Technical Expert Forum 2022:
Tracking of hazardous events and disaster losses and damages

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Co-organised by: UNDRR, WMO and UNDP

Weblink: https://www.undrr.org/event/technical-expert-forum-disaster-and-hazardous-event-accounting

Context

Over the past several decades, the international community has been working to standardize national information on losses and damages to better understand risk, and how these components change over time. Traditionally, the recording of disaster losses and damages starts at the impact level by the national disaster (risk) management offices (NDMOs) in terms of human and economic losses, often based on assessments by local authorities and humanitarian partners. These have been captured through disaster loss and damage tracking systems (e.g., www.DesInventar.net and other nationally owned systems). Attribution of impacts from these events to causal hazards is subsequently made through various sources, including by the national meteorological and hydrological services (NMHS).

However, there are critical challenges in this process, including lack of or limitations in:

- A globally accepted methodology to uniquely identify an event in terms of its time of origin and completion.
- Data standards and event terminology that would allow uniformity in hazard characterization, comparison across time and space, and the ability to link hazardous events with its interconnected and cascading impacts.
- Capability to systematically record impact information with relevant disaggregation levels like sex, age and disability.
- Coordination between the NDMO and sectoral agencies, like agriculture or transport, and NMHS.
- Institutionalization leading to sporadic and discontinuous data collection and registration.
- Compatibility of primary loss data obtained from assessments with loss and damage databases.

These challenges point to the need for a global framework to cover: (1) Institutionalization of national disaster losses and damages tracking systems and relevant policies; (2) Primary hazard and loss data collection systems; (3) Adoption and application of standards; (4) Quality control; and (5) Capacity development.

The ongoing development of a new-generation disaster losses and damages tracking system, by UNDRR in partnership with UNDP, and cataloguing of hazardous events, by WMO, are good opportunities to strengthen tracking of disaster impacts, and their linkages with hazardous events (See Annex). Hence, UNDRR, UNDP and WMO, are collaborating to co-organize a Technical Expert Forum on Tracking of Hazardous Events and Disaster Losses and Damages. This is part of a series of Technical Forums organised annually by the UNDRR Bonn office. The event is linked with the Centre of Excellence for Climate and Disaster Resilience, and also contributes to the work plan of the Executive Committee of the Warsaw International Mechanism for Loss and Damage.

Collective action for stronger risk data: Fulfilling the 2030 Agenda

Recent progress in strengthening the data ecosystem for tracking hazardous events and disaster losses and damages points to the need to harness comparative advantage of organisations to inform a range of services. These include generating impact-based early warning to enable early action, tracking disaster impacts and how they affect disproportionately some vulnerable, excluded and marginalized groups, and informing risk-based approaches and planning, besides reporting against SDGs and Sendai Framework indicators.

Such integrated approaches will help achieve several purposes:

- Enhance the granularity in analysis of disaster impacts by better linking with causative factors and benefit forensic analyses of disasters.
- Extend the disaster data value chain (*observation-event-impact*) to better understand and assess the complex nature of risks and cascading impact of disasters.
- Inform inclusive and end-to-end multi hazard early warning systems as well as informing humanitarian action and strategies to prevent future disasters and/or reduce their impact
- Enable tracking of progress in disaster risk reduction and ensuring actions are targeted to most at-risk and marginalized groups.
- Better inform disaster risk reduction financing strategies and actions including risk transfer (insurance, risk facilities, catastrophic bonds)
- Greater institutionalization of data registration at country level with open access policies
- Agreement on dissemination of and adoption of standards.
- More regular and systematic primary data collection and reporting of hazard events, physical loss and damage, and economic loss equivalencies
- Universal adoption and on-going maintenance of an internationally accepted, standardized coding system allowing unique event identification.
- Integration of disaster loss tracking systems into the Sendai Framework Monitor and contributing to SDG monitoring.

Objectives of the Forum

The Technical Expert Forum will follow a consultative process to advance mechanisms to record and account for hazardous events and disasters and their interlinkages. The Forum will:

1. Review and document good practices and gaps in recording of hazardous events and disaster impacts.
2. Discuss potential synergies among various national data from different agencies and institutions.
3. Discuss opportunities for strengthening hazardous event data and their linkage with impact data through partnerships and agreements at national as well as national to international levels
4. Identify challenges and opportunities to strengthen capacity for disaggregated data collection and analysis
5. Discussion of the role of the private sector for added value capabilities that can benefit developing, small islands developing states and least developed counties.

