The World Bank

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

Report of the

Second Technical Advisory Group (TAG) meeting

Centre for Research on the Epidemiology of Disasters (CRED)

Hosted by the World Bank – Disaster Management Facility

Washington, February 5-9, 2001

CRED

UCL

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ProVention Consortium Disaster Database Working Group Meeting February 5, 2001

Introduction

Alcira Kreimer, World Bank Disaster Management Facility Manager, welcomed participants noting that the membership of this group -- the Center for Research on the Epidemiology of Disasters (CRED), Swiss Re, Munich Re and the World Bank -- represented the most comprehensive sources of disaster data available. The group had an important opportunity to combine their resources and help advance the understanding of all involved in the field of disaster risk management.

Jean Michel Attlan, International Finance Corporation, explained how this, the first working group established by the ProVention Consortium, had been selected. Attlan had considered this group a priority because in his opinion the World Bank had not taken full advantage of the enormous experience that existed in the private sector. Leading reinsurers such as Swiss Re and Munich Re had long been involved with disaster risk management and their participation and encouragement of representatives from Bermuda and Lloyd's of London had further strengthened the group.

The idea of sharing the vast amount of data developed by these organizations with each other and with other leaders such as CRED to explore complementarities was an attractive one, but one that entailed a significant amount of complexity. Maxx Dilley, Disaster Management Facility Geographer, agreed to oversee the efforts to coordinate an exploratory exchange of data within the group as a first step in exploring the potential strengthening the database freely available to decision-makers in developing countries and for research into the economic impacts of disasters.

Dilley had invited the group to extract data on four "test" countries Honduras, India, Mozambique and Vietnam as a means of identifying the notable differences in data selection criteria and the extent to which any inconsistencies between the databases for these countries could be resolved.

Thomas Loster of Munich RE -- An overview of NAT CAT.

Loster explained that Munich Re's philosophy on sharing data was simple: The company was prepared to share the database but would not agree to release publicly the raw data which Munich Re considered to be a proprietary asset with commercial value. The company was prepared to release the results developed from raw data or to release elements of the data (as it had agreed to for this meeting).

History & key features of NAT CAT

- Munich Re established the database research team in 1974
- The Research Team comprises 20 staff. The original three data analysts that started the database? continue to work on the project and ensure continuity and consistency of disaster entries.
- Munich Re catalogues particularly severe events as "Great" Disasters -- defined by the UN definition.
- Converted the records collected to an electronic database in 1986.
- The record now comprises 15,000 electronic entries
- The first record in the database is the eruption of Vesuvius in 1779.
- A paper archive is still retained and documents disasters from 1900 onwards although this is no longer commonly consulted.
- The current database catalogues each and every disaster event in every country
- Trend analysis has been performed on the data for disasters since 1950 (this date being chosen to avoid contamination from the events of the World War and because this date represented the start of the "modern" Reinsurance industry.

NAT CAT was developed to help distil the flood of information generated in the event of a disaster into the essential elements.

NAT CAT Data Monitoring and Sources

- ⇨ Data is collected for the database by a group of students working full time. Once entered into the database, the entry is finalized by a small group (3) of Data Analysts -- the only staff permitted to edit and organize the data.
- ⇨ With the advent of the internet the availability of sources has multiplied but NAT CAT has found many of these to be unreliable. As a result the database receives information from a number of public sources including: Media Reports, Munich Re's worldwide network of scientists, technical literature, Munich Re branch offices, liaison offices and clients worldwide, over 20 different scientific journals, NGOs, weather services, industry sources such as Lloyd's List, AP
- ⇨ Lloyd's List, Reuters and the Insurance Press are considered amongst the more reliable sources.
- ⇨ A new version of NAT CAT now undergoing testing will include a "reliability rating" for the sources used.

Data Input

- ⇨ Essential data (what kind of event, where, when etc.,) is combined with a brief narrative of the event complete citing the sources used (often as many as 9). The longer the narrative the more severe the event.
- ⇨ The focus of the database is the extent of insured losses, total losses, industries affected and property damage -- i.e. developed for commercial purposes. As a result humanitarian information, whilst collected, is not the focus of the database.
- ⇨ Severe events that affect a number of countries are logged as separate entries.

