JOINT WORKSHOP OF IRDR LOSS DATA AND EU LOSS DATA EXPERTS

Third expert meeting of IRDR DATA Working Group
Second technical workshop on an EU approach for recording loss data
Joint Research Centre of the European Commission, Ispra, Italy
19–21 May 2014

MINUTES

1 Participants

IRDR DATA Working group

- Susana Adamo (CIESIN, Columbia University);
- Regina Below (CRED);
- Lucia Bevere (Swiss Re);
- Hongey Chen (Taiwan);
- Susan Cutter (University of South Carolina);
- Jan Eichner (Munich RE);
- Maryam Golnaraghi (WMO);
- Rudolf Schmidt (Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria);
- Julio Serje (UNISDR);
- Adam Smith (NOAA);
- Emily So (GEMECD, University of Cambridge);
- Pascaline Wallemacq (CRED);
- Sisi Zlatanova (University of Delft);
- Tom De Groeve (JRC);
- Daniele Ehrlich (JRC);
- Karmen Poljansek (JRC).

EU Loss Data Working group
(Joined the second day)
- Almudena Bustamante Gil (Procivil, Spain);
- Lorenzo Carrera (FEEM);
- Thomas de Lannoy (ECHO);
- David Demeritt (Kings College London, UK);
- Doina Hategan (General Inspectorate for Emergency Situations, Romania);
- Ana Jaksic (ACPDR, Slovenia);
- Charalampos Haris Kontoes (NOA/ISARS, Greece);
- Scira Menoni (Politecnico di Milano, Italy);
- Jaroslav Mysiak (FEEM);
- Roland Nussbaum (MRN &ONRN, France);
- Xavier Romão (Faculdade de Engenharia da Universidade do Porto, ICORP, Portugal);
- Roberto Rudari (CIMA Foundation, Italy);
- Karoline Sjölander (Swedish Civil Contingencies Agency (MSB), Natural Hazards and Critical Infrastructure Protection, Sweden);
- Annegret Thieken (Universität Potsdam, Institut für Erd- und Umweltwissenschaften, Germany);
- Wouter Vanneuville (EEA, EU);
- Joao Verde (ANPC - National Authority for Civil Protection, Portugal) - videoconference;
- Esmeralda Vila Pouca (Faculdade de Engenharia da Universidade do Porto, ICORP, Portugal).

2 Objective of the workshop and summary of key conclusions

2.1 IRDR DATA Working Group – Third Expert Meeting

One of the main objectives of the third IRDR DATA Working Group meeting was the implementation of the Peril Classification based on the newly released "Peril Classification and Hazard Glossary" IRDR document. The workshop focused also on Assessing Human impacts in disasters and in analysing methodologies to addressing Losses based on physical damage to assets.

2.2 EU Loss Data – Second Technical Workshop

One of the objectives of the EU Loss Data workshop was to provide an opportunity to influence the development of European loss guidelines to be compatible with international ones. The purpose of the EU Loss Data workshop was also to agree on a common methodology of recording losses, identifying the minimum common fields with proposed definitions essential for loss reporting at the EU level and start discussions regarding expected reporting needs.

2.3 Summary of key conclusions

The common topics of IRDR Loss DATA and EU loss Data experts are peril classification, a framework for the definition of human indicators as well as a methodology for economic loss assessment.

The IRDR DATA working group will revise the Peril classification based on the result of the review panel organized by WMO as well as on the input of the workshop. They will take a lead in developing a methodological framework that works for all, based on an initial JRC proposal, taking in consideration the principles of precision and comprehensiveness as well as temporal components of human indicators during the life cycle of disasters. They will start working on the economic loss methodology as well as on the loss normalization methods to compare losses over time (i.e., for trends).

During the joint part of the workshop, the participants discussed their experiences with loss data, their view of the future of loss data, as well as their needs. Many common issues of interests and the benefits of open data repository and interoperability of loss data at the EU level were identified. Lessons learnt from available MS inventories of loss recording system as well as comparison and compatibility of EU loss data inventories with the international development of standards will be an essential part of the future guidelines on a methodology of recording losses. The document "Current status and Best Practices for Disaster Loss Data recording in EU Member States EU" will be written by JRC with joint authorship/collaboration of EU Member States and other Working Group participants by November 2015. To start the process, the participants with loss databases were asked to share specified data with JRC and UNISDR at the municipality level by 30 June.

3 Minutes of the IRDR Meeting

3.1 Introduction

Daniele Ehrlich welcomed participants and introduced the JRC. Tom De Groeve presented the work JRC is doing in Disaster Risk Reduction, both at the international and the EU level, which is the context for the disaster loss data work at JRC.

