C R E D

UNDP/CRED Workshop on Improving Compilation of Reliable Data on Disaster Occurrence and Impact

Expert Consultation on Standards and Norms for Assessing Human and Physical Losses in Mass Emergencies

Final Report

Co-organized by EU-Relex, UNDP and CRED

Centre for Research on the
Epidemiology of Disasters
Université catholique de Louvain
School of Public Health
30 Clos Chapelle aux Champs
1200 Brussels - Belgium

cred@esp.ucl.ac.be

For paper copies,contact Regina Below
(below@esp.ucl.ac.be)

19-20 March 2007
Brussels - Belgium

"I want a common (standardized) methodology, experts that are trained and funding to act quickly." Christian Berger, European Commission,
in opening remarks March 19, 2007

"At the end of this workshop, we hope to have a report, a partnership and the next steps." Maxx Dilley UNDP Advisor for Disaster Risk Management
in opening remarks March 19, 2007

"The next step is to try some of the methods."
Ricardo Zapata-Marti Economic Commission for Latin America
and the Caribbean in closing remarks March 20, 2007

I. Introduction of Workshop

An Expert Consultation on Standards and Norms for Assessing Human and Physical Losses in Mass Emergencies was held on March 19 and 20, 2007 in Brussels. The UNDP Global Risk Identification Program, International Recovery Platform, European Commission's Directorate General for External Relations (RELEX) and Centre for Research on the Epidemiology of Disasters (CRED-Catholic University of Louvain) were the motivating entities of this workshop. The consultation focused on the assessment of physical damages to people, infrastructure and property, during disasters. Disasters, by definition, involve widespread physical damages and/or loss of life. Establishing the extent of the damage, morbidity and mortality is fundamental for relief, recovery and reconstruction planning. Yet in the wake of major disasters, multiple assessments undertaken by multiple actors often fail to yield a comprehensive, accurate, reliable and timely consolidated assessment of physical damages and mortality upon which relief, recovery and reconstruction needs assessments can be based.

II. Background

Earlier, on January 22, 2007 the European Commission's RELEX and the Joint Research Center (JRC) held a workshop on harmonizing damage assessment methodologies. The workshop included major stakeholders involved in post-disaster and post-conflict assessments, including UN agencies and the World Bank. Major points of discussion included that post crisis assessments could be improved, specifically to more comprehensively and accurately capture deaths and physical damages, and that a more coordinated physical damage assessment would reduce duplication and omissions. Currently the Economic Commission for Latin America and the Caribbean (ECLAC) methodology is the reference methodology for post-disaster damage assessments, taking into account enhancements of that methodology currently being incorporated into the Post Disaster Recovery Needs Assessment (PDNA) tool and process under development as an activity of the International Recovery Platform (IRP).The ECLAC methodology provides a means of calculating the economic value of losses. The PDNA has two components: a damage data management tool and a recovery needs assessment methodology. The latter consists of an inventory and synthesis of existing needs methodologies that is scheduled for release in July, 2007.

III. Participants

On March 19-20, 2007, a follow-up workshop was held. The name of the workshop was the "Expert Consultation on Standards and Norms for Assessing Human and Physical Losses in Mass Emergencies." The workshop participants included major stakeholders involved in post-disaster and post-conflict assessments, including UN agencies and experts with a vast amount of experience in a diversity of sectors including major authors of the ECLAC methodology. Many of these individuals gave presentations at this workshop. One of the significant observations made by an observer was the diversity of backgrounds of the participants and the amount of agreement in the concepts of required changes. A participant list and workshop agenda are attached (annexes 1-2).

IV. Purpose of Final Report

This final report summarizes the workshop presentations and refers readers to the PowerPoint presentations provided by presenters on the web site at http://www.em-dat.net/documents/Damage%20assessment%20expert%20consultation.pdf if more detail is desired.

V. Summary of Talks in Workshop

Christian Berger from the European Commission (EC) indicated that the EC is working with four different institutions that address disasters: 1. Office for the Coordination of Humanitarian Aid (OCHA) that allocates funds within 72 hours of a disaster, 2. Stability instrument used in political crises and disasters and managed by DG RELEX, 3. DG ENV Monitoring and Coordination Center that coordinates the civil protection and 4. DG JRC that provides technical and scientific support wherever required. He suggested that the ECLAC methodology may be improved to suit EC needs including the following:

1. since ECLAC focuses mostly on macro economic costs, broader data are needed,
2. Better data is needed to assist in recovery (livelihoods and shelter).

He further stated that:

3. decision-support data requirements must be specified more clearly by disaster experts, and
4. a standardized methodology for physical damage data collection should be agreed upon by experts and implemented.

