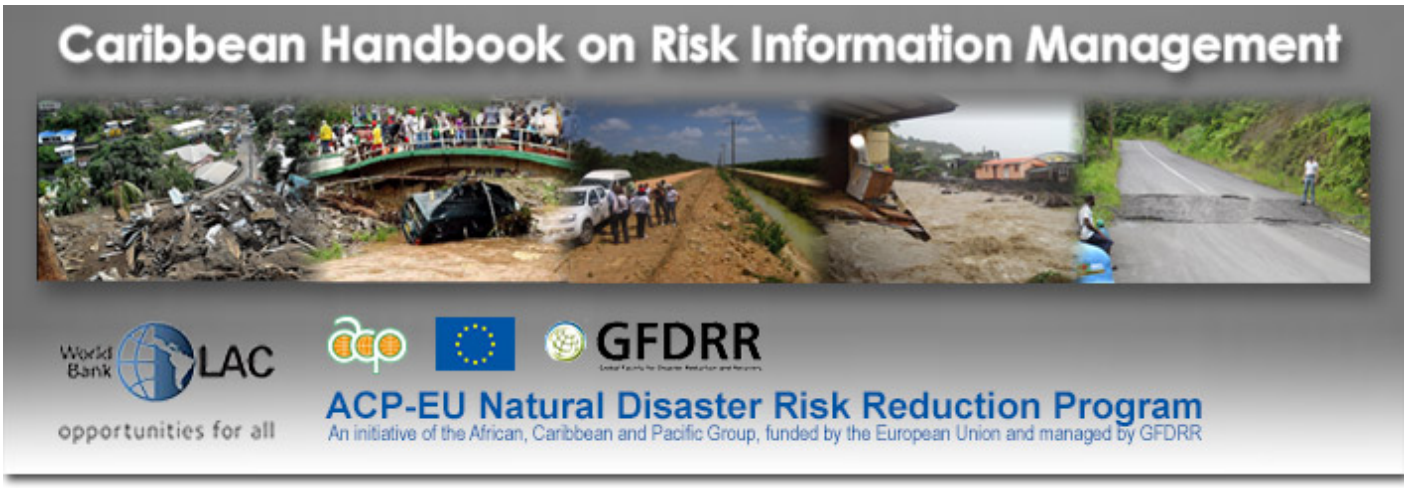

4.2 Disaster databases

Summary

This section introduces the various disaster databases. It includes an anmiation that will show you more examples.

Keywords

Disaster Inventory, EM-DAT, DesInventar

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?INTRODUCTION

Data on disaster occurrence and its impacts in terms of damages and losses to affected countries are very important for an effective Disaster Risk Reduction (DRR). Systematic collection and analysis of such data provides invaluable information to governments and other stakeholder in risk reduction and relief and recovery activities.

OBJECTIVES

- Make familiar with the available disaster loss databases.
- Explain the applications of these databases.

DESCRIPTION

A number of efforts have been made to collect information on disasters, at different scales and with different objectives as described below.

- **CRED (Centre for Research and the Epidemiology of Disasters)**

CRED has a long history of standardized data compilation, validation and analysis. It provides free and open access to its data through its website (http://www.emdat.be/). One of CRED's core data products is the Emergency Events Database (EM-DAT), the International Disaster Database. EM-DAT was created with the initial support of the World Health Organization (WHO) and the Belgian Government. The main objective of the database is to serve the purposes of humanitarian action at national and global levels. It is the most cited database, having been fully accessible to the public

until recently.

EM-DAT provides information on the human impact of disasters, such as the number of people killed, injured or affected as well as economic damage estimates and disaster-specific international aid contributions. EM-DAT contains core data on the occurrence and effects of over 15,700 disasters from 1900 to present, including Natural disasters and Technological disasters. The database is compiled from various sources, including UN agencies, non-governmental organizations, insurance companies, research institutes and press agencies from the year 1900 to present. For a disaster to be entered into the database at least one of the following criteria must be fulfilled:

- Ten (10) or more people reported killed.
- Hundred (100) or more people reported affected.
- Declaration of a state of emergency.
- Call for international assistance.

The consequence of the criteria used in EM-DAT is that only big disaster events with considerable impacts are considered, while hundreds of small and medium-scale events that occur every year in a country will be ignored. Information available about disasters in EM-DAT is listed in Table 1 and very detailed planning cannot be done using such information. For the Caribbean region a total of 669 disasters were recorded in the EM-DAT between 1900 and 2005. Data can be accessed based on country profile, disaster profile, disaster list or advanced search for the region.