Expected outcomes

With the wide range of expertise involved in this workshop, it is expected that the Forum will result in recommendations on:

1. Strengthening standards, processes, interoperability, analysis and transparency of hazardous event and impact data and information.
2. Parameters for recording of data for hazardous events and disasters
3. Capacity development strategies
4. International partnerships.

Target Audience

The Technical Forum will see participation of:

1. NDMOs
2. NMHS
3. Regional organisations
4. UN and international organisations specialising in disaster loss and damage data
5. Private sector including the insurance industry

Interpretation

The Forum will be conducted in English, and simultaneous interpretation will be provided in French and Spanish.

Programme (Forthcoming)

Annex: Background

The Sendai Framework for Disaster Risk Reduction 2015-2030, Priority for Action 1 indicates that:

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be leveraged for the purpose of pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters.

To do this, the Sendai Framework encourages countries "to systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts, as appropriate, in the context of event-specific hazard, exposure, and vulnerability information."

One of the key mechanisms to account for disaster losses is DesInventar (www.desinventar.net), which has been in existence since 1994. UNDRR and UNDP have been supporting this disaster loss accounting system that forms the basis for national disaster loss databases in about 110 Member States, besides the existence of several such databases at sub-national levels in other countries.

These national databases provide a comprehensive picture of human, economic, and infrastructural losses at subnational levels. DesInventar has unique functionality and significant strengths, including a remarkable volume of data. These databases are mostly nationally owned, with data on disaster impact collected and validated within the country. The system is based on collection and analysis of homogeneous disaster data at all scales (small, medium, and large) and generated from the lowest administrative levels in a country. Following the adoption of the Sendai Framework, the system was enhanced, called DesInventar Sendai, to enable closer alignment with relevant targets and indicators of the Sendai Framework, enabling streamlined reporting.

However, the disaster loss data accounting processes and needs have changed significantly over the last 25 years since the first inception of DesInventar. Present-day challenges originate from different factors including technical issues, limited institutionalization, capacities for disaggregated data collection, horizontal and vertical coordination, loss estimation, data management and analytics. These limitations are complex and include loss normalization, cascading events, longer periods of damage assessments and data security concerns.

There is also a strong need to understand the origin of each recorded event, to be able to link the impact of events with weather-related and other hazardous events. Hence, UNDRR has partnered with UNDP and WMO to develop a new-generation hazardous event and disaster loss tracking system that meets the growing needs, with a higher level of sustainability, and based on learnings from DesInventar and other similar systems globally. UNDRR has also been co-leading the development of a common disaster-related statistical framework to strengthen the quality and robustness of data.

UNDRR and the International Science Council have also developed a comprehensive hazard classification and review and subsequently Hazard Information Profiles to provide consistent definitions of hazards, grouped in eight clusters. This represents an important step to building local, national, regional and internationally comparable risk and impact information.

The WMO Congress in 2019 approved a methodology, "WMO Cataloging of Hazardous events," that provides the basis for NMHSs to record the physical parameters of hazardous events systematically and authoritatively. This methodology will help address the challenges above by augmenting NMHSs existing observation and monitoring capabilities to systematically record the

physical hazardous event with linkages to the causal larger-scale phenomena. This provides the opportunity to link climate-related variables, losses and damages, and disaster events.

These records of hazardous events will ensure that events are recorded uniquely with a standardized event name, begin and end times, spatial area of impact, and linking the events to larger-scale phenomena (e.g., a tropical cyclone has linkages to its elements such as heavy rain, strong winds, storm surge flooding and landslides). The linking feature makes this methodology scalable from local (micro event) to larger phenomena, including the climate scales. Effective implementation of the methodology requires cooperation and partnership (e.g., disaster management agencies) at the national level to ensure that hazard and impact data are linked and quality controlled. Furthermore, regional and global cooperation and partnerships can ensure loss and damage information is quality-assured and consistently reported.

Hence the aim is to develop a universally applicable architecture that the countries can adapt to their national context depending on their data and digital maturity. This will determine the level of granularity we would want to go for in this basis system.