



Natural Disasters: Lessons from Uttarakhand

The recent cloud burst in Uttarakhand and subsequent natural disaster in the form of massive inundation should make many of us sit up and take notice. While it is true that notwithstanding all disaster management plans, man is helpless against the vagaries of nature as also borne out by the regular loss of lives and property from tsunami, tornados, typhoons and hurricanes in the developed countries like the USA and Japan. However, we can definitely be better prepared to face any such contingency for minimising such losses and damages. The clichéd but hoary dictum rightly says, 'prevention is always better than cure'.

India's many mountainous regions including Darjeeling, which was ravaged by major earthquakes in 1898 (known as Darjeeling disaster) and then again in September 2011, falls under seismic zone-IV (on a scale of I to V, in order of increasing proneness to earthquakes) near the convergent boundary of the Indian and the Eurasian tectonic plates, also needs better planning and better marshalling of obtaining resources and logistics to be well-equipped for any such natural calamity. Even though all such hilly areas have a contingency plan and relevant paraphernalia to face up to a natural disaster, however there is still a lot which could be done for better mitigation and minimisation of the losses accruing from such sudden natural vehemence.

First and foremost, there is a need for dividing the entire region into suitable eco-sensitive zones for better planning of the relevant developmental works, which are usually carried out without any concerns to the geo-physical nature of the local terrain and topography. It is due to this that our hills are subject to frequent landslides and land subsidence, often throwing the normal human life out of gear. The rampant and reckless felling of trees has left large tracts of the Himalayas denuded of any vegetation, making them further prone to ecological disasters like landslides. The unregulated and unabated building constructions and callous mountain cutting have further endangered the local ecology and human life. The development of human habitations in almost every part of the hills and the subsequent interference with the forces of nature has further distressed an already fragile ecosystem.

Hence, it is quite imperative that all the agencies concerned with the development and disaster planning in this eco-sensitive region synergise their action to save the Himalayas from any impending natural catastrophe waiting to happen. The regulatory framework relating to building constructions and other developmental activities, as already in vogue, ought to be strictly enforced. The relevant rules and laws already in force need to be strictly enforced by the local municipal and rural bodies to ensure enforcement of the building rules and laws while also making it mandatory to have a water-harvesting plan for every proposed building plan in the private and public sector. Now, it should be ensured that the same is implemented with due earnestness.

The integrated watershed management plan (IWMP) is another flagship government programme, which, if properly implemented, has potential to turn things around for the local ecology. There is not only a need for massive afforestation with due contour-wise green micro-planning, there is also a need for a well-designed drainage system so as to suitably channel the waters of hill springs and drains to pre-empt and reduce the chances of further landslides. There is a further need for undertaking massive pre-emptive protection works including construction of protection wall, gully plugging, planned check dams, contour bunding, a zone-wise solid waste management plan, hill-sensitive water harvesting structures and irrigation channels to stem and minimise such landslides.

It should be ensured that all major development works including construction of roads, buildings and hydro power plants are not executed without first studying the environmental implications of the same through an 'environment impact assessment (EIA)' as made mandatory by the extant laws and decrees of the government. As per the studies carried out by the Geographical Survey of India (GSI) and National Disaster Management Agency (NDMA), large tracts of our hills have developed into sinking zones in the aftermath of the regular earthquakes and massive human activities, making the local ecology further fragile.

If we don't put in place the requisite regulatory framework, then landslides shall soon become order of the day. Illegal mining of minor and major minerals in the lower reaches of the Himalayas is another area of concern, which needs attention. And more than the regulatory enforcement, there is need for a political consensus to stop the same otherwise landslides shall keep repeating themselves with a lot of damage to the life and property of the native population.

After we have done the necessary homework with regards to the preventive and regulatory works, we should target our guns at popular awareness, which is abysmally low, to say the least. The native communities need to be made aware and conscientised of the pitfalls of ignoring and violating the relevant rules and laws as relating to various developmental activities as the same has serious implications for their day-to-day life. So, there is an urgent need for massive awareness drives and capacity building exercises of the local populace. The civil defence training relating to various aspects of disaster management and personal safety need to be undertaken in more and more parts of the region, more so for the local youths.

It has been generally experienced that more than anything else, it is the flow of information and communication during a particular disaster, which matters a lot. So, even after we have

a state-of-the-art early warning system as put in place by the Meteorological and Disaster Management Departments, the flow of the information to the right people at right time is what proves crucial to any disaster management exercise. The real time coordination and communication among all the concerned departments at information and resource sharing to provide succour and relief to the affected people is what is most important to face any natural calamity or anthropogenic (read man-made) disaster successfully. The rescue and relief work becomes further easier and facile with an already trained 'quick response teams' (QRTs) and a relatively better aware, trained and sensitised civil society members.

A well-coordinated initiative of the central and state government, local self-governments and local administration in coordination with the involved non-governmental organisations (NGOs) is already underway in all these regions, which is trying to work on the above-mentioned aspects to make the same a reality. However, the same needs to be done in right earnest by all the stakeholders concerned to ensure a sustainable development for all. The diagnosis and remedial measures suggested above for need to be looked into seriously for urgent appreciation of the problem at hand. We need to do it all faster otherwise the anthropogenic climate changes shall do us in sooner than later.

Salient Points

- Notwithstanding all disaster management plans, man is helpless against the vagaries of nature.
- India needs to divide the entire country into suitable eco-sensitive zones for better planning of the relevant developmental works.
- All the agencies concerned with the development and disaster planning in this eco-sensitive region should synergise their action to save the Himalayas from any impending natural catastrophe.
- The integrated watershed management plan, if properly implemented, has potential to turn things around for the local ecology.
- It should be ensured that all major development works including construction of roads, buildings and hydro power plants are not executed without first studying the environmental implications through EIA.
- Massive awareness drives, the civil defence training and capacity building exercises of the local populace should be done.
- A well-coordinated initiative of the central and state government, local self-governments and local administration in coordination with the involved NGOs is needed.
- The diagnosis and remedial measures suggested above for need to be looked into seriously for urgent appreciation of the problem at hand.