

THE DIRECTOR GENERAL
AND STAFF OF ICIMOD

Wish all the Readers of the
ICIMOD Newsletter

A VERY HAPPY AND
PROSPEROUS 1996

Looking back

The year 1995 has been an eventful and highly satisfactory year for ICIMOD. It was the first year that the Regional Collaborative Programme for the Sustainable Development of the Hindu Kush-Himalayas became operational. By emphasising only three major thematic orientations, the administrative structure of the Centre has been simplified. ICIMOD was also able to appoint seven internationally recruited staff for key positions that had been left vacant for several years or for new positions created in response to the felt needs of our Regional Member Countries. Most encouraging was the outcome of the Second Quinquennial Review and the subsequent deliberations of the Board of Governors, which were already covered in the previous newsletter. As a result, several of the donors who had requested the Review have indicated a willingness to or already signed agreements with ICIMOD, doubling the core programme funding to a level of \$ 2.6 million per year. Of particular interest has been the emergence of a political will to address problems of poverty and environmental degradation in the mountains of the world by national governments and agencies, NGOs, and the donor community. The Third Meeting of the United Nations Commission on Sustainable Development particularly welcomed the process and outcome of joint deliberations by international organisations, governments, and NGOs to prepare action plans for sustainable mountain development within the framework of Chapter 13 of Agenda 21: *Fragile Ecosystems - Sustainable Mountain Development*. But it was within the HKH Region itself that ICIMOD could implement its three major functions. Firstly, a strong information



Mountain Development: Overcoming constraints, harnessing resources - China

dissemination programme could respond to an increasingly felt need for knowledge on mountain specific issues. Two issues of the newsletter were sent to over 1,500 addresses in the region and some 8,000 other publications were sent in response to requests. Secondly, the research and knowledge reviews undertaken by ICIMOD during the year have generated results in various fields with a likely impact on policies for sustainable mountain development in our Regional Member Countries. And thirdly, training and capacity building have again been very important components of our activities this year.

Looking ahead

While there may be a feeling of satisfaction about the progress made in the past year, in no way should there be a feeling of complacency. Mountains of the world, in particular the Hindu Kush-Himalayas, are facing nearly insurmountable problems of poverty, inaccessibility, and remaining at the peripheries of the development processes taking place elsewhere. Only recently it has been recognised in the development community that the indigenous knowledge of the local people, their cultural diversity, and also the ecological diversity of the mountains provide opportunities for development that the plains do not have. It is these opportunities that ICIMOD wishes

to identify, assess, and disseminate in the coming years. This issue of the newsletter shows that ICIMOD tries to do so in both the field of technologies and in the field of institutions and policies. We feel very fortunate that in this region we can do so by working together with eminent scientists, experienced development specialists, and committed NGOs.

I look forward to a fruitful year of collaboration and productivity and wish you all personal satisfaction in your endeavours to improve the lives of the mountain people and their environment.

Egbert Pelinck
Director General

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ASIAN MOUNTAIN NETWORK – THE FOLLOW-UP ACTION TO SUDEMAA

At the Regional Conference on the Sustainable Development of Fragile Mountain Areas of Asia (SUDEMAA), held in December 1994, it was unanimously emphasised that the efforts made by ICIMOD, in collaboration with other agencies, to bring together the Asian Mountain Community for the first time, should not cease after the conference. It was agreed that continuing dialogue and exchange of information should be maintained, along with other more concrete institutional arrangements for facilitating cooperation among mountain agencies and communities in Asia. ICIMOD was urged to take a leadership role in developing these linkages, while continuing to focus its programmed work on the Hindu Kush-Himalayas.

As a response to this concern, which was also supported by all the countries of the Hindu Kush-Himalayan Region, ICIMOD put together a proposal for establishing a network for the exchange of information related to the sustainable development of mountain and upland areas in Asia among concerned agencies. More specifically, the network has a number of objectives:

- to facilitate information exchange about sustainable development of mountain areas between professional, development workers and policy-makers in Asian countries; and
- to sensitise donor agencies about the critical need for and options regarding sustainable mountain development.

Certain activities were proposed to facilitate this dialogue. First, a number of subregional groups representing the different mountain areas of Asia will be established. The number will be determined after discussions with concerned agencies in the region. Second, it is proposed to publish a half-yearly, four-page flier covering activities reported by the different subregional groups. Third, several meetings are planned at both the regional and subregional levels, and these will be determined after consultations with concerned agencies in the region. In this context, the extent to which e-mail can be used will also be explored.

The programme will be called Asian Mountain Network and will be operational at ICIMOD for a period of three years beginning January 1996. The funds for this activity have been provided to ICIMOD by the Government of Switzerland. Agencies interested in participating in this network should write to ICIMOD with their suggestions on how to make this activity useful for mountain development agencies and professionals in Asia and the Pacific.