NAT CAT Loss Estimation Methods

- ⇨ Where significant events do not yield sufficient data, entries are made in ESTCAT (Estimation Catalogue). This part of the database provides Munich Re with an **internal** (not made available outside the organization) assessment of the event. These events when aggregated provide theorganization to predict likely future losses.
- ⇨ All losses rely on an official estimation of losses - verified by other reliable sources. Since of the 700-800 events added to the database annually only 150 have an official record the loss estimation (which is for Insured Losses -- not Economic losses) is often little more than an informed guess.
- ⇨ Events are revised if information becomes available subsequently.
- ⇨ Although an internal guide, ESTCAT has been successful in preparing Munich Re against future severe events. An example is Lothar a severe storm system that affected Europe in 1999. A previous storm entered in the database in 1990 helped Munich Re make provision against this event.

Analyses possible with NAT CAT

- ⇨ Maps can be overlaid with disaster data
- ⇨ Event Listings
- ⇨ Statistical Analyses
- ⇨ 15 Munich Re scientists can respond to individual client inquiries relating to event dimensions and frequency and can also provide loss estimates.

Marketing the NAT CAT database

- ⇨ Munich Re is giving some consideration to offering their data products by subscription as part of a wider e -strategy.

Debarati Guha-Sapir, CRED Director, noted the contrast between commercially driven databases that focused on developed insurance markets and CRED's primary focus on developing countries and raised the issue of the degree of shared interest beyond those surrounding database development.
Jean Michel Attlan addressed this issue by noting that despite this apparent contrast, the reinsurers looked to the developing world for future markets. The quicker the international community could start working with these companies, the sooner it could take advantage of the significant experience they had to offer. Attlan believed that despite appearances there was more convergence between public and private agencies than there was divergence.
Peter Hausmann, Swiss Re -- An overview of the Sigma database
Hausmann confirmed that Swiss Re approached their database in a similar fashion to Munich Re, their close competitor. Swiss Re devoted somewhat less resources to their database than Munich Re but used these slightly differently by focusing on a number of annual publications. The publications provide international insurance markets with analyses of market trends and forecasts and summaries of prevailing premium/loss volumes.

The most recognized of these publications was the annual Sigma Report of global disaster losses produced in 7 languages and distributed to over 16,000 subscribers worldwide. The increased prevalence of "securitized" insurance contracts that rely on parametric triggers, Swiss Re was increasingly aware that their data could be used for these triggers and for whose ultimate reliability they could be held legally responsible.

Key Features of Sigma

- Now includes 7,000 events with 300 new events added each year.
- Categories include: Earthquake, Flood, Storms, Drought, Frost and Other
- Losses recorded comprise all insured losses excluding 3rd party liability
- Attainment of any one of the following criteria are sufficient for an event's inclusion in the database: **(i)**More than 20 fatalities **(ii)** More than 2000 homeless **(iii)** Insured losses exceed more than $14m in respect of Marine and $28m in respect of Aviation or $35m in respect of all other losses **(iv)** Total losses in excess of $70m
- An event in Sigma that affects a number of nations, e.g. Hurricane Mitch, is recorded only once -- contrasting with both CRED and Munich Re that make an entry for each nation affected.

Sigma Data Sources

- ⇨ Daily Newspapers
- ⇨ Lloyd's List
- ⇨ Primary Insurance/Reinsurance Periodicals
- ⇨ Internally generated client loss records

Whilst every effort is made to ensure consistency and reliability of data, Sigma does not claim to be fully comprehensive. In a brief and limited data comparison between Swiss Re and CRED, approximately 40% of entries were found to be identical to CRED's reports.

Regina Below, CRED -- Overview of EMDAT database

History and key features of EMDAT

- CRED established in 1989 with support from the USAID Office of US Foreign Disaster Assistance (USAID/OFDA), the World Health Organization (WHO) and the Belgian Government.
- In 1998, USAID/OFDA requested that CRED maintain and develop a database of disaster information and validate its contents. The database was to be made publicly available on the internet.
- The database now contains core data on the occurrence and effects of 12,000 events (including conflicts and technological disasters).
- Between 600-800 new events are added to the database annually.
- The figure for fatalitie s is derived from the sum of the number of dead plus the number of missing -- a definition that differs from both Munich Re and Swiss Re's databases.

The threshold criteria for an event's entry in the database include:

- ⇨ 10 or more deaths and/or
- ⇨ 100 or more people affected and/or
- ⇨ Formal declaration of a state of emergency

EMDAT Data Entry Fields
In addition to the basic data of date and location etc., disasters are categorized in three types: Natural, technological or conflict and then in further subdivisions.

