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DRR in Hilly Regions

Challenges in Sikkim and other Hilly States

Photo: AIDMI

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The Challenge of DRR in Sikkim and other Hilly States of India

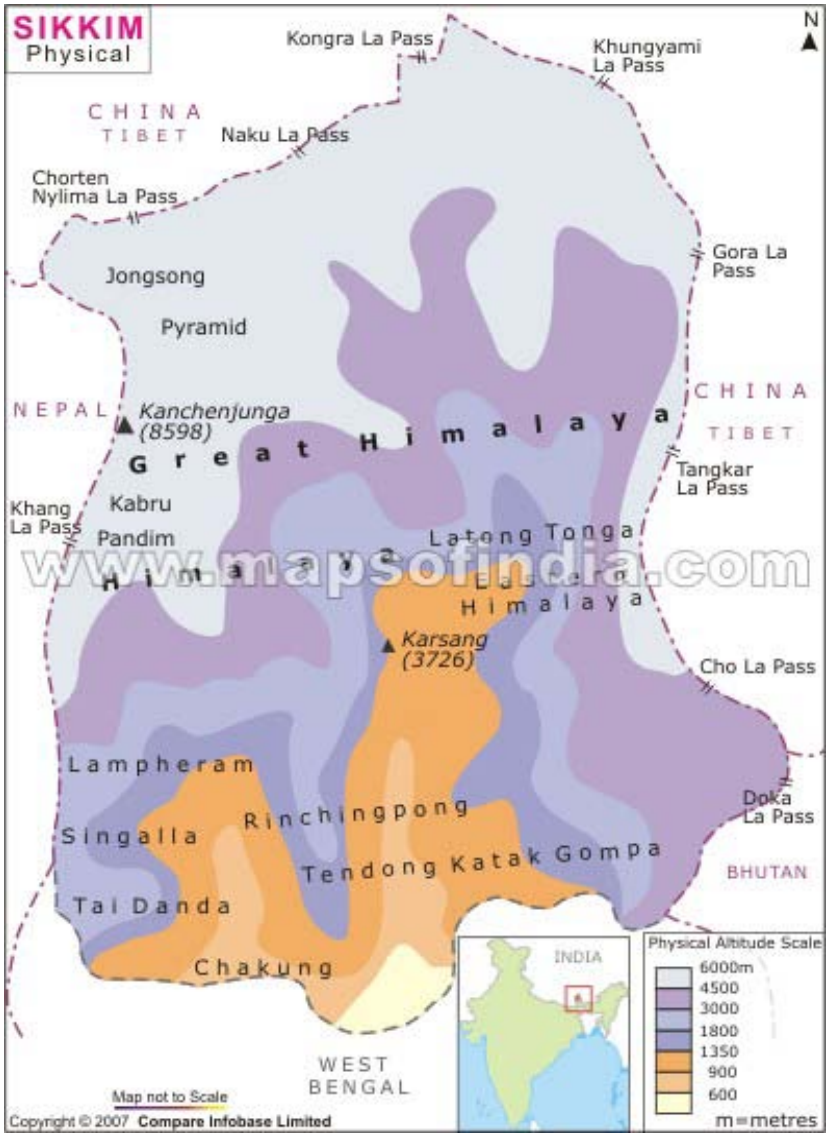
In the aftermath of repeated disasters like the Kashmir Earthquake (2005), the annual floods in Assam, the devastating cloudburst and flash floods in Uttarakhand (2013) or the Sikkim earthquake of 2011, the hilly states of India have emerged as the most disaster prone states in the country. A harsh climate, an unforgiving terrain and remote location coupled with make such states and their citizens highly vulnerable to multiple hazards.

Of these hilly states, Sikkim holds a special strategic significance for India. Bounded by Nepal, Tibet and Bhutan from three sides, the only entry into the state from the Indian mainland is through the south. The problem of accessibility is further compounded by the geo-physical profile of the state which makes it susceptible to earthquakes (Sikkim is in zone IV of Seismic activity), floods and landslides. All these factors combine to make the state of Sikkim extremely vulnerable to the adverse impacts of disasters. Furthermore, global warming also threatens the ecologically sensitive state by adding the imminent risk of floods due to the melting of glacial lakes.

The 2011 earthquake along the Sikkim-Nepal border exposed certain faultlines in the disaster response capacities of the state. But the state disaster management authority has taken proactive steps in the form of a robust state disaster management plan. Apart from a detailed and exhaustive hazard and vulnerability profile of the state, this plan also included endangered species of flora and fauna in the state.

