

# **Expert Consultation on Collection and Validation of Economic Data related to Disasters - Agenda**

**Organised by the Centre for Research on the Epidemiology of Disasters (CRED)**

**Hosted by the World Bank, Hazard Management Unit (HMU)**

**600, 19th street N.W - H Building - Conference room H5-290**

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## **DAY 1: Thursday, December 9, 2004**

**09:00 a.m. to 09.15 a.m.**

**Welcome and introduction (M. Arnold, HMU/WB - D. Guha-Sapir, CRED)**

**09:15 a.m. to 10:45. a.m.**

**(Chairman: D. Sapir, CRED)**

**Economic data on disasters: Global overview**

- Introduction and global analyse on economic data: by CRED/EM-DAT (D. Sapir, Ph. Hoyois), by MunichRe/NatCat (A. Wirtz) and SwissRe/Sigma (A. Zanetti)
- Open discussion

**Coffee break**

**11.00 a.m. to 12.30 p.m.**

**Economic data management and procedures: Contradictions, inaccuracies and problems of data coding**

- Concrete examples from EM-DAT (R. Below) and NatCat (A. Wirtz) and Sigma (A. Zanetti)
- Discussion

**Lunch**

**13.30 p.m. to 15.00 p.m.**

**Quality and methods of field data collection**

**(Chairman: M. Arnold, HMU)**

- Presentation of the ECLAC methodology (R.Zapata, ECLAC)
- Discussion on data collection methods

**Coffee break**

**15.15 p.m. to 16.30 p.m.**

**Sources of economic data: accuracy, consistency and coverage**

- Discussion on potential sources of data and quality of indicators

**DAY 2: Friday, December 10, 2004**

**09:00 a.m. to 10.30 a.m.**

**(Chairman: R.Zapata)**

**Economic data users: who are the users and what do they need?**

- Panel discussion on who needs the data and what for? (IMF, WB, ADB, IADB)

**Coffee break**

**10.45 a.m. to 12.30 p.m.**

- Continued discussion on economic data users

**Lunch**

**13.30 p.m. to 15.00 p.m.**

**(Chairman: M. Dilley)**

**Data on international assistance for disasters**

- How do donors collect and reports its data (OFDA, Relief-Web)

**Coffee break**

**15.15 p.m to 16.00 p.m.**

- Action to be taken, work plan and conclusions

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Washington D.C. – 9<sup>th</sup> and 10<sup>th</sup> December 2004

## List of Participants

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### International Development Banks

**Margaret Arnold**

Hazard Management Unit (HMU), The World Bank, Washington DC, US

**Milan Brahmbhatt**

Lead Economist, World Bank, Washington DC, USA

**Kari Keipi**

Inter-American Development Bank (IADB), Washington DC, USA

**Rodney Ramcharan**

International Monetary Fund (IMF), Washington DC, USA

**Joe Weinstock**

Asian Development Bank (ADB), Manilla, Philippines

### Academic institutions

**Regina Below**

Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain, Belgium

**Debarati Guha-Sapir**

Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain, Belgium

**Philippe Hoyois**

Centre for Research on the Epidemiology of Disasters (CRED), Université Catholique de Louvain, Belgium

**Maxx Dilley**

International Research Institute for Climate Prediction (IRI), Columbia University, New York, USA

## **Re-insurance Companies**

**Angelika Wirtz**

MünichRe/NatCat, Munich, Germany

**Aurelia Zenatti**

SwissRe/Sigma, Zürich, Switzerland

## **Bi-lateral agencies**

**Gilbert Collins**

U.S. Agency for International Development - Office of U.S. Foreign Disaster Assistance (OFDA/USAID), Washington DC, USA

**Rhonda Davis**

U.S. Agency for International Development - Office of U.S. Foreign Disaster Assistance (OFDA/USAID), Washington DC, USA

