

**Paper name: Environmental Geography and Disaster Management**

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**Topic: Overview of Man-Induced Disasters in India and Vulnerability  
Analysis**

**Man-made disasters** refer to non-natural disastrous occurrences that can be sudden or longer term. Sudden man-made disasters include structural collapses, such as building and mine collapse, when this occurs independently without any outside force. In addition, air disasters, land disasters and sea disasters are all man-made (International Red Cross).

The countries in Asia region are densely populated and are low-income economies. Recurrent disasters, specifically, **road and rail accidents, fire outbreaks**, deaths of pavement dwellers due to **heat and cold wave** conditions etc., cause serious setback to the developmental process; in fact disasters and development have a chicken and egg relationship in that one is in fact the primary cause of the other. For example, disasters exacerbate poverty conditions in affected regions; and the poor are the worst sufferers in disasters. The fast pace of growth and expansion without comprehensive understanding or preparedness in urban planning, for instance, has brought forth a range of issues that seek urgent attention at all levels. Local administrative weaknesses have allowed the situation to get out of hand. Institutional weaknesses have created system vulnerabilities over time. In the absence of mitigation measures, growing numbers in our population are at risk of prospective hazards, such as **air accidents, boat capsizing, building collapse, electric fires, festival related disasters, forest fires, mine flooding, oil spills, rail accidents, road accidents, serial bomb blasts, and fires**. The safeguards within existing systems are limited and the risks involved high. The situation with regard to road accidents is particularly acute.

A comprehensive document prepared by the Transportation Research and Injury Prevention Programme (TRIPP) brings out the magnitude of the problem in India and abroad. It gave the first official data of accidents in 2002, recording 80,118 deaths and 342,200 injuries on Indian roads but conceded at the same time that many cases went unreported and that 1,200,000 required hospitalisation. Of the worldwide annual average of 700,000 road accidents, 10 per cent occur in India. The latest annual statistics indicate that over 80,000 people are killed on Indian

roads. These figures do not reflect the human suffering and social problems caused by accidents. Nearly three lakhs per year sustain injuries.

Financial losses are staggering. A decade's worth of saving the Rs 50,000 million estimated loss in traffic accidents every year could finance building 7,000 km long, six lane national highway at today's rates. The figures are always on the increase, which corresponds to the tremendous increase in the production and sale of motor vehicles (Moorthy and Karnick, 2005).

**Nuclear, Chemical and Biological** threats are apparent in the present scenario. Deliberate international terrorism or accidental secondary fallouts can be fatal. There has been considerable agitation in India of late over advanced countries dumping hazardous waste in India. This falls within the realm of international relations. Rapid and effective response as also mitigation policy needs intensive research and laboratory support in this regard to frame convincing legislation, which can ensure internal security without jeopardizing external relations with foreign countries. Globalisation would have to be effectively managed through legislation regulating Multi-national and Transnational corporation activity, especially with regard to safety precautions for hazardous facilities. EIAs or environment impact assessments are already underway in India. There is need for better implementation of the same. A good EIA needs good data support to base arguments on, which is presently lacking. Acknowledging the need, Environmental Information Centre (EIC) has been set up to serve as a professionally managed clearing house of environmental information that can be used by MoEF, project proponents, consultants, NGOs and other stakeholders involved in the process of environmental impact assessment in India. EIC caters to the need of creating and disseminating organised environmental data for various developmental initiatives all over the country. Regarding oil spills, experts opine that satellite imagery should be used to mark out vulnerable areas and mitigation measures put in place, as for example, restricting habitation in the areas.

In India, the man-made disaster category also includes **communal riots**, which affect parts of India periodically, as in the wake of the Babri Masjid demolition or unabated violence against Dalits, the sub-ethnic North-East tangle, and others. Vulnerability studies in this regard would require empirical unearthing of facts with regard to the socio-economic profile of the regions with a view to pinpointing the exact cause (s) of recurrent violence in the area (s). In this regard, generation of awareness among communities, strengthening/generating positive social capital proactively, through measures like mustering opinion in support of measures to ameliorate the

situation, lending active state support to social workers involved in movements towards the same would be some of the desirable activities.

**Health** is a major factor in disaster management efforts. As reported in the World Disasters Report, 2004, across southern Africa, HIV/AIDS is combining with food insecurity, poverty, worsening health care, dirty water and sanitation, uncontrolled urbanization and common disease to create an unprecedented disaster that conventional intervention can no longer contain. The problem is no less acute in India, where figures of actual and potential victims keep rising. The pace of improvement in health services does not compare favourably with countries in East Asia and Latin America where life expectancy is almost as good as developed countries. This is because inter-sector linkages between sanitation, nutrition, poverty alleviation, education, drinking water supply *et al* have not been duly explored. In states where such linkages obtain for historical reasons, or as a result of deliberate effort in this regard on the part of the government, results in health improvement are significantly better than other states. Hence, emphasis in the tenth plan was on improved logistics with regard to drug supply and diagnostics and exploring systems of health care financing so that essential health care is available to all at affordable cost (Tenth Plan).

As per the Red Cross, long-term man-made disasters refer to civil strife, civil war and international war, which are equally pertinent policy concerns. On a national level, this involves war-like encounters between armed groups from the same country, which take place within the borders. Such outbreaks of war, besides threatening national security, may pose large-scale medical problems such as epidemics, lack of water, accumulation of rubbish, displaced persons, refugees, food shortage, hunger etc. Our country has been plagued by civil strife in Kashmir and North-East particularly, besides South India and West Bengal, occasionally. Tensions with neighbouring states have been persistent. As solution has evaded attempts in this regard, the emphasis in diplomacy has currently shifted to 'management' of the problem with a view to normalising relations on other counts such as commerce *et al* instead of insisting on solving persistent political issues, for instance, the Kashmir issue with Pakistan, first.

Scenario with regard to preparedness, with respect to both internal and external problems, however, need not be too pessimistic, since, theoretically, transport accidents, terrorism *et. al* have hitherto not been considered, 'disasters' *per se*; on account of increasing losses from such events however, the term 'Disaster' today is more inclusive in that the above enumerated are being counted disasters, leading to mitigation policy in this regard and urgency with which they need to

be reviewed. This is significant from the point of view of Risk Perception in the sense of resource allocation and prioritisation in development planning. Considering the seriousness with which they are being studied/perceived, comprehensive mitigation plans expectedly, would now be built into wider development planning for the future. The World Health Organisation says India scores high on a number of criteria for disaster-readiness. The country also earned praise from a global study for its immediate response to the tsunami disaster. India is among the five countries in South Asia that meet many of the criteria for disaster-preparedness and have a legal framework in place for the purpose, says the World Health Organisation (WHO).

The other four countries categorised by the WHO as having adequate levels of disasterreadiness are Bangladesh, Indonesia, Sri Lanka and Thailand. India, Myanmar, Sri Lanka and Thailand also have a legal framework in place.

Disaster management is now part of plan commitments, which means it is already a frontline development issue/priority, which improves its position with respect to resource allocation.

Also, awareness generation is already being attempted with regard to retrofitting and earthquake resistant structures *et al*, which is a positive development. It also means government strategy towards disaster mitigation envisages active cooperation of people, which has been advocated as an essential requirement by concerned world bodies, like the United Nations Development Programme (UNDP) and the International Red Cross.

Items high on agenda for administrative reforms, as articulated in the Tenth Plan, henceforth, for overall/comprehensive disaster management, would be, *development of capacity at local levels* through effective decentralisation, *improvement in law and order administration*, through modernisation and training, *urban development* with a perspective of disaster mitigation planning involving all stakeholders.

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