Expert Group Meeting (EGM)
on Improving Disaster Data Towards Building Resilience
in Asia and the Pacific

Technical Paper

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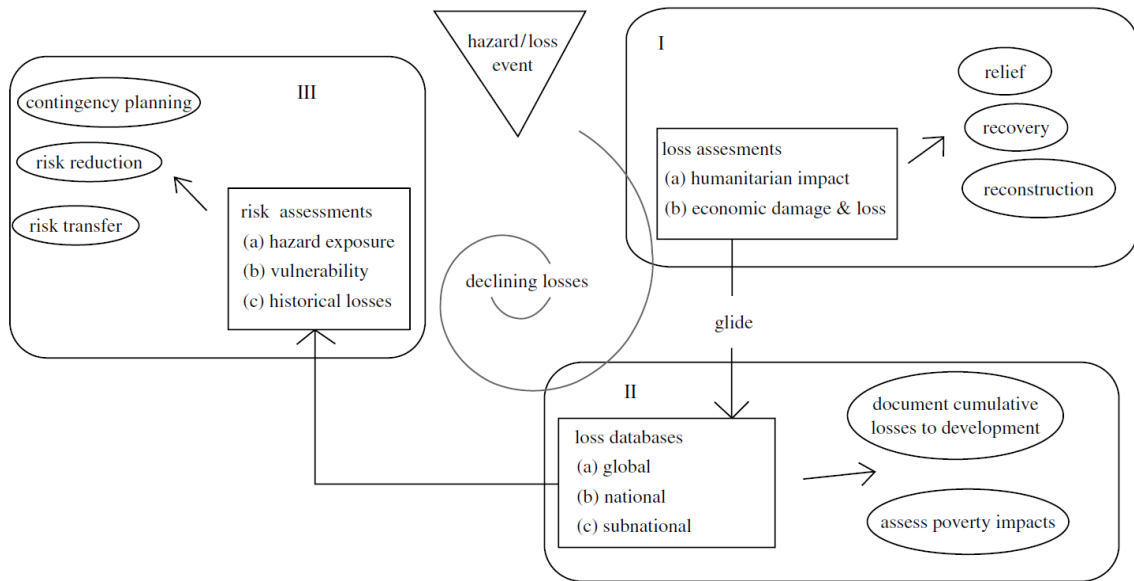
30 September to 1 October 2013

This technical paper serves as the reference for discussions during the Expert Group Meeting (EGM) on Improving Disaster Data Towards Building Resilience in Asia and the Pacific. It highlights some of the key issues related to disaster data management. Participants are encouraged to expand on the concepts described below.

Current gaps in disaster data

Compiling, maintaining and updating disaster data in developing countries is a challenging job. One of the biggest challenges is to overcome the lack of clear standards and definitions, which leads to inconsistent reliability and poor interoperability of different disaster data initiatives.

Post disaster losses data plays a crucial role to help determine the impacts while pre-disaster data in identifying areas of high risks and therefore allowing the stakeholders to focus risk reduction interventions on the vulnerable elements (population, infrastructure and economic activities). In reality there is often fragmentation of pre, during and post disaster events information. This would not help governments determine their most optimal investment to offset risks, mitigate and adapt to hazards, respond to critical events, and to recover from their impacts.

Figure below captures the importance of information about losses at various stages in disaster risk reduction, response and recovery.

hazard/loss event

III

contingency planning

risk reduction

risk transfer

risk assessments
(a) hazard exposure
(b) vulnerability
(c) historical losses

declining losses

I

loss assesments
(a) humanitarian impact
(b) economic damage & loss

relief

recovery

reconstruction

glide

II

loss databases
(a) global
(b) national
(c) subnational

document cumulative losses to development

assess poverty impacts

Source: Dilley Maxx, "Setting priorities: global patterns of disaster risk' in Philosophical Transactions of the Royal Society, 2006

Global sources usually rely on a few, second generation information sources (such as UN-OCHA and WHO, or media sources), which in turn rely on nationally produced data. National level data sources vary, depending on data availability, ranging from official information to media sources to mixtures of these. In all cases, users must check with data producers to get a good idea of accuracy, coverage, possible biases and other limitations, especially when working on cross-boundary projects.

One major challenge is that there are various schemes, initiatives and tools addressing different phases of disaster management. Organizations specialized in, for example, risk reduction, losses and damage, or response, can promote the use of certain tools and systems in some countries and not the others. One country may use a multitude of tools and systems because of advocacy from different organizations. As a result, efforts in disaster management lack an overall strategy to building the long-term resilience and mainstreaming disaster risk reduction into development.

Disaster databases in Asia Pacific

<u>Historical damage and losses</u>
Governments, the academic sector, the UN and NGOs have made important advances in compiling disaster historical databases in Asia and worldwide. These databases with a country level of observation and a subnational (usually hazards equivalent to municipality) resolution of data enable the exploration of loss patterns at the national and sub-national level. Currently, there are as many as 65 national country databases identified, including countries from all continents and economic development statuses.

