Recording and sharing Disaster Loss Data across multiple - scales: the example of FloodCat platform

Eva Trasforini, Marco Massabò
CIMA Research Foundation
Outline

• DLD for Policies and DLD “standards”:
  • Global
  • European
  • National
  • Sub-national
• FloodCat DRKMC Pilot Project
• FloodCat for Greece
Existing Disaster Loss Databases (source UNISDR)

**EM-DAT**
- Global coverage
- Mortality: >10 people
- Number of affected: >100 people
- Economic losses: are present in less than 30% of the records
- Global level of observation, national level resolution

**Private Insurance and Re-insurance companies**
- Global coverage
- Data is not freely available
- Only Analysis reports are shared
- Developed for the insurance market

**ECLAC-WB**
- National level of observation, data with sub-national level of resolution.
- Consistent methodology
- Only assesses losses from large scale (intensive) disasters
- Does not have global coverage

**National databases**
- National level of observation, data with sub-national level of resolution.
- Methodologies are heterogeneous, hampering global comparison.
- Not frequently updated.
Why Scale matters (From GAR)?

- Direct losses are at least 50% more than the ones registered internationally.
Global Policies

Sendai Framework for Disaster Risk Reduction
2015 - 2030

7 Global Targets of SFDRR are

Reduce
- Mortality/ global population
  2020-2030 Average <= 2005-2015 Average
- Affected people/ global population
  2020-2030 Average <= 2005-2015 Average
- Economic loss/ global GDP
  2030 Ratio <= 2015 Ratio
- Damage to critical infrastructure & disruption of basic services
  2030 Values <= 2015 Values

Increase
- Countries with national & local DRR strategies
  2020 Value >= 2015 Value
- International cooperation to developing countries
  2030 Value >= 2015 Value
- Availability and access to multi-hazard early warning systems & disaster risk information and assessments
  2030 Values >= 2015 Values

Sustainable Development Goals

1. No Poverty
2. Zero Hunger
3. Good Health and Well-Being
4. Quality Education
5. Gender Equality
6. Clean Water and Sanitation
7. Affordable and Clean Energy
8. Decent Work and Economic Growth
9. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. Sustainable Cities and Communities
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice and Strong Institutions
17. Partnerships for the Goals
Global Policies: Indicators

- Open-ended Intergovernmental Expert Working Group (OIEWG), established by the United Nations General Assembly
  - A set of 38 indicators were identified
  - 2 Feb 2017 General Assembly https://www.preventionweb.net/drr-framework/open-ended-working-group
  - Disaggregation for gender and diversity has been added as per SDGs

3rd DRMKC Annual Seminar, Sofia, 26-27 April 2018
European Policies/Regulation

• UCPM – Risk Assessment Overview

• rescEU- new EU Civil Protection Legislation (Full Risk Assessment)

• Solidarity Fund
DLD as integral part of NDRA

Box 12 - National disaster loss databases will be used for monitoring Sendai Framework progress

Besides being a data source to use in the historical analysis method, national disaster loss databases will be necessary for monitoring progress in Sendai Framework implementation at national and global level to report on Sendai Targets A to D, which measure loss, damage and impact from disasters. As of today, 105 countries have established national disaster loss databases. Many of these need to be updated and upgraded to comply with the Sendai Framework hazards coverage and monitoring requirements.

Figure 10 - Historical loss databases are established and used in many countries around the world. Source: Global Assessment Report (GAR) 2015.
European Guidance(s)

- Recording Disaster Losses (2013)
- Current status and best practices (November 2014)
- Guidelines for disaster loss data recording (April 2015)
- Loss Data Architecture for Disaster Risk Management (2018)
EU Floods Directive

• As part of Preliminary Flood Risk Assessment

• Reporting for historical significant Floods and adverse consequences to
  • Human health
  • Environment
  • Cultural heritage
  • Economic activity

• Reporting Schema under update by EU WG Floods
National Perspective (implementation of EU Floods Directive and beyond)

- Italy: Prime Minister Directive (Dir.P.C.M. 24 febbraio 2015), FloodCat as a catalogue of floods events

