

# Introduction to the Workshop

The concern for the widespread poverty and degradation of the environment in the Hindu Kush-Himalayan mountains led to the establishment of International Centre for Integrated Mountain Development (ICIMOD) in Nepal in December 1983. Since its establishment, ICIMOD has been actively involved in developing and implementing programmes and activities directed towards a better understanding of the complex and interrelated problems of environmental degradation and poverty in the HKH region in close partnership with the ICIMOD member countries and the donors.

Since its inception, ICIMOD has been promoting the development of a better understanding of the landslides hazards. Various activities have been completed so far; including several training programmes dealing with mountain risk engineering which has focussed on improving road construction along unstable mountain slopes, a review of landslide hazard management activities in China, and the field assessment of landslides and flood events in south-central Nepal following extreme climatic events during July 1993.

## Regional Collaborative Programme for Sustainable Development of the Hindu Kush-Himalayas

In response to Chapter 13 of Agenda 21 of the UN Conference on Environment and Development: "Fragile Ecosystems: Sustainable Mountain Development" and the need for long-term and integrated approaches to deal effectively with the acute problem of poverty and developments in the fragile environment of the HKH, ICIMOD has prepared a Long-term Vision and Medium-term Workplan for Action in the Field of Sustainable Mountain Development. Three thematic programmes will focus on the following important issues: i) Mountain Farming Systems, ii) Mountain Natural Resources, and iii) Mountain Enterprises and Infrastructure.

## ICIMOD'S Programme on Landslide Hazard Management and Control

One of the goals set by ICIMOD in its Mountain Natural Resources' programme is to "Improve the conditions of mountain resources and environments by halting, and eventually reversing, their degradation." Programme activities envisaged to achieve the above goal are directed towards:

- identification of measures to mitigate different types of natural hazards that perpetuate loss of natural resources;
- promotion of skills and methodologies for natural hazard assessment; and
- improvement of public awareness for better disaster preparedness in mountain areas.

ICIMOD's programme on "Landslide Hazard Management and Control" focuses on helping to protect valuable natural resources from different types of natural hazards. This programme is based on ongoing activities of ICIMOD which were introduced in 1994 with support from the Government of Japan.

The above-mentioned activities include the following.

- i) Preparation of a state-of-the-art review on 'Landslide Management and Control' in selected countries (China, India, Pakistan, and Nepal) of the HKH.
- ii) A Regional Training Programme on Slope Instability Hazard Mapping using Remote Sensing and GIS.
- iii) Preparation of a Climatic-Hydrological Atlas of Nepal based upon available information.

Of these three activities, the Regional Training Programme on Slope Instability Hazard Mapping using Remote Sensing and GIS was completed in 1994, while the other items will be finalised in 1995. As a follow up, a four-week training course in Landslide Hazard Management and Control is being designed and the first courses are scheduled to be held in 1996.

## The Workshop

The Regional Workshop on 'Landslide Hazard Management and Control in the Hindu Kush-Himalayas' was organised by the Mountain Natural Resources' Division of ICIMOD. This was the first ever workshop discussing the problems and issues related to landslide hazard management and control in the Hindu Kush-Himalayan region. It was held at the ICIMOD Headquarters from July 12 to 14, 1995.

**The major concerns of the workshop were to identify priorities for a regional collaborative training programme, to be implemented by ICIMOD, and to review the existing facilities and curricula for training in Landslide Hazard Management and Control in the Hindu Kush-Himalayan countries. In order to identify the priorities and relevance of such a training programme, and to share experiences of the member countries in this field, presentations of reviews and country papers on the current status of programmes and activities on Landslide Hazard Management and Control in the countries of the Hindu Kush-Himalayas were also included in the workshop.**

The workshop was attended by 35 participants, including official representatives and/or experts from six ICIMOD member countries (Bangladesh, China, India, Myanmar, Nepal, and Pakistan) and experts from Japan, The Netherlands, Germany, and Switzerland.

In his welcome address, Mr. Egbert Pelinck, Director General of ICIMOD, highlighted ICIMOD's programme activities, particularly in the field of Landslide Hazard Management and Control. He expressed gratitude for support received from the ICIMOD member countries and the Government of Japan for the project activities.