EMDAT Data Sources
As CRED was established to serve the international community, it uses many of the available official sources. Having established clear criteria and categories for entry, CRED is pleased to note that many UN and Red Cross sources are providing data that conforms to the fields and categories established by CRED. Damage is estimated in Euros, local currency and US$.

The sources identified by CRED as "priority" -- judged on their consistency and reliability include in order of preference:

- ⇨ UN Agencies: the Office for Coordination of Humanitarian Affairs (OCHA), the World Food Program (WFP) and WHO
- ⇨ US Government Agencies: USAID/OFDA, the US National Oceanic and Atmospheric Administration and the US Federal Emergency Management Agency
- ⇨ Official Government sources in the affected nation
- ⇨ The International Federation of Red Cross and Red Crescent societies
- ⇨ Research Centers
- ⇨ Lloyd's of London
- ⇨ Reinsurance sources

Sources are continually being assessed with a view to achieving improved reliability. Normally a single primary source will be used to develop an entry. This will be verified with as many as 10 other confirming data sources. Where official estimates of dead or homeless are unavailable, informed proxies are used to develop estimates.

Below noted that CRED used different sources for different types of information and for different regions. Below also noted that in CRED's view, UN sources tended to be more reliable than press

sources particularly since CRED shared with the United Nations, the focus on the humanitarian effects of disasters in developing nations.
The database contains records dating back to 1900 and until 1984, CRED rated the UN, the US Government and Official Government reports from the affected nations as the three most reliable sources. In the period 1985-1999, the third most reliable source -- Official Government reports – had been replaced by reinsurance industry particularly where this provides detailed knowledge of events in the industrialized world that are otherwise not systematically captured by CRED.

CRED had found that since much disaster information originates from a single source, only to be interpreted and augmented by other sources, the quality of the *main* source used was the key issue and not the number of confirming sources that were used.

The discussion provoked a question from Johnathan Agwe, Disaster Management Facility, as to whether the increase in disasters was a result of better reporting or due to an underlying increase in their frequency. Respondents from all three organizations agreed that improved reporting had increased awareness of global disasters and that in addition, increased populations in vulnerable locations also meant that disasters had greater effects -- that were in turn more widely reported.

Cross-Database Comparison
Using the time available, the working group proposed to compare data on a given country and see to what extent their information was complimentary. Using a spreadsheet format, data from the three databases was compared for the country of Honduras (table 1).

The 10 natural disaster events that affected the most people and had the highest economic damages were selected from each database. Any event occurring ion the top 10 in any of the databases was included from all of them, resulting in a total of 14 natural disaster events from 1985-1999 (a period for which all three databases contained entries).

Out of 14 events in table 1, there were only five cases in which all three databases contained an entry. Nearly half of the events that were in the top 10 in one database were not recorded in either of the other two.

Economic damage and loss data is available for only half of the events that fell into the top 10 most destructive in any of the databases. When hurricane Mitch, the 13th entry in table 1, is not considered, the economic loss data are comparable. Estimates for that event, however, range from $2 to $4 billion for just Honduras (Sigma's entry of $5 billion includes El Salvador, Costa Rica, Nicaragua, Guatemala and Panama).

Without Mitch the total number of people killed in the other 13 events ranges from 492 to 760. The latter figure, from Sigma, is inflated by the inclusion of other affected countries. When Mitch is included the pattern reverses; the death toll for Honduras recorded in EMDAT and NatCat is significantly higher that what Sigma reports for Honduras and the five other counties.

With or without Mitch, the total number of people affected by all 14 disasters varies significantly among the three databases. Sigma's lower figure is due in large part to the fact that Sigma does not have a general category for "affected", which significantly increases the total affected (killed, missing, injured, homeless and affected) reported in EMDAT and NatCat.

There are a number of sources of discrepancies among the entries. In addition to differences caused by reporting the impacts of each event by country (EMDAT and NatCat) versus reporting the impacts of each event on all affected countries (Sigma), other differences include data sources, the

thresholds for inclusion of entries (number killed or affected for example), definition of terms, as well as differences in techniques and sources for the estimation of economic damages and losses. Theinclusion and interpretation of the "affected" category in particular influences the total numbers of victims recorded.