The national disaster loss databases have made available large sub-national data from several countries in Asia (and around the world) which have been analyzed and used in support of policy advocacy through the United Nations 2009, 2011 and 2013 Global Assessment Report (GAR). The data have helped the in depth analysis of linkages between disasters and poverty and have provided useful policy recommendations.

The partnership UNDP-UNISDR has successfully applied the 'Desinventar' methodology and software (http://www.desinventar.net and http://www.desinventar.org) to build national disaster databases. The goal has been to build national capacities for better understanding of disaster risks over time and space and to provide support to policy and decision-making and planning for disaster risk reduction, preparedness, mitigation, response and recovery at national and sub-national levels.

At national level, the disaster loss databases are providing important inputs to the preparation of national and sub-national disaster management plans, development of Historical Disaster Risk Index for assessing levels of risk based on the past disaster events, and criteria for allocation of funds based on the levels of risks. UNDP APRC collaborates with UNISDR is supporting disaster loss databases throughout Asia.

Several countries in Asia, viz. Iran, Nepal, Sri Lanka, and Indonesia, India (Tamil Nadu and Orissa states) have established disaster loss databases with historical disaster data going back up to 30 years or more. In Indonesia, several provinces (such as Aceh, Yogyakarta, East Nusa Tenggara, Bengkulu, and Central Java) have also established provincial databases; likewise more countries such as Timor Leste, Cambodia, Vietnam and Lao PDR are at various stages of establishing and institutionalizing disaster loss databases.

Predictive loss and damage from climate change

It is important to understand and reduce loss and damage associated with the adverse effects of climate change both the slow onset and the extreme weather events. The *Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX)* by the Intergovernmental Panel on Climate Change (IPCC) calls for the significantly scaling up of measures at local, national and international level that reduce disaster risk. Naturally, this would require the more evidence-based long range damage and losses processes[1].

Quantification of Risks
Progress has been made in combining the historical damage and losses with the predictive long term damage and losses. Subsequently, the database is furnished with layers describing the elements-at-risk and then they are plotted into annual cycle. This calculation provides the government with better educated guesses to guide their disaster risk reduction and, indeed, the development investments.

Emergency and Post Disaster Needs Assessment Methodology
In the onset of disaster emergency, humanitarian community is continuously perfecting their methods and tools to measure the immediate impact on various key sectors. Immediate Rapid Assessment (IRA), Multicluster Initial Rapid Asessment (MIRA) and others are being utilized to determine the humanitarian needs and early recovery.

In term of recovery ADPC devised a Damage and Needs Assessment (DANA) and the Worldbank the Damage and Loss Assessment (DaLA) Methodology. This was initially developed by the UN-ECLAC in 1972. It has since been improved through close cooperation of WHO, PAHO, World Bank, Inter-American Development Bank, UNESCO, ILO to capture the closest approximation of damage and losses due to disaster events. It is a flexible tool that can be adapted to specific disaster types and government ownership requirements. The DaLA Methodology bases its assessments on the overall economy of the affected country. It uses the national accounts and statistics of the country government as baseline data to assess damage and loss. It also factors in the impact of disasters on individual livelihoods and incomes to fully define the needs for recovery and reconstruction.

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[1] Warner and Zakieldeen, *Loss and damage due to climate change: an overview of the UNFCCC negotiations.* European Capacity Building Initiative.

Post-Disaster Needs Assessment is a synthesis of DaLA and human recovery needs assessment. It typically includes the recovery and reconstruction framework that guides the post-disaster recovery strategy. A unique aspect of the PDNA is that it is led and owned by the government of the affected country and assisted by a multi-disciplinary, multi-agency team comprising the World Bank, GFDRR, UN Agencies, European Commission, and other relevant stakeholders. The World Bank, UNDG and the European Commission have entered into a Joint Declaration on Post-Crises Assessments and Recovery Planning in 2008 to achieve optimum coordination to support affected governments in effectively dealing with post-crises recovery.

National level data and NSO-NDMA coordination

A number of countries have established disaster databases following standard Desinventar methodology with country-specific adaptations and configuration of each database. While all UNDP supported database follow similar structure in terms of capture of disaster and impact information, the basic concepts and definitions are not necessarily well developed for being coherent, consistent and inter-operable across databases. Terminologies that are not interpreted in the same manner by all countries makes it difficult to aggregate data at regional level. Some countries have clear definitions of terms but others are still in the process of developing systems and clarity for capturing disaster information and impacts. Meanwhile, developed countries, such as Japan, the Republic of Korea and Australia have developed their own databases.

Despite developments in international methodologies for statistics on the occurrences and impacts of natural disasters, availability of key indicators for informed-policy decisions for disaster risk reduction remain limited in many places across Asia and the Pacific. One important means of improving this is through better coordination between