Being ecologically fragile, the state of Sikkim also has a State Action Plan on Climate Change (SAPCC). This plan gives impetus to the National Action Plan on Climate Change (NAPCC) by focusing on the necessary interventions needed in the state of Sikkim. Thus, it is observed that there are a lot of challenges for effective disaster risk reduction in the hilly states of India, particularly in Sikkim. The above map gives an overview of the geo-physical features of Sikkim. ■

– Kshitij Gupta



About this issue

This issue of *Southasiadisasters.net* aims to highlight the challenges to effective DRR in Sikkim and other hilly states of India. The articles in this issue are based on various topics subsumed under this vast theme and range from the risk of climate change in DRR to the exigencies of DRR sensitive heritage conservation in such hilly states. ■

The Rationale of the Disaster Risk Reduction and Climate Change Adaptation Convergence

Synergies for financing disaster risk reduction (DRR) and climate change adaptation (CCA) was one of the topics that was discussed at the Eight International Conference on Community–based Adaptation in Kathmandu, Nepal. Participants however, were also inquiring more evidences approving the linkage between DRR and CCA activities. Hence, this short note, argues the importance and necessity of the integration of DRR with CCA.

Achieving effective DRR activities without considering CCA is hard to accomplish. Vulnerability to the increased frequency and magnitude of extreme climate variables (temperature and precipitation) is greater for developing countries. Thus, adaptive capacity and disaster risk reduction activities related to the changing climate is dependent on the development strategies that are being pursued by developing countries[1]. Adapting to the changing climate relies on the reduction and management of climate-induced disaster risks. Therefore, and as a result of the overlapping definitions and concepts, measures and objectives of CCA and DRR, which are reflected in their concepts and goals, a number of national and international documents have been focused on CCA and DRR simultaneously[2 3 4 5 6]. At the international level, the Hyogo Framework for Action (HFA) of 2005, which has been endorsed by the United Nations General Assembly, expects to promote the integration of risk reduction and adaptation to climate change strategies. The Bali Action Plan (2007) has also approved the linkages between DRR and CCA and called for enhanced actions on adaptation, including disaster reduction strategies, as well as identifying the loss and damage associated with climate change impacts in developing countries[7]. Development and humanitarian practitioners are collectively trying to empower those who are vulnerable and exposed to hazards and climate change. This also requires an approach that integrates the concepts and practices of DRR with CCA. Similarities also exist in other area of activities in DRR and CCA such as knowledge and practices, financial mechanism as well as national institutions. In short, CCA and DRR are already converging in the following areas[8]:

- International agreements
- Financial mechanism
- National institutions
- Knowledge and practices
- Humanitarians and civil society efforts

In Nepal, since integration of CCA and DRR activities have yet to be institutionalized within various sectors, it is essential that an adequate implementation mechanism with an inter-sectoral approach buttressed with timely information and experience sharing discussions and more importantly, institutional commitment/support be developed. Nepal however, has developed a local adaptation plan of action[9] (LAPA) manual to address the climate change adaption as well as well as the local disaster risk management planning[10] (LDRMP) guideline to adapt an effective and practical action plan to reduce disaster risks at the organizational level. Reviewing both documents shows that while both documents are sharing a great deal of common activities, the LAPA manual is more detail oriented and the LDRMP guidelines however, provide a better direction to identify and connect to the related institutions at all levels. Therefore, a combination of the both these documents is most likely to develop an adequate implementation mechanism that works toward adapting to the changing climate as well as reducing disasters risks, including climate-induced disasters in Nepal. ■

– Sima Mostofi Javid (Ph.D.),
Consultant, Disaster Risk Reduction and Climate Change Adaptation, Nepal

1 Mirza, M. M. Q. 2003. Climate change and extreme weather events: can developing countries adapt? Climate Policy, Vol. 3, Issue 3, p. 233-248
2 Hay, J. E. 2012. Disaster risk reduction and climate change adaptation in the Pacific: an institutional and policy analysis, UNDP and UNISDR, http://www.unisdr.org/we/inform/publications/26725
3 Ministry of Agriculture and Cooperatives, Government of Nepal, 2011. Priority Framework for Action Climate Change Adaptation and Disaster Risk Management in Agriculture
4 UNICEF/HQ, 2012. Climate change adaptation and disaster risk reduction in the education sector: Resource Manual
5 UNICEF/HQ, 2013. Programming for climate change: A reader
6 Turnbull, M., Sterrett, L. Ch. And Hilleboe, A. 2013. Toward Resilience: A Guide to Disaster Risk Reduction and Climate Change Adaptation, Practical Action Publishing Ltd
7 Accelerating the Implementation of the Hyogo Framework for Action (HFA) in Asia and the Pacific, Asian Disaster Management News, 2010, Vol.15, No. 2
8 Mitchell, T. Aalst , M. V. and Villanueva, P. S. 2010. Assessing Progress on Integrating Disaster Risk Reduction and Climate Change Adaptation in Development Processes, Institute of Development Studies
9 Government of Nepal, 2011. National Framework on Local Adaptation Plans for Action, Ministry of Science Technology and Environment, Singha Durbar, Kathmandu, Nepal
10 Government of Nepal, 2011. Local Disaster Risk Management Planning guideline. Ministry of Local Development , Sirmahal, Lalitpur, Nepal

Disaster Risks in High Mountain Regions

Mountains occupy approximately one-fifth of the earth's land surface and cover 54% of Asia's land mass. They are home to diverse ecosystems and provide sanctuaries for plant and animal species as well as shelter for 10% of the world's population. Eighty percent of the Earth's surface water originates in the mountains. This water is essential not only for mountain communities but also for billions of people living in the plains.

