Economics of Disaster

"In explaining famines, we have to look not primarily at the total food supply ... We have to concentrate, therefore, on the economic and political changes that rob particular occupation groups of their ability to command food. For example, the development of extensive unemployment leading to widespread inability to earn an income, or a severe rise in food prices vis-à-vis wages, or a sharp fall in the price of the products that craftsmen make, can lead to widespread starvation".

Amartya Sen, address at the award ceremony of the 2nd Senator Giovanni Agnelli International Prize

The economic consequences of catastrophes are always tallied, as they should be, after counting the number of dead and injured. What is sometimes overlooked is that disasters cause aftershocks to a nation's or region's economy that can affect the quality of life and health for years to come In some cases, an earthquake, drought or flood is matched in destructive power by the quiet and pernicious economic disaster that follows in its wake.

According to the World Bank, disasters cost US$ 40 thousand million in physical damage each year. Windstorms, floods and earthquakes alone cost US$ 18.8 million per day on average A single event can carry an astonishing price. The total cost of damage caused by the earthquake of 7 December 1988 in the Armenian SSR was estimated at 10 thousand million roubles (US$ 16 thousand million at the official United Nations exchange rate).

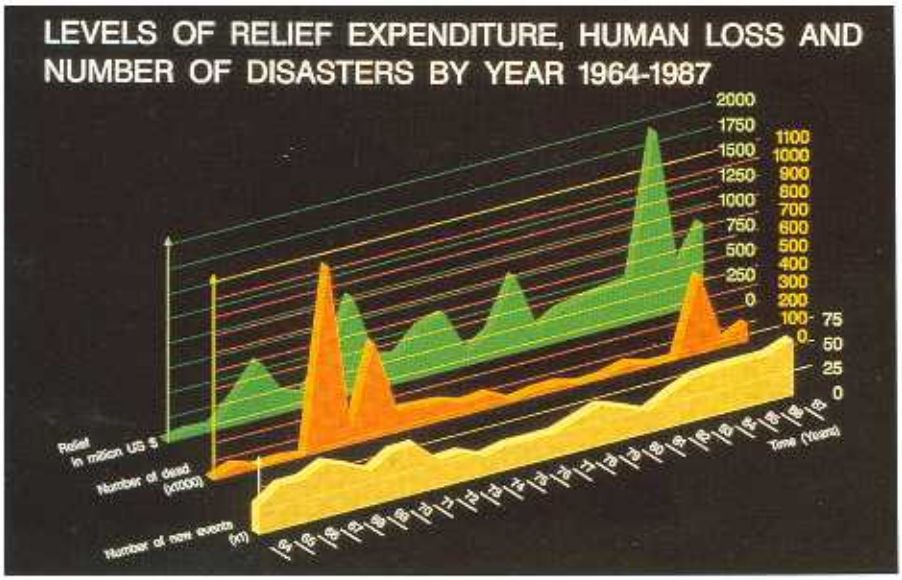
All countries are susceptible to the negative economic effects of disasters, but nations with fragile, developing economies are especially vulnerable It has been estimated that the losses to GNP due to disasters can be 20 times greater for developing countries than for more developed nations.

The Food and Agriculture Organization of the United Nations (FAO) has estimated that the 1970s drought in the Sahel halved the GNPs of Burkina Faso, Chad, Mali, Mauritania, Niger and Senegal

According to the Office of the United Nations Disaster Relief Coordinator (UNDRO), the 1972 Philippines flood set the country's development efforts back three to five years.

Typhoons in southeast Asia during 1961-1970 cost $10 thousand million in damage – $500 million more than the total assistance provided by the International Bank for Reconstruction and Development during the same period.

An earthquake or a flood causes obvious physical damage, but the broader economic implications are harder to assess. The long-term impact of the loss of skills due to the death of technicians or craftsmen, for example, is very hard to quantify. A natural catastrophe can also destroy vital sectors of a nation's economy. Between 1946-1951, six million coffee trees in an area of 130 square kilometres were blighted by toxic sulphur fumes from Nicaragua's Masaya volcano. The November 1970 cyclone in Bangladesh, in which at least 300 000 people died, drowned 60% of the country's fishermen. The tragic loss of the fishermen, and the resulting loss in the supply of fish, undoubtedly had secondary effects on the economy as well as nutrition levels



The physical damage from a catastrophe can limit severely the ability of health workers to respond to the emergency at hand. The December 1988 earthquake in the Armenian SSR, which killed 25 000 people and injured 15 000, also damaged or destroyed 32 hospitals and 224 local clinics and health centres. Caring for the 500 000 people who were made homeless was complicated by the wide scale destruction of the schools and academic buildings that are often used as secondary shelter during emergencies.