3.2 Review of issues from the second Expert Meeting and Recent Progress (19 May, Day 1, AM)

WMO (Maryam Golnaraghi)
There is interest in UN Standard setting bodies to standardize disaster loss data. WMO is an ISO accredited standardization body. WMO sets guidelines, recommended practices (urged) and standards (required) through 8 technical commissions.

Maryam Golnaraghi presented the WMO DRR Two-tier Work Plan, based on identification and documentation of good practices (large survey with member states). It established 5 expert advisory groups, including a group on Hazard and Risk Analysis. There is a critical need for historical and forward looking multi-hazard data and analysis to support risk assessment. Maryam proposes the process as follows: June 2103 workshop with member states on peril classification, October 2013 follow-up meeting. Currently WMO will work in South East Asia, Central America and Caribbean, South East Europe, Haiti, Africa, to digitize historical databases on perils.

There has been an exchange of letters from chair of IRDR WG on Data to WMO Secretariat to designate a member to the group and contribute to reports. WMO recommended the work, designated Ms. Golnaraghi to the group, informed that WMO will immediately start a review and urged that the report was not to be launched publicly prior to considering results of the review. A formal review was initiated by WMO engaging leading experts (14 April, 2014). The review panel consisted of 7 high level experts. Results were very positive and recommended the systematic approach. Activities are aligned with the initiative that has been undertaken by WMO DRR Programme. IRDR WG on Data Chair is being invited to the WMO User Workshop at Understanding Risk 2014. Main comments were: some specific comments and revisions; should consider existing hydrological definitions; IRDR WG on Data could be leveraged for the WMO initiatives in relation with the WMO User Interface Expert Advisory Group on Hazard/Risk. Next step can be a dedicated workshop at WMO.

Susan Cutter shared the letter and the response of the Secretary General of WMO. It is a very positive outcome of the IRDR work.

Julio Serje mentioned the strict timeline of HFA2 negotiations and suggested an earlier meeting, before the UR2014 meeting. Maryam warned not to accelerate too much in order not to compromise the technical work. She also mentioned that an adoption at UNISDR level will not be binding, as it is not a standard setting body. It may be more important to (slowly) engage the standard setting bodies. Tom mentioned that the EU proposed text for HFA2 and SDG was in political consultation, making new technical feedback difficult.

3.3 Implementation of Peril Classification

CRED EM-DAT (Regina Below)

Regina Below is one of the developers and authors of the IRDR Peril Classification. EM-DAT is implementing the new classification, with the exception of certain terms: (1) the term general storm is kept, in addition of the five other types of meteorological disasters, (2) 'epidemic' instead of 'disease'. Before end of June, EM-DAT will be migrated to the IRDR classification.

Munich Re (Jan Eichner)

Implementation was straightforward. Exceptions: no wave action; storm ok to split; extreme temperatures were in climatological family and now in meteorological family, which is still debated. The new peril classification will be implemented in 2014.

DesInventar (Julio Serje)

Julio Serje operates the DesInventar database. IRDR Peril Classification has been published on the DesInventar website. The latest version of the open source software has the classification included.

In the summer, DesInventar data will be consolidated for GAR2015. The data will be translated into the IRDR scheme, which will be a learning exercise. Ideally, there will be automated procedures to support the adoption of the IRDR standard.

SwissRe (Lucia Bevere)

SwissRe's Sigma CatNet database has still few perils formally in the database. It includes lots of information in free text notes fields. They are currently writing software to code perils more systematically. SwissRe is building new software (so changes are timely), but the historical data will have to be manually re-coded. Software will start in 2015, probably ready by the end of 2015 and it will take the IRDR Peril Classification into account.

SHELDUS (Susan Cutter)

Susan Cutter summarized the status of SHELDUS that is geo-referenced database at subnational county level from 1960 to present with dead, injured, property loss and crop loss. The database is typically available on-line. However, access is temporarily suspended and subject to more funds.

Implementation of the IRDR Peril Classification will be ready by 1 July 2014, after which a new version of SHELDUS will be launched (up to 2013 data).

3.4 Human losses (19 May,Day 1, PM)

CRED, SwissRe and MunichRe (Regina Below)

Regina Below introduced the position paper produced jointly by CRED, SwissRe and MunichRe. The purpose of the paper was to define a small set of human losses indicators. The indicators are guided by the user needs (e.g. affected was kept, in spite of the vague definition). Susan Cutter said this paper was discussed in the previous meeting, and some suggestions were given.