In the inaugural speech, Chief Guest, Mr. S.N. Upadhyaya, Secretary, His Majesty's Government of Nepal, Ministry of Water Resources, emphasised the need for ingenuous selection and application of human knowledge to deal with the extraordinarily high hazard potential in the HKH mountains and expressed his appreciation of ICIMOD's efforts to develop a better understanding of the human and ecological processes in these fragile mountains. Speaking on the same occasion, Mr. M. Ishikawa, Minister, Embassy of Japan in Nepal, expressed his government's appreciation of ICIMOD's programme activities for sustainable development of the mountainous regions of the HKH and indicated that Japan is favourably considering increasing its support to the Landslide Hazard Management and Control project in the coming years.

On the first day of the Workshop, country reports were presented by representatives from Bangladesh and Myanmar as well as four review papers from China, India, Nepal, and Pakistan, commissioned by ICIMOD as part of the Landslide Hazard Management and Control Project, by their respective authors. This facilitated the critical review and examination of outstanding issues as well as the current status of the programme.

On the second day (July 13), after presentations of some invited papers, the workshop participants joined on a field excursion to the landslide monitoring station of the Water Induced Disaster Prevention Technical Centre (DPTC) of His Majesty's Government of Nepal at a site 19 km along the Kathmandu-Trisuli road, to become familiar with field level issues and problems. The field excursion was organised in collaboration with the DPTC.

Each day a few invited papers were also presented to highlight specific issues in order to emphasise the interdisciplinary nature and complexity of landslides and facilitate full discussion. The aim of the workshop was also to identify key issues and problems in Landslide Hazard Management and Control in the HKH to be included in the Regional Collaborative Training Programme in accordance with the needs and priorities of the countries of the Hindu Kush-Himalayan region.

The last day of the workshop was devoted to group discussions. The main purpose of these discussions was to identify priorities for a Regional Collaborative Training Programme to be implemented by ICIMOD. This was facilitated by the presentation of a paper with proposed course details prepared for ICIMOD by Professor Li Tianchi of China. After detailed discussions, the workshop made the recommendations given in Box 1.

## **Box 1: Recommendations of the Regional Workshop on Landslide Hazard Management and Control in the Hindu Kush-Himalayas**

1. The workshop unanimously endorsed the Draft of the Regional Collaborative Training Programme on Landslide Hazard Management and Control with some suggestions for modifications.
2. The workshop agreed that the target group for the first training should be middle-level professional and that the training should be held at ICIMOD, Kathmandu.
3. For future training on Landslide Hazard Management and Control the workshop also recommended that target groups should include:

- (a) policy and decision-makers;
- (b) middle-level professionals;
- (c) technicians; and
- (d) local communities/farmers.

ICIMOD should, therefore, also consider organising training for the other three levels of the target groups, apart from the training it is organising for middle-level professionals as endorsed by the workshop.

4. To further strengthen capacities in the region, regional training may be held in rotation at appropriate institutions in the member countries and country specific training may be organised by ICIMOD in collaboration with national institutions.
5. The participants urged ICIMOD to continue its role as the regional focal point and collaborate and coordinate regional efforts on training and other activities in cooperation with institutions from the HKH countries, as well as with those from outside the region (e.g., Japan and The Netherlands).
6. National Working Groups on Landslide Hazard Management and Control should be established in the HKH countries. National Focal Points (NFP) should coordinate national-level working groups and their activities. Such NFPs should also act as repositories of data and information, and they should preferably be located in autonomous institutions as they might be able to function more efficiently than in other institutions. ICIMOD should coordinate activities at the regional level and, if possible, provide support for the capacity building of NFPs for efficient functioning.

In connection with this, the DPTC in Nepal and the Ministry of Science and Technology in India were identified as focal points. For other countries, it was agreed that more work may be necessary to identify focal points. The Workshop urged ICIMOD to strengthen the technical and professional capacities of focal points.

7. The workshop also recommended that appropriate regional training in GIS and Remote Sensing be organised for landslide hazard mapping.
8. Governments of the HKH countries should make available the relevant data (e.g., rainfall, seismicity) and information (including topographical maps, aerial photographs and geological maps) required for landslide hazard management and control studies to their National Focal Points (NFPs). Similarly they should also facilitate exchange of data, including maps (e.g., on a scale of 1:250,000) at the regional level, in view of the availability of such data maps and information from sources outside the region.

In the chapters that follow the main highlights of each session of the workshop are presented.