The five subregional nodes proposed for the network

ANNOUNCEMENT OF RESEARCH FELLOWSHIP

ICIMOD is reintroducing the Research Fellowships to support specific research work identified in the ICIMOD Regional Collaborative Programme for 1995 to 1998. The main objective of the Fellowship is to provide research support to outstanding scientists from the Hindu Kush-Himalayan Region to contribute to Sustainable Mountain Development.

For 1996 **Three** Fellowship awards will be given for the subjects mentioned below. One award will be made in each Division as well as to candidates from different countries. Each fellowship consists of an honorarium of US\$ 9,000 and field research support of US\$ 4,000. The honorarium will be provided in two equal amounts - one after the signing of the agreement and the other after the satisfactory completion of the fellowship.

Each candidate selected will be required to be in residence at ICIMOD for one month (two weeks at the beginning and two weeks at the end of the fellowship period) when he/she will be required to present a seminar on their research topic. The topics being considered for 1996 are given below. Those interested should submit their application and research proposal to the Division Head, in one of the areas described below. These applications should reach ICIMOD at the latest by the end of February, 1996. Women researchers are encouraged to apply.

1. **Mountain Farming Systems' Division**
 - 1.1 Subsidy and Mountain Agricultural Development
 - 1.2 Livestock in Mountain Farming Systems
 - 1.3 Commercialisation of Mountain Agriculture: Economic and Environmental Impact
2. **Mountain Natural Resources' Division**
 - 2.1 State of Forest Resources in the Hindu Kush-Himalayas
 - 2.2 Mountain Climate Change: The Available Evidence
 - 2.3 Indigenous Knowledge in Managing Mountain Natural Resources
3. **Mountain Enterprises and Infrastructure Division**
 - 3.1 Highland - Lowland Interactions: The Economic Contribution of Mountain Areas to Downstream Areas
 - 3.2 Environmentally-sound Low Cost Roads in Mountain Areas: The Role of Bio-Engineering
 - 3.3 Access Improvements and Sustainable Development
 - 3.4 Environmental Impact Assessment of Development Interventions in Mountain Areas.

Application of GIS for Planning Agricultural Development in Mountain Areas

Hubert Trapp

The application of Geographic Information Systems (GIS) for planning agricultural development in the Gorkha district of Nepal was an effort to address development potentials and constraints in the agricultural sector using GIS technology. GIS case studies were conducted by ICIMOD/ MENRIS, in collaboration with the Gorkha Development Project jointly being implemented by His Majesty's Government of Nepal and the German Technical Cooperation (GTZ). These case studies as a whole constitute the Gorkha Case Study. Assessment was carried out of agroclimatic zones at the zonal level for planning development interventions in the agricultural sector of mountainous regions. A number of areas were examined.

- An analysis of the livestock carrying capacity based on the feed situation, was carried out to understand the spatial relationship of the livestock demand and feed supply situation and to identify areas for immediate intervention.
- Horticulture is considered to be effective for reducing soil erosion and improving the economic situation of mountain farmers if the products can be suitably marketed. There is great potential for the development of various fruits in Gorkha. The case study assessed the potential for horticultural development in Gorkha district, taking into account various parameters, e.g., temperature, land use, aspects, and accessibility of markets.
- Assessments using GIS technology were also made regarding potato growing periods for particular locations.

An appropriate database is critical for future planning and management of development activities. A GIS orientation workshop was held in Gorkha Bazaar in April 1995, to discuss the use of the GIS database. It was attended by representatives of the District Development Committee (DDC),

various line agencies, and NGOs working in the district. Results of the case studies were presented. During discussions it was agreed that the district database should be installed and managed by the local government. It was envisaged that all agencies should contribute to the information system and have access to it. At present, the district bodies do not have the capability of undertaking this task independently. The Gorkha Development Project aims to train staff on the subject and to establish basic computer facilities at the DDC to manage the database. For proper use of the system, data networking with other agencies, updating the databases, and so on, the DDC body needs support to upgrade its institutional skills and knowledge.

Limitations

Geographic Information Systems' technology was originally developed for lowland areas and can be inappropriate for mountain environments if the wide variability of these systems is not addressed. Due to the complexity of mountain areas and their fast-changing environments, data collection, including the scale of data sources, data quality, data storage, and the hardware and GIS software used in analysis are the main areas of concern.

Many of the GIS-based case studies do not cover large areas because of several types of data constraint.

However, one of the primary advantages of the GIS is its flexibility. GIS analysis can be carried out by applying different sets of indicators based on adjusted parameters. The system is easy to update, especially the socioeconomic aspects. In general, the database can be used for the assessment of different situations. Once a methodology is developed, it can be adapted and transferred to other regions.

The results of the Gorkha Case Study have been published as MENRIS Case Study Series No 3.