NOAA (Adam Smith)

Adam Smith presented the human impacts recorded in NOAA Storm Data. Since 2007 there was a NOAA directive clarifying that direct and indirect fatalities/injured should be recorded. Direct vs indirect fatalities examples for different perils were shown.

3.4.1 Way forward

- Susan Cutter: Adopt IRDR paper, keep framework for next step.
- Julio Serje: difficult to find data.

JRC (Karmen Poljanšek)

JRC presented a proposal for human loss data framework. It follows the concept where people affected by disaster could be disaggregated into different fields – human impact indicators following the principles of precision, comprehensiveness, measurability and practicality. The main objective is to provide mutually exclusive definitions of the human impact indicators fields that cover all affected people. Affected people are the summation of the fields defined by framework.

Discussion:

- Principles?
- Forward looking versus reconciling databases.
- Sisi Zlatanova: conceptual framework helps to classify the data collected so far.
- Julio Serje: translating may be difficult if definitions don't match one to one.
- Jan Eichner: minimal set of definitions, finer framework is fine to have (optional).
- Lucia Bevere: number of deaths, missing, injured, homeless (temp + perm).
- Susan Cutter: fatalities, injured.
- Karmen Poljansek: categories relevant for users (medical teams, shelter, etc.).
- Roberto Rudari: one person can be injured and homeless.
- Jan Eichner: double counting is acceptable.
- Tom De Groeve: precision and comprehensiveness.
- Susan Cutter: geography also important, scale.
- Emily So: need to check the framework and definitions with practitioners.
- Maryam Golnaraghi: need to match with capabilities of practitioners for collecting data
- Susan Cutter: minimum set + ideal set. Ideal set should be simpler than JRC framework.
- Roberto Rudari: split "practical" between prospective and retrospective.

3.4.2 Conclusions

- IRDR will take the lead in developing a methodological framework that works for all, based on the initial JRC proposal. Discuss principles of precision and comprehensiveness; discuss temporal issues (life cycle of disaster, e.g. for relocation).
- Creating revised document with definition of human indicators, compatible with EM-DAT, SwissRe, MunichRe proposals → one month.

3.5 Economic losses collection (20 May, Day 2, AM)

SwissRe (Lucia Bevere)
The basis of Sigma CatNet database is the estimated claims (insured losses = sum of claims). Initially, while claims are coming in, SwissRe uses estimates for claims using internal or external models: Portfolio + Extent = Estimated claims.

Economic losses: less standardized methodology, less standardized definition. SwissRe defines it as the cost of the disaster to society. It consists of the totally destroyed / partially destroyed buildings in all sectors and the direct business interruption.

The SwissRe methodology to estimate economic losses includes a number of information sources:

- Official government figures
- SwissRe estimates dependent on the extent of the events:
    - Large event: sum of buildings (derive proportion of buildings private to public) / ha of agricultural land.
    - Medium event: sum of buildings + estimates of insurance association sources.
    - Small event: typically not reported.
- No method: apply proportion buildings private (claims) to public

⇒ in general the final figure underestimates the total economic losses

Try to eliminate "Jacuzzi effect" → try to use list of assets, and only consider those relevant for own definition. Try to eliminate secondary indirect losses (some sectors gain, some sectors lose)

MunichRe (Jan Eichner)
Jan Eichner provided a detailed description of five stages of information quality regarding the collection of economic losses:

- insured loss compiled by specialized institutions.
- insured loss in developing markets (often not complete).
- economic loss, often from government (no info on insured loss; may be under/overestimated).
- partial economic loss (only numbers on impact on agro).
- description of event (number of houses damaged).

Formula: claims * factor (insurance penetration) * correction factor (deductibles / limits).
The assessment figures are processed, adjusted and typically available to the company within 6 months and going to 3 month release.
The loss data at MunichRe are one of the assets of the company and therefore not released to the public, for commercial purposes, if not in form of bulletins.

GAR 2011 (Julio Serje)
Julio Serje of UNISDR described the work conducted using loss data for GAR2011. It provides examples of the computation of loss exceedance curves, used for Annual Average Loss and Probable Maximum Loss calculations. They are derived by direct economic loss estimations based on 6 damage indicators (houses damaged, houses destroyed, crops and woods [ha], educational centres, hospitals, roads affected [m]). Unit costs are derived from statistical analysis using a variety of models for different

sectors (housing, agriculture, and infrastructure). Mathematical models are validated / calibrated using loss data (CIMNE method) through empirical loss exceedance curves using DALA/ECLAC assessments, unit costs (template in DesInventar). The figures are useful for discussion with finance ministers of disaster affected countries.