The restoration of the health infrastructure is one of the most important tasks facing the government and people following a disaster. Rehabilitation that is slowed or prevented due to a lack of funds can lead to health hazards. When personal hygiene regimens are interrupted by natural disasters, the possibility of typhus-carrying fleas and lice arises. When sewer systems are damaged during floods, the potential for widespread contamination of water supplies is great. The risk of water-borne diseases in populations living near pools, rivers and lakes must be monitored closely.

The costs of rehabilitating a shattered infrastructure and economy are enormous, particularly when, as in many developing countries, property is uninsured. A lack of adequate insurance compounds the economic costs, slowing recovery and reconstruction.

Earthquakes can reverse economic growth in developing countries when they destroy part of the economic infrastructure.

Measures taken before disasters can pay off handsomely after it. For example, hospitals built in San Francisco after strict earthquake-resistant building codes went into force were able to function immediately after the powerful 1989 earthquake. Prevention or mitigation measures should be seen as prudent long-term investments that will weather the sudden downturn that disasters create.

Incorporating preparedness planning into long-term developmental strategies is therefore not a luxury; it is an essential need. Developed and developing countries alike can improve their preparedness planning. An estimated two-thirds of the countries most vulnerable to disasters are still without adequate disaster planning.

Should disaster strike, the measures taken to strengthen the infrastructure and stabilize the economic base will be as important to the lives of survivors in the long term as relief efforts immediately following it.

Opportunities and Challenges in Natural Disaster Reduction

Interview with Dr H. A. Hamad-Elneil, M.D., Ph.D.
Director, Emergency Relief Operations, WHO, Geneva

Dr H. A. Hamad-Elneil

What are some of the challenges we all face during the International Decade for Natural Disaster Reduction?

The combination of rapid population growth, unconstrained urbanisation, shrinking natural resources and newly emerging technological dangers now confronts us with a mix of conditions which amplifies the potential impact of both natural and other catastrophes - and their unaffordable human costs. It highlights the urgency for improved disaster prevention and preparedness in all sectors.

What is the health sector's role in natural disaster reduction?

Health workers have a lead role to play. For example, they can identify epidemiological risk factors associated with disease outbreaks. Organizationally, there is a real chance for health personnel to work alongside hydrologists, meteorologists, urban planners, engineers and other professionals at all stages of disaster prevention and rehabilitation.

How important is cooperation between the various organizations?

Disaster reduction is by necessity a multisectoral and multi-agency responsibility. No single organization or discipline can do it alone. Preparedness planning presents rich possibilities to pool the collective expertise of health workers, civil defence officers and representatives of local and nongovernmental organizations to minimise the impact of likely catastrophes.

What is technology's role?

Progress in satellite imaging now alerts us to approaching cyclones and droughts. Rapid developments in global communication and computer technologies speed our ability to transmit assessment findings from disaster-affected areas within hours of impact.

There are many parallels between forecasting strategies used in the meteorological sciences and in the epidemiological surveillance/early warning techniques applied to the detection of epidemics.

Our challenge is to explore ways in which emergency preparedness strategies can be more effectively integrated into these and other ongoing health activities at the national, provincial and community levels.

Health worker training is one of the priorities for the Decade for Natural Disaster Reduction.

What are some of the priorities during the International Decade for Natural Disaster Reduction?

A technical priority at all levels is training. Better disaster preparedness in the health sector clearly requires training of health workers at all levels, as well as the integration of key preparedness principles into the curricula of training institutions.

At a global level, WHO has long supported disaster training activities on a wide range of technical subjects in partnership with regional offices and collaborating centres.

The WHO Pan African Centre for Emergency Preparedness and Response in Addis Ababa, Ethiopia, supports the special disaster reduction training needs for Africa. The Asian Disaster Preparedness Centre at the Asian Institute of Technology in Bangkok, Thailand, has started similar activities for the Asian region.

In the Americas and Caribbean, the Pan American Sanitary Bureau has played a vigorous role in stimulating disaster preparedness training at the country level. Despite the extraordinary challenges we face in the mitigation and prevention of natural and man-made catastrophes, we as health workers have a clear goal - to increase preparedness. That is why we say, 'Should disaster strike, be prepared.'