Valley of Daroundi Khola in mid-mountain Gorkha

- H. Trapp

MANAGEMENT OPTIONS FOR RANGELANDS IN THE HKH

Daniel J. Miller

Rangeland ecosystems are estimated to comprise about 40 per cent of the total land area of the HKH region. Rangelands, therefore, are a major resource and are important for a number of reasons. First, rangelands form the headwaters' environment of major river systems in the HKH and what takes place in these grazing land ecosystems has far-reaching effects on downstream areas. Second, products obtained from grazing animals are important as food and secondary products for human consumption, as a source of cash income to producers, and as revenue to governments to assist development. Third, rangeland ecosystems provide habitats for numerous wildlife species and plants of medicinal and economic value; many of the protected areas in the HKH are located in rangeland environments. Fourth, the rangelands of the HKH are home to about 25 million people who have largely been neglected by previous development efforts due to remoteness and as a result of government

process itself which has brought improved access and services to previously remote pastoral areas; the expansion of agriculture into rangelands; the transformation of traditional pastoral production systems; the disruption in traditional trans-Himalayan trade networks; and what appears to be a general desiccation of alpine rangelands due to climatic changes which modify vegetation composition and reduce plant productivity and carrying capacity. These political, social, economic, and ecological transformations have altered the previous, well-established links between the pastoral population and their rangeland environment.

Human activities in the mountain environments of the HKH have caused considerable rangeland degradation, with a consequent reduction in grazing, animal carrying capacity, loss of biodiversity, and growing marginalisation of the human population. Accordingly, rangeland degradation can no longer be regarded

dynamics and processes are still poorly understood. There is a lack of good, quantitative ecological data on rangelands. The question of how rangeland vegetation functions and the effect of grazing animals on the ecosystem in the HKH remain largely unanswered. This limits the preparation of rational conservation and development planning.

Pastoralists in the HKH have, over centuries, developed animal husbandry skills and grazing practices adapted to the harsh environmental conditions and perturbations in the ecosystem, but the efficacy of these traditional pastoral practices are not sufficiently acknowledged by development planners. There is also a lack of information on traditional pastoral production systems, impeding informed decisions about altering traditional livestock production practices. The "mainstream view" regarding nomadic pastoralism, which maintains that traditional pastoral practices need to be improved, has largely shaped pastoral development in the HKH, as elsewhere in the pastoral world. The result has been that the pastoralists themselves have largely been left out of the development process.



Fields of grass in the HKH

- D. Miller

policies that failed to appreciate the importance and potential of the mountain rangelands.

In recent decades, profound changes, with implications for the future of rangeland resources, the pastoralist, and their production systems, have taken place on the rangelands of the HKH region. These changes include the modernisation pro-

cesses itself which has brought improved access and services to previously remote pastoral areas; the expansion of agriculture into rangelands; the transformation of traditional pastoral production systems; the disruption in traditional trans-Himalayan trade networks; and what appears to be a general desiccation of alpine rangelands due to climatic changes which modify vegetation composition and reduce plant productivity and carrying capacity.

The Development Challenge

The challenges facing the sustainable development of rangelands in the HKH are considerable. Despite their extent and importance, rangeland ecosystem

The mountain rangelands of the HKH are comprised of a unique assemblage of flora and fauna. Human activities have resulted in the destruction of wildlife habitat and the loss of biodiversity. Numerous national parks and reserves exist in the HKH, but significant gaps in the protected area system remain, long-term ecological studies are lacking, and management of these valuable resources is ineffective and inadequate. The preservation of mountain wild animals and management of their rangeland habitat are essential for conserving biodiversity.

Sustainable development of rangelands requires appropriate policies. Development policies in the HKH have largely ignored the mountain rangeland areas, and policies that do exist for pastoral areas have generally maintained that traditional pastoral systems need to be "improved" without any consideration of what may be practical or of value in the

existing system. Agricultural and forestry development policies have usually neglected the role of livestock in development, and the potential positive contribution that livestock can make to agricultural and economic growth has been overlooked. Rangeland development policies tend to centre on improving livestock production rather than on multiple-use resource management, which considers uses other than livestock.

The lack of concern for rangelands and misconceptions regarding pastoral ecosystems in the HKH have led to a general downward spiral in the productivity of many rangeland areas and increased marginalisation of pastoral peoples. Reversing these trends should be a priority for governments and development agencies. Resolving rangeland degradation and pastoral development issues will require modification in current strategies and approaches which will need to integrate ecological processes of rangeland management and biodiversity conservation with the economic processes of livestock production and integrated mountain development.

The Development Opportunities

In the HKH, rangeland development based on long-term sustainable use of rangeland resources has the potential to increase productivity of rangelands, maintain biodiversity, and improve people's incomes and livelihoods, provided that the information on ecological and socio-cultural constraints is internalised and integrated into development approaches. The poor perception of rangeland environments and pastoralism and the limited support for pastoral development and rangeland resource management in the HKH, in the past, need to be counterbalanced by emerging perspectives and information regarding the assessment of range ecosystem dynamics, pastoral production practices, and biodiversity conservation. These new perceptions suggest new possibilities for and fresh approaches to designing range management and pastoral development in the future.

