could be an attractive option to allow international partners to “pre-commit” post-disaster aid, thereby making the disbursement of funds quicker and more predictable for countries and allowing governments to plan ahead. This could also be considered as a platform component.

A regional platform for disaster risk finance in Asia could confer significant benefits to the region. Many discussions—between countries, donors, and development partners and within regional economic platforms—are already taking place on how to improve financial resilience in Asian countries. The heterogeneity of countries’ needs and differing levels of existing engagement in this area, should form the basis of a transparent and open dialogue on disaster risk financing for the region. The next step in establishing any regional facility is to engage with individual countries to assess their priorities and needs.

Next Steps

The collaboration between the World Bank Disaster Risk Financing and Insurance Program and the Rockefeller Foundation aims to bring together ongoing discussions, identify key questions, and explore options for the institutional, financial and operational design of a regional facility. Four main activities will be carried out over the course of this year towards an outline for a potential regional mechanism, identify challenges to be addressed to establish such a mechanism, and propose a roadmap for its implementation:

- a. **Policy scoping and demand assessment.** Review of existing national initiatives; consultations with potential participants to assess demand, readiness, barriers, and political will; and targeted outreach bringing together decision makers and champions to support required political will for implementation.
- b. **Market Supply Assessment.** Assessment of financial market appetite and prerequisites for providing private risk capital to Asian countries, especially through a regional vehicle;
- c. **Risk Assessment and Data Collection Review.** Review of current cat risk models available in Asia, regional initiatives of disaster risk data collection and assessment, and prerequisites to build the required risk data tools for such a facility.

Annex 1. Progress in Disaster Risk Financing in Select Asian Countries

Engagement phase:	Early discussion with partners	Technical preparation	Implementation (legislative or financial instrument)	
	National rapid disaster response financing	Property catastrophe risk insurance for public assets	Subnational rapid disaster response financing	Property catastrophe risk insurance for private assets
Philippines	Contingent credit for disasters (World Bank Cat DDO, JICA SECURE) previously in place (US\$500 million Cat DDO, US\$500 million JICA), work on renewal of Cat DDO under way. National Financial Protection Strategy in place, and sovereign catastrophe insurance transaction under consideration.	Insurance for public assets already in use, but work continues to increase uptake.	Subnational joint catastrophe insurance facility for local governments in technical preparation.	Early discussions taking place on development of the domestic insurance market for property catastrophe risk insurance of private assets.
Sri Lanka	Sovereign contingent credit (World Bank Cat DDO) for disasters recently implemented.			
Myanmar	National Disaster Management Fund established, to be operationalized; South East Asia Regional Disaster Risk Insurance Fund being discussed as part of a broader national DRFI strategy.			
Lao PDR	State Reserve Fund established and operational; early discussions taking place with technical partners about South East Asia Regional Disaster Risk Insurance Fund.			
Indonesia	Preliminary work on National Sovereign DRFI Strategy.	National insurance program for public assets in technical phase of consideration.		
Vietnam	Emergency assistance program for disaster victims under consideration as part of a broader World Bank program to strengthen social protection systems to manage disaster and climate risk.	Discussion on property catastrophe risk insurance of public assets is under way.		Government-supported pilot agricultural insurance program in place.
Cambodia	Early discussions taking place with technical partners about South East Asia Regional Disaster Risk Insurance Fund			
Nepal	2015 earthquake highlighted the gap in rapid response financing.			
Pakistan			State-level disaster fund to be operationalized under new project.	
India			State-level disaster risk-financing mechanism for emergency response proposed by technical partners to complement state disaster funds.	The National Agricultural Insurance Scheme (established 1999) covers 25 million farmers (includes weather-based index insurance).
Kazakhstan				Risk-based insurance supervision introduced in 2010 for earthquake to strengthen domestic (re)insurance market; work to strengthen domestic catastrophe risk insurance penetration about to begin with international partners.
Thailand				National Catastrophe Insurance Fund serves as backstop to domestic (re)insurance market; Thailand Rice Disaster Relief Top-up Crop Insurance scheme (2011) is available to farmers.

Note: This table builds on ongoing World Bank engagement and is not meant to be exhaustive.