THE IMPACT OF NATURAL DISASTERS: A Brief Analysis of Characteristics and Trends

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Introduction

Most natural disasters that occur frequently may be classified into four main categories: floods, earthquakes, cyclones and famine. Other catastrophic events, such as land slides, avalanches, snow storms, fires occur at rarer occasions and threaten smaller proportions of the populated world. The destructive agents in the above categories are wind, water (a lack or excess thereof) and tectonic force. While all of these cause structural damage, their mortality and morbidity effects are varied both between them and over time. The disaster cycle can be differentiated into five main phases, extending from one disaster to the next. The phases are: the warning phase indicating the possible occurrence of a catastrophe and the threat period during which the disaster is pending; the impact phase when the disaster strikes; the emergency phase when rescue, treatment and salvage activities commence; the rehabilitation phase when essential services are provided on a temporary basis; the reconstruction phase when a permanent return to normality is achieved.[4] The disaster-induced mortality and morbidity differ between these phases and are also a function of the prevailing health and socio-economic conditions of the affected community. As a result of this, global statistics on disasters seem to indicate a significantly higher frequency of natural disasters in the developing countries than in the industrialized world.

Characteristics of Natural Disasters:

It is helpful to start by locating the four main types of disasters on relative scales of lethality, predictability, onset time and impact scope. This ranking provides some guidance towards understanding the variation in mortality impact observed among disaster events across time and space. Figure 1 displays the four scales with the location of each disaster type. Although drought-related famines are a very special class of disasters, and often do not present a comparable picture, it may nevertheless, be included in this diagram.

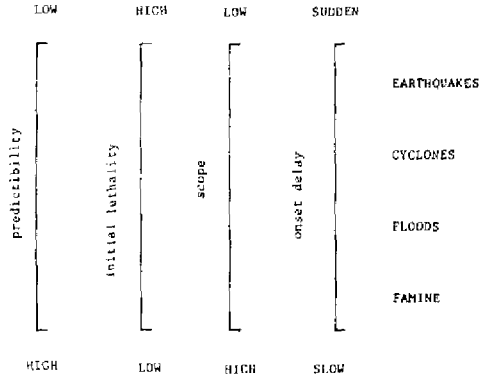

Figure 1. Ranking of Principal Disasters on relative scales of predictability, initial lethality, scope and onset delay.

Famines are disasters of high *predictability*. With the exception of the Great Bengal Famine of 1941-43, almost all the following important famines, certainly the ones of Sahelian Africa and Ethiopia, were more or less foreseen as impending events. Famines, in fact, provide an excellent illustration of the fact that the knowledge of impending disaster does not imply that a community can or will take responsive action. On the other end of the scale, earthquakes tend to be least predictable, striking with little warning and thus cause enormous human and physical damage. Japan is one of the few high risk countries that have an effective earthquake management program, focusing on warning and evacuation systems that has resulted in spectacularly low human and physical impact from high intensity shocks.[5] For instance, the earthquake of Niigata (16th June, 1964) registered 7.7 on the Richter scale. Although 20,000 houses were destroyed, only 13 people were killed and 315 injured. Due to the quality of its preparedness programs registering a high number of seismic shocks, Japan suffers very limited mortality.[1]

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