Strategies for range management and pastoral development in the HKH should aim to maintain rangeland productivity,



Rangelands in the HKH

- D. Miller

rehabilitate degraded areas, protect and enhance biodiversity, promote sustainable livestock production, stimulate economic growth and create employment among the pastoral population, and improve people's living standards. Developing such strategies requires a much better understanding of rangeland ecosystem dynamics, increased knowledge of existing pastoral production practices, more thorough analysis of the issues and opportunities facing pastoralists, and adjustment of existing policies for rangelands and pastoral areas.

Successful implementation of sustainable rangeland development interventions requires that ecological principles regulating rangeland ecosystem functions be linked with the economic principles governing livestock production and general development processes. However, most of the existing institutions and organisations involved with rangeland ecosystems in the HKH lack a suitable system for organising and analysing range resource information relevant to the management of rangelands. Fortunately, there is a growing awareness of the need to address rangeland resource issues in the HKH, which, when coupled with insights from fresh perspectives emerging on rangeland ecosystem processes and pastoral development and new computer-assisted technology available for processing and analysing information on rangelands, provides good prospects for more sustainable development of rangeland areas.

ICIMOD's Role with Respect to Rangeland Development in the HKH

ICIMOD is uniquely positioned to assist countries in the HKH with sustainable development of rangeland ecosystems. As part of ICIMOD's new Regional Collaborative Programme, the development of rangelands will receive high priority in the Centre's Mountain Natural Resources Programme. ICIMOD's multidisciplinary team of experts plan to work with rangeland specialists in the HKH to assess rangeland ecosystems, review traditional pastoral production systems, evaluate previous rangeland development experiences, and identify successful interventions for improving rangeland management practices. A major strength of ICIMOD's multidisciplinary approach is the identification of interdependence across spatial, ecological, sectoral, institutional, and disciplinary boundaries as an important requirement for promoting integrated approaches to sustainable mountain development.

By focussing greater attention on rangeland environments, ICIMOD expects to assist governments, local people, NGOs, and the international donor community in i) promoting the wellbeing of inhabitants and users of the rangelands of the HKH; ii) improving the conditions and management techniques for the rangelands; and iii) strengthening the capabilities of institutions and organisations in the HKH to support sustainable development of the rangeland resources of the HKH.

Integrated Training for Mountain Risk Engineering (MRE) in the Himalayas

The avalanche in Gokya Fang, Khumbu region and the landslides in Manang, Nepal, during the November 1995 disaster left 63 dead, 22 other nationals and 41 Nepalis. While some of these hazards have a natural cause, many others have been precipitated by development activities. Nepal is still ecologically fragile, therefore, land use management techniques are very crucial. Reckless development activities account for almost three times the disasters caused by natural hazards.

Moreover, a global study of the occurrence of disasters shows that the incidence in least developed countries (LDCs) is twenty times higher than in industrialised countries. To help mitigate these disasters caused by poor construction in mountain areas, ICIMOD established a programme of Mountain Risk Engineering (MRE) Training activities. The programme's overall objective is to promote, through dissemination and training, the benefits of employing MRE skills in selected countries in the HKH region.

The specific objective of the programme is to promote awareness about MRE among policy-makers, senior officials in government, and development organisations; to support decentralised on-the-job training for junior professionals, including farmers and village labourers; to support the introduction of MRE curricula in academic institutions; and to disseminate programmes and other MRE information generated throughout the HKH region.

In Phase I, the focus was on the preparation of a Training Manual for MRE and the implementation of a Pilot Training Programme. Under Phase II, the training manual was revised and published and another eight-week long MRE training course was conducted for professionals from the Himalayan region. Extensive review and assessment of earlier achieve-

ments and impacts of MRE indicated that, whereas MRE concepts and methods were very valuable for mountain areas, new approaches were needed to focus on on-the-job training and to facilitate a wider use of MRE "soft" techniques for instability and mitigation and control.

The third phase funded by the European Commission has been developed and designed to cater to these needs of the HKH countries. It has two main project areas – China and Nepal, while a third one in India is being discussed. Activities at the regional

sets of activities are envisaged. These entail organising three workshops for 25 participants each and a seminar for academic personnel and university officials in order to develop MRE curricula in the university system. It will consist of an exploratory meeting of the institutes and departments of disciplines related to MRE. A scientific committee (4-5 members) will put forth three basic proposals – one for biological sciences, one for civil engineering, and one for the earth sciences. Apart from this, an MRE training support unit will be operationalised.



Training site selection team in Sichuan, China

level are directed towards facilitating the in-country projects and to generating a wider momentum for MRE training activities in the HKH region.

The China focal point is the Chengdu Institute of Mountain Hazards and Environment. The agenda includes on-the-job training for in-service officers and community labourers in four groups of 16 persons each; two awareness seminars for 30 decision-makers; and two workshops for 30 officials from academic institutions.

Tribhuvan University has been designated as the Nepal focal point. Three

In the case of the India project, additional feasibility studies will be conducted during the next few months. The project's steering committee, which sat on 13 December, 1995, approved the operational plan and the first year's work plan of the project.