Mr. Berger also mentioned that there are too many missions in the field that duplicate some information and omit other types of data. These missions need to be coordinated.

In conclusion, Mr. Berger would like to see a common methodology developed, experts that are trained to use the methodology and funding streams to act quickly. He indicated that the EC is ready to provide expertise through the JRC and has funds that will support damage assessment missions with tight schedules.

Debarati (Debby) Guha-Sapir, Director of CRED, indicated that measuring both physical and socio-economic losses is extremely important because there is a strong connection between how risks are associated with each. Understanding risks is the main factor in understanding losses. She mentioned that some low level losses have high political costs and some high level losses have low political costs. As she stated, all major crises are global issues and therefore require global solutions.

The EC-funded Microdis Project involves DG EVN, CRED and six EU and Asian universities. It is dedicated to testing methods for assessing human and economic losses. It will create several pilot datasets on economic, socio-economic and health impacts and offers a vehicle for taking forward the issues being explored at this meeting.

Hossein Kalali, UNDP shelter expert, described the International Recovery Platform (IRP). The IRP supports early recovery to get society back on its feet quickly following disasters. Early recovery seeks to reduce risks during the recovery process and it starts on day one. Early recovery takes place in parallel with Humanitarian Assistance (HA). HA must also provide services very early in the disaster; the recovery process seeks to replace humanitarian assistance with sustainable local provision of life- and livelihood-sustaining services.

Maxx Dilley, UNDP adviser for Disaster Risk Management opened the meeting with a welcome to participants and acknowledged the EC for co-sponsoring and CRED for organizing and hosting. He then described the Global Risk Identification Programme (GRIP) as a multi-stakeholder partnership to track disaster losses and risks globally. He said that workshop participants included many institutions as well as users of the damage loss data for development impacts and risk assessments.

He explained to participants that this workshop was not intended to focus on any one method or program or an in depth exploration of applications ("needs"). Rather, the workshop's purpose was to develop a consensus report, a partnership and plan for next steps related to improving the systematic collection of data on physical damages following disasters.

He noted the need to combine improved damage data collection with efforts to promote the creation of better loss databases with more transparent standards. Such databases should track those losses over space and time and monitor the impacts of disaster losses on development. Loss data is also indispensable to

the calculation of risk and can help in monitoring progress of risk reduction programs.

Dr. Dilley stated that loss data come from the physical damage assessments. It comes from the physical damage assessment. Assessments of physical losses give us damage**.** Damage is different from needs. Damage assessment provides the "facts," whereas needs assessments interpret those facts for program decision-making. The ECLAC methodology converts damage data into economic values, both direct and indirect.

Dr. Dilley outlined key discussion points for the workshop including: How can we measure, using rigorously collected data, the difference between physical conditions before and after the occurrence of a natural hazard event? What are the trade-offs between timeliness, accuracy and cost? How can we standardize precisely the advice we give to government statistical offices when these governments are willing to do damage assessments and provide baseline data?

Ricardo Zapata-Marti is the manager of the ECLAC Guide and author of many of the procedures. He explained that the ECLAC guide has been evolving for over thirty years after being used to assess hundreds of natural disasters. It is an economic model to monetize damages of physical assets and the indirect losses that follow in current dollars. It is used mostly for natural disasters and currently most of the disaster workers use the ECLAC Guide including the World Bank and UNDP. Physical damage to assets, valued at replacement costs, occurring during event and the losses that occur after the event as a result of the damage are systematically listed and monetized in both the public and private sectors. This total damage gives an estimate of the cost of reconstruction. The damages and losses constitute the effects [impacts] on the economy. The guide delineates damages as primary, direct impacts; losses are secondary and indirect. Damages and losses are assessed by sector that are divided into social, infrastructure and productive sectors and loss data provide a basis for assessing relief, recovery and reconstruction needs and costs. All of these taken together provide a picture of the global impact. Estimates relating to infrastructure include water and sanitation systems, transportation and so on; housing is included among the social sectors. Many different kinds of assets can be damaged within each sector. Having a good pre-disaster database on physical assets is essential.

Mr. Zapata-Marti also outlined some weaknesses of ECLAC assessments as follows:
1) stratum disaggregation is difficult e.g., socio-economic, gender, etc.,
2) assessments are demand-driven and respond to events and government requests,
3) assessments do not link damage to needs, nor needs to reconstruction strategies,

4) pre-disaster environmental baselines and environmental assessments are not linked,
5) the recovery and reconstruction process and the transition to development are not assessed.

To address some of these points, the PDNA is being developed to provide a platform for collective action. Governments are not unitary institutions and the relevant departments of governments need to conduct the relevant parts of the assessments. For example, statistical offices need to be brought in, along with planning ministries, emergency response and civil defense.

