TU-CDES & UNDP Cooperation

Strengthening Disaster Risk Management in Academia

DRM Knowledge Brief

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Editorial

Tribhuvan University Central Department of Environmental Science is undertaking the project on Strengthening Disaster Risk Management in Academia (2012-2015) with the support of Government of Nepal and UNDP. One of the specific objectives of the Project is to conduct action research on DRR issues of national priorities. The Department is undertaking such research involving graduate students supervised by faculties and experts. The works, thus, become a rigorous exercise of the MSc dissertation which is a requirement for completion of Master's degree. Dissertation offers an opportunity to the students to carry out scientific research independently. Beside dissertation, the TU-CDES Master's students go the community and work there for about two-weeks learning how to translate the theories into practice. Community work has been designed to expose the students to their real work situation through interaction with community. The students also produce two case study reports under the guidance of faculties. Case study has been designed to develop analytical skill of students by intensive study of environmental components. The SDRMA project funds 22 MSc dissertations, 30 case studies and 40 community works. The first issue of DRM Knowledge Brief is dedicated to the knowledge generated through these academic exercises. In this issue, the abstract of community works and case studies carried out in disaster sector under SDRMA project with some glimpses of SDRMA activities and disaster highlights are presented.

VULNERABILITY ASSESSMENT OF LOCAL PEOPLE'S LIVELIHOOD IN CONTEXT OF WATER INDUCED HAZARD: A CASE STUDY FROM JYADUL KHOLA CATCHMENT, GORKHA

-Ram Prasad Gotame, Madan Koirala

Central Department of Environmental Science, Tribhuvan University, Kathmandu, Nepal

ABSTRACT

Jyadul Khola is one of the major tributaries of the Budhigandaki River located in the south-western side of Gorkha district. Altitudinal gradient ranges from 397 to 1,402 meter above sea level and has diversified geological features. Its catchement area is 57 sq. km and comprises of five Village Development Committees namely Borlang, Ashrang, Taple, Phinam and Bungkot. Flood and landslide have always been major water induced hazards to the safety of human beings and their other means of livelihood. In case of mountainous country like Nepal, the fragile and young Himalaya with erratic monsoon, earth tremors and environmental degradation have together enhanced the frequency of landslide and flood. The objective of this case study was to assess the water induced vulnerabilities of Jyadul Khola catchment. This includes identification of previous hazards, their frequency and the associated impacts of those hazards in the livelihood of local people. The present study attempts hazard assessment of flood and landslide using social survey on the reference of measurement of degraded land and crop production of the prominent hazard event. Furthermore, previous agricultural loss, potential loss and adaptive capacities were incorporated during the social survey. Moreover, the study provides information about the catchment area and basis for more precise studies on vulnerability assessment of the area.

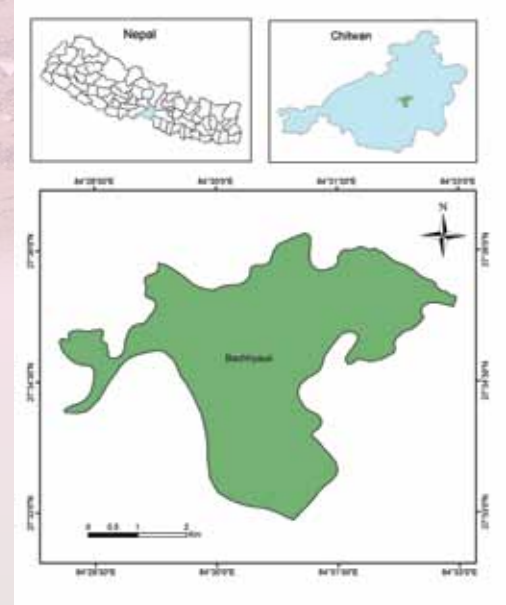
Keywords: Flood, Jyadulkhola, Landslide, Livelihood, Vulnerability.

