

CRED CRUNCH

“Disaster Data: A Balanced Perspective”

August 2005

The first semester of 2005 was relatively uneventful in terms of natural disaster impact. This was a welcomed breather after the tragic tsunami of December 2004, the final impact of which still remains to be fully addressed.

In the second part of this issue we try to shed some light on the recurrent question of whether there has been a real increase in the occurrence of natural disasters over the last century. Factors like climate change, environmental degradation, population pressures and human vulnerabilities play a role, as well as better reporting by media and active disaster compilation by CRED.

Dr. Debarati Guba-Sapir
Director

Natural disasters in the first semester of 2005: summary

	2005 1 st Semester	1995-2004 1 st semester average
No. of disasters	174	149
No. of countries affected	86	71
No. of people killed	5,967	28,275
No. of people affected	60 million	121 million
Economic damages (US\$)	6.3 billion	25.6 billion

The 10 largest natural disasters over the first semester of 2005

By the number of people killed

Disaster	Month	Country	No. of people Killed
Earthquake	March	Indonesia	1,659
Flood	February	Pakistan	520
Earthquake	February	Iran	490
Heat Wave	June	India	329
Avalanche	February	India	250
Flood	June	India	239
Flood	June	North Korea	193
Landslide	February	Indonesia	143
Flood	May/June	China	139
Flood	June	China	138

By the number of people affected

Disaster	Month	Country	No. of people Affected
Flood	June	China	16.7 million
Flood	June	China	11.2 million
Flood	May/June	China	9.8 million
Winter Windstorm	March	China	8 million
Flood	February	Pakistan	7 million
Drought	May/June	Mozambique	1.4 million
Drought	June	Zambia	1.2 million
Windstorm	June	China	825,223
Drought	March	Uganda	600,000
Drought	April	Cambodia	600,000

By estimated economic damages

Disaster	Month	Country	Economic damages (US\$)
Flood	June	India	2.3 billion
Flood	June	China	1.6 billion
Flood	April/May	Romania	596 million
Flood	May/June	China	383 million
Windstorm	March	China	300 million
Drought	March	Thailand	250 million
Drought	January	Brazil	220 million
Flood	June	India	200 million
Flood	January	U.S.A.	90 million
Flood	June	Taiwan	68 million

CRED News

- EM-DAT & CE-DAT Training Sessions, August 17 - Washington D.C.
- EM-DAT Technical Advisory Group Meeting, August 18 & 19 - Washington D.C.
- New study being conducted by CRED: "Survival Patterns and Risk Factors for Mortality following the Tsunami - Tamil Nadu, India"

Are natural disasters increasing?

As recorded in EM-DAT, there has been a clear increase in the occurrence of natural disasters since 1900.

However, improved disaster reporting and active case finding played a large part in this increase. Over the last 105 years, we are unable to say what proportion is a real increase or is due to a reporting bias.

Looking at the data over the last 30 years (Graph 1), we can get a better idea of the different factors contributing to the increase in the number of disasters that are being recorded by EM-DAT. For this, it is important to breakdown disasters into their components and look at changes in the occurrence of individual disaster-types over time.

Natural disasters are considered to be the convergence of hazards and vulnerabilities. It is therefore important to take into account a potential increase of hazards and/or of vulnerabilities. The EM-DAT database, because it uses human-impact criteria in compiling occurrence data, does not answer the question of whether the risks of hazards are increasing. Physical vulnerabilities – that is the number of people living at higher risk-exposure, such as in a flood plain or on the slopes of a volcano – might account for an important part of the increase.

