The roles of NSOs in measuring extreme events and disasters: Draft report of the UNECE Task Force

Task Force Measuring 'Hazardous' Events and Disasters

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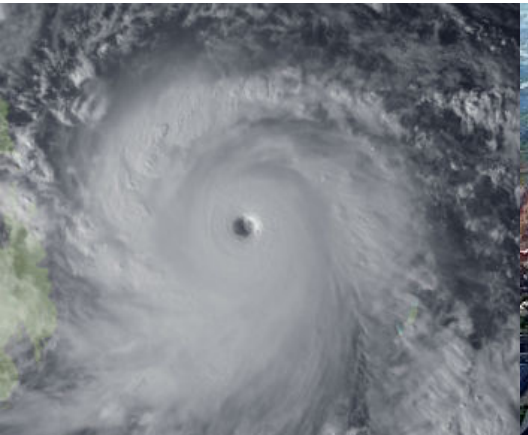


The report presents the outcomes of the work of the TF.
Key messages:

- **Official statistics have an important role to play in all phases of DRM.**

  The policy relevance of these statistics has grown considerably in recent years, and increasingly, NSS are contributing to this work.

- **Taking into account the traditional strengths of NSOs with the national DRM institutional context, a set of roles can be identified for NSOs**

Main purpose of the report is to guide NSOs in finding their role in the emerging policy area next to other governmental institutions such as Ministries and Disaster-Risk-Management-Agencies (DRMA).

The report has been drafted in close cooperation with the United Nations Disaster Risk Agency (UNISDR) and UN-ESCAP

Summary of the Report

1. Introduction
2. Key Terms and Concepts
3. Scope of statistics for measuring HED
4. Roles of NSOs
5. Key Statistical Infrastructure
6. Developing a Statistical Capacity

2. Key Terms and Concepts

Key-terms, classifications and definitions have been developed by 'other' expert communities, often without involving NSOs. Different expert communities used their own terminology 'not agreed internationally'.

COMMON BASE definitions

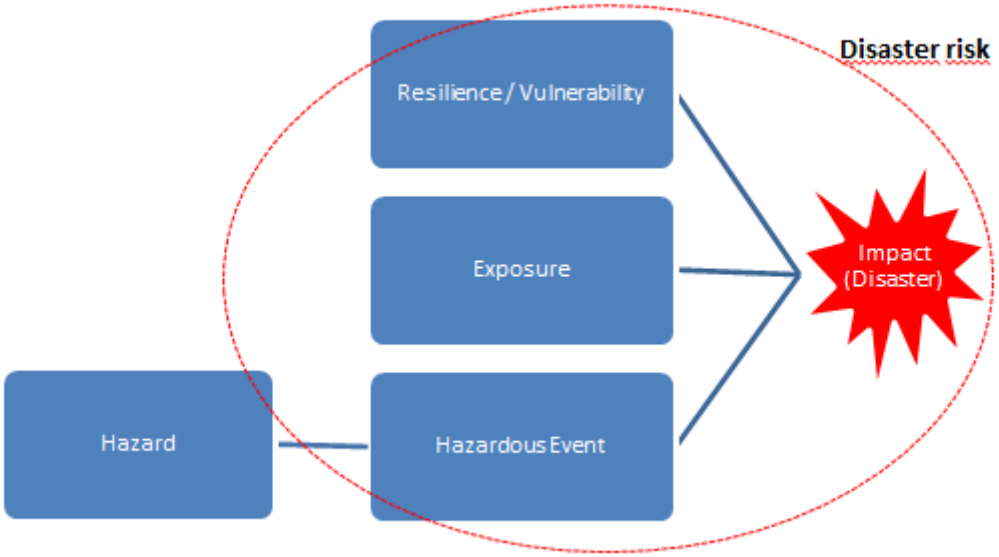
Figure 1: Summary of key terms

Hazard	• The process, phenomenon or human activity that may potentially cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. (UNISDR 2017)
Hazardous Event	• The manifestation of a hazard in a particular place during a particular period of time.
Exposure	• The situation of people, infrastructure, housing, production capacities and other tangible human assets. (UNISDR 2017)
Resillence / Vulnerability	• Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner. (UNISDR 2017) • Vulnerability: Can be seen as the opposite of Resilience.
Impact	• The effects of a hazardous event given exposure and vulnerability. At its extreme, impacts are **disasters**.
Disaster	• is a serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure and vulnerability, leading to human, material, economic and environmental losses and impacts.
Disaster risk	• Is the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure and vulnerability.

