

# **Improving disaster data and statistics on vulnerable groups: Contributing to building a resilient Asia Pacific region**

Information Communications Technology  
and Disaster Risk Reduction Section, ESCAP

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## Introduction

Member States of the United Nations Economic and Social Commission in Asia and the Pacific (ESCAP) demonstrate increasing interest for monitoring resilience. ESCAP Resolution 69/12 on “Enhancing regional cooperation for building resilience to disasters in Asia and the Pacific” underlined the central role of the concept of ‘resilience’ for Asia Pacific region and emphasized the necessity to improve the evidence basis for policymaking towards setting better targets and to improve risk reduction programmes. The ESCAP Committee on Disaster Risk Reduction, in November 2013, requested the secretariat to work towards monitoring more effectively the resilience of member States to disasters, including through the development of a core set of disaster-related statistics in close coordination with the ESCAP Committee on Statistics.

This paper examines the concept of resilience and its importance in Asia Pacific region and the relevance to global frameworks and goals in disaster risk reduction. Given the breadth of the subject matter, it focuses on the sub-set of disaster data, namely loss and damage, and in that context the issue of addressing vulnerability in the disaster response phase. It concludes with the proposal of a number of policy options. The conceptual framework of resilience addresses multiple shocks; however this paper focuses on the impacts from disasters caused by natural hazards.

## What is resilience and why is it important?

Currently, there exist various definitions of resilience.<sup>1</sup> ESCAP defines it in terms of resilience of countries to multiple crises based on the fact that the world has been subject to multiple shocks ranging from economic crises, natural hazards, human-induced disasters, etc. Given the complexity of the global economy, these crises have become increasingly interrelated. If the countries of Asia and the Pacific are to become more resilient to these overlapping shocks, they will need to address them in a more comprehensive and systemic manner. Ultimately, what matters is the effect of such shocks on people’s lives – both in current and future generations. Therefore, the working definition of resilience as adopted in ESCAP’s Theme Study for the 69<sup>th</sup> Commission on Building Resilience to Natural Disasters and Major Economic Crises is:

*The capacity of countries to withstand, adapt to, and recover from natural disasters and major economic crises – so that their people can continue to lead the kind of life they value.*

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<sup>1</sup> See p.5, ESCAP Theme Study for 69<sup>th</sup> Commission Session on Building Resilience to Natural Disasters and Major Economic Crises (2013).

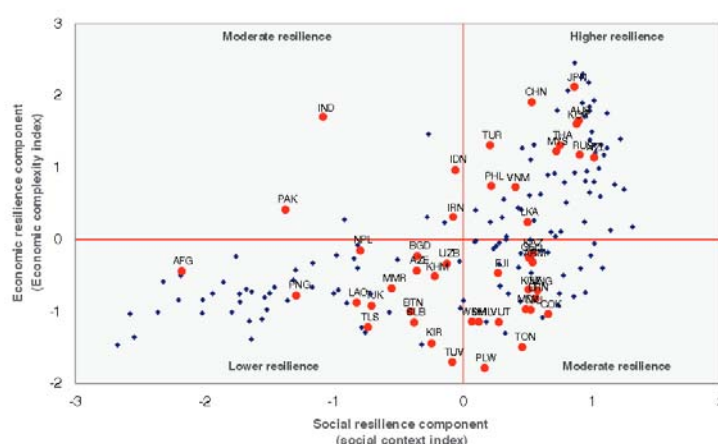
Figure 1. What is resilience?

Resilience is the ability to		
Quickly bounce back and restore a stable equilibrium after stresses, ensuring reduced risks and disturbances from shocks.	Mitigate disruption and reconfigure from shocks so as to maintain a functioning system.	Reorganize and transform in order to respond to crises, absorb their impact and maintain the system's core purpose.
Objects	Systems	Complex systems

Source: ESCAP (2013).

Building resilience to a wide range of potential shocks is a complex task involving a large number of interconnected economic, social and environmental systems. It demands that people, organizations and institutions develop the ability to reconfigure and redesign their systems to be able to cope with multiple shocks. ESCAP has expanded the concept of resilience to cover major economic crises. While there are a number of measures of exposure, vulnerability and risk to economic crises and disasters, thus far there have been fewer efforts to measure resilience to these combined shocks. One suggestion on how such a measure of the combined effects of these shocks has been shown in the Theme Study.<sup>2</sup> ESCAP's initial attempt to measure resilience for each country was based on characteristics of both the economy and the society. The focus is on the intrinsic resilience of countries to adapt to shocks, which is defined here as the resilience that emerges from inherent characteristics of the economy and the society that creates the environment for people to withstand, absorb and adapt to shocks. In other words, it considers whether the economy can adapt to changed circumstances and self-organize to continue functioning at times of crises, and whether people are sufficiently empowered to be better able to absorb and adapt to shocks.

Figure 2. Intrinsic resilience, 2010



Source: ESCAP Theme Study (2013).

