Uttarakhand Floods disaster: Lessons for Himalayan states

Many in the media and outside are calling the current Uttarakhand floods disaster of huge but as yet unknown proportions as Himalayan Tsunami. By that very name, we connect the combined fate of all Himalayan states and the inherent lessons which all Himalayan states need to learn from this tragedy.

Similarities between Uttarakhand and Himalayan states like Arunachal Pradesh In fact one article[1] has already been written drawing some parallels, predicting what Uttarakhand experiences today[2], Sikkim may tomorrow and Arunachal day after. In fact, Himachal Pradesh and Jammu & Kashmir are ahead of North East in this queue.

Himachal Pradesh, Sikkim and Jammu & Kashmir have gone too far down that road, but still can wake up and review their development plans and policies and possibly reduce the disaster potential in the respective states. Similarly Arunachal Pradesh has signed over 150 MOUs for big hydropower projects, each of them will entail big dam, long and huge tunnels, blasting, mining, muck generation & disposal, roads, townships, influx of people, transmission lines and so on, without any credible assessment in place.

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- All Himalayan hill states are fragile, part of new mountain that is prone to high intensity rainfall events, including cloud bursts. In fact the average rainfall in Arunachal Pradesh is much higher than that in Uttarakhand.
- All Himalayan states are also prone to flash floods and landslides.
- All Himalayan states are home to very large number of rapidly flowing silt laden rivers that can turn into ravaging, eroding, forces of destruction if they are not treated carefully. Again Arunachal Pradesh has much large number of major rivers than Uttarakhand. Arunachal's Rivers are also known to carry more silt than Uttarakhand Rivers.
- All Himalayan states are in seismically active area in zone IV and V, with tectonic activities that can lead to impact on land, rivers, landslides, increasing the disaster potential. This also means that geology of these states has numerous fault lines and all development activities have to be done keeping these fault lines in mind.
- All Himalayan states have very high proportion of area under forests, which is necessary for the sustained existence of the local environment, rivers, people and biodiversity. Livelihood and water security of people in these states majorly depends on these natural resources.
- All Himalayan states are prone to climate change impacts in major way, Himalayas have already seen increase in temperature that are 2-3 times higher than the average global temperature rise of 0.9° C. These climate change impacts include greater frequency of high intensity rainfall, including cloud bursts that can also increase the potential of landslides, flashfloods and glacier lake outburst floods.

Lessons from Uttarakhand tragedy Some of the lessons that Uttarakhand and other Himalayan states can draw from the current tragedy include:

- Put in place system of early warning, forecasting and dissemination for all kinds of disasters, particularly those related to rainfall and landslides. It is technologically feasible to predict even cloud bursts at least 3 hours in advance. A Doppler radar system was sanctioned for Uttarakhand since

[1] http://www.indiaspend.com/investigations/after-uttarakhand-will-arunachal-sikkim-be-next-54548
[2] For detailed blog on Uttarakhand disaster, see: http://sandrp.wordpress.com/2013/06/21/uttarakhand-deluge-how-human-actions-and-neglect-converted-a-natural-phenomenon-into-a-massive-disaster/

2008 which would have enabled this forecasting, but due to lack of coordination between NDMA, IMD and Uttarakhand government, this was not installed. However, communities and local governments have to be at the centre of all such warning and forecasting systems.

- Put in place a clearly defined monitoring system in place which will give prompt reports of actual rainfall events even as the they start so that people and administration in the downstream and can be alerted. This was absent in Uttarakhand.
- Protection and conservation of rivers, riverbeds and flood plains, including aquatic biodiversity. Do not allow encroachment of riverbeds and floodplains.
- Prepare clearly defined space for rivers, have river regulation zone in place and remove all illegal encroachments in river beds and flood plains in a time bound manner urgently through legislative, followed by executive action.
- Do not allow unsustainable mining of riverbeds.
- Do not allow blasting for any development activity. (Uttarakhand Disaster Management & Mitigation Centre made this specific recommendation after the Rudraprayag disaster of Sept 2012 that lead to death of 69 people) As such, blasting leads to increase in landslides.
- Protection of catchments including forests, wetlands and local water bodies that can play the role of cushion during high rainfall events.
- Ensure credible environmental and social impact assessment of all activities including all dams and all hydropower projects of above 1 MW capacity, all major roads, such assessments should also include how the projects can increase the disaster potential of the area, how they will affect the adaptation capacity of the local people in the context of climate change, how the projects themselves would be affected in changing climate, among other aspects. Currently, we do not have credible environmental and social impact assessment for *any* project.
- Ensure credible environmental compliance mechanism in place for each project in which local people have a key role. Today we have NO credible environmental compliance in place.
- No projects should be cleared until and unless there is credible cumulative impact assessment for all projects in any river basin and sub basin, which includes carrying capacity study. None of this was done in Uttarakhand and none is in place in any river basin of any Himalayan state.
- A review of under construction and under planning projects should be taken up urgently and projects need to be halted, awaiting such a review. The review should include various environment and river governance policies.
- Certain rivers and certain high risk zones should be declared as no project areas in each basin.
- In any case, there should be at least 5 kms of free flowing river between any two projects. At least 50% of river flows in lean season and at least 30% of river flows in monsoon should be released on daily changing basis as environmental flows as recommended by IMG recently. This should be applicable for all projects, including existing and under construction projects.
- All states, including those in North East must have an active state disaster management authority in place that will have key role in all development decisions. The disaster management authority should be integrated from village/ ward level upwards as action taken at local level typically has the greatest impact.
- Implement the National Mission on Sustainable Himalayan Ecosystem in a participatory, transparent, accountable and time bound manner.

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While rainfall and cloud bursts are natural phenomena, the disaster potential of such events directly depends on what we have done on ground over the years. Uttarakhand, by allowing indiscriminate building of roads, buildings and hydropower projects without basic assessments and participatory decision making processes, has increased the disaster potential of high intensity rainfall manifold. While some in the media are erroneously (as Tsunami is a natural phenomena, current Uttarakhand disaster is not) calling this as Himalayan Tsunami, many people of Uttarakhand are seeing it as a trailer of such Tsunami. If Himalayan states do not wake up, much bigger tragedy may await the region.

SANDRP