work of the ***Open-ended Intergovernmental Expert Working Group on Indicators and Terminology relating to Disaster Risk Reduction***
and its report which was adopted by the United Nations General Assembly in February 2017.

2. Key Terms and Concepts

Figure 2: Simplified Event-Impact Model



The relationship between these terms is important to clarify for measurement and coordination purposes

3. Scope of statistics for measuring HED / National needs

Phase	Typical issues	Typical decisions and plans required	Sample information requirements
Risk Identification	• Disaster risks can be estimated but are not known • Development investments should be informed by risk profiles • Risks that development investments may exacerbate existing (and/or create new) disaster risks	• Prioritizing investments in risk reduction • How to invest in development while avoiding new risks • If particularly vulnerable groups are identified, guide policies favoring their relocation	• The dynamic hazard profiles (magnitude, temporal and spatial distribution) • Vulnerability and baseline of exposure: (demographic and, socioeconomic statistics) and baseline of exposure in geographic areas prone to natural hazards; identifying particularly vulnerable groups • Utilizing available data to calculate risk probability profiles Historical disaster data, forecasted losses
Risk reduction, mitigation and preparedness	• Risk Profiles are changing as new information becomes available and development in potentially vulnerable areas takes place • Early warning systems and other monitoring systems, where available, are continuous delivering information on risks and possibilities for mitigating impacts	• Introduction of new measures to reduce disaster risk • Introduction of mechanisms to improve or ensure sufficient early warning and adequate preparedness • How to invest in development that can address disaster and climate risks and minimized creation of new exposures • Whether and how to discourage development in hazardous areas	• Scale and qualities of investment in disaster risk reduction • Signals of hazards transforming into increased risk of disaster • Level of awareness, preparedness, and investment against disasters Factors that cause and or exacerbate disaster risks • Baseline information on vulnerable groups (e.g., location of residents living below the poverty line)
Response	• Imperative is to act quickly and efficiently to save lives and mitigate unnecessary suffering • Sufficient scale of injection of resources to put crisis under control • Urgent demand to meet overwhelming needs for places where vital systems and delivery of basic resources is affected	• Determine the magnitude of the disaster and prioritization the needs for emergency relief • How to make the response the most efficient • How to manage needs given impacts to local supplies of goods and services (how to address temporary interference to local services supply) • How to mount emergency response while also putting in place requirements for medium and long term recovery	• Disaster occurrence, including temporal, and spatial spread of the event • Disaster type and characteristics of impacts, e.g. rapid or slow onset, concentrated or widespread, etc. Immediate indication of impacts on population, damage, losses, and disruption of functions / services • Recovery needs which potentially could be increasing • Who is responding what, where and when
Medium and long term recovery	• Yet unaddressed humanitarian needs • Risk that fragile communities could regress into a new emergency crisis if recovery needs are not met • Less spotlight on initial response may translate to less resources for recovery • Often a normal development policy-planning cycle resumes with many requirements but, due to disaster, less available resources	• How to prioritize recovery of economic sectors and determination of appropriate scale of re-building effort in affected location • How to determine appropriate level of investment required for complete to recovery from impacts for disasters: • Returning to consideration of future risk identification and mitigation (see above)	• Comprehensive and credible post-disaster accounting for damage, losses, and disruption of functions / services • Magnitude of requirements to address recovery needs • Coping mechanisms of communities, localities and sectors • New post-disaster calculation of vulnerability to future incidents

…for national disaster-risk statistics:

UNESCAP-EG identified the demand for disaster-related information according for each of the 4 phases of DRM

3. Scope of statistics for measuring HED / International needs

The 3 most central policy frameworks in this area are:

- **the Sendai Framework**
- **Agenda 2030**
- **the Paris Agreement**

These frameworks were developed concurrently, with the intention of complementing the contributions of each.