<sup>2</sup> See Appendix 1, ESCAP Theme Study for 69<sup>th</sup> Commission Session on Building Resilience to Natural Disasters and Major Economic Crises (2013).

The lack of a globally agreed definition of resilience leads to a number of issues, including lack of measurable goals, target and performance measurement, absence of a results-driven framework, and gaps in cost-benefit-analysis for investing in building resilience. This leads to difficulties in quantifying optimum investment, and eventually, lack of an accountability system. Such situation hinders efforts in making an evidence-based policy making and development planning, and in rendering effective response and recovery from disasters. In order to set goals, objectives, and targets in disaster risk reduction, developing robust indicators is critical. Strengthening the statistics related to disasters and multiple shocks is an important part of gathering the evidence base to justify investments in key sectors of national governments.

An evidence based resilience framework will require firstly an agreed definition of 'resilience' itself, and its operationalization into development strategies and investments. Secondly, a solid foundation of baseline data, such as population data from census or other sources of data collected by the National Statistical Office (NSO), would need to be defined. Furthermore, a core set disaster statistics would need to be drawn up and agreed to by regional and global stakeholders. Considerations will need to be given to allow for global benchmarking and goals setting.

## Global frameworks and goals on disaster risk reduction

The Hyogo Framework for Action (HFA) places the concept of "resilience" at the centre of policies, institutional arrangements, and programmes for disaster risk reduction. This requires the 'unpacking' of the concept into relevant indicators and statistics, and eventually the collection of data to monitor progress and to measure the actual reduced risks as results as well as resilience as the means to attaining such results. This will need to be comprehensive enough to cover all phases of disaster risk reduction and management.

The Hyogo Framework for Action adopted at the World Conference on Disaster Reduction in 2005 sets as one of the Priority Actions the recording, analysis and dissemination of statistical information on disaster events, impacts and losses through international, regional, national and local mechanisms. As the international community meets at the Third World Conference on Disaster Risk Reduction (WCDRR) in Sendai in March 2015 to renew the commitments made during the adoption of the Hyogo Framework for Action 2005-2015 (HFA), it has a strategic opportunity to further operationalize and propose an evidence-based framework for building "resilience". There is a growing consensus among the disaster risk management community that this is a central proposition upon which the future disaster risk reduction framework (HFA2) must base its policies, institutional arrangements, and programmes for disaster risk reduction.<sup>3</sup>

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<sup>3</sup> Expert Group Meeting (EGM) on Improving Disaster Data to Build Resilience in Asia and the Pacific, 30 September to 1 October 2013, Sendai, Japan. Summary and the Way Forward, 1 October 2013, Available from <http://northeast-sro.unescap.org/meeting/2013/EGM.html>

The United Nations Task Team on the Post-2015 United Nations Development Agenda published its first report in June 2012 that proposed goals on inclusive social and economic development, environmental sustainability, peace and security. In 2013 the High-level Panel of Eminent Persons on the Post-2015 Development Agenda noted five major transformational shifts, under which disaster risk reduction is identified as a priority area. Similarly in other forums begun by the United Nations, disaster risk reduction is typically listed as a priority in the development agenda beyond 2015, being clustered with climate change and other environmental priorities and, increasingly, with socioeconomic development. Regionally, priorities have been clustered around themes of economic, social, and environmental sustainability as well as governance and institutions. The post-2015 framework on disaster risk reduction (Hyogo Framework for Action 2, or HFA2) to be reviewed at Third World Conference on Disaster Risk Reduction process is also running as parallel process. Consultations in the Asia-Pacific Region on both the post 2015 agenda and HFA2 have emphasized the requirement for the inclusion of well-defined targets, indicators, responsibilities and monitoring mechanisms to quantify the impact of investments in disaster risk reduction.<sup>4</sup>

In short, with resilience at the heart of regional and international policymaking, governments and development partners are calling for ways to monitor and track resilience over time. One step towards this is through establishing robust disaster data and statistics, which will pave the way towards standardization and harmonization. When combined with other efforts in monitoring resilience, this will facilitate global goal setting and building resilience, eventually reducing the risks countries and regions face to multiple and simultaneous shocks.

## Nexus of disaster data and vulnerability

In Asia Pacific, the region most prone to disasters, the adverse effects of climate change, and other shocks, timely and reliable data is needed to move forward towards achieving comprehensive resilience. The importance of reliable disaster statistics for building resilience through development strategies and planning has been well recognized internationally by governments and development and response agencies. Unpacking resilience into relevant indicators and statistics, and collecting data to monitor progress involves all phases of disaster risk management i.e. in reducing, preparing for, responding to, and recovering effectively from disasters and multiple shocks.