However, mountains are very sensitive to environmental change. Rise in temperature can disrupt a mountain system and lead to the melting of glaciers, soil erosion, landslides, rock fall, floods, and avalanches. These disasters can not only cause massive loss of life and property, but also leave mountain communities cut off from the rest of the world for days, weeks, and even months on end.

The mountain areas of the Hindu Kush Himalayan region have suffered a series of disasters in recent years. In 2010, the flooding of the Indus River basin in Pakistan killed thousands and displaced millions. Those floods are seen as a result of climate change combined with wanton destruction of forests in the Hindu Kush mountains. Similarly, Ladakh, which is in the Himalayan region of India, suffered unprecedented rainfall (14 inches in two hours) and consequent floods that left hundreds dead. In 2013, flash floods triggered by very heavy rainfall and a cloudburst in Uttarakhand affected 12 out of the 13 districts in the state, killing thousands and displacing hundreds of thousands of pilgrims and local people. The deluge washed away roads, bridges and other infrastructure.

In addition, the tragic avalanche of 2012 that buried hundreds of Pakistani soldiers on the Siachen Glacier, located in the Karakoram range in Pakistan, and the recent avalanche that killed 16 Nepalese Sherpas on Mount Everest in 2014 have drawn the world's attention to high-altitude disasters.

To monitor hazard risk and assess changes in the high mountains, ICIMOD has developed the Cryosphere Initiative under the Regional Programme on Cryosphere and Atmosphere. The Cryosphere Initiative focuses on the monitoring of glaciers, snow, and glacial lakes and glacio-hydrology with an emphasis on in-situ measurements, remote sensing, and modelling. Snow cover in the HKH is also being monitored by ICIMOD's new MODIS satellite data receiving and processing facility.

ICIMOD team establishing a Glacial Monitoring system at Yala Glacier, Nepal. Photo credit: Udayan Mishra

Among the most worrying hazards in high-mountain areas are glacial lake outburst floods. Recent studies by the International Centre for Integrated Mountain Development (ICIMOD) and other institutions have identified over 200 glacial lakes in the Hindu Kush Himalayan region at risk of causing a glacial lake outburst flood. ICIMOD, in collaboration with respective national government agencies, has been establishing glacial lake monitoring systems at selected glacial lakes in the Himalayas and in the landscape surrounding Mount Kailash in southwestern Tibet to facilitate data collection and analysis to assess the potential risk of glacial lake outburst floods.

High altitude mountain ecosystems are under immense stress due to the demands of the growing world economy and impacts of climate change, while mountain communities are deprived of the development gains made at their expense. Communities living in high altitudes are also at constant risk of landslides, flash floods, and other disasters. The critical questions we need to ask are: How can we sustainably harness the potential of mountains, without creating disaster risks for mountain communities? How can mountain people be compensated for the services they provide to downstream users?

There are no easy answers to these questions. Urgent integrated efforts are required to protect fragile mountains from the impacts of climate change and to reduce disaster risks in mountain regions. These efforts may include proper drainage management to control shallow debris and bioengineering using appropriate forms of vegetation to stabilize vulnerable surface areas; ensuring disaster preparedness among mountain communities; setting up GLOF, flood and landslide early warning systems and improving information flow; and providing access to mitigation and relief measures. Further, there is an urgent need for transboundary and regional cooperation among mountain countries in the areas of data sharing, flood and seismic catastrophe management, periodic digital hazard mapping, monitoring and modeling for accurate understanding and forecasting of disasters to save thousands of lives.

To that end ICIMOD has long been exploring ways to reduce the risk of disasters resulting from natural hazards in the mountains. It has focused its efforts on assessing the differential vulnerabilities and coping capacities of women and men. ICIMOD has also fostered regional and transboundary cooperation in disaster risk reduction, and remains committed to strengthening gender-sensitive policies and practices in disaster early warning, community-based disaster risk reduction, and disaster response in the high mountain region. ■

– Hari Krishna Nibanupudi,
Senior Disaster Risk Reduction Specialist, International Centre for Integrated Mountain Development (ICIMOD), Nepal

