



Session 3: Natural Disasters Statistics and Indicators

United Nations Statistics Division

**Workshop on Environment Statistics
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Need for indicators

Information on frequency and severity of natural disasters is important for preparedness and risk management as well as for assessing vulnerability.



Definition of disaster

A situation or event, which overwhelms local capacity, necessitating a request to the national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering.

Source: EM-DAT: The OFDA/CRED International Disaster Database

(<http://www.emdat.be/>)



Types of Natural Disasters

- floods;
- natural disasters of geological origin, (volcanic eruptions, earthquakes and landslides);
- natural disasters of climatic or meteorological origin, (droughts, cold waves, heat waves, avalanches, wave surges including tsunamis and tidal waves, and wind storms including cyclones, hurricanes, storms, tornadoes, tropical storms, typhoons and winter storms);
- wildfires, both forest and scrub;
- insect infestations; and
- epidemics of cholera, diarrhea, meningitis, dengue fever and malaria.



International Data Sources:

- Office of United States Foreign Disaster Assistance/Centre for Research on the Epidemiology of Disasters (OFDA/CRED) International Disaster Database.
- [\[1\]](#) Specific sources of OFDA/CRED data include UN:AFRO, UN:FAO, UN:IRIN, UN:OCHA, UN:PAHO, UN:UNDP, UN:UNEP, UN:UNDRO, UN:UNICEF, UN:WFP, UN:WHO/OMS, UN:WMO, US gov:CDC, US gov:FEMA, US gov:NOAA, US gov:OFDA, US gov:Smithsonian, US gov:USGS, Govern:ADRC, Govern:IDNDR, MunichRe, SwissRe, Press:AFP, Press:International Herald Tribune, Press:Mode, Press:Reuters.



Inclusion in database:

- In order for a disaster to be entered into the database at least one of the following criteria has to be fulfilled:
 - 10 or more people reported killed
 - 100 or more people reported affected
 - declaration of a state of emergency
 - call for international assistance



Main variables:

- **Events per year**: The year that a disaster occurs is easily recognized for sudden disasters like landslides and earthquakes. For long-term disasters like droughts, the data are divided by the number of affected years, and a separate entry is made for each year of the event.
- **Killed**: Persons confirmed as dead and persons missing and presumed dead.
- **Injured**: People suffering from physical injuries, trauma or an illness requiring medical treatment as a direct result of a disaster.
- **Homeless**: People needing immediate assistance in the form of shelter.
- **Affected**: People requiring immediate assistance during a period of emergency, i.e. requiring basic survival needs such as food, water, shelter, sanitation and immediate medical assistance; appearance of a significant number of cases of an infectious disease introduced in a region or a population that is usually free from that disease.
- **Estimated Damage**: The economic impact of a disaster usually consists of direct (e.g. damage to infrastructure, crops, housing) and indirect (e.g. loss of revenues, unemployment, market destabilization) consequences on the local economy. In EM-DAT estimated damage is given in US\$ ('000). For each disaster, the registered figure corresponds to the damage value at the moment of the event, i.e. the figures are shown true to the year of the event.



CSD Indicators of Sustainable Development

- Theme: Natural hazards
 - Sub-theme: Vulnerability to natural hazards
 - Indicator: PERCENTAGE OF POPULATION LIVING IN HAZARD PRONE AREAS
 - Sub-theme: Disaster preparedness and response
 - Indicator: HUMAN AND ECONOMIC LOSS DUE TO NATURAL DISASTERS

http://www.un.org/esa/dsd/dsd_aofw_ind/ind_index.shtml



Agreed Set of ECOWAS Regional Indicators

PRIORITY AREA	INDICATOR
Exposure to natural disasters	PERCENTAGE OF POPULATION LIVING IN HAZARD PRONE AREAS [CSD]
	Frequency of extreme events
Impacts of natural disasters	HUMAN AND ECONOMIC LOSS DUE TO NATURAL DISASTERS [CSD]
Early warning systems	% of population having access to information from early warning systems
Adaptive capacity	Public expenditure on disaster reduction and related measures