**Berverlay Youmans**

U.S. Agency for International Development (USAID), Washington DC, USA

## **United Nations and other inter-governmental agencies**

**Robert E. Smith**

United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Geneva, Switzerland

**Riccardo Zapata**

Economic Commission for Latin America and Caribbean (ECLAC), Mexico City, Mexico

**David Peppiatt**

Proventium Consortium, Geneva, Switzerland

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## Meeting Report

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### **I. Introduction**

An historical transition is underway in which disasters are now being seen not only as a humanitarian issue but also as a major consideration in the pursuit of socio-economic development. Data on economic losses constitutes a vital evidence base for documenting the relationship between disasters and development. This data has been neglected over the last decade of disaster data development and compilation and requires urgent attention. Economic loss data were introduced into EM-DAT at a late stage in its development. About 70% of EM-DAT records do not have any economic information at all.

In view of the mandate of OFDA which makes specific reference to reducing economic losses due to disasters, and the frequent requests from financial institutions for these data, improving data on economic losses and relief costs was identified as priority in the next EM-DAT/CRED work-plan. CRED aims to compile and mine data sources that have not been examined before and also establish best practical procedures for the compilation of these data.

In this context, a first consultation meeting on economic data for natural disasters has been held in December 2004. This was not a Technical Advisory Group Meeting (TAG), which is held once a year and has a more general focus. It was part of a series of consultations with small group of experts to focus on specific issues, including:

- Drought/famine data study : in collaboration with the International Research Institute for Climate Prediction (IRI) , for which the first technical meeting was held in September 2004
- Economic data expert consultation on natural disasters, hosted by the Hazard Management Unit of the World Bank in December 2004
- Technical advisory group on global EM-DAT methodology, planned for 2005

This first Consultation meeting brought together 17 persons from different organizations: the World Bank, Asian Development Bank (ADB), Reinsurance Companies (MünichRe and SwissRe), Office of Foreign Disaster Assistance (OFDA/USAID), Economic Commission for Latin America and the Caribbean (ECLAC), United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Provention Consortium Secretariat and IRI.

The discussions of these two days of meetings focuses on the two categories of economic data that CRED expects to include and improve in the "International Disaster Database" (EM-DAT):

1. Damage and losses
2. International and national disaster relief contributions

These issues were presented and analyzed by three different types of participants: the data collectors, the data suppliers and the data users.

## **II. Day 1**

The first day was dedicated to the different data collectors and suppliers in order to have an overview of the economic data available in different existing databases: EM-DAT (CRED), NatCat (MünichRe) and Sigma (SwissRe). Part of the day was also dedicated to the ECLAC methodology, one of the most important source of economic data available for Latin America and the Caribbean. This data is also increasingly available for disasters in other regions, as the methodology is propagated by ECLAC, the World Bank and the Provention Consortium.

### **A. Presentation of EM-DAT**

Philippe Hoyois of CRED presented a global analysis of economic data in EM-DAT. The presentation was followed by an overview by Regina Below (CRED) of specific problems and questions related to economic damages in EM-DAT.

The fields which reflect disaster costs and economic losses in EM-DAT include:

- Total economic damages and losses
- Disaster impact and sectors affected
- Disaster relief contributions

Several problems have been identified in relation to EM-DAT:

- Over the past 3 decades, economic losses were reported for less than 30% of all natural disasters. Since 1995, the percentage of entries with economic losses has even been declining. The percentage of "large disasters" with economic losses has remained relatively constant, while the percentage of "small" and "medium" disasters with economic losses has declined. The percentage of entries with economic losses is high for developed countries (United States, Japan) in comparison to developing countries.
- There is no systematic collection of economic data
- The evaluation of the economic damage is not systematically undertaken
- There is no standardized methodologies for the reporting of economic losses
- Losses from major disasters are generally reported, but only for direct losses. little mention is made of indirect losses and even less of secondary costs
- There is no information on the breakdown of the losses (by sector or direct vs. indirect losses) and no further indication on the content of the given figures.

Most of the problems in setting up a clear methodology are due to: (1) a lack of information, (2) variations according to the sources reporting the data, (3) and coverage of the damage figures (what kind of losses are included in disaster economic data).