PREPAREDNESS

Planning Disaster Preparedness in India: Key Thoughts

India has woken up very late in terms of policy-making for preparing and mitigating disasters. It was as late as the year 2005 that we had a disaster management policy. Even after putting the policy in place we have had major disasters that we have been ineffective in responding to. The most horrendous in the series being the Uttarakhand floods in June 2013 in which thousands of people lost their lives. The hills came crumbling down and yet we put the blame on the fury of the "nature". It is quite a well-known fact that it was illegal mining and dams that led to the hollowing of the hills and they came down when the flash floods occurred. Uttarakhand was a "human-made" disaster. The Live Mint magazine[1] dated 29th April 2014 reports that the "Government panel blames hydel-power projects for the deadly Uttarakhand floods". This is so typical of India where we love to play the blame game after the tragedy has occurred instead of addressing the root cause of disasters and distress. In this write-up I am not presenting solutions but posing a few questions to the readers as to how we can talk about disaster-preparedness in a country like India with its current social, political and economic situation where inequality is at an all-time high and the state has been focusing too much on economic growth at the cost of the environment and cultural concerns.

The voices of concern of grassroots social and environmental activists are subdued as they caution us about the impending disasters. How easy it is for the Indian government and citizens to forget the sacrifice of Swami Nigamananda who died trying to protect the fragile mountain-ecology of Uttarakhand and preventing mining in its river beds particularly that of River Ganga.

The dirty nexus between the state and the mining industries was successful in eradicating the voice that opposed them. How can we discuss disaster-preparedness in a country where civil society is crushed by such unfair means? India claims itself to be a democracy and yet the state oppresses the people who are trying to protect the environment and culture of their land. For any kind of disaster-preparedness we have to be inclusive in our decision-making processes. How was mining and haphazard construction activity ever approved in the fragile eco-systems is the critical question everybody needs to ask not just in the aftermath of the disaster but before it occurs just like Swami Nigamananda did. How can we achieve any kind of environmental and social justice when the voices of our crusaders are silenced by those who are out to destroy the environment for selfish gains? How does the state allow these whistle blowers to be attacked and die when abroad these people are being worshipped like Gods?

Yet another example of an impending disaster would be the indiscriminate mining and industrial activities in Chattisgarh that has already alienated thousands of indigenous people from their land and is causing massive land degradation and pollution in that region. Prosperous tribal communities who did not know what disease and sickness was now face the challenges of multiple health problems ranging from respiratory diseases to skin problems. The private mining companies have sucked every drop of their blood by acquiring their lands through unfair practices and not even giving them adequate compensation for it. The state has been complicit in these acquisitions and has favoured the powerful in their transactions.

Further, the voices of RtI activists such as Ramesh Agrawal, a resident of Raigarh who has been actively challenging the private mining companies are dimmed by using violence against them. Mr Agrawal had been active in opposing private mining companies in and around Raigarh in *jan sunvais* (public hearings) and also faced arrest for the same. In the year 2011 he spent over two months in the jail on charges by a private company of using abusive language and instigating people against them at a public hearing. In April 2012 due to his active pursuance, the National Green Tribunal cancelled the mining permit for a private company in Tamnar block of Raigarh district and ordered that a fresh public hearing be conducted since the previous one appeared fake. Within three months of this people's victory Mr Ramesh Agrawal was shot in his shop by 2 unidentified assailants and suffered major leg injuries for which he underwent several surgeries. He continues to limp but the attack has not marred his spirit to fight against selfish capitalists who are destroying the physical and social environment of Raigarh.

The reason for discussing activists like Swami Nigamanand and Ramesh Agrawal in the context of disaster-preparedness in India is to highlight the faulty priorities of the state and its failure to incorporate citizens' voices in its blind quest for economic growth. The neo-liberal turn in India's economic policy is the biggest threat for disaster-preparedness in the country. So long as the Indian state keeps turning a deaf ear to the voices of people like the late Swami Nigamananda and Mr Ramesh Agrawal, there is little hope for this country to be prepared for handling its disasters and emerge as a resilient democracy where people's voices of concern are heard. Climate change is already showing its impacts in India and it is predicted that disasters particularly floods and droughts will be on the rise in the coming years. In such a scenario, the food and livelihood security of millions in India are at risk. These grassroots voices need to be heard and incorporated into the fold of environmental planning in India or else their exclusion will be a bigger disaster than the "natural disaster" itself. ■

– Kanchan Gandhi,
Associate Professor, School of Planning and Architecture, Vijayawada, India

1 http://www.livemint.com/Politics/jI2NRcscwg8AcEDpUasCEN/Govt-panel-blames-hydropower-plants-for-deadly-floods.html

Overview of the State Action Plan on Climate Change (SAPCC) for Sikkim

Introduction

The Indian state of Sikkim is located in the north-eastern part of the country. Bounded by Tibet, Nepal and Bhutan on three sides, the state of Sikkim is of special strategic importance for India. Apart from its strategic significance, this state is also a biodiversity hotspot. However, anthropogenic activity induced climate change threatens this ecologically gifted albeit fragile state. The government of India has woken up to the urgency of introducing concerted plans at the policy level that can facilitate adaptation to climate change in Sikkim and similar ecologically fragile states. The result was the National Action Plan on Climate Change (NAPCC) which was formulated and launched in June 2008. The onus of this plan was to facilitate adaptation to climate change based on efficient technology solutions that engender ecological sustainability. To translate this plan into action, local level state action plans for climate change were formulated to address the exigencies of climate change adaptation at individual state level. The natural culmination of this strategy was the Sikkim State Action Plan on Climate Change (SAPCC).