Expected impacts and benefits include expansion in MRE knowledge, awareness, skills, and applications with benefits to mountain projects and their environment. Production of MRE materials for a wider audience, regional cooperation, and, above all, sharing of experiences will be among the benefits.

ETHNOBOTANY AND SUSTAINABLE USE OF PLANT RESOURCES

Pei Shengji

Today, ethnobotany is widely accepted as a science of human interactions with plants and ecosystems. Recent developments in ethnobotany in China, India, Nepal, and Pakistan have been strongly oriented towards traditional herbal medicine, indigenously managed plant resources; traditional organisations; cultural interpretation of the plant world, ethnobotany of minorities, and ethnobotany for rural development; and biodiversity conservation with strong applied approaches in the field.

Ethnobotany by nature is a multidisciplinary science drawing on botany, ecology, and anthropology. The fundamental focus of ethnobotanical research is to examine the dynamic relationships between human populations, cultural values, and plants; recognising that plants permeate many aspects of culture, materially, symbolically, and metaphorically, and that nature is by no means passive to human action but provides an equal interaction. Thus, ethnobotany is more than simply a study of plants useful to people; it is devoted to understanding the limitations and behavioural consequences of the human population's actions on their plant environment.

At the same time, it is recognised that plants impose limitations on human actions and underlie many aspects of human beliefs and actions. The genetics, phenology, chemistry, and productivity of specific plants and human populations are a few of the factors examined in order to understand botanical restrictions and flexibilities that affect these interactions.

The importance of ethnobotany, however, is not limited to hard science; it has an important role to play in the conservation of nature and culture and of the biological and the traditional cultural diversities of the world. In fact, the conservation of biodiversity

and cultural diversity are closely linked to each other. For instance, in traditional medicine and food culture, the use of edible plants differs from one region to another and from one ethnic group to another. Ancient knowledge systems not only involve the knowledge of plants used for medicine and food, but also protection strategies for sustainable use of plant resources. Therefore, ethnobotany has played an important role and will continue to facilitate documentation of traditional knowledge on medicinal and edible plants in different ecological zones and human societies in the world.

Mountain ecosystems in the Himalayas have long been neglected because of their inaccessibility and economic deprivation. Understanding how mountain people conceptualise their ecosystem is particularly useful when combined with studies of resource use patterns, appropriation systems, decision making, and so on. Basically, the mountain economies of the region are characterised by self-sufficient and self-reliant systems that are agro-forestry based and have extremely diversified land use, bioresources, and human cultures.

Over the past two decades, environmental and cultural changes and economic development in the mountain region have accelerated, creating a serious impact on mountain natural resources. As the fundamental building blocks for development, biological resources provide the basis of subsistence for mountain people and the potentials for development of mountain economies. As regenerative resources, however, biological resources have been maintained by the indigenous people of the mountain region for agriculture, horticulture, animal husbandry, forest products, herbal medicine, hunting, rituals, cultural needs, and almost all of their subsistence needs.

Mountain people use a wide variety of species rather than a few species only; mountain communities manage the environment as a whole, an integrated system rather than separate ecosystems. For them, the mountain habitat provides a means of survival and is not just an area to be exploited for short-term benefits. From such perceptions and practices, mountain people have constructed a system of use and maintenance of natural resources which is referred to as an **informal knowledge system** or **indigenous knowledge system**. Modern systems of resource utilisation and methods of economic development are often divided into separate disciplines which compete for natural resources from the environment by using formal knowledge and modern technology. Operations under these systems concentrate on exploiting specific biospecies with higher economic value for marketing. Ignorance of the system functions of biological resources in mountain societies has resulted in the degradation of the mountain environment and its resources.

UNESCO, in collaboration with ICIMOD and with funds granted by DANIDA (Government of Denmark), is launching a three-year programme to develop the field of ethnobotany applied in the management and conservation of plant resources through capacity-building, supporting research, and promoting action-oriented field projects. Emphasis will be placed on supporting young ethnobotanists at the interface of conservation and development using a participatory approach.

We expect to establish close linkages with ethnobotanists within the region and create more opportunities to interact with ethnobotanists from other regions in the near future through implementation of the project in the Hindu Kush-Himalayan region.

NINGNAN SERICULTURE STUDY TOUR

Sericulture is being promoted as a source of on-farm cash-generating activity for women in Nepal. It is practised in pockets of the eastern district of Ilam. Many farmers, several institutions, and local NGOs involved in silk production have come together to form the Sericulture Association of Nepal (SAN). The organisation is still in its infancy and requires support in terms of technology, research, marketing, and manufacturing.

Finding answers to these problems is very much within ICIMOD's sphere of interests and activities. By playing the role of a facilitator, ICIMOD helps to replicate successful experiences in the countries of the HKH region. As part of its continuing efforts to identify and promote high-value crops in mountain areas, sericulture was identified as a potential mountain crop for farmers in the mid-hills of Nepal.

of Agriculture and Animal Science (IAAS), Rampur, Chitwan, were also part of the team.

