



Statistical offices and the measurement of extreme events and disasters

CES Task Force on Measuring extreme Events and Disasters

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Why is it relevant to know the role of National Statistical Offices in measuring extreme events and disasters?

1. Climate change perspective:

- Occurrence of extreme weather events, their magnitude and their impacts are part of climate-change related statistics, and often used to demonstrate the main phenomena of climate change
- Several targets and indicators of SDG 13 on climate change



2. Disaster-Risk-Reduction (DRR) perspective:

- Statistics are important in understanding the impacts and costs of disasters. They can be used to inform policy decisions to help reduce disaster risks and build resilience.
- Operationalization of Sendai-FW and SDG indicators requires involvement of NSOs
- Many countries have already given a role to NSOs, or will do so in the future

2015 disasters in numbers
346 reported disasters
22 773 people dead
98.6 million people affected
us\$66.5 billion economic damage

Clarification of some important terms

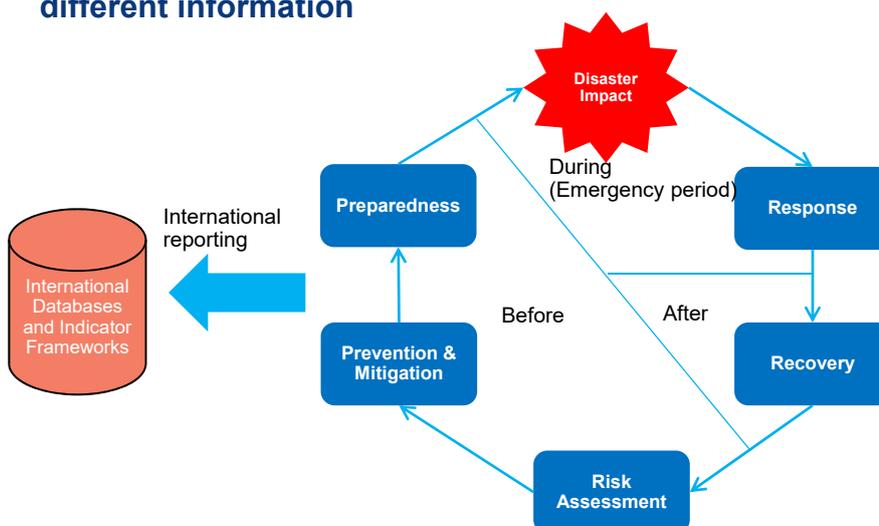
Extreme event: The term is mainly used in relation with extreme weather events and refers to statistical probability.

The terms “**hazard**” and “**disaster**” are associated with events that have an impact on humans or infrastructure. Now defined by OIEWG:

- **Hazard:** *A process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation.*
- **Disaster:** *A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts.*

Note: The conceptual link between “extreme event” and “hazards / disasters” is to be defined!

Different phases of disaster-risk management require different information





Examples for information requirements BEFORE a disaster strikes (peace time)

- **Typical decisions to be made are:**
 - How to identify hazardous areas?
 - How to prioritize investments?
 - How to discourage development in hazardous areas?

- **Typical information requirements:**
 - Demographic and socio-economic statistics to assess vulnerability and to identify particularly vulnerable groups
 - Historic disaster data to forecast losses
 - Statistics on critical infrastructure
 - Statistics on existing prevention measures



Examples for information requirements in the EMERGENCY PERIOD

- **Typical decisions to be made are:**
 - 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 mount emergency response while also putting in place requirements for medium and long term recovery?

- **Typical information requirements:**
 - Disaster occurrence, including temporal, and spatial spread of the event
 - Disaster type and characteristics of impacts
 - 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



Examples for information requirements AFTER a disaster (recovery)

- **Typical decisions to be made are:**
 - How to prioritize recovery of economic sectors and determination of appropriate scale of re-building effort
 - How to determine appropriate level of investment
 - Returning to consideration of future risk identification and mitigation

- **Typical information requirements:**
 - Post-disaster accounting for damage, losses, and disruption of functions and services
 - Magnitude of requirements to address recovery needs
 - Coping mechanisms of communities, localities and sectors
 - New post-disaster calculation of vulnerability to future incidents