The Need for State Action Plan for Climate Change (SAPCC) in Sikkim

The state of Sikkim encompasses the Lesser Himalaya, Central Himalaya, and the Tethys Himalaya. Due its temperate climate conditions, the state is rich in biodiversity with a variety of flora and fauna. The state has a large number of glaciers (84) and glacial lakes (315). According to the 2011 census, the population of the state is 0.61 million of which almost 75% is rural.

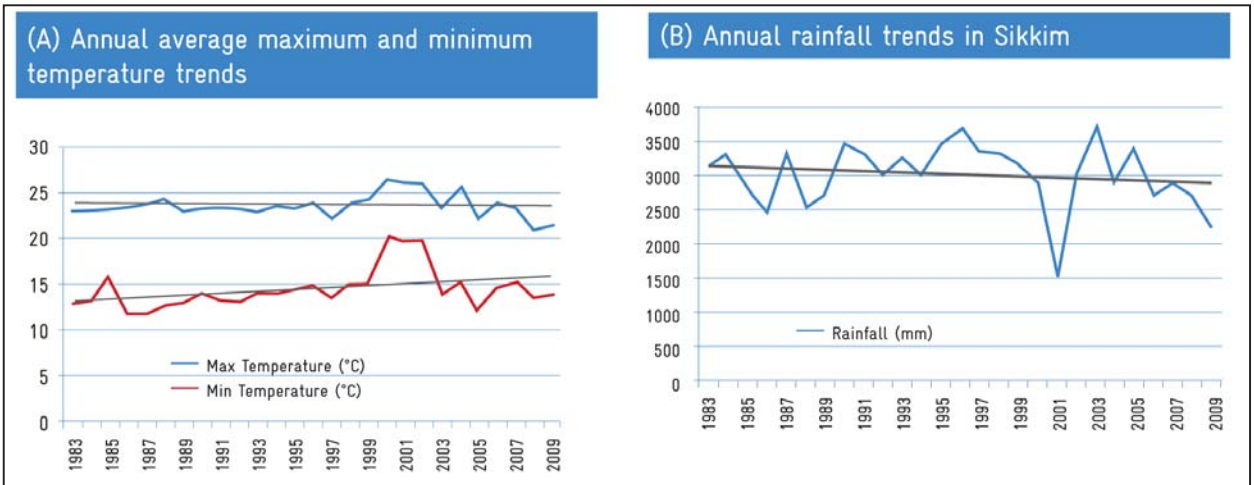
However, the state is ecologically sensitive and is constantly under the threat of climate change. Long term meteorological data points to the rising of average temperatures at the rate of 0.2-0.3°C per decade and to the fluctuation in the pattern of monsoons. Moreover, between 1957 and 2009, the minimum temperatures have increased by 2.5°C. The graphs show the average maximum and minimum temperature along with annual rainfall trends in Sikkim[1]:

Furthermore, the erratic rainfall is now received in short and intense bursts which escalates the risk of landslides and flashfoolds and the possibility of a long and dry winter. All these factors pose a grave climatic threat to Sikkim and vindicate the need for a state level plan on climate change adaptation.

Main Features of the Sikkim SAPCC

A plan is an instrument to transform intent into action. To better understand the rationale behind devising this plan, it is necessary to examine the areas of concern for the state in a changing climate scenario. These areas of concern are as follows[2]:

- Ensuring sustainability of water resources and meeting rising water demand in the future as



Graphs show the average maximum and minimum temperature along with annual rainfall trends in Sikkim.

1 Sikkim Action Plan on Climate Change (2012-2030), http://envfor.nic.in/downloads/publicinformation/Sikkim-SAPCC.pdf
2 The Sikkim State Action Plan on Climate Change, http://cca.ner-india.org/sites/default/files/pictures/2_sikkim_sapcc_abstract.pdf

the climate becomes warmer.