Paolo Leoni from International Management Group (IMG) discussed the physical damage assessment methodology they use relating to infrastructure, buildings and houses. He showed details of the different levels of damage and indicated that an assessment of the percentage of damage levels is important in order to establish the funding necessary to carry out the recovery.

The model presented by IMG was first applied in the Balkans. In housing and building assessments, the model has four categories of damage, from 1 to 4 (the higher the number, the higher the level of damage). Some agencies have introduced a fifth category for the buildings which have a level of damage above 70%, thus meaning that the house/building is damaged beyond repair.

Each unit to be assessed is located via GPS and digital photographs are taken of each building. The Engineers in the field carry out a field assessment of each building, according to the methodology presented and using field fiches which have been discussed and prepared in advance by the Assessment Team Management. Civil engineers and architects complete these assessments using a table, a sample of which was shown in the power point presentation. The damage assessment includes the square meters affected, the number of units, their location, number of floors, photos, etc., all of which go into a comprehensive database. The paradigm used is based on an engineering model.

Paolo Leoni emphasized that every scenario may provide different data and the more houses that are visited and assessed, the more accurate the overall damage assessment will be. Further, the general strategy adopted and the time available will determine the number of possible physical assessments which can be executed in the field. Time pressure is a constant limiting factor in these assessments. The overall assessment is made on the basis of assumptions and a mathematical statistical model which will lead to extrapolation / interpolation and interpretation of the data.

The monitoring system developed is particularly comprehensive. The methodology has now already been exported, with relevant modifications, to areas outside the Balkans such as the West Bank, Gaza and in Lebanon after the July 2006 conflict.

Saroj Kumar Jha from the World Bank indicated that assessment methodologies need to be inventoried. Currently, there are different methodologies in the different sectors. Secondly, Dr. Kumar Jha suggested that national statistical systems be taken into account. These systems sometimes have a great deal of good information. Thirdly, assessment methodologies need to be developed that are compatible (including some guiding principles) so that there are no gaps between early assessments and financing recovery and reconstruction. He indicated that if the early recovery phase does not have good assessment tools, there will be financial gaps. In addition, he said it is essential to determine who will maintain the data base (e.g., will it be part of the national system or not?). He believes that national systems need to be supported and strengthened although if there is no local capacity, then the international community should intervene.

Praveen Pardeshi, Senior Adviser at the International Strategy for Disaster Reduction, UN/ISDR indicated that damage assessment criteria are not unique. The criteria for needs assessments differ between national governments and international community. Most of the information is collected by local authorities, which have even another set of criteria of their own. The objectives of damage assessment determine the entire assessment process, too. If we need to plan the recovery, for example, what do we need to think about during the assessment process?

Andrew Maskrey from the International Strategy for Disaster Reduction (ISDR) emphasized that these assessments should be government led and not UN led. He stated that the recovery process is done under humanitarian conditions and the goal must be the reduction of risk in order to reduce future damage. In other words, damage assessment is used to estimate losses and also to identify vulnerabilities and risks. Damage assessments may vary depending on who the final users of those assessments are. However, the international community, central governments, and local governments all use the data so damage assessments must be comprehensive and flexible so that damage data are widely applicable. This is especially true in developing countries where good data are not always available. The criteria used to develop data must be carefully engineered for maximum use by different sectors and different levels of government and institutions.

The major points from his presentation include the following: 1) Recovery after an emergency is developmental. It starts happening from day one and may well rebuild risk. It is important to determine how to differentiate the phases. Recovery means recovering from the risk, not just the losses. Rapid recovery without reducing risk is a development set back. Damage and loss data are one thing; needs are another. Damage is manifest risk and it tells us something about risk. Knowing about realized risk tells us something about recovery needs. 2) Determine why data collection is being done: for the government and communities or for the international agencies. The data must be disaggregated to

the local level. You can always aggregate later, but it is harder to disaggregate at a later time. 3) Pre-disaster recovery planning is our only hope. Countries have data, surveys, statistics, that can be used for baselines as well as for assessments. We have to engage with governments in these low-capacity/high-risk countries. Can we reverse-engineer the ECLAC methodology to generate damage scenarios for planning? 4) The IMG method provides the disaggregation needed at the national level. However, what is not clear is how well that methodology would work in developing countries. 5) What is the best way to get the interest of national governments? Tools and methods need to be assimilated by governments. A package must be developed that can be customized and adapted, by hazard, region and circumstance. Further, it must assess institutions, legislation, policies and capacity. 6) The ISDR system and HFA, as well as the IRP and PDNA, could continue having meetings, but we really need to have local involvement in the PDNA process. We could build it around joint planning, joint financing, or institutional coherence to benefit governments. This could include standards and norms for data reporting in the recovery process and for database development.