FLOOD HAZARD MITIGATION AND AWARENESS IN THARU COMMUNITY OF SAURAHA AND BADRENI NEAR RAPTI RIVER

Kamana Jha, *Binod Baniya
Central Department of Environmental Science, Tribhuvan University, Kathmandu, Nepal
**Department of Environmental Science, Patan Multiple college, Tribhuvan University, Lalitpur, Nepal*

ABSTRACT

Terai region has large number of small and usually seasonal rivers, most of which originate in the Siwalik Hills. As the Terai is increasingly deforested, drained and brought under cultivation, the connection with wetness fades in contemporary usage. Terai becomes a geographic, not a hydrographic term for districts in the plains near or bordering the Siwalik. There are more than 600 rivers in Nepal. Terai is a plain area so people are affected mostly by flood in Terai region. Due to flood, large number of property and life of people and animals are widely affected in Sauraha and Bedreni. Floodplains are land areas adjacent to rivers and streams that are subject to recurring inundation. Owing to their continually changing nature, floodplains and other flood-prone areas need to be examined in the light of how they might affect or be affected by development. The general objective of this community service work was to figure out the status of disaster risk in the study area using the tools of disaster ranking, to understand and appreciate the knowledge of the communities towards issues of disasters and to suggest some methods and approaches on disaster risk reduction to the communities based on the ongoing scenario of disaster in the area. The study was targeted in Tharu community of Sauraha and Badreni because they are more vulnerable towards disaster due to lack of knowledge, awareness and living status. Flood is the major problem in Sauraha and Badreni of Bacchauli Village Development Committee. Generally, flood occurs in rainy season (July-October). Huge flood had occurred in Sauraha on 2050, 2059, 2060 and 2063 B.S which had affected life and property in large quantity. The largest flood occurred on 2050 B.S which started at night (9:30pm) which was of 3 days long. Mostly people living nearby river site such as Rapti at the south, Budhi Rapti at north, Khagedi at west and Dhungre at east are affected by flood. Flood had also brought epidemic diseases in the affected area. People used to cope with flood by using stone on the bank of river. Recently, dikes are being built in the bank of Rapti River from Lothar to Badreni by Government of Nepal. High Sediment deposit is the major cause of flood in Rapti River which needs to be extracted to get protection from flood.



Keywords: Cultivation, Deforested, Dikes, Disaster, Drained, Floodplains, Sediment.

Disaster Glimpse

Disaster havoc in Mid-western

Three days torrential rain from 14-16 August 2014 affected the nation causing floods and landslides in 19 districts throughout the country. The water level in Koshi, Narayani, Karnali and west Rapti rivers increased above warning level during this period. The water overflowing the banks of these rivers hit hardest the mid-western region and recorded the worst in years. Banke, Bardiya, Surkhet and Dang were greatly affected by floods and inundation.

Thousands of people had been displaced by flood incidents in these districts. The human casualties caused by these floods are shown here:

	Death	Lost	Injured
Banke	15	5	2
Bardia	33	15	2
Surkhet	34	91	26
Dang	14	4	2

Source: *Ministry of Home Affairs (2071/07/11)*

Highways, linking Banke to Bardiya, Nepalgunj to Surkhet and Surkhet to neighbouring districts had been blocked due to landslides and flood. The flood had swept way five suspension bridges in Surkhet.

Rescuing flood victims , Source: Kantipur Daily (15/08/2014)

Earth provides enough to satisfy every man's needs, but not every man's greed- Mahatma Gandhi

SDRMA Highlights

Jure landslide area visit

SDRMA team carried out a field visit to the recent massive Jure landslide of Sindhupalchowk district in the border of Mankha and Ramche VDC with the objective of documenting its current disaster situation. The landslide occurred on 2 August 2014 at around 02:30 am. Jure landslide appeared like a complex slope failure but it was difficult to ascertain its mechanism. It was a huge slide, with large horizontal and vertical spatial span.