JRC: Global Flood Partnership (Tom De Groeve) and Remote Sensing – Copernicus (Daniele Ehrlich)
Daniele Ehrlich introduced the large volumes of satellite-based maps showing hazards and impacts, which are available for free to the community. Tom De Groeve made the link with the Global Flood Partnership (http://portal.gdacs.org/Global-Flood-Partnership), which aims at building a flood loss record (combining flood footprints with impacts) and a flood observatory (distributed real-time flood monitoring). There is an emphasis on recording geo-location, uncertainty, and time-dependent information.

NOAA (Adam Smith)
Similar methodologies. NOAA is interested in building 95% confidence intervals for damage estimates.

3.6   Summary discussions

3.6.1   GLIDE – the unique event identifier

ADRC invited IRDR for a meeting in Japan to discuss issues (6th Asian Ministerial Conference on DRR, in Bangkok, Thailand, June 22-26). Julio Serje said that ADRC is still interested in the provision of an interface for automatic creation of GLIDE numbers. Julio Serje will follow up on this.

3.6.2   Summary on Human Losses

Susan Cutter presented an adapted a conceptual framework for human impacts for disaster loss databases, with three levels: primary, secondary and tertiary fields.

- Primary: fatalities, injuries, missing, homeless.
- Secondary: direct/indirect, permanent/temporary, evacuated, relocated, affected.
- Tertiary: gender disaggregation; location disaggregation; temporal aspects (permanent, temporary).

User community? Needs for response community are different than those of the reconstruction / insurance community.

Discussion:

- Criteria?
- Tom De Groeve: Retrospective (data saving) or prospective (high quality data).
- Julio Serje: Availability of data, uncertainty of data: fatalities, injuries, missing (mostly official figures); evacuated/displace (OCHA figures).
- Regina Below: Most used data fields in primary: fatalities, missing, injuries, homeless/affected.
- Jan Eichner: can leave ambiguity.
- Definitions?

- Affected: Everybody agreed that 'affected' people was not a suitable indicator of loss because different actors use different methods of estimation. On the other side it reflects the extent of the disaster, therefore it is suggested to keep this indicator in the databases.
- Tom De Groeve: There is an opportunity to set standards. Is IRDR interested in taking up this ambition?
- Susan Cutter: Yes, but the timeline will be longer than 1 year.
- Julio Serje: Should be retrospective, prospective (forward looking definitions) and realistic.
- Role of IRDR: make sense of what exists, not to prescribe for countries.

3.6.3 Next meeting

- Prepare framework and definitions for human disaster losses (draft in next month).
- Next meeting could take place in the fall 2014 in Brussels, possibly at the European Commission premises of ERCC, jointly with IRDR, EU Loss Data, FEMA/ECHO, EMDAT Technical Advisory Committee.

3.6.4 Outcomes and actions

The following topics will be addressed before the next meeting:

- Human loss indicators based on the JRC methodological framework of human impacts;
- Normalization of losses in time for trends;
- Revise Peril Classification based on UN input;
- Economic losses.

4 Minutes of the Joint IRDR – EU Loss Data Meeting (Day 2 – PM)

4.1 Introduction

IRDR DATA Working Group (Susan Cutter)
Susan Cutter, chair, introduced the IRDR DATA Working Group to the European partners. IRDR was founded in 2009, entering in a second phase of the research programme. IRDR included: FORIN (methods for forensics of disasters), RIA (understanding individual/organizational capacity for risk interpretation and analysis), AIRDR (state of knowledge – the Assessment of Integrated Research on Disaster Risk), and DATA (structure and standards for disaster loss data). First focus was event classification scheme, and aggregation schemes.

Outcomes of 3rd expert meeting include a step forward for developing a human loss data framework and ambition to start an economic loss data framework.

EU Disaster Loss Data Working group (Tom De Groeve)
Tom De Groeve presented the overview and outcomes of the series of workshops on EU Loss Data dedicated to the development process towards European loss standards.

4.2 Round table

Each organization has 5 min to present:

- their experience with loss data: Why? What? How?
- their view of the future of loss data: What needs to be done now? What can be done better?
- their needs: What do you need to progress?