The successful experiences of seri-farmers in Ningnan were discussed with the team. These covered the whole gamut of silk production: the sericulture extension system, mulberry production, egg production, cocoon grading, cocoon drying and storing, marketing system, post-cocoon reeling, and silk yarn production.

Mulberry planting and silkworm rearing have still to become popular amongst farmers in Nepal. Certain pockets where sericulture is carried out in Nepal have experienced constraints. As there is no tradition of sericulture in Nepal, choice of technology has to be made carefully. It is the belief of those in the industry that sericulture should be promoted as a cottage and small industry.

The activity is totally dependent on outside raw materials. Silkworm eggs are not produced in Nepal, but imported from South Korea. Most of the time the supply of eggs does not match the mulberry garden schedule; a management problem to a large extent. Also, the varieties of silk-worm (eggs) imported are not suitable to local conditions. There is no research on appropriate technology nor R & D testing, there is a dearth of trained manpower, and virtually no market for cocoons. The cocoon producers lament the arbitrary government pricing of cocoons, which should ideally be based on the international (prices and demand) market.

The outcome of the study tour to Ningnan County, reveals many technical misconceptions. Cooperatives were found to be strongly viable. The outcome was a follow up platform. This platform for follow up action will bring together government officials and NGOs and result in business, technical, and marketing inputs. It will also identify new areas suitable for sericulture.

The group studied the institutional aspects and farmers' activities. Mrs Maggie Shah, the chairperson of SAN, and the other mission members returned with many positive ideas. China provides 85 per cent of the world's silk and they do an excellent job of production, Mrs Shah stated. The exposure to how farm-level service is conducted has been very useful. According to her, the initial stages are most crucial. What kind of eggs do the farmers get? If the egg is weak, there is no way the poor farmer can get it passed. Although the

tradition of silk rearing is comparatively new in Ningnan county, their nursery rearing model is very strong. They have some advanced farmers who exclusively rear the egg/worm through its first two delicate stages. This is the most useful experience for Nepal. The land-use pattern for mulberry planting is also very helpful and is acceptable to Nepali farmers.

However, Mrs. Shah does not suggest that Nepal go in for egg production, which involves high complex biotechnology and is also expensive. "But we can replicate some things. Like the production of temperate climate silk, as in China, which is more suitable to Nepali conditions than the tropical silk of southern India."

The mission members are very grateful for ICIMOD's rapid response to their needs. As a follow-up, Mrs Shah has requested a technical review to identify suitable mulberry and egg varieties to suit local conditions and different levels of training by experts from China. She has also suggested that it would be useful for the government to set up a formal avenue of import for the right kind of raw materials.



Sieving out the silkworm in Ningnan

- Tang Ya

The recent sericulture study tour by a group from Nepal in October '95 to Ningnan County, Sichuan Province, China, sponsored by ICIMOD, included ten professionals – manufacturers, scientists, government officials, and seri-farmers. The group members came from varied backgrounds – from pioneers in the field like the proprietor of Surya Silk, Mrs Maggie Shah, to those who have worked for the development of the silk industry in the interior of Nepal, for example, Dil Kumari Lingdem, a seri-farmer from Ilam who is chairperson of the 'Amar' Sericulture Development Group. Dil Kumari Lingdem has worked for a decade to develop good cocoons from mulberry. Scientists and officials from the Institute

SEABUCKTHORN INTERCOUNTRY STUDY TOUR TO CHINA

Tej Partap

Under the institutional strengthening programme of the Mountain Farming Systems at ICIMOD, one of the activities focusses on building the institutional capacities of national research and development (R&D) institutions to replicate successful experiences. The success achieved by using Seabuckthorn (SBT) to regenerate dry areas - notably successes in improving both the ecology and farm economies of otherwise resource poor areas, have been documented and advocated.

Himachal Pradesh (H.P.), a tiny hill state in India, in its efforts to develop Seabuckthorn has mobilised the state's R & D institutions in the cold and dry Himalayan areas of the state. Subsistence farmers have been using SBT traditionally as a source for fuelwood, fodder, and for slope stabilisation. The programme managers in Himachal Pradesh were not aware of the Seabuckthorn revolution in China and were a little hesitant to draw up a large programme on Seabuckthorn.

ICIMOD provided support for a two-week intercountry exchange study tour for 10 persons to the People's Republic of China giving them first hand acquaintance of Seabuckthorn activities in China.

The team included a provincial leader from Himachal Pradesh who had been instrumental in shaping tribal development plans in his area, the Chief of the Forest Department in the cold and dry areas of the state; the state council staff in-charge of coordinating SBT activities in the state; the scientist in-charge of the UHF-ICIMOD Seabuckthorn Research and Demonstration Centre; and a local NGO representative-cum-progressive farmer from Lahaul. Besides, representatives of two NGOs from Ladakh, who are working on the various ways of using seabuckthorn to improve the farm economies of Ladhakhi highlanders, and a representative of the industry were also included in the delegation. Two persons from Nepal also joined the study tour and they were from the Remote Area Development Committee of the Ministry of Local Development.