- Ensuring food security and thus devising strategies for agriculture, horticulture and livestock.
- Ensuring livelihoods for majority of its population dependent on agriculture, agriculture allied services, forest produce, and ecotourism.
- Protecting and conserving forests and biodiversity.
- Sustaining the habitats and human health security in a changing climate scenario.
- Introducing energy efficiency and renewable energy technologies

After highlighting the areas of concern for the state of Sikkim in a changing climate scenario, this plan delineates the sectors for which strategies for adaptation to climate change have been included. These sectors include the following:

a. Water
b. Agriculture, Horticulture and Livestock
c. Biodiversity, forests, wildlife and ecotourism
d. Promotion of energy efficiency
e. Urban and rural habitats and communities

After the identification of the areas of concern in a changing climate scenario and of the relevant sectors for which mitigation and adaptation strategies need to devised, the SAPCC progresses to a sector wise description of these strategies. Furthermore, the challenges to each of these sectors have also been highlighted. All in all, the SAPCC for Sikkim is a seminal document that lists out a comprehensive list of climate related threats to different sectors of the state and suggests strategies to counteract on these threats. Most importantly, this plan has paved the way for a concerted climate change adaptation effort to start in this beautiful state. ■

– Kshitij Gupta

CASE STUDY

Living with Floods in Assam

In floodplain areas around the world, farmers use the silt deposits that floods bring as a traditional way to upgrade soil quality. However, floods can also cause a sandy layer to be deposited, which can have long-term impacts on soil fertility. This problem is particularly significant in Dhemaji District in north-eastern Assam where sand deposition is making it difficult for many farmers to make a living. The average rice yield in the state of Assam between 1990-91 and 2009-10 was 1,433 kg per hectare. But, in the sand-deposited villages of Dhemaji District, the average yield is 315 kg of rice per hectare. Why is this the case and what are the costs borne by poor farmers as a result of sand deposits?


Photo: AIDMI.

I am 42 year old and Naruathan is my birthplace. When I was a child I had seen the river MAGUMAARI (a stream of JIYADHAL River) flowing with clean and nutritious water through village. We had sufficient rainy water for irrigation and very fertile land. But the heavy floods of 1979, 1983, 1988 and 1996 have completely changed the picture of our village. No we are staying inundated for six months as the river depth has decreased due to sedimentation. Water directly enters the villages and destroys everything (including agriculture, livestock and houses). The productivity of land has also decreased. We don't have a place to stay safe during the monsoons. We rush to high raised place like on roads, we drink flood water and if we get relief we have food to eat but if we didn't get relief our children and family members face starvation.

'We don't have money to migrate to a safer place; we don't have land for earning. Is there any way of getting our old days back'.

– Gobind Chattri, Naruathan Village, Assam

Sand Deposition in the Dhemaji Valley

Dhemaji is a narrow valley district surrounded by the steep slopes of the Arunachal Himalaya to the north and the east, and by the Brahmaputra River to the south. The district, once considered the rice bowl of Assam, has been transformed into a virtual desert due to sand deposition caused by flooding from the Himalayan tributaries of the Brahmaputra River. Floods in the year 2000 affected about 330,000 people in 810 villages, damaging 11,331 hectares of standing crop. The floods of 2011 affected a population of 154,000 and an area of 28,300 hectares in 261 villages in the district.

The floods have clearly ravaged agriculture production. Between 1992 and 2004-05, net sown area in the district decreased by about 11%. Furthermore, fallow and uncultivated land increased by 35%. Average paddy productivity in Dhemaji District is now much lower than the state average. ■

– Brij Chauhan

Reference: Sand Deposition and Poverty Among Farm Households in North-eastern Assam, Policy Brief, Number 65-12, November 2012

The Vulnerability of Sikkim to Multiple Hazards

Importance of Hazard, Vulnerability and Capacity Assessments

Disasters disrupt development. It is now a universally acknowledged fact that disasters can offset the progress on developmental outcomes in the areas they strike, pushing their citizens into a state of poverty and privation. Furthermore, the areas affected by disasters are also left exposed to newer risks. In this context, it becomes imperative to mitigate the adverse impacts of disasters for making the development outcomes of an area resilient. One of the most potent methods to achieve this aforesaid resilience is a Hazard, Vulnerability and Capacity Assessment (HVCA) exercise.

Founded on the principle that effective mitigation necessitates the identification of all the possible hazards to which an area might be susceptible to, an HVCA exercise is often referred to as the backbone of any disaster mitigation and management effort. Since disaster risk is a function of hazard, vulnerability and the coping capacity of a system/s, an HVCA exercise can be viewed as a scientific instrument in reducing vulnerability. The following equation explains this:

$$\text{Disaster Risk} = \frac{\text{Natural Hazard} \times \text{Vulnerability}}{\text{Capacity of Societal System}}$$

The Multi Hazard Risk and Vulnerability Assessment (MRHVA) in Sikkim

The state of Sikkim, situated on the north-eastern part of India is extremely vulnerable to multiple hazards. According to the census of 2011, almost 75% of the state is rural which leaves a lot of scope for development initiatives to take place. However, the state is ecologically fragile and prone to a variety of hazards. A Multi Hazard Risk Vulnerability Assessment (MHRVA) was conducted for the state of Sikkim to help the stakeholders at various levels to make informed decisions for reducing the vulnerability of Sikkim to various hazards. This MHRVA is a seminal document that is aimed at enhancing community preparedness.

