

The Snake and the River Don't Run Straight

Local Knowledge on Disaster Preparedness
in the Eastern Terai of Nepal



About the Organisations

International Centre for Integrated Mountain Development

The International Centre for Integrated Mountain Development (ICIMOD) is an independent 'Mountain Learning and Knowledge Centre' serving the eight countries of the Hindu Kush-Himalayas – Afghanistan 🇦🇫, Bangladesh 🇬🇧, Bhutan 🇧🇹, China 🇨🇳, India 🇮🇳, Myanmar 🇲🇲, Nepal 🇳🇵, and Pakistan 🇵🇰 – and the global mountain community. Founded in 1983, ICIMOD is based in Kathmandu, Nepal, and brings together a partnership of regional member countries, partner institutions, and donors with a commitment for development action to secure a better future for the people and environment of the extended Himalayan region. ICIMOD's activities are supported by its core programme donors: the governments of Austria, Denmark, Germany, Netherlands, Norway, Switzerland, and its regional member countries, along with over thirty project co-financing donors. The primary objective of the Centre is to promote the development of an economically and environmentally sound mountain ecosystem and to improve the living standards of mountain populations.

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Julie Dekens

International Centre for Integrated Mountain Development (ICIMOD)
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Page 64: Decorated walls of a house in Katarait VDC, Dhanusha District

Back cover: Man crossing the river, Deuri VDC, Dhanusha District

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Foreword

Inhabitants in the Himalayan region are exposed to many natural hazards. The mountain ranges are young with an unstable geology, steep slopes, and a climate that is difficult to predict. As a result, the region is highly susceptible to natural hazards such as floods and flash floods, landslides, and earthquakes. In populated areas, these can lead to disaster. Vulnerable groups – the poor, women, and children – are often hit hardest.

Since its establishment in 1983, the International Centre for Integrated Mountain Development (ICIMOD) has dedicated much of its work to examining ways to reduce the risk of disasters from natural hazards, thereby working towards the decreased physical vulnerability of the people in the Hindu Kush-Himalayas. This work has encompassed training courses, hazard mapping, landslide mitigation and control, mountain risk engineering, watershed management, vulnerability assessment, and much more. ICIMOD has also fostered regional and transboundary dialogue for improved management of both the resources provided and the risks threatened by the big rivers in the Himalayan region; sharing of hydro-meteorological data and information among the countries in the region is of particular importance for mitigating the risk of riverine and flash floods in the major river basins.

This publication is one of a series produced under the project ‘Living with risk – sharing knowledge on disaster preparedness in the Himalayan region’, implemented by ICIMOD during a 15-month period in 2006 and 2007. The project was funded by the European Commission through their Humanitarian Aid department (DG ECHO) as part of the Disaster Preparedness ECHO programme (DIPECHO) in South Asia, and by ICIMOD. Through this project, ICIMOD has endeavoured to encourage knowledge sharing and to strengthen capacity among key practitioners in the field of disaster preparedness and management. This has been done through training courses, workshops, knowledge compilation and dissemination, and the establishment of a website (www.disasterpreparedness.icimod.org).

The publications resulting from this project include baseline assessments of the disaster preparedness status in the four target countries (Bangladesh, India, Nepal, and Pakistan); case studies and a framework on local knowledge for disaster preparedness; and gender and vulnerability aspects in disaster risk reduction. The publications, training sessions, and workshops were undertaken in the context of the ‘Hyogo Framework for Action 2005-2015’ which recommends that

regional organisations should promote sharing of information; undertake and publish baseline assessments of disaster risk reduction status; and undertake research, training, education, and capacity building in the field of disaster risk reduction.

The long-term mission to bring the Himalayan region to an acceptable level of disaster risk has only just begun. The countries in the region are among the most disaster prone in the world in terms of number and severity of disasters,

casualties, and impact on national economies. Only by strong commitment, hard work, and joint efforts can this situation be improved. It is ICIMOD's hope that our collective endeavours will help improve disaster risk reduction in the mountain region we are committed to serve.