Short presentations:
- Wouter Vanneuville (EEA): **reporting requirements** are different for different disasters disasters (e.g. Floods directive Water Scarcity and Droughts communication); estimating impacts with **climate change.**
- Doina Hategan (General Inspectorate for Emergency Situations, Romania): r**eal-time losses for disaster response**; after event evaluation, committees at county level for ministry responsible of specific risk; data centralized at national level.
- Sisi Zlatanova (University of Delft, co-chair IRDR): **modelling data** from first hours of emergency response; what information + how to record this information and archive for further use (risk assessment and mitigation).
- Roberto Rudari (CIMA Foundation, Italy): **Italian CP**, **improve flood loss data** assessment, expand to other use; global flood partnership: **global flood record.**
- Rudolf Smith (Austria): hazard database (5-10 years) focused on disaster forensics (no losses) + uncoordinated loss databases (insurance, countries) → Austria wants to fund Austria wants to fund a national **UNISDR platform with goal to develop loss database for whole Austria.**
- Jan Eichner (MunichRe): **catastrophe losses**, NatCat unit; loss accounting, learn about **trends** and development in different regions.
- Lorenzo Carrera (FEEM, Climate Change Adaptation): normalization of historical dataset on losses at EU level, for climate change. Interest in economic losses; modelling direct economic losses.
- Karoline Sjölander (MSB, Sweden): lessons learnt section, statistics for accidents and disasters; information system for natural hazards, but not good enough to make statistics; economic losses difficult; connect natural hazard database to loss data / accidents.
- Jaroslav Misyak (FEEM): disaster economics; economic losses of disasters, assess DRR measure for performance and measure; work with EEA climate indicators (economic losses of climate and weather related disasters).
- Harris Kontoes (Research Dir. NOA, Greece): leads the Centre of excellence BEYOND for EO based monitoring and mapping of disasters; presented several databases on hazards and losses available at Ministerial level in Greece; provide Greek organisations with feedback on discussions in the working group.
- Xavier Romão/Esmeralda Paupério (ICORP, Portugal): cultural heritage losses; harmonization with EU initiatives, uncertainty framework.
- Susana Adamo (CIESIN, Colombia University): human dimensions of environmental change.
- Pascaline Wallemacq and Regina Below (CRED): EMDAT global database; academic side, international community; involved in standardization and harmonization; georeferencing disasters in EM-DAT; would like that all national databases feed global database.
- David Demeritt (King College London, UK): Natural Hazard Partnership, initiative on hazard impact modelling, to underpin short-term warnings (impact based warnings); loss data needed for validation and calibration model.

- Emily So (GEMECD, University of Cambridge): earthquake engineering, collected loss data in several earthquakes; building collapse; developing vulnerability curves; GEM and GEMECD (harmonize data on buildings and losses); needs: some form of international dialogue to try build better loss data in the future.
- Julio Serje (UNISDR): in charge of "global initiative for disaster loss data collection" (funded by DEVCO); providing technical assistance to develop loss databases at national level; about 70 databases built for 94 countries; purpose: develop capacity in country + use data for developing global probabilistic risk models; prepare HFA2 framework, partially based on loss indicators; interested in details in country systems.
- Almudena Bustamante Gil (Procivil, Spain): Civil Protection Direction, in charge of national catalogue of floods + compensations database for Spain; flood catalogue almost finished, expanded to earthquakes.
- Ana Jaksic (ACDPR, Slovenia): national system to record losses; glad to share experience with other countries.
- Annegret Thieken (Universität Potsdam, Germany): flood loss data collection methods, since 2002; campaign to collect data after each medium to large flood; factors that might influence amount of loss; want to learn more about factors and drivers that cause losses; created loss models to estimate damage and losses ex ante (e.g. used by reinsurance broker). Chairwoman of scientific board for DRR (German platform for UNISDR): how to create a national loss database. Founded working group, first meeting in two weeks.
- Adam Smith (NOAA): focal point for other agencies (including FEMA, USACE, etc.); develop disaster assessments for annual reports; for future, standards are important (economic losses, indirect/direct, sectors).
- Roland Nussbaum (MRN & ONRN, France): CEO of MRN, an association dedicated to risk knowledge/reduction, between FFSA and GEMA the two insurance companies trade associations in France (created after 1999 major floods and storms); member of the Management Council of National Observatory of Natural Hazards (a PPP arrangement between French State, CCR and MRN); insured loss data can be downloaded at municipality level (flood, subsidence effects of draught below dwellings) or CRESTA level (wind storms). Not only loss accounting, also risk management policy at national level, interlink with existing or developing observatories at regional level and most other relevant public data producers.
- Lucia Bevere (Swiss Re): impact of catastrophic activity on industry; mainly insured losses, secondary economic losses.
- Susan Cutter (University of South Carolina, SHELDUS): University, South Carolina; intl centre of excellence in hazard, vulnerability and resilience metrics; maintain SHELDUS (18 peril classes; 1960-now; geo-referenced); needs: fund database.
- Scira Menoni (Politecnico di Milano, Italy): With Umbria, post-flood damage surveys. Develop comprehensive damage data report, coordinated with civil protection. Important that there is a coordinator for data at regional level (quality control, completeness). Main focus on DRR, also compensation requirements after state of emergency. Apply standards that are under development; develop computer software to assist collecting data, analysis and report generation. Mauro Rossi, head of CP volcanology and earthquake: interested in work, because Italian CP is development method for standards for damage assessment;

Roberto Rudari activated the working group on way how to collect data on residual risk; also on top of it damage information.