The purpose of the study tour was to show how resource poor areas, for example Jian Ping County used this plant to transform its ecology and economy in a mere decade and a half; what is the state-of-the-art in terms of the agro-industrial use of this plant; and how successful it has been in China.

The once poor county of Jian Ping in northern China first used SBT two decades ago to meet the subsistence needs of the farmers, i.e., for fuel and fodder and to control wind erosion. Later, the newly-established Seabuckthorn forests were harvested for by-products (fruit). This led to the development of agro-industries and a change in the farm economy. Today, the people of the county are prosperous and their economic diversification is largely based on SBT.

China has built up a wide variety of wild and domesticated races of SBT from all over the world. An intensive selection and breeding programme is carried out at the Yongshore County experimental station in Shaanxi Province. The plant collections from different agroecological zones being raised on the site also brought to light the fact that seabuckthorn has different plant forms adapted to different agroecological zones.

The visit was a most useful teaming experience. There are half kilometre strips



Successful experience: An apple orchard amidst dry cold areas in Kinnaur, India

planted on both sides of the Yellow River and even wider areas where the river basin has spread far and wide. Large areas of the river basin were afforested with seabuckthorn through air seeding. It was reported by the local people that, with luxurious forests in place, the river was tamed substantially and had clearer waters. This area has now become the base for seabuckthorn industries.

The group also visited various factories producing seabuckthorn products. Most notable among these were those of SBT oil and oil-based medicines. Samples of SBT products were provided as gifts to the participants.

It clearly emerged that the SBT exchange tour helped strengthen the knowledge of the participants and through them their institutions. The National Seabuckthorn Office of China had established a Research and Training Centre on Seabuckthorn which has been upgraded to the level of an International Centre for Research and Training on Seabuckthorn during the International Workshop on Seabuckthorn (ICRTS) in December 1995.

* The Y.S. Parmar University of Horticulture and Forestry, Solan, H.P. India

Aga Khan Rural Support Programme

Established in 1982, the **Aga Khan Rural Support Programme (AKRSP)** is a private non-profit, non-partisan organisation of the Aga Khan Foundation which is working to improve the quality of life of villagers in northern Pakistan.

The AKRSP works in the three rugged and remote mountainous districts of Gilgit, Baltistan, and Chitral. Together these districts cover an area of 66,000sq.km. and approximately 1,030 villages in the Northern Areas (Gilgit and Baltistan) and in the North West Frontier Province (Chitral).

Objectives

AKRSP's specific objectives complement and supplement the activities of government departments and other development agencies. The three principal objectives are:

- raising the incomes and quality of life of approximately one million people in the remote mountainous north of Pakistan;
- developing institutional and technical models for equitable development;
- evolving sustainable, long-term strategies for productive management of natural resources in a dry and fragile mountain environment.

The fourth objective, conditional on the achievement of the first three, is to demonstrate approaches that can be replicated.

Organisation

AKRSP has generalised a model for sustainable resource management and outlined operational guidelines. This institutional model of rural development has been widely acclaimed for 11 years. The programme establishes a partnership with the village, based on the establishment by the village of a Village Organisation (VO). As an organisational incentive, AKRSP provides a grant for village projects called **Productive Physical Infrastructure (PPI)**, and terms of partnership are signed between the VO and AKRSP. The decisions of the VO are made in general body meetings and are binding. Thus the VO enables the implementation of PPI. AKRSP maintains that stagnation in subsistence farming can be overcome by investing in the individual and jointly-managed stock of the physical capital in villages. The farmers are always urged to upgrade their skills in order to be able to undertake development activities. VOs nominate members



AKRSP women's meeting with ICIMOD team, Sost, Hunza Valley, Gilgit

to be trained by AKRSP as village specialists in the skills needed to achieve these development activities.

The concept and philosophy of AKRSP have been widely successful and have spread far and wide. Its programmes are by far the most important non-government development activity in the Northern Areas.

Programme

There are three phases to the programme – identification, preparation, and appraisal. The AKRSP works at various levels. It demonstrates commitment to establishing a VO, using it as a primary vehicle for development. At the **social** level, the forming of a VO involves field-based social organisers to interact on a regular basis. The methodology of **women in development** has been weaved into every project successfully, and AKRSP gives full credit to the Women's Organisations (WO) that were in place before the village sought AKRSP assistance. The **Productive Physical Infrastructure (PPI)** identified by the overwhelming majority of members of a VO is implemented by the villagers, becoming joint property. AKRSP's **savings and credit** scheme demonstrates the ability of small farmers to accumulate capital through disciplined and regular savings, however small. The **natural resources' management programme** seeks to optimise the productive capacity of local resources by replacing subsistence agriculture.

