Possible relation between increase natural disasters in the South East Asian in the last 50 years and climate change

Abstract

Natural disasters have always been directly related to the human history. Unfortunately, in recent decades have seen a definite increase of these phenomena. This research try to determine through research literature may be the relationship between the increase in natural disasters due to weather and climate change from an environmental standpoint. In the following lines will attempt to answer questions like the following: This increase is directly related to climate change? If so, which parts of the world are more exposed? What is the version of the scientific community for the future? What role society plays in all this?

Key words

Natural disasters, climate change, South East Asian, storm, flood

Description of the Project (places, time and topics)

This project aims to study and understand the relationship between climate change and increased natural disasters in the past 50 years, through literature search and database that focusing mainly in areas where there is stronger evidence in that increase.

In this research project, the area of observation and study will be the South East Asian, between a chronological limit of 50 years (1960-2009). The idea is to search that environmental and social changes have occurred throughout the twentieth century that may cause an increase in these destructive phenomena.

So, the theoretical framework of my research project is thus based on three main points:

- Observe how they have been increasing natural disasters throughout history and how the increase has begun.

- Try to relate this increase with climate change processes and areas of the world that have been most affected, particularly the case of South East Asian.

- Take stock of what have been the natural disasters that have more increased and determine what role society has on all these events.

Introduction to project

Since the Industrial Revolution, human activity began to have regional effects, as in the case of watershed pollution and more recently the case of acid rain, where the emissions produced by burning impacts in areas relatively far from the source emission. At present, the social impacts have global dimension, including the affectation of the atmosphere on global warming. These processes of change may induce a higher frequency of occurrence of environmental disasters.

Natural disasters are increasingly common in the modern world. Hurricanes, floods caused by torrential rains and extreme droughts are phenomena that occupy almost daily headlines in the media. Disasters make clear the tension between human society with its production of polluting gases, and a nature transformed by global warming that seems to want to regain lost space in recent decades.

The frequency and severity of disasters have been increasing, and experts point to climate change as one of the culprits. If the first half of the twentieth century there was an average of 12 disasters a year, in 2004 the number reached a staggering 350. If you look at natural disasters that have occurred in the last 50 years we see a clear upward trend.[1].

Focusing more on the study area, the South East Asian - Indonesia, Philippines, Malaysia, Thailand, Vietnam, Laos - has been one of the regions that has more been affected in an increase in natural disasters (Table 1). It is one of the most vulnerable regions to climate change.

Table 1: Number of disasters south East Asian between 1960-2009

	Number of disasters per decade				
Disaster Type	**1960-1969**	**1970-1979**	**1980-1989**	**1990-1999**	**2000-2009**
Drought	1	4	11	12	12
Earthquake	9	15	17	31	44
Epidemic	4	10	8	41	36
Flood	16	39	61	105	220
Mass movement wet	1	2	13	19	44
Storm	25	59	82	104	138
Volcano	8	6	16	15	16
TOTAL	**64**	**135**	**208**	**327**	**510**

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

In the brief period of 50 years (1960-2009) the increase of natural disasters in this zone has been very high compared to the first half of the twentieth century. One reason that more are being considered in the scientific community is to be one of the many consequences caused by climate change process since, as many experts point out, natural disasters that have increased are those directly related to atmospheric processes (see Table 1), i.e. environmental disasters.

[1] EM-DAT: The International Disaster Database

In this case, the impact of climate change on the incidence of natural disasters is evident in the increased storms, floods and wet mass movement are clearly influenced by the global phenomenon.

Methodologies and Sources

To carry out this project is critical to know which and what kind of natural disasters have occurred to date. For all the above disaster information is necessary to consult some of the most comprehensive online databases in the world. Several organizations have their own databases of statistical information on natural disasters that have occurred in this century. *Natcat*, a re-insurer in Munich, has accumulated information of more than 15,000 disasters that dating back to year 79 AD, *Sigma*, a new insurance company in Switzerland, has a database containing information on more than 7,000 disasters that have occurred since 1970, and the CRED *EM-DAT* (Centre for Research on the Epidemiology of Disasters, Catholic University of Leuven, Belgium) has information on more than 12,000 disasters dating back to 1900.

Once observed the history of natural disasters in the twentieth century in the databases, we should be able to see in what time period the number of natural disasters has increased exponentially. One way to study these increases of environmental disaster could be for decades as shown in Table 1. So, the idea would be to compare that environmental parameters (temperature, presence of CO2 in the atmosphere, climatological variables ...) have changed between the study periods and find the relationship with these increases.

Another line of research could be the social dimension. Also consider whether this increase is due to growth, expansion, evolution and industrialization of the population of the study area over the years and how it interacts with the environment.

In short, observe that environmental and social concepts have changed to produce this increase, decade after decade and seems to have no end.