Jure landslide area

Draining of overflow from dam

The landslide culminated with 145 human casualties displacing 1,011 people from 219 households, creating a large dam on Sunkoshi River and halting Araniko highway, damaging three schools and two gates of Sunkoshi Power House Headwork, completely submerging Sanima Hydropower Project and disrupting Chaku and Bhairabkunda projects.

Interview with inspector, APF

Relief work for the landslide affected victims have been ongoing in coordination of DAO, securities forces and DDC and the team is more focused now for the translocation of the displaced which is found the challenging task.

DRR comic book launching

SDRMA has developed a Comic Story Book on DRR titled "Bipad Jokhim Neunikaran Ka Lagi Hamro Bal Club" in Nepali language that targets students and community people as beneficiaries. The comic book was launched by Honorable Constituent Assesmbly Member and Ex-minister of Education, Gangalal Tuladhar on 26 September 2014 (Friday) during Sharing and Coordination Meet on DRR held at Trade Tower, Thapathali.

Comic Story Book

Comic Story Book launching

Addressing the programme, Gangala Tuladhar said that political commitment is the key to materialize disaster management initiatives, so research should also focus on study of political commitment and interest on disaster management. And, he keenly urged for the effective coordination among politician, academician and private organization working on DRM. At last, Mr Tuladhar acknowledged efforts of SDRMA and all researchers for promoting science in disaster management.

CAUSES, CONSEQUENCES AND MITIGATION MEASURES OF LANDSLIDES AT CHAPAKOT VDC, KASKI, NEPAL

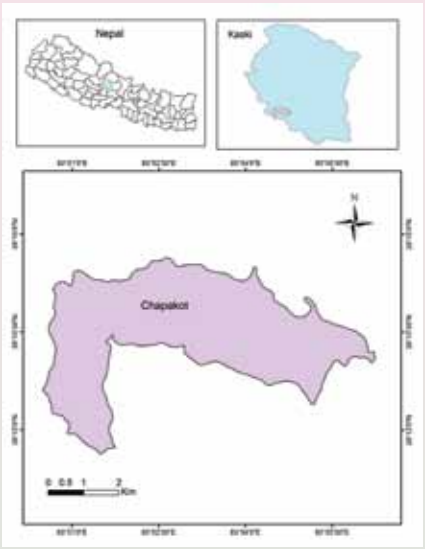
Umesh Basnet, *Reeta Singh

Tribhuvan University, Central Department of Environmental Science, Kathmandu, Nepal,

**Department of Environmental Science, Patan Multiple college, Tribhuvan University, Lalitpur, Nepal*

ABSTRACT

Landslides are the most frequent natural disasters in Nepal. As such, the scientific study of the Nepal landslides has been in progress for several years but no significant achievement has been made in preventing landslides and mitigating disaster damage yet. The direct field observation clearly shows that several small- and large-scale landslides occur in Panchase every year, most of which often remain unnoticed and unreported mainly because of an inadequate information system, little economic impact or little harm to humans and national infrastructure. Despite having mountainous topography and failure-prone rugged and steep slopes, Panchase lacks a proper system to deal with landslide-related disasters. There also have been little efforts to identify landslide prone areas that make the situation even worst. It is difficult to predict disasters, it can occur at any place and at any time. Unless and until the local stakeholders are made aware of landslides, it is impossible to reduce the impact in desired proportion. Sharing the knowledge about coping mechanism and understanding the people's attitude towards disaster risk reduction not only minimize the loss of life and property but also help them to be prepared even in the worst scenarios. The community work was conducted at Chhapakot VDC of Kaski district for 15 days with various activities performed in the field such as preliminary visit and transect walk, key informant interview, orientation program, focus group discussion and awareness in the schools and village through knowledge sharing and demonstration concerning causes, consequences of landslides, its management and impacts of climate change. Most of the people in the community are unknown about the issues of climate change. Unmanaged grazing, unsustainable road construction and weak geological structure (phyllitic composition) are the main three causes of landslides in the Panchase area. This suggested that creating awareness in the local level is the most important and efficient means to minimize the impacts of landslide and climate change in community as there is significant influence of human intervention, particularly in terms of road slope cutting, land development, agricultural practices on the occurrence of landslides and related failures.