Matthews Graham talked about the Royal Institute of Chartered Surveyors (RICS) and the work they are doing to assess the effects of major natural and man made disaster on the buildings and environment. Seventy percent of wealth is tied up in land, property, construction and other environmental items of concern to RICS which has a history of over 100 years. Find the web site at www.RICS.org.uk.

Bjorn-Vidar Vangelsten indicated that there is a direct link between the Information and Technology Group at EC and damage assessment. They concur that data standardization is a priority. Useful and possible links are envisioned with their work on incorporating IT methods and tools into disaster surveying.

Regina Below is the EM-DAT[1] database manager and has had long experience in data collection and management. She described improvements in information systems and the availability of statistical data over the last 30 years. However, she also indicated that the quality of databases depends on the quality of the data collection. Two main key problems have been identified: the inconsistencies, data gaps and ambiguity of terminology which make comparisons between and use of different data sets difficult; and the lack of standardized collection methodologies and definitions which lead to ambiguities. She suggested that standardized methods and national training are required. This methodology needs to be organized and systematized to optimize results and avoid duplications and omissions. Improving quality and compatibility will be helpful to the end process of reconstruction and recovery.

Daniele Ehrlich from the JRC indicated that the integration of damage, response and recovery information is necessary to present a complete package to decision makers. Further, he stated that what is needed next is to fully integrate the

utilization of satellite imagery and other high technologies for disaster assessments. The costs of such an integrated system are high but the EC is working to reduce them. JRC is using video with GPS to make additional useful imagery available. This videography shows the date and time of day as well as the exact longitude and latitude so that it becomes a legal document. The EC is planning the creation of a platform to share information on what everyone is doing at the time of the emergency.

He stated that acquiring, compiling, archiving, and systematizing satellite information will cost the EU 1.2 billion Euros which have been allocated to this program - 150 million Euros for data acquisition alone. However, the EU believes that the collection of baseline information is crucial.

To participate in this research program, a project needs to involve European organizations and developing countries. More information about this EU research can be found at: http://ec.europa.eu/research.

Maureen Fordham presented information about collecting socio-information with a focus on gender. The Gender and Disaster Network (http://www.gdnonline.org) website includes several tools and considerations for damage assessment.

How to incorporate gender issues in the assessments is the big unanswered issue. Dr. Fordham described aspects of damage assessment related to: 1) issues concerning the data collectors, 2) issues concerning the community, 3) the tools used, and 4) gaps in the data.

The data collectors themselves can be a problem because they can create bias. Sometimes we use the wrong people. We should ask who the collectors are and where they are from. Are they outsiders or insiders? Their gender, language, professional background (engineering-oriented surveys, for example) all make a difference. Why are they there? What is the data collection objective? Who is asking for funding the survey?
These are problems with assessing the physical structure in isolation from the social dimensions which is standard practice.

There is always the possibility of having spatial bias when we select a convenient sample of people to interview. This convenient sample can have political conveniences. The issues of the community relate to whether or not the sample is representative and inclusiveness of those in the target population. Class and social standings are important to contextualize the analysis to include all the important factors.

Lastly, gaps in the data are important when there is no gender disaggregated data, there is no cultural training of assessors/surveyors and when there is sexual and gender based violence – largely unrecognized as a problem during and after disasters.

Julio Serje is an independent consultant currently working with UNDP and ECLAC to develop the PDNA. Mr. Serje has been working on disaster assessment and databases for a long time. He presented the general requirements of disaster damage data to satisfy evolutionary information needs across sectors and across disaster phases. He wants standardized data acquisition methods to be developed to increase compatibility of compiled data, analysis and uses. He stated that better analysis and uses of compiled damage data are necessary to add value to the collected information.

Further, data management for disaster situations must capture many forms with multiple fields, be able to aggregate/disaggregate data in multiple ways, display spatial data and provide tabular information to feed decision makers for needs assessments. A standardized methodology is required for data collection, which must include definitions, a glossary of terms and how data are to be disaggregated. Historical loss data should be considered and analyzed as part of the estimation of risk of vulnerabilities and as a way of rebuilding better and reducing risk.

Bill Wigton from Agricultural Assessments International Corp. indicated that an information system must serve the data users and therefore it is important that the data users establish their data requirements in a data users' requirements study (DURS). This DURS establishes costs and design.