- FloodCat categories (Damage indicators) reflect national needs

<table>
<thead>
<tr>
<th>DAMAGE CATEGORIES</th>
<th>SUB CATEGORIES OF DAMAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRICULTURE AND LIVESTOCK</td>
<td>DEATHS</td>
</tr>
<tr>
<td>PROTECTED AREAS AND ENVIRONMENT</td>
<td>INJURED</td>
</tr>
<tr>
<td>CULTURAL HERITAGE, LANDSCAPE</td>
<td>EVACUATED</td>
</tr>
<tr>
<td>DAMAGE TO THE POPULATION</td>
<td>MISSING</td>
</tr>
<tr>
<td>CIVIL BUILDINGS</td>
<td>OTHER/NOT APPLICABLE</td>
</tr>
<tr>
<td>PUBLIC INTEREST BUILDINGS</td>
<td></td>
</tr>
<tr>
<td>INDUSTRIAL INSTALLATIONS</td>
<td></td>
</tr>
<tr>
<td>COMMUNICATION AND TRANSPORT INFRASTRUCTURE</td>
<td></td>
</tr>
<tr>
<td>TECHNOLOGICAL AND SERVICE INFRASTRUCTURE</td>
<td></td>
</tr>
<tr>
<td>HYDRAULIC WORKS</td>
<td></td>
</tr>
<tr>
<td>TOURIST-RECREATIONAL STRUCTURE/INFRASTRUCTURE</td>
<td></td>
</tr>
</tbody>
</table>
National Perspective (Italy)

- Multiple actors
- Multiple source of data and information

River basin districts and UoM

River basin authorities

Regions

3rd DRMKC Annual Seminar, Sofia, 26-27 April 2018
Disaster Loss Data for multiple purposes

- DLD for Sendai
- DLD for SDGs
- DLD for EU Floods Directive (reporting)
- DLD for DRA and UCPM
- DLD for Damage assessment and Emergency declaration
- DLD for National Needs
- DLD for Solidarity Fund - UCPM
FloodCat Pilot Project

- DRKMC support Service
- Italian Department of Civil Protection
- Technical implementer: CIMA

3rd DRMKC Annual Seminar, Sofia, 26-27 April 2018
Main Outcomes of Pilot Project

• The platform ensures an high level of **disaggregation** for the elements recorded and for their geographical location

• This allows the collection:
  
  • to be related with an high number of indicators for Target A,B,C,D of Sendai Framework
  
  • to export dataset according to different output data models: FD reporting schema, JRC-DLD Guidance minimum requirements
  
  • to be used for different purposes (civil protection activities, recovery, reporting for European and International regulations, risk model validation)
Implementation of FloodCat in Greece

• Collaboration Agreement of the Italian Civil Protection Department (DPC) and JRC that envisages the possibility for UCPM participating countries to obtain the technological transfer of the FloodCat platform

• DG Echo and JRC support to UCPM participant countries to further develop their National capabilities on losses and damages data recording
FloodCat Greece

• SSW FloodCat coordinator

• Identify contributing institutions and relevant indicators

• Targeting FloodCat to Greece needs

• Use of FloodCat for EU Floods Directive Reporting
Multi-stakeholder data availability (long term)

**SSW**
- Coordination of the data collection process;
- Information on the event and phenomenon (currently non-distinct);
- Definition of the methodology for damage assessment;
- Assessment of total damage.

**DAEFK DB, ELGA**
- Flooded area;
- Location;
- Damage description and assessment;

**SOURCES**
- Internal expertise;
- Technical reports (also from other institutions);
- National DB on hydrometeorological information

3rd DRMKC Annual Seminar, Sofia, 26-27 April 2018
HISTORIC FLOODS
About 1600 records
SIGNIFICANT FLOODS
About 300 records
Customization of the platform

USE CASES MODIFICATION:
• Insert new event
• Insert new phenomenon
• Insert new damage
• Advanced search
• Reporting

DEDICATED TRAINING
• End users
• System administrators
• IT developers

POPULATION OF THE DB
Historical events

Beta release
June 2018

Final release
October 2018

Final workshop
November 2018

Beta release
June 2018

Final release
October 2018

Final workshop
November 2018

3rd DRMKC Annual Seminar, Sofia, 26-27 April 2018
Conclusions

• High level of data disaggregation facilitates the use of DLD for multiple-purposes (from Global policies to National needs)

• FloodCat demonstrated to be a flexible tools that can be adapted in different institutional context (i.e. Greece) and targeted to National needs
Thanks
cimafoundation.org