The presentation concluded that there is a need to develop a clear EM-DAT methodology, add additional fields for economic losses and have better reporting of sources. But in order to provide this information to the users, a better methodology for damage assessment is also needed. A better exchange of information as well as enhanced cooperation between partners will help provide users with more complete and reliable information. Coverage of large disasters can be achieved by better capture of assessment data generated through the application of the ECLAC methodology. Improved data on losses in the smaller disasters, however, is likely to require: a) promotion of a standardized methodology that can be more routinely applied to assess economic losses at the national level in disaster prone countries, and b) cooperation with national level information providers in both the routine application of the methodology and the on-going capture of the results.

The EM-DAT economic loss data presentation was followed by the presentations by Angelika Wirtz (MünichRe) on NatCat and Aurelia Zanetti (Swiss Re) on Sigma.

## **B. Presentation of NatCat (MünichRe)**

MünichRe calculates future insured losses, as they have developed a model to calculate expected losses or loss occurrence probability based on their historical knowledge and their ability to extrapolate to the future.

MünichRe also mentioned the problem of the high variation in data reporting and the reliability of the data. The question was also underlined by J. Weinstock (ADB) who insisted on the need of knowing more about the reliability of reported data and underlined the fact that it is more useful for users to have a score of reliability on the figures used and provided to the public.

Economic data in NatCat are also provided by different sources of information: the ones used in EM-DAT (Governmental sources, disaster and humanitarian agencies, health agencies, specialized and scientific agencies, Insurance and the media) as well as insured sources - MünichRe has branches in several countries and regular contacts. They have more possibilities than CRED to get the information as they are focused on more significant and large events.

If there is information which seems reliable, they will put it in the estimation catalogue, even if it is a raw estimation and most of the time is under-estimated. However, it is better than having no data at all (this was mentioned several time by the 3 database holders).

When there is no good estimate or the information is not reliable enough, they will put it in the estimation catalogue but will not publish the data - they will just use it as an estimate for their own work.

The policy is that a figure, even if it is under-estimated, is better than nothing. However, they will never exaggerate a figure.

They only deal with meteorological and geological disasters (not technological disasters, epidemics or locust invasions. Drought are also problematic for NatCat).

The database is only accessible to public on a by-request basis.

The conclusions were that:

- good information is only reported for major disasters
- there is a lack of information on economic data resources
- lack of knowledge on the reliability of the information given by the different sources

### **C. Presentation of Sigma (Swiss Re)**

SwissRe focuses on insured property losses and have published an annual list of natural and technological disaster data in the Sigma Bulletin since 1970.

The criteria are:

- insured property losses
- total losses (economic damage)
- casualties (20 dead/missing, 50 injured, 2000 homeless)

They also underlined the question of updating the loss information.

The sources used are: electronic and printed media, insurance trade press, and information from direct insurers (confidential). SwissRe evaluates the sources and discusses the plausibility of the data.

They also avoid the extrapolation from they own economic data because there are too many gaps in the data.

### **D. ECLAC methodology**

ECLAC is one of the major source of data available for Latin and Central America and several studies has been undertaken by the World Bank using the ECLAC methodology. A handbook documenting the methodology is available on line at: <http://www.proventionconsortium.org/toolkit.htm>

ECLAC has conducted 35 economic damage assessment studies for major disasters since 1972, using a standardized, comprehensive methodology. In addition, the World Bank has also conducted 5-10 assessments using the ECLAC methodology (e.g. Turkey, Gujarat, Bam earthquake, Mozambique floods, Indonesia tsunami, etc. ...).

Data on direct damages and indirect losses for over 100 disasters in Mexico has also been compiled using a streamlined version of the ECLAC method. These data, therefore, offer a source of comprehensive estimates of economic losses assessed with a consistent methodology.

### **E. Conclusions and recommendations**

The problems in data entry management are the same in the three databases: lack of information, gaps, and no single, consistent methodology.