He stated that different survey designs provide different estimates for the same population parameters so it is important to standardize designs across sectors, across administration districts within a disaster and across disasters. An integrated sample design called the area frame (AF) solves many of the problems mentioned at this workshop. The concept of the AF design is simple: divide the geographic area of interest into parcels of land. Select a representative sample of parcels, collect data from the parcels without error and make population estimates by multiplying the data by the proper expansion factors. The AF design has been used to monitor agriculture, environmental damage, social and economic aspects and public health. Criteria used to decide advantages of alternative designs are: accuracy, timeliness, objectivity, comprehensiveness, cost-effectiveness, sustainability, ability to detect change and flexibility. Sample design, sample allocation and the data collection are separate issues when surveys are designed. One of the most important issues is credibility of the data. If the data do not have credibility, then the information system loses its usefulness. Costs of the AF information systems are divided into set-up costs and recurrent (operational) costs. The GIS systems greatly reduce set-up costs and integrating surveys can save money and improve accuracy. In disasters, timeliness depends on set-up time and sample size.

He recommended three types of advanced technologies that can be added to the AF system: 1) satellite image processing, 2) multiple frame sampling and 3)

sampling for details of specific items. At different times, all three have applications in disaster monitoring. However, multiple frame sampling should be standard for all disasters.

It was mentioned by several people at this workshop that currently the disaster monitoring systems have duplication and omissions. Mr. Wigton described how the AF design eliminates most of those problems. However, there is an even greater reason to switch to the AF system. Currently you have no way to establish relationships between variables in different sectors. The AF system allows one to establish these relationships between data from different sectors. For example, you will be able to correlate variables in agriculture, the environment, health and poverty of the people living on the land. The powerpoint presentation shows more details about the AF methodology. Lastly, the definitions for the terms he used are presented.

Definition: **Sampling frame:** A list, or the equivalent of a list, of all sampling units of the population. It enables probability sampling. The phase "or the equivalent of a list" is inserted because frames often account for all sampling units (and elements) in a population without having every sampling unit explicitly listed or defined in advance. A sampling frame is needed whether sampling or a census is involved. The minimum requirement for the list is the sampling unit name (or number), an address for the unit so that it can be found if selected, and non-zero probabilities assigned to each unit.
Definition**: Area sampling frame:** A special case of cluster sampling where the sampling units are areas of land, commonly called segments. The idea is to divide the entire land area of the population to be surveyed into sampling units (SUs) and to select a sample of such SUs called segments. The process of area sampling is usually accomplished by selecting the sample in stages which avoids the necessity of dividing the entire population into segments. The main characteristics of area sampling are that the frame is general purpose and complete.
Definition**: List frame**: A list of sampling units of the population. It can be a list of people, farms, hospitals, city blocks, villages or almost any unique units of a population.
Definition**: Multiple frame sampling:** A sampling plan when more that one sampling frame is used conjointly. Collectively, the frames should include all elements of the population. Some elements can be included in two or more frames. A common application is two-frame sampling, where one frame is an area frame that includes all elements and the second frame is a list of elements that are too important to be left out.

A list frame of important items is prepared and a sample selected in order to represent the list and another independent sample is selected from the area frame. Data are combined in a way that avoids duplication. When multiple frame sampling (MFS) is employed, the advantages of list sampling (efficient for list

items) and AF (complete for all items) are obtained. It will be necessary to establish MFS in any disaster monitoring system.

VI. Summary of Wrap-Up Session

At the conclusion of the workshop, participants reflected on the results of the two days. A number of people said that from the presentations and discussion they had a good sense of how the different organizations represented could contribute to a more systematic and comprehensive assessment process. Many participants mentioned that improving and standardizing pre-disaster information as well as damage assessments (both rapid and comprehensive) will help improve recovery planning. The underlying purpose of the meeting seemed to hit a chord with the participants.

Many participants described their organization's particular expertise and interests, and suggested ways in which they could be involved in different aspects of the damage assessment improvement process. For example, the EU has set aside funding for: 1) staff time at the JRC to work on standardization, technical issues and satellite acquisition and storage, 2) working in collaboration with EU and developing country universities to develop cases studies, 3) aspects of IT preparation and training and 4) preparation for disaster recovery. In addition, OCHA has an information coordination initiative which should also be a participant. Others suggested joint work for standardization documents, tools and guidelines.

Several people stated that the elements of a more systematic and comprehensive approach to damage assessment should be pursued with an idea of creating an initiative or on-going process through which efforts could be harmonized so that duplications and omissions can be minimized.

Participants asserted that host country institutions need to have a greater role in the assessment process including being trained if need be. They suggested that better standards need to be described and passed on to high-risk countries. They also suggested that improvements can be made if past experiences are reviewed (including both successful strategies used and problems encountered) and documents prepared including standardized guidelines for both damage recovery institutions and host countries.