Conclusions and Next Steps

It was concluded that analysis of the other pilot countries (India, Mozambique and Vietnam) should continue to obtain a larger sample from which to draw conclusions about the similarities and differences between the existing data holdings. In addition to completing similar analysis as was conducted for Honduras, summaries will be prepared of all the records for each country including the total number of events; numbers killed, missing, injured, homeless and affected; and economic losses by hazard category. In addition to a detailed event-by-event comparison of the major disasters, this will provide an overall summary of the entire contents for those countries from each database.

The results of the analysis will be circulated among the participants for further comment and eventual joint publication, either by the ProVention Consortium or in a peer reviewed journal. It is clear even from this preliminary analysis that greater attention needs to be given to improving consistency in the analysis of economic impacts of natural disasters so that such data can be systematically entered in the historical disaster data record. The ProVention Consortium and Disaster Management Facility are seeking to improve methods and practices for damage and needs assessments so that such data will be more standardized and increasingly available.
Based on the cross-database analysis results, the working group will reconvene to determine next steps.

Second Technical Advisory Group (TAG) meeting February 6-8, 2001

Introduction

In recent years, natural and man-made disasters have been affecting increasing numbers of people around the world. As a consequence, efforts to establish better preparedness for and prevention of disasters are a priority for the international aid community. At a very fundamental level, knowledge of the vulnerability to different types of disasters - particularly of developing countries - is critical to the most effective relief and preparedness planning. For this reason, demand for data from planners, policymakers and field agencies is growing.

The usefulness of a disaster events database as a tool in this strategic planning has become increasingly evident to many government and international agencies engaged in disaster relief as well as in mitigation and prevention programmes.

In response to the need for better data on disaster occurrence, a number of databases have been established around the world with different criteria, formats and purpose. These databases, while individually useful, have been generally limited in scope. Inconsistencies, data gaps and ambiguities in terminology make comparisons and use of the different data sets difficult, resulting in considerable confusion.

Establishing a central database on all global disaster events is an effort that requires the data items to be included in the register. To be workable their definitions must be kept simple and concrete to allow easy collection by field assessment teams. Standard procedures for collecting and reporting of these data must also be worked out among all participants. To keep this task manageable, the scope of this central database must be limited only to essential data; agency specific information may be maintained as supplement to this core database.

History and progress of EM-DAT

It is within the context of serving humanitarian action purposes at national and international levels that WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED) has been maintaining the Emergency Events Database - EM-DAT since 1988. EM-DAT was created with the initial support of WHO and the Belgian government.

Its purpose is to inform rationalised decision making as well as to provide an objective basis for vulnerability assessment and priority setting. For example, it helps a user decide whether floods in a given country are more significant in terms of their impact than earthquakes.

EMDAT contains essential core data on the occurrence and effects of more than 12,500 mass disasters in the world from 1900 to the present. It is compiled from various sources, including UN agencies, NGOs, insurance companies, research institutes and media agencies.

WHY THE OFDA/CRED INITIATIVE?

In January 1999, the OFDA/CRED initiative, a collaboration between USAID - Office of US Foreign Disaster Assistance (OFDA) and CRED, was launched to respond to the evident need for reliable and precise disaster data.

The overall goal of this project was to enhance EM-DAT by working together with OFDA to create a more complete, enlarged database (EM-DAT: the "OFDA/CRED International Disaster Database") widely available to the U.S. and world-wide users. Furthermore, the project was aimed at increasing the dissemination of information by establishing it on the Internet; thus providing a source of information to a large public, that accurately tracks the occurrence of natural and man-made disasters world-wide and their impact in the lives, property, infrastructure and economies of the affected people and countries.

The specific objectives of the project were:

- ⇨ *To collect and validate data from OFDA and other sources on natural and man-made disasters from national and international sources and to update the database continuously;*
- ⇨ *To provide Internet access to OFDA as well as the general public, both within and outside of the relief community, thus satisfying the need for a reliable source of information for natural and man-made disasters;*
- ⇨ *To enhance the existing EM-DAT database through combining CRED's data collection, verification and maintenance expertise with an improved database technology. The data contained in the database will be consistently and actively pursued and all entries be revised to reflect updated information.*

To reach these objectives by taking into account users and international needs and interests, the first TAG meeting was held in July 1999 at WHO/Geneva. Since then, real progresses have been made in EM-DAT.