In conclusion, and as its first priority, CRED should revise its dataset on economic data consolidate its methodology on economic data entry

CRED will revise at least the economic data of the years 2000 to 2004 following a strict methodology (with additional fields), and then propose to flag some records from EM-DAT to ECLAC documents reports. It means, revising some variables/fields related to economic losses, make minor changes or modifications and revise the database structure and links to documents for more detailed information.

### **III. Day 2**

The second issue was focused on disaster assistance contributions (Financial Tracking System of OCHA/Relief-Web) and on the different views, needs and advices of the users (IMF, ADB and the World Bank).

#### **A. Presentation of FTS/Aid contribution**

Relief costs are important figures for quantifying the financial implications of disasters. The cost of relief in disaster response was presented by two experts: OFDA and OCHA/Relief-Web FTS.

The Financial Tracking System of OCHA is a real-time database which provides different information tables on aid contributions (estimated funding needs, funding made available, where and how much). The FTS data are used in EM-DAT to fill the "Aid contribution" field but is only present for 10% of all natural disasters included in EM-DAT from 1993 onward and only for major disasters which occurred in developing countries or countries in transition. FTS also includes country contributions to relief within their own borders (all private funding is not included).

A crucial question for CRED concerns the effort necessity to put new information of this nature in EM-DAT (how many fields can be useful, to which extent does CRED want to add this information in the EM-DAT database, is there any added value which will justify this effort?)

#### **B. Discussion on the users' needs**

The Asian Development Bank re-iterated the question of reliability, justified by the fact that most users do not have the technical personnel and/or expertise to re-check data or make reliability analyses. However, there is a need for reliable data to perform plausible country risk profiles and country risk assessments. So, most of the time, they simply rely on CRED/EM-DAT data. In this context, they would like that EM-DAT put some reliability index on the data provided to the users so they know exactly what's behind them. In this context, the discussion turned over to the possibility of giving access to users to the different figures given by the sources used in EM-DAT (presently, users only have access to the final, validated figures).

Given the constraints in time and personnel available for EM-DAT, the only suggestion made by CRED was to give access for specific users to a more detailed database which would provide information/figures given by the different sources, along with a source priority classification. The users will then be able to make their own judgments.

The World Bank proposed that CRED be also involved in country risk assessment work: the components of which would not only be on historical data but also looking into potential losses in the future. For example, IRI and the World Bank have used this data to calculate vulnerability coefficients for estimating global risks of economic losses associated with major natural hazards.

The conclusions of the discussions were that there are missing values and inconsistent methodologies.

### **C. Overall conclusions and recommendations**

The following topics were highlighted by CRED as needing more work in the upcoming year:

1. Different sources of economic data were discussed: the ECLAC studies and archives, the World Bank studies, Mexico data (CENAPRED), Factiva, Celade, Redatam. CRED will produce an overview paper on the status and usefulness of the different available sources of information on economic data in order to fill the existing gaps.
2. Reliability score of the sources: CRED will make its sources of information available, on request, to the public and conceive a system which will give a reliability score in a more systematic way.
3. Training in EM-DAT use: CRED plans to give training session on EM-DAT use. In the first phase, these would be given to OFDA and the World Bank. A later and more advanced training session could also be foreseen for other organizations (ADB).
4. CRED will produce a technical paper on the methods of quantifying economic data for disasters.
5. CRED will create new fields in EM-DAT and set up a clear methodology for entering economic data (e.g. breakdown information of economic losses, reconstruction figures)
6. CRED will link its data with some detailed studies on these same issue (adding URL address)
7. The group also proposed to have a group of experts develop accounting principles for recording and disseminating information on the economic costs of disasters (See IMF website). These could be used for EM-DAT, but also to develop standards for country-level work.
8. There is a need to link information on populations and GDP at the Admin1 levels and investigate how best to standardize admin1 or other location geo-referencing tools for EM-DAT events
9. FTS will automatically make available for CRED, reports and breakdowns by country of information on the funds made available for disaster relief.
10. CRED also intends to produce a short study on economic data based on the enhancements and review of the EM-DAT economic data (2000-2004 as a first step.)