The next steps will include further elaborating, refining and testing some of the damage assessment methodological improvements identified during the workshop. The PDNA process provides a vehicle for piloting methodological enhancements and linking damage assessments to assessments of post disaster recovery needs. The Cluster Working Group on Early Recovery, the International Recovery Platform, and the OCHA assessment working group, for example, offer multi-agency forums for exploring how improved methods could be incorporated into practice. Case studies would be beneficial to further explore

how to integrate improved damage data collection with assessments of response and recovery needs. In addition, training damage recovery staff in international organizations, as well as staff in relevant institutions in high risk countries, and sharing data will help ensure that recovery is optimized.

In general, the comments shared by the participants focused on opportunities, priorities and next steps. Although the experts all contributed in different ways according to their individual expertise, there was high agreement on concepts. One participant commented was that the ideas shared were "like pieces of a puzzle that need to be put together."

In his summary of the meeting, Maxx Dilley iterated that since a primary goal is to have national standing capacity, improved methods, combined with coordination among the various agencies, could be used to assist with developing assessment and response capacity in high risk countries. In order to achieve this, it will be necessary to improve baseline information and to incorporate Information and Communication Technology. Further, additional value is obtained from improving the assessment process in high risk countries if damage and loss data is accumulated over time in disaster databases. This will ensure that the damage data collected following disasters is useful for both responses as well as for assessing the cumulative impacts of disasters and disaster risks over the longer term. The existing platforms identified above can help to harmonize these efforts and pilot-testing new designs and developments to accelerate the process.

Acronyms

CRED	Center for Research on the Epidemiology of Disasters
EC/JRC	European Commission / Joint Research Centre
ECLAC	Economic Commission for Latin America and the Caribbean
GRIP	Global Risk Identification Program
IMG	International Management Group
IPSC	Institute for the Protection and Security of the Citizen
IRP	International Recovery Platform
ISDR	International Strategy for Disaster Reduction
OCHA	Office of Coordination of Humanitarian Assistance
PCNA	Post Conflict Disaster Assessment
PDNA	Post Disaster Needs Assessments
RELEX	External Relations (EC)
RICS	Royal Institution of Chartered Surveyors

Annex 1

List of Participants

Below, Regina
Database Manager
Center for Research on the Epidemiology of Disasters - CRED
Université Catholique de Louvain - Ecole de Sante Publique
30.34 Clos Chapelle-aux-Champs
1200 Brussels - Belgium
Tel (Work): +322-764-3327
Fax: +322-764-3441
E-Mail: below@esp.ucl.ac.be

Berger, Christian
Head, Conflict Prevention and Crisis Management Unit
European Commission Director General for External Relations
CHAR 12/45, 170 rue de la Loi
1049 Brussels - Belgium
Tel (Work): +322-299-7727
Fax: +322-299-0873
E-Mail: Christian.Berger@ec.europa.eu

Chiapparino, Manuela
World Bank - Focal Point for Europe Global Facility for Disaster Reduction and Recovery (GFDRR) 10 rue Montoyer, bte. 16
1000 Brussels - Belgium Tel: +32 2 552 00 31
Fax: +32 2 552 00 25
E-Mail: mchiapparino@worldbank.org

Dilley, Maxx
Senior Policy Advisor, Disaster Risk Management
United Nations Development Program Bureau for Crisis Prevention and Recovery
Room B-103, International Environment House, 11-13 Chemin des Anemones
1219 Chatelaine, Geneva - Switzerland
Tel (Work):+ 4122-917-8285
Fax: + 4122-917-8060
E-Mail: maxx.dilley@undp.org

Ehrlich, Daniele
Project Leader
Institute for the Protection and Security of the Citizen,
Joint Research Centre (JRC) of the European Commission
CCR-TP 267, Via E. Fermi, 1
21020 Ispra (VA) - Italy

Tel (Work): + 39-0332-789-384
Fax: +39-0332-785-154
E-Mail: daniele.ehrlich@jrc.it

Fabbri, Karen
European Union - DG/INFSO
European Commission, BU31 05/46,
Avenue de Beaulieu 31
1160 Brussels - Belgium
Tel (Work): +322-299-5185
Fax: +322-296-9548
E-Mail: Karen.Fabbri@ec.europa.eu

Fordham, Maureen
Disaster and Development Centre
University of Northumbria at Newcastle
School of Applied Sciences, Ellison Building
Newcastle upon Tyne NE1 8ST - United Kingdom
Tel (Work):+441912273757
Fax: +441912274715
E-Mail: maureen.fordham@northumbria.ac.uk