- Data are currently under the process of being validated and enhanced: this process consists in extracting useful information from the "comments" fields and looking at more specific information in the paper sources. Information is included in specific fields.
- In addition of containing natural and technological disaster data, EM-DAT also includes conflict data recorded until 1996. CRED has recently collected 1997 to 1999 missing conflict data.
- Through the OFDA/CRED agreement, it was also decided to place the database on a dedicated website to provide all users a reliable source of disaster related data for all the countries. The website address is the following: http://www.cred.be/emdat
- All disaster data and ongoing year data are on line.
- Conflict data from 1991 to 2000 are also available on line.

- 230 natural disaster country and region profiles, which offers a TOP ten disaster table, a chronological table and raw data that users can easily download, are available.
- *Summary tables*: a series of static figures are provided to users, to give them a global overview on natural as well as on technological disasters. Users will also find tables prepared for the World Disaster Report 1999 and 2000; since the first WDR in 1993, CRED has been involved each year in this Red Cross Federation publication.
- *Map centre*: 30 static maps on number of events, and their human impacts are on line.

Second Technical Advisory Group meeting (February 6 – 8, 2001)

Having achieved all these tasks, CRED wanted to update its objectives. In order to present what was accomplished and to pursue the effort, a second Technical Advisor Group meeting was held in February 2001 to response to the need of technical advice on specific areas. This meeting was hosted by the Disaster Management Facility (DMF) department of the World Bank, Washington. The two main issues discussed were applications of Geographic Information System (GIS) for disaster management planning and economic data collection to improve vulnerability estimates.

Main goals of this second TAG meeting were focused on a need of technical advice for:
- *Improving economic data*
- *Georeferencing database*

IMPROVING ECONOMIC DATA

The economic impact of a disaster usually consists of direct damage (e.g. to infrastructure, crops, housing) and indirect damage (e.g. loss of revenues, unemployment, market destabilisation). EM-DAT's estimates relate only to direct damage. In addition, estimating the monetary value of disasters is, at present, far from precise. Inflation and currency fluctuation are not taken into account when calculating disaster-related damages entered in EM-DAT.

The database contain economic data extracted from various sources. However, multi-standard reporting makes estimations difficult, as does the lack of standardisation of estimate components: for example, one estimation may include only damage to livestock, crops and infrastructure, while another may also include the cost of human lives lost. It is not always clear whether estimations are based on the cost of replacement or on the original value. Insurance figures, while using standard methodology, include only those assets that have been insured, which in most developing countries represent a minor proportion of the losses. A standard methodology for the estimation of the economic damages is urgently required to justify prevention and preparedness programmes.

AN OVERVIEW OF CRED ECONOMIC DATA

An overview of CRED economic data experiment has been presented in order to identify the problem and improve the quality of those data. Only 25% of all natural disaster events in EM-DAT report economic damage data.

A comparison with Swiss Reinsurance and Munich Reinsurance companies' disaster data demonstrates that there is a great difference between data coverage on economic damage and on insured damage, when considering the geographical distribution. Data from developed countries are more complete than developing country sources.

In addition, data can be skewed because of the rationale behind data gathering. Reinsurance companies, for instance, systematically gather data on disaster occurrence in order to assess insurance

risk, but they only do this for areas of the world where disaster insurance is a regular occurrence, thus missing out whole regions where disasters affect some of the poorest countries and poorest people to whom disaster insurance is an impossibility.

CRED would like to consider a new field on the financial contribution received by a country, and would like to use Reliefweb as the main source. A clarification is needed on the exact meaning of the information available, if they are commitments or disbursements.

DISASTER DAMAGES AND NEEDS ASSESSMENT METHODS

The presentation shows ECLAC methodology and a case study of its application for the evaluation of damage caused by Hurricane Keith in Belize (September 2000)

ECLAC Methodology focuses on the population affected. It is used to assist in drawing up proposals for reconstruction priorities and needs, one of which should be the explicit incorporation of measures to reduce the country's high vulnerability to such disasters and increase the country's sustainability for development. The assessment of the disaster sets both the overall magnitude of direct and indirect damages and their effects on the behaviour of the economy as a whole (secondary effects).