Keywords: Awareness, Community, Landslide, Management, Preparedness, Unsustainable.

WOMEN VULNERABILITY TO NATURAL DISASTERS
A CASE STUDY OF MAJHI COMMUNITY OF GHYALCHOWK, GORKHA, NEPAL

Niva Bajracharya, Dinesh R Bhuju
Central Department of Environmental Science, Tribhuvan University, Kathmandu, Nepal

ABSTRACT

Nepal is one of the highly disaster prone countries exposed to various types of natural disasters because of its dynamic geology and monsoon rainfall pattern. Population pressure and haphazard conversion of land-use pattern are aggravating this problem. Nepal's major hazard reported is epidemics (diseases) followed by landslide and flood. Disaster does not differentiate male and female; however, gender based inequalities put females at higher risk. Nepal has patriarchal society where women have less access to basic needs, education, social rights and justice. Especially such is the condition among the women of marginalized community. Majhi, the fisherman community, is one of the 59 marginalized groups who earn their living by fishing and river transport. Usually their settlement is near the rivers which make them highly vulnerable to natural hazards, specifically floods. The main purpose of this study was to assess the vulnerability of Majhi women to disasters. The study was conducted in Majhitar, ward no. 9, Ghyalchwok Village Development Committee of Gorkha district in central Nepal and found that Majhitar's Majhi community was not prone to the water related hazards. Two reasons are explained for this seemingly different fact: firstly that the community has shifted their profession from fishing to farming and/or other available jobs and secondly that the communities in Majhitar live on the higher land away from the river. Perhaps such shift in profession and move to higher elevation is the result of their adaptation prompted by experiences. However, the community was found vulnerable to epidemics mainly water-borne diseases. Majority of the respondents considered drought and disease as their major problems. Lack of latrines, open defecation contributed to higher exposure to disaster. As the community faces frequent scarcity of water, extra burden is put on women and girls making them more vulnerable. Less education and less representation in decision making have compounded the problem. Furthermore, being a marginalized community, they were often deprived from access to resources and their resilience was weakened as they did not know about water purification methods and importance of hand washing. Their rituals indicate that there had been cases of disasters in the past and these cultural practices were their beliefs and mechanism of avoiding it. The study suggests taking intensive disaster management programs and WASH campaigns in marginalized communities.

Keywords: Epidemics, Gender, Majhi, Vulnerability.

Rameswor Dangal
Joint Secretary
Division Chief
Disaster Management Division
Ministry of Home Affairs
Government of Nepal

Opinion

Nepal's encouraging initiatives in DRM

I would say, multi-stakeholder engagement in DRM is an encouraging initiative taken by Nepal in recent years. The Ministry (Home Affairs) is taking lead in the issue, and so also the other ministries are taking responsibilities in integrating DRM as a cross cutting issue. Preparation of Disaster Preparedness and Response Plan, District Disaster Management Plan and Local Disaster Risk Management Plan are also notable initiatives to mainstream DRM into development.

Challenges in DRM

Our main challenges in DRM are coordination, reporting and monitoring. DRM is not a one-institution system, rather works in tandem with many other institutions, and at all levels. However, our experiences are evolving us towards a matured system.

Way forward in DRM

There is the strong need of hazard and risk mapping to enhance the risk sensitive land use plan. Also we need to promote risk sensitive investment as per public private partnership policy. Most importantly, effective mainstreaming of DRM into development in an integrated way is call of the time.

SDRMA is project of TU-CDES in collaboration with UNDP that envisions strengthening the institutional capacity on disaster risk management through research and development.

Project Office:
Central Department of Environmental Science
Strengthening Disaster Risk Management in Academia
Tribhuvan University, Kirtipur, Nepal
Tel. 977-1-4332147, 4332711
Email: info@cdes.edu.np, Website: www.cdes.edu.np