Guha-Sapir, Debarati
Director, CRED; Professor Department of Public Health
Center for Research on the Epidemiology of Disasters - CRED
Université Catholique de Louvain - Ecole de Santé Publique
30.34 Clos Chapelle-aux-Champs
1200 Brussels - Belgium
Tel (Work) : +322-764-3327
Fax : +322-764-3441
E-Mail : sapir@esp.ucl.ac.be

Hoyois, Philippe
Center for Research on the Epidemiology of Disasters - CRED
Université Catholique de Louvain - Ecole de Santé Publique
30.34 Clos Chapelle-aux-Champs
1200 Brussels - Belgium
Tel (Work): +322-764-3327
Fax: +322-764-3441
E-Mail: philippe.hoyois@esp.ucl.ac.be

Jensen, David
Policy and Planning Coordinator
Disaster and Conflict Branch
United Nations Environment Program
International Environment House
11-13 Chemin des Anemones
CH-1219 Chatelaine, Geneva -Switzerland
Tel (Work): +4122-917-8167
Fax: + 4122-917-8064
E-Mail: david.jensen@unep.ch

Ketselidis, Michalis
European Commission Office CHAR 12/212
Rue de la Loi 170
1040 Brussels
Tel (Work): +322-299-9776
Fax: +322-299-0873
Email: michalis.ketselidis@ec.europa.eu

Kumar Jha, Saroj
Senior Hazard Management Specialist,
Urban Development Unit, Transport and Urban Development Department
The World Bank
1818 H Street, NW
Washington, DC 20433 - USA
Tel (Work): +1-202-458-2726
Fax: +1-202-614-1566
E-Mail: sjha1@worldbank.org

Larsen, Lynnette
Information Management Consultant
OCHA Field Information Services Unit
Room D-601
Geneva - Switzerland
Tel (Work): +4122-917-4139
Tel (Mobile): +4178-685-2783
E-Mail: larsen3@un.org

Leoni, Paolo
International Management Group
Aluminka Comples
Partizanski odredi 70b
100 Skopje, Republic of Macedonia
Tel (Work): +389-2306-4612
Fax: +389-2306-4616
E-Mail: paolo.leoni@img-int.org

Marsland, Neil
Food Security and Livelihood Advisor Rehabilitation and Humanitarian Policies Unit, TCER Emergency Operations and Rehabilitation Division - FAO
Viale delle Terme di Caracalla
00100 Rome- Italy
Tel: +39 06 570 55 921
E-Mail: Neil.Marsland@fao.org

Maskrey, Andrew
Chief, Disaster Reduction and Recovery Unit
Bureau for Crisis Prevention and Recovery
Tel: +4122-917-8229
Fax: +4122-917-8060
Email: andrew.maskrey@undp.org

Masson, Josiane
European Union - DG ENTR/GMES Bureau, BREY 09/257
Avenue D'Auderghem 45
1040 Brussels - Belgium
Tel (Work): +322-299-0592
E-Mail: josiane.masson@ec.europa.eu

Matthews, Graham
Partner, EC Harris
Tel (Work): +442078122492
E-Mail: graham.matthews@echarris.com

Murata, Masahiko
Recovery Expert International Recovery Platform (IRP) Secretariat,
ADRC Tel: +81-78-262-6041/6043
Fax: +81-78-262-6046 E-mail: murata@RecoveryPlatform.org

Nakano, Hajime
Asian Disaster Reduction Center, Hitomiraikan 5F
1-5-2 Wakinohamakaigan-tori Chuo-ku,
Kobe 651-0073 - Japan
Tel: +81-78-262-5540
E-Mail：nakano@adrc.or.jp

Pardeshi, Praveen
Senior Adviser
International Strategy for Disaster Reduction,
UN/ISDR International Environment House-2
Office 3-42 7-9 Chemin de Balexert, CH 1219 Chatelaine, Geneva 10,
Switzerland Tel : (41.22) 9178901 - 917 8893
Fax: (41.22) 9178964
E-Mail: pardeshi@un.org

Sarem-Kalali, Hossein
Environment Advisor Bureau for Crisis Prevention and Recovery - UNDP 11-13,
Chemin des Anémones 1219- Chatelaine-1219, Geneva, Switzerland Tel
(Work):+ 4122 917 87 06 Fax (Work): +4122 917 80 60
E-Mail: hossein.kalali@undp.org

Serge, Julio
UNDP Consultant - IRP/PDNA
176 Bridlewood Drive
Kanata (Ottawa), Ontario K2M2M4 - Canada
Tel (Work): +1-613-261-5525
Tel (Home):+1-613-271-2898
Tel (Mobile):+1-613-261-5525
E-Mail:jserje@canada.com, julio.serje@undp.org