Direct damages *are defined as all damage to fixed assets (including property) which occur simultaneously or as a direct consequence of a natural phenomenon causing a disaster.* Indirect damages *are linked to the effect on flows of foods that will not be produces and services that will not be provided after a disaster.* Secondary effects *refer to the impact on the overall economic performance of the economy as measured through the most significant macro-economic variables (such as GDP, balance of trade and balance of payments).*

The analysis of the damages is carried on in the following sectors:
1- social sectors (housing, education, health)
2- productive sectors (agriculture, livestock and fisheries, tourism, industry and commerce)
3- infrastructure (transport, telecommunications, energy, water and sanitation)
4- effects on the environment

The case study on Belize reported 280 million US$ of total damage, and 59% refers to the economic sectors, mostly tourism and agriculture. ECLAC suggest that priority for reconstruction should be given to housing, infrastructures and tourism.

RECOMMENDATIONS

- ⇨ *CRED should make a task force group to define the components of the economic data section and compile the economic data for creation of a reliable set of economic data. This task force could make an agreement on the methodology that we can use in collecting economic data. Such a task force could help us to promote a methodology for collecting economic data. To facilitate the work, it will be useful to treat first the most intense events and then work on less intensity events, because of the importance of the flows of disasters.*
- ⇨ *CRED should use as a basis to enter its economic disaster data the ECLAC assessing damage standard methodology. Such a methodology should be used as a reference by all international organisations, all UN agencies order to evaluate locally the damage assessment following a disaster.*
- ⇨ *The significance of losses is different from a country to another, we need a correction factor as the dollar value is not representative.*

GEOREFERENCING DATABASE

The georeferencing process, which consists in assigning a geographic location (e.g. latitude and longitude) to a geographic feature on the basis of its location, is an important tool for emergency response. Locate past disasters would strongly help policy decision makers.
Prevention and preparedness programs would take into account previous catastrophic events, their consequences, and also include what has already been done to prevent the recurrence of such disasters. The georeferencing project of EM-DAT data is based on this perspective.

GEO-REFERENCING EM-DAT DATA

The collaboration between CRED and FAO was proposed in April 1999. The objective was to investigate factors contributing to food insecurity in low-income food deficit countries and to study vulnerability of disaster prone areas using sub-national data. The methodology was developed in June 1999 and presented to the first TAG meeting in July 1999.

In January 2000, the two organisations agreed that FAO would geo-reference EM-DAT data to produce disaster maps at the first administrative level of each country. As the first step of this collaboration, CRED provided FAO enhanced data from 1975 to 2000, for South, Southeast and East Asian countries. The second step of this collaboration is the modification of EM-DAT database structure to allow CRED georeferencing themselves the data.
Constraints:

- Generic/ambiguous geographical names/locations at country level
- Casualties cannot not be redistributed across affected regional
- Georeferencing at 2nd administrative level is not possible
- Administrative boundaries changes

Next steps:

- Development of a sub-national level geo-code entry function
- Function to search the location names and digital maps of disaster affected regions in the Internet
- Data distribution through CRED and via FIVIMS web-sites
- Contribution to "FAO Asia Pacific Conference on early Warning, Preparedness, Prevention and Management of Disasters in Food and Agriculture", Bangkok, June-July 2001
- CRED 20st Century Disaster Report

DISASTER DAMAGES AND NEEDS ASSESSMENT GEO-REFERENCING

Behind maps, information to make maps is required. Georeferencing can play a role in the assessing process. Geographic information provides elements for reconstruction planning.

Case study on Kosovo: this is an economic analysis, but we need to include geographic parameters. You create an inventory on the areas, which need to be assessed. The assessment process can be lead by a small, as well as by a big team. The geographic focus was orientated towards data collection in order to lead people to the construction of a database. The survey in Kosovo, was a multisectorial survey. The georeferencing was notably established by municipalities. Forms were filled in with information and each form was georeferenced. This amount of data can be use for cartography.

This is how to organise data into a structure which is sectorial and use geographic data as well to produce numbers, and arrive at maps and make several agencies to work together. The goal is to promote this methodology, in order to result in a stronger database.

