COURSE : DISASTER MANAGEMENT (MA/MSc PART I)
Paper : I
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Topic : Early Warning of Modern Disasters

INTRODUCTION

Geologists have found that Middle Eastern flooding myths, including the story of Noah, could be traced to the sudden inundation of the Black Sea 7,600 years ago. The Oracle at Delphi has been found to lie over a geological fault through which seeped hallucinogenic gases. These could account for the trances and utterances of the oracle's mystics.

Along the Oregon and Washington coast, there are Native American stories about boulders, called a'yahos, which can shake to death anyone who stares at them. In addition, Ruth Ludwin, a seismologist in Seattle, discovered tales of villages being washed away and of whales and thunderbirds locked in fights.

These stories were a key influence on Atwater, who started to study the 680-mile long Cascadia subduction zone fault along the coast. What he found provided a shock. Long stretches had suffered sudden inundation relatively recently.

The study of trees stumps in this drowned landscape indicated there had been a huge earthquake and a tsunami between 1680 and 1720. Later research on tree rings put the date at between 1699 and 1700. Then local legends helped again. Japanese colleagues studied their records and traced an orphan tsunami - a giant wave not linked to a local earthquake - that destroyed several villages on 27 January, 1700.

Scientists now believe huge earthquakes and tsunamis devastate the Seattle area every 200 to 1,000 years. However, until this year, the lesson of that tsunami was remembered only as a dim legend. Other such stories have been put to better use, however.

The December 2004 tsunami was also triggered by a strong earthquake, and around 300,000 people died. The Moken - or sea gypsies - of Thailand, however, have a tradition which warns that when tides recede far and fast, now known as a precursor of a

tsunami, then a man-eating wave will soon head their way: so they should run far and fast.

Another example of the power of geomythology is from Patrick Nunn, of Fiji in the South Pacific. His studies of volcanoes on the Fijian island of Kadavu indicated they had not been active for tens of thousands of years.

Now, Nunn is working for the French government to compile tales that might pinpoint Pacific islands where scientists should look for warnings of earthquakes, volcanoes and catastrophic landslides. These include stories of deities who fish up islands from the water and others in which they are thrown back into the sea.

Early Warning Systems (EWSs)

EWSs are widely considered to be one of the most important mechanisms to prevent disasters around the globe. But as disasters continue to affect countries where EWSs have already been implemented, the striking disaster consequences have led us to reflect on the focus, architecture, and function of the warning systems. Since the 2004 Indian Ocean tsunami there has been a rapid rise in the promotion and use of EWSs to minimize disaster losses and damage.

The origin of early warning systems (EWSs) dates back to the 1980s, when famines in Sudan and Ethiopia generated the need to anticipate and avert future food crises. The consequences of the long socio-natural processes of famine and drought raised the possibility of planning ahead. However, the evolution of the EWS concept and function has been diverted from its original conception in two ways. First, the definition of "early" is relative, according to natural hazard typology and speed of onset. From this we could assess whether or not the original sense of EWSs targeting actions well in advance has become irrelevant, but also whether current EWSs are already late by definition. We need to reflect on how "early" EWSs should be called on and made operational. Second, although there is no denying the significance of natural hazards in the definition of disaster risk, EWSs are mainly based on a physicalist perspective , where the emphasis is on the hazard, while social context is mostly neglected. Thus, the understanding of vulnerability and exposure within the "equation" of disaster risk remains unresolved.

Recognizing that EWSs are necessary can be regarded as a step into the sphere of social and institutional awareness and preparedness. It is clear, however, that enabling awareness and preparedness through EWSs requires not only the availability of scientific and practical information and resources to people, but also building capacity in terms of psychological and social capital to interpret and use information and resources according to local needs and expectations, including the comprehensive understanding of disaster risk.

The current definition, architecture, and function of EWSs as an adaptive measure to the existing exposure conditions are not adequate. Disaster risk reduction (DRR) as the policy objective of disaster risk management (DRM) should encompass the social processes directed towards reducing existing disaster risk, managing residual risk, and especially avoiding the construction of new disaster risk in society. The simple logic and common sense of EWSs should include the cognizance of disaster risk as a condition that is largely influenced by choices and decision making that lead to the misuse of land, derived from the socioeconomic practices promoting inequality that have led to the social construction of disaster risk and disasters. This would allow the systematic identification and analysis of their causal factors and drivers.