Dr. Andreas Schild
Director General
ICIMOD

Preface

Meanderings

“The snake and the river don’t run straight.”

Local saying related to the Lakhandehi River,
Belhi village, Sarlahi District

It is the rice-harvesting season. Mountains of straw are piling up in front of the houses and near the river beds. On the flat horizon, the sun is low and looks like a red ball ready to burn the congested settlements and the surrounding fields of rice, wheat, sugarcane, pulses, and vegetables. For the outsider, everything looks peaceful. The houses and the environment appear strongly intertwined, with settlements built using mud, straw, bamboo, and wood. Each section of a village is a microcosm of the whole based on different caste and social systems, mainly Hindu – but that, you only realise later. Socioeconomic disparities can be seen in the different types of houses. Most women have decorated their mud houses with a natural terracotta colour for Deepawali or Tihar, the major Hindu festival in the Terai region. The outside walls are covered with drawings using natural white and red colours or sculpted relief of human hands, cattle and crops, and elephants. These decorations represent, like other indigenous art, the interconnection between humans, farming activities, and the sacred.

Traditional farming is the major source of livelihood here. In many places, men and women are thrashing paddy by beating it manually, by using oxen, or by passing it through a rudimentary turbine. Elsewhere men are busy using oxen on the road to transport straw and grain, and in the fields to plough the land. Soon, wheat will be planted. Only a few villagers have tractors, so oxen are crucial to support human labour. Buffaloes, cows, and goats are also omnipresent and provide households with sources of additional food, income, fertiliser, and fuel. In front of the houses and along the road, women are preparing fuel from a mixture of cow dung, straw, and water. It is then piled up to dry beneath the sun. Children are resting on top of buffaloes as they take them to graze along the roads and by the river bed.

Settlements here are never too far away from rivers – or shall we rather say, the rivers here never let the settlements be too far away from them? They are, to name a few, the Bagmati and the Bakaiya rivers in Rautahat District, the Lakhandehi River in Sarlahi District, the Ratu River in Mahottari District, and the Jalaidh and Jamuni rivers in Dhanusha District. All flow from the Himalayas to form the northern edge of the vast Gangetic plain of North India. Access to the villages often involves crossing wide, river channels, some old, some new, on sandy roads and passing in front of large natural

ponds. Around the settlements, some of the agricultural fields are white from sandy sediments deposited by the last floods. The river took another path again this year. Women remember stories of past floods: *“Once I cut a snake while I was collecting grass for my cattle after a flood.”* And elsewhere: *“Three years ago, a girl from the village died from snakebite during the flood. No dry place*

was available so we had to cremate her inside a building, which is against our traditions.” Here, the meanderings of the river and the snake are often intertwined, and people find themselves in the middle.

Julie Dekens

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Some Key Terms

Capacity – A combination of all the strengths and resources available within a community, society, or organisation that can reduce the level of risk, or the effects of a disaster.

Disaster – A serious disruption of the functioning of a community or a society causing widespread human, material, economic, or environmental losses which exceed the ability of the affected community or society to cope using its own resources.

Disaster risk reduction (disaster reduction) – The conceptual framework of elements considered with the possibilities to minimise vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

Hazard – A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Mitigation – Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Preparedness – Activities and measures taken in advance to ensure effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Resilience/resilient – The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. It is determined by the degree to which the social system is capable of organising itself to increase its capacity for learning from past disasters for better future protection and to improve risk reduction measures.

Risk – The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environmental damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions. Conventionally risk is expressed by the notation $\text{Risk} = \text{Hazards} \times \text{Vulnerability}$. Some disciplines also include the concept of exposure to refer particularly to the physical aspects of vulnerability. A disaster is a function of the risk process. It results from the combination of hazards, conditions of vulnerability and insufficient capacity or measures to reduce the potential negative consequences of risk.

Risk assessment or analysis – A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend.

Vulnerability – The conditions determined by physical, social, economic, and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Adapted from UN/ISDR (2004)

Note: The term 'VDC' used in the description of place names is short for 'village development committee', the local level administrative unit in Nepal. In general, a VDC comprises a number of villages.