RECOMMENDATIONS

- ⇨ *Look for other sources to improve the work of location enhancement and produce more outputs based on the FAO /CRED initiative.*
- ⇨ *Reporting should be done at ADM2 level, because it is the level of significant activities. For the moment, CRED and OFDA are focused on activities at the national level to locate responsibilities, and it is very different from the goals of other organisations, such as LA RED.*

Annex 1 – Agenda

Monday, February 5
(2121 Pennsylvania Avenue, NW, Room F4P-190)

09:00 Welcome -- Alcira Kreimer, Manager, Disaster Management Facility

09:15 Project antecedants -- Jean Michel Attlan, Disaster Management Facility

09:30 Refinement/elaboration of scope and objectives and review of agenda -- Maxx Dilley

10:00 Database overview presentation and discussion: *NatCat* -- Munich Re

10:45 Coffee break

11:00 Database overview presentation and discussion: *Sigma* -- Swiss Re

11:45 Database overview presentation and discussion: *EMDAT* – CRED – Regina Below

12:30 Lunch

13:30 Case study country comparisons and discussion -- Swiss Re, Munich Re, CRED

14:00 Results and discussion of field-content comparison -- Maxx Dilley

14:45 Coffee break

15:00 Economic issues related to existing and new fields -- Barbara Bacigalupi

15:30 Information sharing protocols and procedures -- Debarati Guha-Sapir

16:15 Recommendations and next steps

17:00 Preparation for Tuesday session -- TBD

17:30 Adjourn

Tuesday, February 6 -- Economic aspects
(2121 Pennsylvania Avenue, NW, Room F5K-182)

09:00 Welcome -- Alcira Kreimer, Manager, Disaster Management Facility

09:15 *EMDAT* project overview and progress report -- CRED

10:30 Coffee break

10:45 CRED economic data experiment -- Barbara Bacigalupi

11:30 ProVention Disaster Databases Working Group report -- TBD

12:30 Lunch

13:30 World Institute for Disaster Risk Management -- Fred Krimgold

14:00 ECLAC methodology and discussion -- Ricardo Zapata

15:00 Coffee break

15:15 Consolidated appeals process and tracking -- OCHA

16:00 UNDP's role in disaster assessments and reporting

17:00 Recap

17:30 Adjourn

Wednesday, February 7 -- Geographic aspects
2121 Pennsylvania Avenue, NW, Room F5K-182

09:00 Overview of *EMDAT* geo-referencing status -- Caroline Michellier

10:00 *DesInventar* geo-referencing approach -- Cristina Rosales, La Red

10:45 Coffee Break

11:00 Geo-referencing in *Sigma* -- Peter Hausmann, Swiss Re

11:45 Geo-referencing in *NatCat* -- Angelika Wirtz, Munich Re

12:30 Lunch

13:30 FAO's contribution to *EMDAT* geo-referencing -- Naoki Minamiguchi

14:15 SHARE applications for disaster damage and needs assessments -- Maxx Dilley

15:00 Coffee break

15:15 Remote sensing applications for damage and needs assessment -- Ricardo Zapata

16:00 Discussion

17:00 Recommendations and next steps

17:30 Adjourn

Thursday, February 8 -- Geographic Information Applications in Disaster and Risk Management (open morning session)
2121 Pennsylvania Avenue, NW, Room L-103

08:45 Welcome -- Alcira Kreimer, World Bank

09:00 Uwe Deichmann, World Bank (invited)

09:20 World of Natural Hazards -- Munich Re NatCat service

09:40 Humanitarian planning maps -- William Wood, U.S. Department of State (invited)

10:00 Structured Humanitarian Assistance Reporting (SHARE)-- Pablo Recalde, UNOCHA and Dennis King, UNICEF

10:20 SHARE examples from Kosovo, Mozambique and elsewhere -- Rhonda Davis, UNOCHA

10:40 Identification Disaster Risk Hotspots -- Maxx Dilley, World Bank

11:00 Remote sensing applications for refugee management -- Jean Yves Bouchardy/Einar Bjorgo, UNHCR

11:20 Vulnerability Assessment and Mapping -- WFP

11:40 Agricultural assessment -- FAO

12:00 Kosovo pilot project -- JRC/Space Applications Insitute

12:30 Adjourn

Geographic Information Support Team World Bank, Washington, DC
Thursday, February 8 (afternoon session)
2121 Pennsylvania Avenue, NW, Room F4P-190

13:30 Agenda review and administration, welcome to new members

14:00 Strengthening relationships with specialized resources (IOM, UNDCP, Cartographic Unit, mine action)

15:30 Coffee break

15:45 OFDA new structure -- Nate Smith

16:00 SHARE document discussion
Presentation of Dennis King document
Framework proposal - discussion of scope of work consultant
Guidelines development work and allocation of responsibilities

17:30 Adjourn

Annex 2 – List of participants

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