4.3 Common topics out of interests of participants

The following topics where identified as common among two or more participants. Some of these were further discussed during the meeting.

- Technical issues
  - Economic losses: recording and modelling future losses.
  - Uncertainty.
  - Geo-referencing.
- Use
  - Use of loss data for national risk management policy.
  - Use of loss data for impact-based warnings.
  - Use of loss data for compensation.
- National databases
  - Create national loss database (Austria, Germany, Italy, Spain).
  - Collecting from national loss databases.

4.3.1 Economic losses

Damage/Loss assessment (Karmen Poljanšek)
JRC presented a framework for discussing economic loss data. Principles for standards include precision, comprehensiveness, realism and practicality.

Discussion:

- Jan Eichner: "cost for hotel of people losing their home = direct loss for insurance company"
- Direct loss is defined differently by insurers, economists and engineers;
- Who is collecting this: Romania, Slovenia, Italy
- David Demeritt: first purpose needs to be defined. Why are losses collected? SP, SL: because of social insurance scheme. Assumptions must be made explicit.
- Jaroslav Mysiak: hotel costs = direct damage measured by flows; flow/stock not uniquely in direct/indirect
- Scira Menoni: in Italy is becoming standard; interest in coupling forensic with compensation; data quality is very important (e.g., of 4000 AXA records only 300 were usable for forensics)
- Stakeholder perspective: loss is different (same thing can be damage/gain).
- Loss to environment must be considered
- Wouter Vanneuville: forward (Solidarity fund) or backward (historical databases)
- Lorenzo Carrera: time scale: direct = immediate; flows = capital stock over time, so what is the time scale? Depending on the time scale, summing up may be wrong.
- Tom De Groeve: existing frameworks? Lorenzo: Capital stock and flows. Empirical function to link indirect losses from direct losses.
- Jan Eichner: long-term power outage

- Annegret Thieken: CONHAZ → direct losses, business interruption losses, indirect loss; linked to three different methods for collecting; different models
- Scira Menoni: hotel costs from the example can be part of the mitigation activities and can be excluded from the direct costs; identify time phases of disaster; different kinds of vulnerability that are cause
- Perspective is important. Different angles! Collection of "eligible" damage
- Over half of group interest in exploring this further, including several EU MS.

4.3.2 Uncertainty

- Xavier Romão: uncertainty handling. Pedigree Matrix can be helpful
- Adam Smith: at NOAA 95% confidence interval is objective; using different estimates (MunichRe, SwissRe, etc.) to derive confidence interval (5 term equation).
- Susan Cutter: how does loss model capture costs (e.g. debris removal, overtime) → is a sector
- Jan Eichner: the smaller the loss event, the larger the relative uncertainty. Analysis of aggregate: disregard small events, as they don't contain a lot of information. Fat tail distribution, so info in fat tail.
- Wouter Vanneuville: uncertainty by definitions (who counts as dead)
- Scira Menoni: (1) extensive/intensive is related to the scale of your operation, (2) costs/losses: reported losses may not be related to disaster
- Jan Eichner: 1b euro event = 1000 1m euro events

Of all database owners, only Slovenia was satisfied with the way uncertainty was handled in the database.

4.4 Final comments

- Jaroslav Mysiak, Lorenzo Carrera offered a help to improve the economic loss framework
- Jaroslav Mysiak will share WB2010 report on economic losses.
- Xavier Romão will send his draft paper on Assessment of data quality and uncertainty in disaster loss analysis.

5 Minutes of the Joint IRDR – EU Loss Data Meeting (Day 3 – AM)

5.1 Introduction

Thomas de Lannoy introduced ECHO policy of DRR with its beginnings in 2010 where loss data was identified as key issue. In 2014 the process is going towards the EU guidelines for recording disaster loss data. Open data repository and interoperability of disaster loss data will support the development of good practice on disaster prevention, integrating risk reduction into the government planning, risk assessment and analysis, learning and exchange of experience to improve governance. Recently EU Council adopted COM on the post 2015 Hyogo Framework for action. The key principles are improving accountability, transparency and governance of DRR policy to support open data policy. The measures taken are the development of different indicators to track progress over time.