Statistics feature peacetime indicators such as baseline population data, vulnerability, poverty, to data related to pre-crisis (e.g. hazards), the onset (e.g. disaster type, magnitude, economic and social loss and damage), and post-crisis data and risk and

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<sup>4</sup>United Nations Economic and Social Commission for Asia and the Pacific (2013). *Disaster risk reduction related to the development agenda beyond 2015, including issues pertinent to least developed countries and countries with special needs: Note by the secretariat. Economic and Social Commission for Asia and the Pacific, Committee on Disaster Risk Reduction: Third Session*, website: <http://www.unescap.org/idd/events/cdrr-2013/CDR3-4E.pdf>

forecasting.<sup>5</sup> This information is critical for a wide range of actors involved in all stages of risk and crisis management, as well as those involved in development planning particularly those addressing vulnerability including poverty alleviation. Several challenges exist in collecting relevant data and statistics on the vulnerable groups. Lack of reliable data and robust regional mechanisms for data sharing undermines the ability of countries to strengthen their vulnerability reduction investments and interventions through evidence-based regional and national level policy making, planning, and programming; and when required, to respond swiftly to multiple shocks while maintaining the focus on the vulnerable groups.

Despite developments in international methodologies for statistics on the occurrences and impacts of natural disasters, unavailability of key indicators for informed-policy decisions for disaster risk reduction particularly with regard to vulnerable groups remain limited in Asia and the Pacific. The information that is available suffers from lack of comparability across countries. While efforts in developing methodologies for collecting disaggregated data have progressed considerably<sup>6</sup> There is not yet an international consensus on data collection on the vulnerable groups, a status quo of ad-hoc and reactive practices have resulted in low quality data, large capacity gaps, and a lack of vital disaggregated data and vulnerability indicators. The collection of disaster statistics on vulnerable groups is further complicated as each phase of the disaster presents its own information management challenges.

Peace-time information management requires comprehensive baseline data on public investments, services and infrastructure that is typically using aggregated data that is spread across development sectors e.g. infrastructure that includes electricity, water and sanitation, transport and communication; productive sectors such as agriculture, livestock and fishery, industry, and tourism; and social sectors that usually covers housing, education, and health. In the emergency response stage the collection of statistics is neglected in favor of emergency needs assessments responding to the more pressing live-saving imperatives, contributing to a culture of improvisation over evidence-based response<sup>7</sup>. Post-disaster information management and systems lack important baseline data, making it difficult to benchmark and compare the impact of interventions particularly to the recovery of vulnerable groups.

The multitude of actors in various development sectors, working towards respective mandates across different stages of the disaster is one of the most challenging aspects of disaster statistics on vulnerable groups. Lack of coordination in information collection generally generates insubstantial and overlapping reports. There is often a limited understanding of the differential disaster risks to vulnerable groups among key

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<sup>5</sup>United Nations Statistics Division (2013). Framework for the development of environment statistics. *Statistical Commission Background document Forty-fourth session Available in English only 26 February – 1 March 2013*. Available from <http://unstats.un.org/unsd/statcom/doc13/BG-FDES-Environment.pdf>

<sup>6</sup> The MultiCluster/Sector Initial Rapid Assessment (MIRA) Approach, Process, Methodologies, and tools, Provisional Version, the Needs Assessment Task Force, IASC, January 2012

<sup>7</sup>The World Bank (2008). *Data against natural disasters: establishing effective systems for relief, recovery and reconstruction*. Washington: The International Bank for Reconstruction and Development/The World Bank.

stakeholders including government agencies, thus data gaps are formed particularly where funding is lacking and collection mechanisms are absent<sup>8</sup>. At the national level, data is compiled from these actors and analyzed using procedures and definitions unique to the individual country, limiting the potential for regional comparability, collaboration and assistance.<sup>9</sup>

## Disaster damage and losses

Given the complexity, this paper focuses on the sub-set of disaster data, namely damage and losses, as an entry point to establish the linkage between resilience, damage and losses in the onset of disasters, and the specific needs of the vulnerable groups.

Various disaster damage and losses databases have been developed over recent decades. The Emergency Disasters Data Base (EM-DAT), NatCat, Sigma and DesInventar include varying levels of geographic coverage from event specific, sub-national, national, regional, to global coverage. Disaster databases have many practical applications and can be essential analytical tools in promoting action for disaster risk reduction. Such applications include research on disaster trends, risk and impact assessments, climate tracking, and analysis of historical hotspots. In turn, such research informs policy on disaster response, risk reduction, sustainable recovery, national resource allocation and development planning.<sup>10</sup> The shortcomings of disaster damage and losses databases include lack of agreed definitions, methodological inconsistencies, lack of comparability, poor data quality, and duplication of data, reflecting comparable challenges to data and statistics applicable to other phases of disaster management.

Experiences in the collection and dissemination of disaster-related data vary enormously across the Asian and Pacific region. With regards to the occurrence and impact data, it ranges from those with low capacity to a more systematic and advanced level of databases. Thailand's Department of Disaster Prevention and Mitigation collects disaster and housing data in its national database, aided by a clear legislative framework tied to key performance indicators and compensation outcomes.<sup>11</sup> The lack of standardization in disaster data and analysis remains to be a challenge. The absence of clear standards and definitions reduces the reliability of data

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