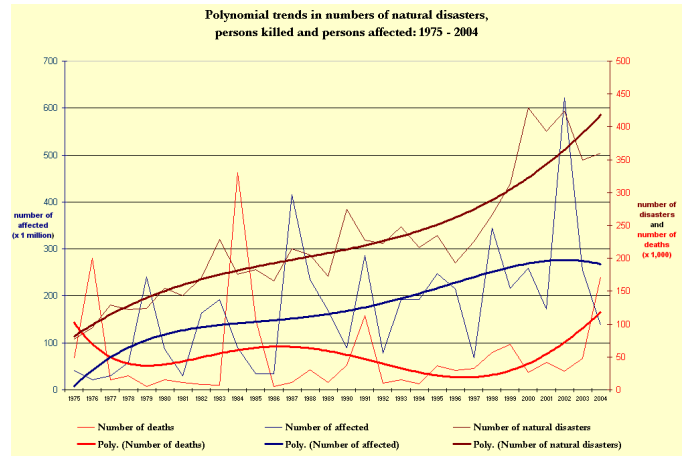
Graph 2 shows the global number of magnitude 7.0 and greater earthquakes per year (USGS) and the number of earthquakes registered in EM-DAT between 1970 and 2004. This data indicates that there has not been an increase in the number of large earthquakes, while there has been an increase in the number of earthquakes that fulfilled the human-impact criteria of EM-DAT - indicating an increase in vulnerabilities.

Looking at the polynomial time trends of Graph 3 for the four major types of disasters in EM-DAT (floods and related, droughts and related, windstorms, geological), floods have increased the most, followed by windstorms, droughts and finally geological disasters.

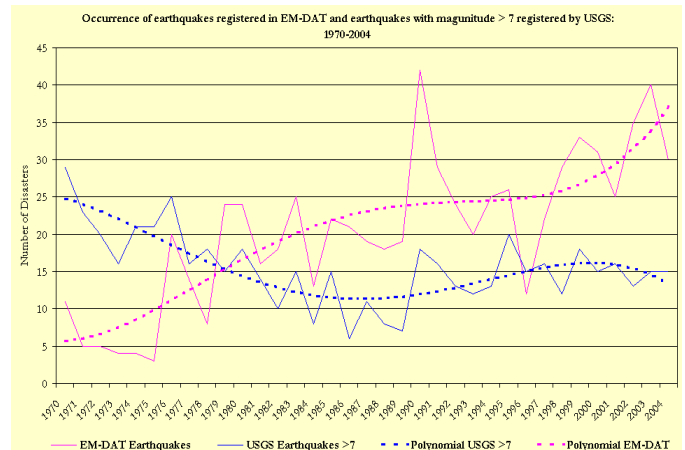
An important aspect of this increase in disaster events is that certain disaster types are not only occurring more frequently, but also with greater intensity. In the case of hurricanes, for example, a recent study suggests that their intensity and duration have expanded over the last 30 years rather than their numbers. In recent years, floods occur more often, affect more people and damage greater areas per event than they did two decades ago. Geological events are notable in their increased capacity to affect populations due to rampant urbanization and population increases in high seismic areas such as Izmit and Bhuj, both of which tripled their populations in just 40 years.

In conclusion, the numbers of disasters are a function of real increases in some categories, increases in exposed populations and increases in the intensity and duration of the events themselves.

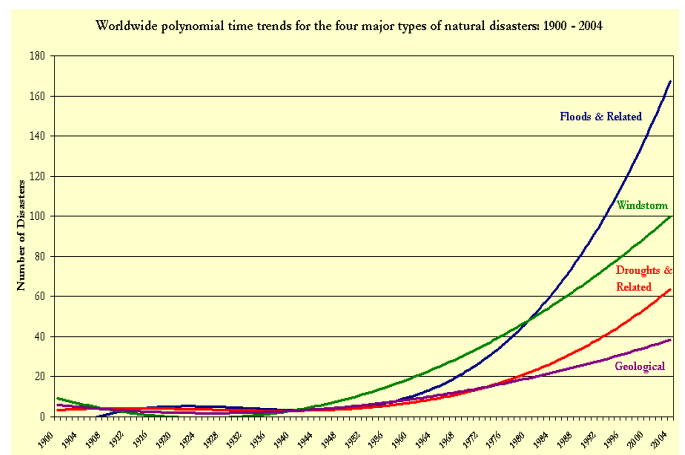
Graph 1: Trend in disaster occurrence and impact, 1975 – 2004



Graph2: Earthquake occurrence as registered by EM-DAT & USGS, 1970 - 2004



Graph 3: Polynomial trends in disaster-type occurrence, 1900 - 2004



Please note that disaster data are subject to change as validation and cross-referencing of the sources is undertaken and as new information becomes available. For any enquiries, please contact cred-crunch@em-dat.net