5.2 Disaster Loss Databases within EU MS

Lessons learnt (Karmen Poljanšek)

MS possessing a loss database were requested to provide:

- Loss Database Survey form (sent by 8 MS).
- Definitions of hazard types recorded in their country and find a conversion into the IRDR Peril Classification (sent by 3 MS).
- Definitions of human loss indicators recorded in their countries (sent by 4 MS).
- Definitions of damage/loss Indicators recorded in their countries (sent by 2 MS).
- Summary data in prescribed formats at EU level (sent by 2 MS).

Based on given MS loss data similarities in methodology, mapping of hazard types into IRDR Peril classification, mapping of human indicators into JRC human impact framework, and mapping of loss indicators into JRC economic loss framework as well as some examples of summary statistics were presented.

Opportunity is given to newly joined MS to present their loss data recording system:

PORTUGAL

The loss database presented by Joao Verde is mandated by Ministry of internal affairs (national authority for civil protection) since 2006 and it is produced to support decision making for fire fighters. It is not designed for loss accounting and its purpose defines its biases. The input is triggered through the emergency operations, while loss data collection is not mandatory as well as losses after emergencies are not always collected even though the system allows (e.g. fields for physical damage and loss value). It does not provide data for compensation and methodology for field assessment does not exist. In Portugal there is another loss database not linked to any governmental organization which was developed by the DISASTER national research project led by Prof. José Zêzere (http://riskam.ul.pt/disaster/en/). The project developed a GIS database covering floods and landslides that occurred in Portugal from 1865 to 2010. The database registers dead, injured, missing, evacuated and displaced people.

FRANCE

Roland Nussbaum provided an overview on the ONRN (www.onrn.fr) initiative, that is an agreement passed in 2012, after Xynthia event, between institutions (i.e., the state represented by the Ministry of Ecology, Sustainable Development and Energy, Central Reinsurance Company - CCR and the direct insurers dedicated association, Mission Risques Naturels, www.mrn.asso.fr) for a -platform to organize and develop data sharing and outreach for use in decision making of all categories of stakeholders. AFPCN, as the operator of the French National platform for DRR, is in charge of the ONRN Users Committee. The platform aims at providing specific indicators or links to data on risk exposure, losses, lessons learnt by event, progress of prevention policies in place, etc.

The ONRN specific indicators are downloadable on line, at municipality or CRESTA zone grid, together with an explanation fiche on their definition, uncertainties and limitations of use, together with metadata following INSPIRE standard. Most of the loss data so far are insured losses, provided through CCR and the insurance market, but indications on human losses and economic losses are already present through major events monographies (lessons learnt reports).

GERMANY

Annegret Thieken is an academic that records losses to derive vulnerability models rather than establishing loss data for accounting. Database HOWAS21 covers flood damage only. The main purpose is for forensic analysis and modelling. The data are used to derive representative cases in order to get damage functions. The data are collected by local teams and by consulting companies via systematic interviews (guidelines for assessment and collection of damage are provided) organized with the lists of addresses of flooded assets and appointment made by telephone. Statistics of affected/not affected owners as well as willing/unwilling to participate are known. Forensic is based on hazard, land use and assets as well as vulnerability. Minimum requirements of data include information about the flood event (water level, event date…) and the flooded object (description of damage, address, exact geographic position as well as precautions taken). Data quality is assured by the NUSAP approach. There is an opportunity to link this database to a loss accounting database.

GREECE

Haris Kontoes reported on behalf of the Ministry of infrastructure, transport and networks, the Earthquake Rehabilitation Service. They have very comprehensive based on the asset level database for fires, floods, earthquakes, landslides and volcanoes. When damages on building stock and infrastructures occur, they are recorded based on exhaustive field woks. It is used a traffic light qualitative reporting scheme based on red buildings (destroyed), yellow, partially destroyed and, green (no affected). That first assessment is following almost immediately after the first shock for precise recordings and rapid damage assessment.

The database contain information relating to the type of damages, repairs, and loans for making restorations, name of municipality, name of owner, classification etc. , land use code, and type of construction. Related to the reporting of damages. It is at the building level and it is linked to the cadaster where available.

Ministry of environment, energy and climate change is mandated for the fire disaster database, while Ministry for Public Order and Citizen Protection is responsible for the fire brigade event database. The BEYOND center also records and maps the damages at national level due to fires, earthquakes, and other types of disasters.