- Key measurement aspects of each
- Considerable areas of overlap / integrating

- Reduce duplication, improve efficiency

Key Global Policy Mandates

4. Roles of NSOs

- **To respond to these demands countries rely on their NSS**
- **NSOs as managers of the NSS have important competencies**
- **There are many ways in which NSOs can contribute**
  Country specificities (Type of hazards, NSS, Level of stage,…)
- **Improve awareness of NSOs potential contribution**

Current/Potential role – Primary/Expanded role of NSOs

4. (Primary- Current - Core) Role of NSOs

- **"Primary"** roles should be those were NSOs are strong: producing and holding **baseline information** as part of traditional activities, with consistent and coherent time series; quality assurance; standardization, etc.

Baseline data:

- on population, economy, social, environment, agriculture, business and infrastructure…
- produced by NSOs through a combination of censuses, surveys, analysis of data generated by administrative registers and register systems
- **can be used to produce exposure and accordingly, hazard and impact statistics**

CONTEXT: Other institutions involved The main governmental actors are typically national disaster-risk agencies, line-ministries (e.g., Ministry of Interior, Ministry of Environmental , Ministry of Agriculture, Ministry of Health), hydro-meteorological institutes, Environmental protection agencies, sub-national administrative bodies (e.g., municipal administrations)...

4. Role of NSOs: additional or expanded roles

Currently, in a few countries, NSOs assume more tasks, such:

Coordination of Geographic Information offering digital maps for a large number of topics, including infrastructure, geology, buildings, population, land use, among others.

These maps rely on data produced from several different sources, including statistical surveys, land observation and others. Combining the multiple layers of these maps facilitates the dissemination of disaster-risk statistics and provides value added by improving ease of access of this information in a form

(i.e. INEGI, Mexico)

Potential contributions of NSOs in each phase of DRM

NSOs can improve the availability of statistics:

Before a disaster

Risk Assessment, Prevention and mitigation, Preparedness ….

During a disaster

Response…

After a disaster

Recovery …

To maximize their utility all the statistics should be provided in **geographically-disaggregated/geocoded format.**

5 Key Statistical: organizational structure

Tools that support the operation of a statistical system:

1. **Legislation**
2. Frameworks, standards and classifications
3. **Organizational structures**
4. Statistical methods and systems
5. Quality assurance and guidelines
6. Knowledge and capacity
7. Cooperation networks

Example : Legislation

has a crucial role in supporting the production of statistics.

Legislation ensuring confidentiality may limit access to some of the data needed

Statistical legislation should facilitate effective cooperation between different producers and permit access to the data required

For the emergency situations an emergency protocol would clarify which data has to be provided

Example :

Infrastructure

Working in **crosscutting areas requires** an organization that supports **collaboration across different structural units and subject areas**.

The **work is spread over different units; a specific organisational unit** or a **focal point** within the NSO should be assigned.

Organizational changes in NSOs may be needed.

6 Developing a Statistical Capacity

(How to implement all this /Practical steps /step by step)

Where we are? Where we want to go? How?

1 Clarify the main objectives
2 Establish/affirm coordination network with stakeholders
3 Identify the information needed / country specificities
4 Define the role / prioritize data gaps to be addressed
5 Examine sources of data, explore additional sources / strengthen their **quality**
6 Review and strengthen governance
7 Identify optimal infrastructure to produce robust data
8 Establish/affirm coordination network with local stakeholders
9 Improve continuously step by step
10 Core indicators and **further work**

'Tailor' a Road Map / Developing Plan

considering countries' Specificities and Objectives)

Thank you for your attention!

Task Force on Measuring Extreme Events and Disasters