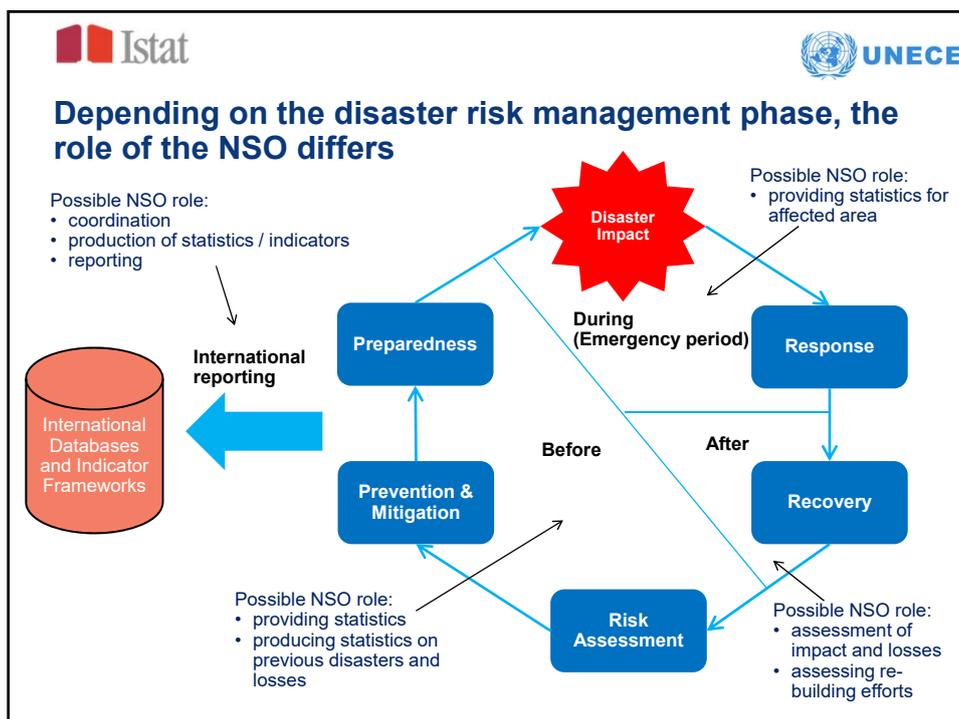


Information needs for international disaster-related reporting

- Sendai Framework on Disaster-risk Reduction (7 targets, 38 global indicators)
- Sustainable Development Goals (use e.g. a subset of the SF indicators)
- International disaster databases (e.g. EM-DAT)

Typical information requirements:

- Disaster mortality
- Affected people
- Economic loss
- Damage to critical infrastructure and disruption of basic services
- National and local disaster risk reduction strategies
- International cooperation to developing countries through adequate and sustainable support
- Availability of and access to multi-hazard early warning systems and disaster risk information and assessments



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The role of National Statistical Offices and official statistics

Current situation:

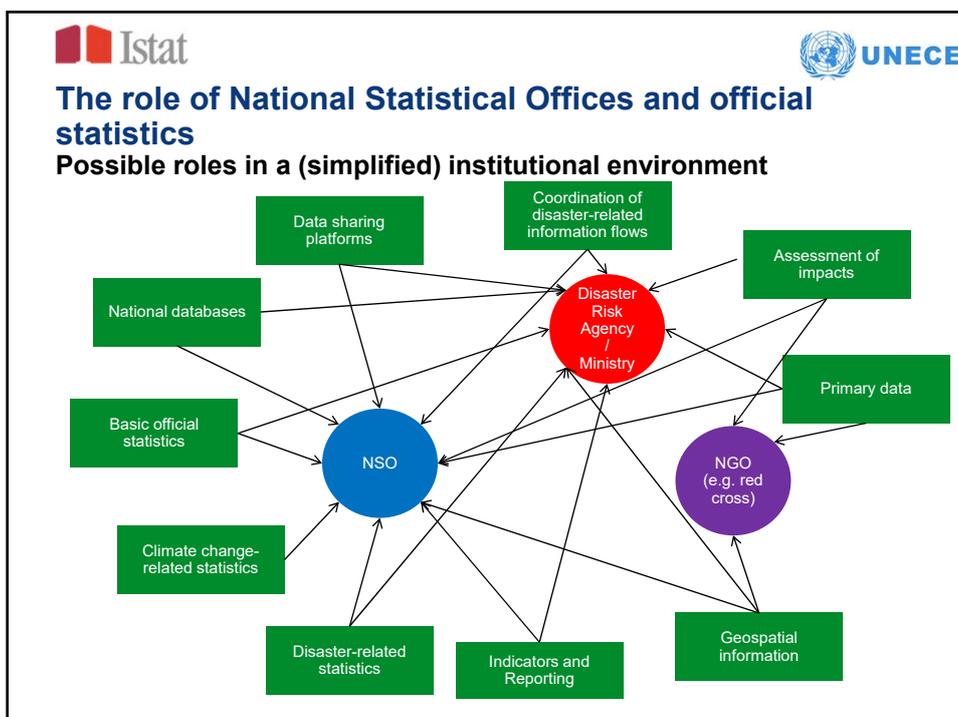
- In most cases NSOs are not responsible for production statistics on extreme events and disasters (e.g. 13 out of 39 countries which replied to a survey of the CES Task Force).
- Official statistics mostly used for disaster-risk management: Population, Housing, Agriculture, Economic, Environment, Transport
- In some countries NSOs have taken up additional roles, such as:
 - Coordination of geographical information services
 - Maintaining disaster databases
 - Producing statistics on disasters and impacts
- Main problems to use existing official statistics are poor data quality, coordination, lack of geographical information.

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The role of National Statistical Offices and official statistics

Ideal situation:

- ❑ All functions needed for all phases of disaster-risk management are available in a COUNTRY, and clearly defined within the existing institutional environment (NSO, DRM Agency, Ministries, Research, NGOs etc.)
- ❑ Important functions for data management are for example:
 - Coordination
 - Production of primary data
 - Assessment of impacts
 - Processing of data, and data quality assurance
 - National database(s) on disasters and losses
 - Production of disaster-related statistics
 - Production of climate change-related statistics
 - Geographical information services
 - Data sharing platforms
- ❑ Which of these functions are taken by NSOs depend on the national situation





The CES Task Force on Measuring Extreme Events and Disasters will meet on 6 October and continue with its work around the following guiding questions

1. What are the definition, scope and conceptual understanding of “measuring extreme events and disasters”
2. Which functions are needed for the flow of information in the different phases of disaster-risk management, and what could the role of NSOs be?
3. What is the role of statistical tools (surveys, registers etc.), administrative data and big data in measuring extreme events and disasters?
4. Which recommendations (and roadmap) for implementation of statistics on extreme events and disasters can be given to NSOs?



National and international organisations are working in a partnership to generate maximum benefit for countries in an efficient way

- a) CES / UNECE Task Force working mainly on the clarification of the role of NSOs
- b) UNESCAP Expert Group drafted a statistical framework for disaster-related statistics
- c) UNISDR drafting guidelines for the operationalization of the Sendai Framework Indicators

8 case studies have been launched jointly (UNECE, UNESCAP, UNISDR and Group on Earth Observation) – 4 will be presented to day

A Global Partnership on Disaster-related Statistics has been established



Conclusions

- The roles of NSOs in measuring extreme events and disasters differ in different phases of disaster risk management
- Upcoming issues for all NSOs will be on
 - Reviewing quality and disaggregation issues of existing official statistics to make them fit for purpose
 - Getting involved in the production and reporting of Sendai and SDG indicators by getting a clear mandate
- Several NSOs have already taken up additional roles such as
 - Coordination of geographical information services
 - Maintaining disaster databases
 - Producing statistics on disasters and impacts
- The disaster-related statistics framework developed by UNESCAP is to be considered for global use
- Important issues still need to be solved, including the definition of the scope of measuring extreme events and disasters
- The CES Task Force on Measuring Extreme Events and Disasters will have its meeting tomorrow



Thank you very much for your attention!