The state is exposed to the following hazards:

a. Landslide hazards
b. Earthquake hazards
c. Fire hazards
d. Flood/ flash floods hazards
e. Snow Avalanches hazards
f. Drought hazards
g. Hailstorm, Thundering and lightening hazards.
h. Riots and stampedes

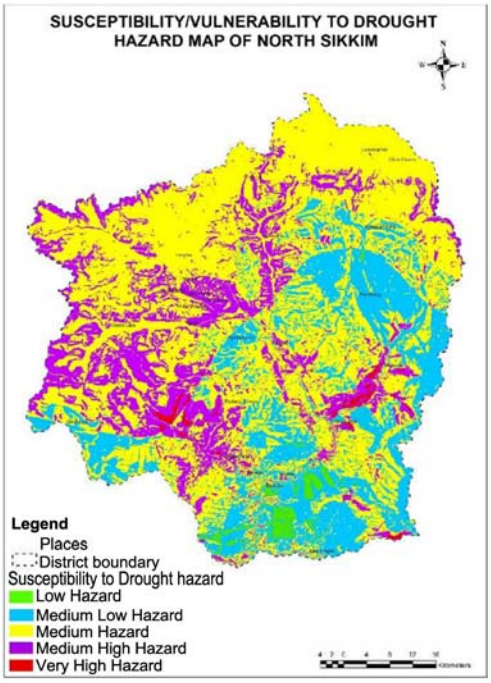
The objectives of this MHVRA are as follows:

- Investigate prominent natural and human-caused events.
- Identify the various hazards affected by that area and hazards likely to occur in Sikkim.
- Identify any threats that may require a timely and coordinated response to protect lives, property, and to reduce economic losses.
- Evaluation of the effectiveness of the mitigation and emergency plans and implementation of training activities such as simulation, seminars and workshops.

The methodology followed by this MHVRA to achieve the aforementioned objectives was the preparation of composite risk maps at the district, sub-district and gram panchayat level in Sikkim. These maps identified hazard risks and linked them to their geological and hydrological origin. This was followed by the scaling up of these maps by using appropriate softwares. All this was used to evolve a risk rating system for this MHRVA exercise.

The MHRVA has a risk rating system for facilitating decision making on emergency response and management. According to this rating, risks can be categorised in the following 5 categories:

- **Low Risk**
  If a particular hazard has been rated as low risk then it implies that it is highly unlikely for that hazard to occur in that area as compared to other hazards.



- **Medium Low Risk**
  A hazard rated medium low implies that the likelihood of that hazard in that area is relatively less but still higher than a hazard rated 'low risk'.

- **Medium Risk**
  These hazards are at the intermediary stage of severity and frequency. Given their likelihood they should be countered with an appropriate level of urgency in preparedness.

- **Medium High Risk**
  These hazards warrant immediate attention to evolve appropriate mitigation strategies for countering the risk emanating from them.

Drought Hazards			
Hazards Category	**% of Area**	**% of Household**	**Risk type**
Very High Hazards	0.64	1.13	Very High
Medium High Hazards	19.60	19.28	High
Medium Hazards	56.35	45.12	Medium
Medium Low Hazards	22.09	26.97	Low
Low Hazards	1.32	7.50	Low

- **High Risk**
  The risk from these hazards is the most. Therefore, such hazards necessitate the urgent attention for suitable action to be taken on mitigating such hazards.

An example of this risk rating mechanism for the hazard of drought is given in the above table.

It is on the basis of these risk ratings that this Multi Hazard Risk Vulnerability exercise strives to enable decision makers at all levels to make important choices regarding allocation of resources for preparedness and emergency management that can lead to a more resilient Sikkim. ■

– Ennio V. Picucci

Reference: Multi-Hazard Risk and Vulnerability Assessment in North, East, West & South Sikkim, http://www.ssdma.nic.in/resources/publications/Sikkim%20HRVA.pdf

World Humanitarian Summit

Regional Consultation for West and Central Africa: Co-Chairs' Summary Report

The World Humanitarian Summit's regional consultation for west and central Africa was held in Abidjan, Côte d'Ivoire on 19-20 June 2014. It was co-chaired by the Governments of the Democratic Republic of the Congo and Côte d'Ivoire, representing the Regional Steering Group. In the spirit of the summit process' multi-stakeholder approach, the consultation brought together over 180 participants from 24 countries. This included representation from regional organisations, national and local governments, non-governmental organizations, affected communities, local and international civil society, the private sector, academia, the media, donor governments, and United Nations organizations.

This summary highlights some of the emerging recommendations. A full consultation report, which the Regional Steering Group will publish in the coming weeks, will capture the complete array of recommendations and common observations. The co-chairs encourage regional actors to quickly turn a number of the recommendations into specific action and programmes.

