Introduction and Workshop Objectives

Mountain agricultural systems are characterized by their extreme diversity and complexity. Many unique crop varieties and animal species are found in mountain environments. Unfortunately, much of this diversity is rapidly being lost as a result of growing population pressures, an increasing demand for crops which can be marketed for cash in urban areas and competition from high yielding modern varieties of major crops. Indeed, the situation in many areas is considered extremely serious and urgent measures are required to ensure that these irreplaceable genetic resources are collected and maintained.

At the same time, crops which are well adapted to one mountain area may prove valuable in improving the agriculture in other mountain regions having similar conditions. Recognizing this, the International Centre for Integrated Mountain Development (ICIMOD), the International Development Research Centre (IDRC) and the Ministry of Agriculture, His Majesty's Government of Nepal, jointly sponsored the International Workshop on Mountain Agriculture and Crop Genetic Resources from February 16-19, 1987 in Kathmandu, to review the special features of mountain agricultural systems, the crops which are adapted to them and opportunities and mechanisms for collection and exchange of genetic resources.

The specific objectives of the Workshop were:

1. to characterize various mountain physical environments and to look for common elements

2. to characterize mountain farming systems to identify common needs and opportunities

3. to describe the range and use of germplasm adapted to mountain conditions including:

   a) native species
   b) adapted landraces of major crop species
   c) genetically improved cultivars of both native and major crops

4. to establish mechanisms for the exchange and multi-location evaluation of germplasm, and the exchange of information on performance and potential use of materials exchanged

5. to discuss the need, desirability or feasibility of establishing a network for mountain crops.

The Workshop was inaugurated by the Honourable Minister of Agriculture, Law and Justice, His Majesty's Government, Mr. Hari Narayan Rajauria. During the inaugural address the Honourable Minister drew attention to the factors that have brought about the imbalances between the population and resources which, in turn, has accentuated both poverty and ecological degradation in the mountain regions of Nepal. He stressed the need and the importance of conserving the diversified crop genetic resources of the mountain regions of the world. He emphasized that the rugged topography, poor physical and institutional infrastructures and considerable climatic variations pose serious hurdles in mountain development. He also said that the tremendous heterogeneity represented by mountain environments, agriculture and the associated farming systems, has generated the most diversified and rich crop genetic resources available to all mankind, and every effort should be made to preserve and conserve these genetic resources.

During the welcome address, Dr. Colin Rosser, the Director of ICIMOD, said that the Workshop is the first in a planned series of expert meetings over the next eighteen months leading to a major international Workshop in 1988 on **Strategies of Mountain Agriculture: A 20-year Perspective**. He indicated that the central theme of this series of exchanges of professional knowledge and experience would be on the related aspects of mountain agriculture, such as, the increasing pressure on traditional hill farming systems and their vulnerable mountain habitats exerted by a relentlessly growing population throughout the Hindu Kush-Himalaya region. He emphasized the urgency of appropriate policy and programme measures to assist the essential transition of hill agriculture from near total dependence on subsistence farming to integration of cash crops, forestry products and livestock into the market economy. He also stressed the importance of the preservation of mountain environments through sustained agriculture and farming systems that embody the richly diversified crop genetic resources.

Dr. Geoffrey Hawtin, Associate Director, IDRC, highlighted the need and importance of exchange of germ germplasm in general and between the mountain regions in particular, so that mountain agriculture can be sustained or made more viable and the diversity of genetic resources in these agriculture and farming systems preserved. He stressed not only the need for extending the germplasm exchange networks beyond the Alps and the Andes to the Hindu Kush-Himalaya and other mountain regions, but also the need to analyze the implications of the different problems inherent in the application of crop genetic resources.

The Workshop participants consisted of crop geneticists, agriculture specialists and social scientists from the mountain regions of the Hindu Kush-Himalaya, Andes, west Asia and Africa. The forty participants represented Bhutan, China, Ecuador, India, Kenya, Nepal, Pakistan, Peru, Thailand, and USA. The professionals of ICIMOD, IDRC and the Ministry of Agriculture,

also participated in the Workshop. A field visit to Kakani Horticulture Farm and Agriculture Research Centre at Khumaltar was organized with the help of the Department of Agriculture, His Majesty's Government, Nepal.

The highlights of the Workshop discussions are presented in the next two sections: Physical Environment and Mountain Farming Systems and Genetic Resources of Mountain Crops followed by Conclusion and Recommendations. The annexes contain the programme and list of participants of the Workshop.