



Preface

Mountain Environments and Human Activities

Awareness has increased of the importance of mountain ecosystems and communities in recent years, largely due to ongoing broad-based efforts to implement Agenda 21 (in particular, Chapter 13 'Managing Fragile Ecosystems: Sustainable Mountain Development'), the programme of action adopted by the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, 1992. One of the most significant decisions regarding mountains since that time was made in November 1998 when the United Nations General Assembly designated 2002 the International Year of Mountains (IYM).

Mountain areas have been recognized by the international community as one of the world's most vulnerable bio-geographical areas, susceptible to land degradation and having variable climates and heterogeneous habitats often with unique fauna and flora. Mountainous areas are frequently thought of as 'water towers' for fresh water resources, and as areas suffering from loss of indigenous culture and traditions. They are also the home to a high proportion of the world's malnourished and food insecure.

Mountains are fragile environments subject to adverse and harsh climatic conditions (excessive rainfall or dryness, relatively low temperatures, high solar radiation), natural disasters (avalanches, earthquakes, volcanic eruptions), and poor and shallow soils prone to erosion. Yet, coupled with limited access, these constraints have meant that many mountain areas have been protected from loss of biological diversity and maintain high degrees of endemism as well as cultural integrity and heritage. The recent trend towards greater globalization, however, has tended to erode the social and cultural integrity in some mountain areas due to increased and accelerated contact with the outside world.

About 10 percent of the Earth's population live in mountain areas with steep slopes, while about 40 percent occupy the adjacent middle- and lower-watershed areas. There are serious problems of environmental deterioration in these watershed areas including the hillside areas of Andean countries and the mountain and upland areas of the Himalaya, Southeast Asia, and East and Central Africa. These areas, which contribute vitally to agricultural production, are threatened by cultivation of marginal lands due to expanding populations in and/or below the mountain areas.

The United Nations University (UNU) introduced a programme on the Use and Management of Natural Resources almost thirty years ago, concentrating on applied research and training in the humid tropics and subtropics. One component has involved the study of 'Highland-Lowland Interactive Systems,' which in practice has served as the UNU mountain project and has evolved formally into 'Mountain Ecology and Sustainable Development.' The early UNU work focused on Northern Thailand and the Himalaya. It later expanded into Tibet and Yunnan, China, along with Tajikistan, the Andes, the highlands of East Africa and Ethiopia, and Madagascar. It is currently being extended into Kyrgyzstan. The project thus attained a global perspective.

The International Year of Mountains (IYM) 2002 inspired numerous symposiums and publications in Japan. Among them was the UNU International Symposium 'Conservation of Mountain Ecosystems,' held on 1 February, 2002. This symposium was organized by the UNU and Hokkaido University. The editor would like to thank Prof. Dr. Hans van Ginkel, Rector of the UNU, Dr. Libor Jansky, Senior Officer of ESD, UNU, and Prof. Dr. Masatoshi Yoshino, Senior Advisor to the UNU; Ministry of Education, Culture, Sports, Science and Technology (Japan) as a co-organizer; and Ministry of the Environment (Japan), Forestry Agency (Japan), Centre for Development and Environment of University of Berne (Switzerland), and UNESCO/MAB-Japan, as supporting organizations. This special issue of 'Global Environmental Research,' part of the contributions to 'IYM and beyond,' carries eight updated papers from 17 presentations at the symposium, with additions of three papers (Ives, Jansky & Pachova, Norihisa & Suzuki) to help to demonstrate that efforts to address mountain issues are still continuing after IYM, and that further steps are necessary. Some of the papers in this special issue may contain controversial views. The editor, however, believes that it is important for readers to have such papers, so that readers can reconsider mountain problems from different points of view in order to solve them without bias.

Four years have passed since this journal published its previous special issue on mountains for the IYM, 'Regional Issues of International Year of Mountains: Global Warming and Sustainable Use of Mountain Resources in Asia' (Vol. 6, No.1). There are still numerous problems confronting us involving mountains, although much research has identified mountains as one of the priority geo-ecosystems to be conserved. By introducing various efforts conducted in the world's mountain areas, this issue hopes to help to provide a better understanding of mountain environments and human activities in mountain areas, and of the necessity for further contribution to the sustainable development of mountain geo-ecosystem as well as for launching new mountain programmes.

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