Theme 1: Humanitarian Effectiveness
Theme 2: Managing Risk and Reducing Vulnerability
Theme 3: Transformation through Innovation
Theme 4: Serving the Needs of People in Conflict

Please post your comments on this report to wcafrica@whsummit.org ■

for more information: www.worldhumanitariansummit.org/node/447373

The Need for DRR Sensitive Heritage Conservation in Sikkim

The architecture of a region is a potent conveyor of its culture. This is also true of the state of Sikkim, where centuries of history unfold as a rich tapestry in the form of imposing monasteries, temples and palaces. These edifices command the reverence of the local people while enthralling visitors. However, the high risk profile of Sikkim to various hazards is a grave threat to such monuments. There is an urgent need to evolve a systematic process of heritage conservation that addresses the exigencies of disaster risk reduction. The urgency of the problem is reflected in the fact that Sikkim has only 3 protected monuments and 305 unprotected monuments.[1]

The protected monuments of the state of Sikkim are as follows:

1. Rabdentse Site of Ancient Capital of Sikkim

The ruins extended over a considerable area are of second Capital of Sikkim. Tensung Namgyal the second Chogyal of Sikkim and son of Phuntsok Namgyal shifted the capital from Yuksom to Rabdentse in late 17th century AD. The exposed and restored remains contain royal houses, places of worship, votive stupas etc. ▶

http://farm9.static.flickr.com/

http://www.thedailystar.net/

2. Dubdi Monastery

Located on top of a hill on a picturesque surrounding it was the first Monastery established by Gyalwa Lhatsun Chembo during the reign of the first king of Sikkim and was built in the year 1701 AD. The entrance of this Monastery is guarded by four divinities- the Lords of North, South, East and west. It is a double storied stone-built Monastery. ◀

3. Coronation Throne of Norbugang Near Yuksam

Located in a picturesque surrounding amidst sacred shrines the throne made of stone commemorates the spot where the First Chogyal Phuntshog Namgyal of Sikkim was coronated by the Lamas in the year 1641 AD. It is now a sacred place. ▶

http://static.panoramio.com/

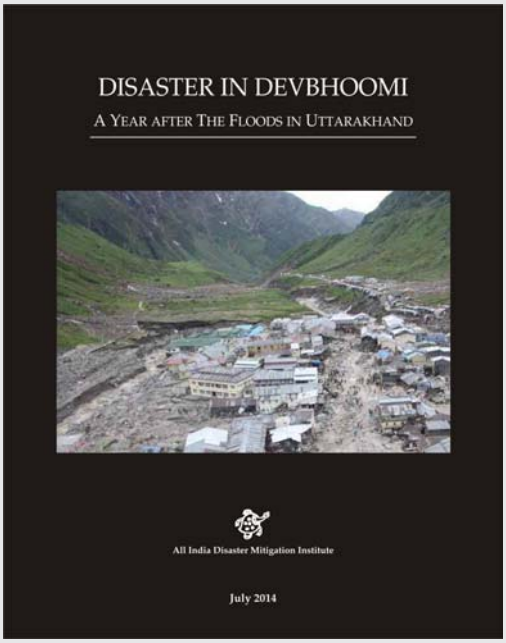
1 Sikkim has 305 unprotected monuments, http://isikkim.com/2011-05-sikkim-has-305-unprotected-monuments-041/

Reference: Official website Archaeological survey of India.

– Aditya Jain

KNOWLEDGE SHARING

Disaster in Devbhoomi: A Year After the Floods in Uttarakhand



It has been more than a year to the tragedy in the state of Uttarakhand. Popularly referred to as Devbhoomi (abode of the gods) on account of the large number of temples situated there, the state of Uttarakhand witnessed devastation on a hitherto unprecedented scale on June 16 & June 17, 2013 when flash floods wreaked havoc in the state. In particular, the districts of Uttarkashi, Chamoli, Rudraprayag and Gharwal were severely affected. The death toll was estimated to have crossed 5,000. Tens of thousands of people lost homes and livelihood while the financial losses were estimated to be above Rs. 3,000 crore.

The All India Disaster Mitigation Institute (AIDMI) has come out with a report titled '*Disaster in Devbhoomi: A Year After the Floods in Uttarakhand*'. The purpose of this report is to understand the underlying factors responsible for the unprecedented destruction brought about by this disaster so as to preclude such an event in future. This report is an attempt to review the several articles, journals and scholarly periodicals that appeared since the catastrophe in mid June 2013 to the present date. The crux of these articles, journals and periodicals has been presented as a narrative following a sequential and chronological series of events. The objective of doing so is to add perspective to these seemingly objective sources of information which would further the understanding of the interested stakeholders and policymakers in India and beyond about the causes and consequences of this catastrophe. ■

– Kshitij Gupta

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