ROMANIA

Doina Hategan presented the Romanian legal system and application for collecting and recording losses for floods and snow emergencies. Most of the terminology is defined by legislation. Other hazard types are recorded as well but are not part of this application. The mandated organization is the Ministry of Internal Affairs that mobilizes the County Inspectorate for Emergency Situation and field experts. The losses are reported at the national level. Data are used by the Ministry of Environment and Climate Change and by the Ministry for Public Administration to deal with risk management.

SWEDEN

Karoline Sjölander presented Swedish Natural Hazard Information System. Database is created in 2005 and includes events from 1950. Main purpose of the database is to learn from the past, aim is to support societal, development education, risk analysis. It follows holistic approach where the aggregation is not possible. It includes nine different types of natural hazards. There is no clear entry criteria; the main focus is if there is something to learn from the hazard no matter size. The loss data are collected at the municipality level by different agencies. The data get processed before entered in the database. It is often one or two years before information about the hazard is updated. It is very basic about forensic. Economic losses are mainly provided by insurance companies and the database doesn´t show methodology used.

6   Minutes of the Joint IRDR – EU Loss Data Meeting (Day 3 – PM)

Role of remote sensing (Daniele Ehrlich)

Physical damages generated from remote sensing data through the Copernicus Emergency Management Service (EMS) and by other services such as the International Charter on major disasters (http://www.esa.int/About_Us/ESRIN/International_Charter_on_Space_Major_Disasters) could be used as reference for the institutions recording losses. Both services provide an additional support in the aftermath of major disasters for companies that collect and estimate damage to buildings. The spatial detail allows for a precise estimation of the building stock and damage.

Satellite or aerial photography over the disaster affected area can also provide estimates on other physical assets at risk including road networks as well as agricultural lands. Estimates on those assets, based on measurements, can provide valuable information for verification of the losses, for normalization of the loss data and thus decreasing the uncertainty in the physical loss estimations.

Table of content for report

It has been agreed upon the content of the report that is to be written by JRC with joint authorship/collaboration of EU Member States and other Working Group participants with the title:

Current status and Best Practices for Disaster Loss Data recording in EU Member States

Introduction

This chapter introduces the report. Why is it written? Why is there a need for disaster loss data?

- **WHY? (ECHO/MS)**
    - Examples: Solidarity Fund? Prioritize allocation of funds for DRR. National risk assessments. Insurance market (JRC report).

State of the art in MS

Based on the input provided during the past two workshops, current practices and developments regarding loss data recording in the EU will be described with one chapter per Member State.

- **One chapter per MS**, following loss database survey
    - National drivers for loss data

      o   Public communication (risk register?)

Comparative analysis of MS

Based on the structured survey used in the workshops, practices, methodologies and databases can be compared, highlighting different strengths, different applications and different standards. It is a tool to identify common elements.

- **Context, methodology, mandate**
- Hazard identification and classification
- Loss indicators (human, economic)
- Summary statistics (aggregation)
- **MS: share data with JRC + UNISDR!!!**

Gaps and aspirations

This section is forward looking: given the state of the art in EU Members States, what are perceived weaknesses and gaps, and what are the options to address these in a realistic way. In which areas is collaboration at EU level desired, and what will the benefits be for MS?

- Legal frameworks (including existing national law and EU regulations)
  - o   parallel with more advanced areas like ENV/INSPIRE/MARS/SEVESO/FLOOD
- Implementation mechanisms (Role of PPP; PUP)
- Standardization / classification
  - o   Human/economic/perils/agricultural crops/buildings
- Assessment/collection methodologies
- Uncertainty, quality assurance
- Data policy: IPR or Open Data

Guidelines

This section should identify the first steps towards practical collaboration at EU level, making sharing of data among MS and with EU/UN possible.

- Purpose: sharing among MS and with EU/UN (drivers for doing so)
- Minimum requirements for loss indicators
- **Cost/benefit analysis for implementing/sustaining this (by MS)**

7 Way forward

The workshop participants agreed to take further this work with the following actions:

- To help expanding the current loss network (to contact Netherland and Bulgaria)
- To share data with JRC and UNISDR at municipality level in June based on the data specifications provided within a week
- To provide chapters (highlighted parts of the content) within the report: "Current status and Best Practices for Disaster Loss Data recording in EU Member States" until September
- JRC produces the 1st version of report in July and 2nd version of report in October

- The next meeting is planned in November in Brussels, possibly back-to-back with a FEMA/ECHO meeting. It can be a joint IRDR-EU loss data working group meeting again.