- **DesInventar**

DesInventar is a conceptual and methodological tool for the generation of National Disaster Inventories and the construction of databases of damage, losses and in general the effects of disasters. Until the mid-1990's, systematic information about the occurrence of disasters of small and medium impact and disaggregated data about the effects of large scale disasters was not available in most countries of the world. However, creation of a common conceptual and methodological framework was begun in 1994 in Latin America by groups of researchers, academics, and institutional actors linked to the Network of Social Studies in the Prevention of Disasters in Latin America (Red de Estudios Sociales en Prevención de Desastres en América Latina - LA RED). These groups conceptualized a system of acquisition, collection, retrieval, query and analysis of information about disasters of small, medium and greater impact, based on pre-existing official data, academic records, newspaper sources and institutional reports in nine countries in Latin America. This effort was then picked up by UNDP and UNISDR who sponsored the implementation in the Caribbean, Asia and Africa. The developed conceptualization, methodology and software tool is called Disaster Inventory System - DesInventar (Sistema de Inventario de Desastres), which can be found under http://www.desinventar.org/.

DesInventar uses historical data about the impact of disasters, which are collected in a systematic and homogeneous manner in the process of identifying hazards, vulnerabilities and risks on specific regions. Data must be collected following a set of standards and is time-stamped and geo-referenced and disaggregated to a relatively small geographic unit, usually a low level administrative unit available in a country such as village, sub-district, or district. The following criteria are considered for DesInventar:

- All inventories must use the same variables to measure the effects and the same homogeneous and basic classification of events;
- The information compiled and processed must be entered in a scale of time and at a geo referenced spatial level;
- The information comprising DesInventar inventories must be spatially disaggregated in order to show (and later analyze) the effects of disasters at local level. For country level disaster inventories it is recommended a minimum disaggregation level equivalent to municipality or equivalent, usually one or two levels below the first administrative/political division (Province/State/Department, depending on each country);
- The inventories should be analyzed following a number of well-defined methodologies.

DesInventar includes a software product with two main components; 1) Administration and Data Entry module, which is a relational and structural database and the database is fed by filling in predefined fields (space and temporal data, types of events and causes, sources) and by both direct and indirect effects (deaths, houses, infrastructure, economic sectors) and 2) Analysis module which allows access to the database by queries that may include relations among the diverse variables of effects, types of events, causes, sites, dates, etc. in table, graphic and thematic map formats.

DesInventar data in the Caribbean region is available for Belize, Dominican Republic, Haiti, Jamaica, and Trinidad and Tobago, and UNISDR has been working on further expanding towards the Eastern Caribbean Islands.

	EM-DAT	DesInventar
Disaster Type	**Natural Disaster**	**Natural Disaster (Broader number of events compared to EM-DAT)**
Available information	**Total Death, Total Affected, Total economic damage, Glide number**	**Total Death, Total Affected, Total economic damage, Glide number, effects on agriculture, communication etc.**
Physical Information	**Triggering origin of a disaster, Location information, temporal information**	**Origin of disaster, Location information, temporal information**
Data Search	**Simple data search**	**Advance data search compared to EM-DAT**
Generate Graphs	**No**	**Yes**

Table 1: Comparison of EM-DAT and DesInventar

APPLICATIONS

EM-DAT was developed with an aim to rationalize decision making for disaster preparedness, as well as providing an objective base for vulnerability assessment and priority setting. EM-DAT captures the major disasters in a country over the past hundred years and it helps policymakers at the national level to identify disaster types that are most common in a given country and have had significant historical impacts on specific human populations in order to make appropriate risk reduction measures.

DesInventar, on the other hand, helps to analyze the disaster trends and their impacts in a systematic manner at a local level. With increased understanding of the disaster trends and their impacts, better prevention, mitigation and preparedness measures can be planned to reduce the impact of disasters on the communities. With local level information, DesInventar can also help in initiating dialogues for risk management between actors, institutions, sectors, provincial and national governments. In case of Belize 129 records of disasters from 1931 to 2011 are available in DesInventar. Event specific queries, for example, dead/affected/rescued (no.), building destroyed (no.), crops damaged (ha), total loss (local currency and US Dollars) etc. can be made online using the system. Comparison of events is also possible, for example, the disaster which caused highest loss entire period was found that Hurricane Keith, which hit Belize in 2000 and it caused a loss of 261 Million USD. Since all the events are geo-tagged, therefore, location specific analysis and possible risk reduction interventions can be made.

Historical data on hazard events and their locations is particularly important for hazard and exposure assessment, which are further utilized for vulnerability and risk assessment. DesInventar database will be very much helpful for hazard and risk assessment for development planning.

References

www.em-dat.be
www.desinventar.org

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