Vangelsten, Bjorn-Vidar
European Union - DG/RTD
21 Rue du Champ de Mars, 1050 Brussels - Belgium
Tel (Work): +322-298-5447 Fax : +322-299-5755
E-Mail : Bjorn-Vidar.Vangelsten@ec.europa.eu

Villa, Alessandro
European Commission Directorate General for External Relations
EC Office, CHAR 12/113
170 rue de la Loi
1040 Brussels - Belgium
Tel (Work): +322-295-0771
Fax: +322-299-0873
E-Mail: Alessandro.Villa@ec.europa.eu

Villacis, Carlos
GRIP Coordinator
United Nations Development Program Bureau for Crisis Prevention and Recovery
International Environment House
11-13 Chemin des Anemones
1219 Chatelaine, Geneva - Switzerland
Tel (Work): +4122-917-8399
Fax: +4122-917-8060
E-Mail: carlos.villacis@undp.org

Villar Forner, Mireia
Senior Policy Advisor, UNDP
Brussels - Belgium Work: +322-504-9057 Fax: +322-503-9729 E-Mail: mireia.villar.forner@undp.be

Wigton, Bill
Agricultural Assessments International Corporation
2606 Ritchie-Marlboro Road
Upper Marlboro, MD 20774 - USA
Tel (Home): +1-301-336-6515
Fax: +1-301-336-5682
E-Mail: wwigton@aaic.net

Wirtz, Angelika
Data Analysis and MRNatCatService
Munich Re Group
Königinstrasse 107
80791 München - Germany
Tel (Work): +498938913453
Fax: +4989389173453
E-Mail: awirzt@munichre.com

Zapata-Martí, Ricardo
IRP/PDNA, United Nations Economic Commission on Latin America and the Caribbean
Point Focal d'Evaluation des Désastres
Presidente Masaryk 29
12ème étage, 11570
México, D.F
Tel (Work): +5255-5263-9685
Fax: + 5255-5531-1151
E-Mail: ricardo.zapata@cepal.org

Observers

Altare, Chiara
Research Assistant
Center for Research on the Epidemiology of Disasters - CRED
Université Catholique de Louvain - Ecole de Sante Publique
30.34 Clos Chapelle-aux-Champs
1200 Brussels - Belgium
Tel (Work): +322-764-3367
Fax: +322-764-3441
E-Mail: chiara.altare@esp.ucl.ac.be

Irvine, Laura
Center for Research on the Epidemiology of Disasters - CRED
Université Catholique de Louvain - Ecole de Santé Publique
30.34 Clos Chapelle-aux-Champs
1200 Brussels - Belgium
Tel (Work) : +322-764-3367
Fax : +322-764-3441
E-Mail : laura.irvine@esp.ucl.ac.be

Scheuren, Jean-Michel
Research Assistant
Center for Research on the Epidemiology of Disasters - CRED
Université Catholique de Louvain - Ecole de Sante Publique
30.34 Clos Chapelle-aux-Champs
1200 Brussels - Belgium
Tel (Work): +322-764-3368
Fax: +322-764-3441
E-Mail: jean-michel.scheuren@esp.ucl.ac.be

Annex 2

Agenda

AGENDA

Day 1, March 19

Expert Consultation
on Standards and Norms for Assessing Human and Physical Losses in Mass Emergencies
(Co-organised by EU-Relex, UNDP and CRED)
Brussels, 19-20 March 2007

Club de la Fondation Universitaire - Rue d'Egmont, 11 - 1000 Brussels

0900-0930 *Welcome and introductions, review of agenda and organizers' perspectives on the workshop*

- C. Berger (EU)
- D. Guha-Sapir (CRED)
- H. Sarem-Kalali and M. Dilley (UNDP)

0900-1100 *Strengths and weaknesses of ECLAC and IMG methods for estimating of physical infrastructure losses*

Chair: M. Dilley

Presentation by: R. Zapata and P. Leoni
Comments by: D. Ehrlich
Open discussion

1100-1115 *Coffee Break*

1115-1230 *Strengths and weaknesses of ECLAC and IMG methods for estimating of physical infrastructure losses (continued)*

Chair: M. Dilley

Discussion on applicability, utility and compatibility of these methods

Comments by: D. Jensen
Open discussion

1230-1400 *Lunch*

1400-1530 *1400-1530 Information for estimating human and other physical tolls (environment, agriculture, etc.) in specific disaster types : floods, cyclones and earthquakes*

Chair: L. Larsen

Short presentations by: R. Below, G. Matthews, and A. Maskrey

Lessons learned and next steps for post-disaster needs assessment and recovery planning (P. Pardeshi)

1530-1545 *Coffee Break*

1545-1645 Open discussion led by: D. Jensen