ICIMOD and AKRSP

Since its inception ICIMOD has had occasional interaction with AKRSP, particularly in the field of mountain farming systems. Earlier in the year, the Director General, Mr Egbert Pelinck, led a fact-finding mission to Pakistan which included a visit to the Northern Areas and field activities supported by AKRSP. Both Mr Pelinck and Mr S Rasmussen, General Manager of AKRSP, agreed that closer collaboration between the two organisations would be of mutual benefit. Exchange of information and participation in each other's meetings was considered an important first step to do so. Initially, the following subjects were identified for collaboration: Ecological Tourism; Geographic Information Systems (GIS); Micro-hydel; Gender; Community Forestry; Information-Networking; and Beekeeping.

In the meantime several AKRSP staff have already participated in ICIMOD sponsored workshops and training courses.

CENTRE NEWS

MEETINGS OF THE BOARD AND THE ICIMOD SUPPORT GROUP

The 23rd Meeting of the ICIMOD Board of Governors and the Fifth Meeting of the ICIMOD Support Group

These meetings took place from 28-30 November, 1995 in Kathmandu. Members of both Groups first met together at Centre's Day, during which many conceptual and technical issues were raised on the basis of presentations made by ICIMOD management team and specialists. In the following two days the Board and Support Group met separately and discussed issues specific to their mandate. The Board, in response to one of the recommendations of the Second Quinquennial Review established Standing Committees of the Board on Programmes and Finance. The Programme Advisory Committee will meet twice a year. The Board approved the Programme of Work and Budget for 1996 at a total amount of \$ 4.5 million. Representatives of several ICIMOD donor organisations expressed their continuing support to the Centre during the meeting of the Support Group. Particularly encouraging was the fact that the total contribution to ICIMOD's core programme in 1996 will be double that of 1994. Both the Board and the Support Group expressed their general satisfaction with the progress made during 1995 and the proposed workplan for 1996. Several suggestions were made on prioritisation of programme components and the ICIMOD management was requested to prepare a consolidated response to several issues raised during Centre's Day, and for which insufficient time had been available.

TRAVEL REPORTS

Directorate

Europe-USA-Peru-Japan

The Director General, Mr Egbert Pelinck, attended the first meeting of the Initial Organising Committee of the Mountain Forum which was held in West Virginia, USA, during September '95. The meeting agreed to establish "The Mountain Forum" as a network of institutions concerned with mountain areas in a broad sense. The Forum, it was agreed, will have a strong regional focus and two major functions: of advocacy at national, regional, and international level and of mutual support through information exchange. It was decided that networking would take place through regional nodes/service centres. ICIMOD will play that role in Asia. The Director General also met with officials from the World Bank, World Resources' Institute, USAID, and the International Food Policy Research Institute.

The meeting on "Project Design for Sustainable Mountain Development" was held in Lima, Peru. It was organised by the International Potato Centre (CIP). Extensive discussions on the approach to research for sustainable mountain agriculture and mountain specificities concluded with sharing of research results and developing common methodologies on research. As a follow up to the meeting a joint project proposal on mountain agricultural research is presently being developed.

The Director General visited Japan and informed officials in the Foreign Ministry of the outcome of the Quinquennial Review and the follow up action taken by the ICIMOD Board

and Management. Additional briefing was provided on the progress of the Landslide Hazard Project.

India

The Director General's visit to India was mainly to discuss outstanding issues with the Ministry of Environment and Forests. Mr NR Krishnan, Secretary, Ministry of Environment & Forests and one of the ICIMOD Regional Board Members, expressed his satisfaction with the expansion of ICIMOD's contacts with several of India's Himalayan States, e.g. Himachal Pradesh, Uttar Pradesh, Sikkim, Arunachal Pradesh and Nagaland. The Government of India officials expressed keen interest in participating in the Mountain Risk Engineering project.

The Director General also met with senior staff of the Indian Council of Agricultural Research, Tata Energy Research Institute and WWF-India. During his visit he signed a project agreement at the Embassy of Norway on phase II of the project "Tourism for Local Community Development". He also met with the Ambassador of Belgium to India and Nepal and officials of the embassies of the Netherlands, New Zealand and Sweden.

Mountain Farming Systems (MFS)

Regional Workshop on Sustainable Agriculture in Dry and Cold Mountain Areas, Quetta, Pakistan

Dr M Banskota, Deputy Director General attended the above-mentioned workshop held in Quetta, Pakistan, from 23-30 September 1995. He was accompanied by Dr Tej Partap, Dr Tang Ya, and Mr Daniel J Miller. The workshop was organ-



The 23rd Board deliberations in full swing

ised by the Pakistan Agricultural Research Council (PARC), Islamabad. ICIMOD was the sponsor. Presentations at the conference focussed on the R&D carried out on the Arid Zone. Dr M Banskota, in his opening address, stated that rapid commercialisation in the mountain areas had led to reckless exploitation of natural resources and that for sustainable development, better management was needed. He urged the participants at the workshop to integrate their efforts at organising the voices of the mountain people. The speech of Dr Anwar Khan, Chairman, PARC, highlighted concerns about sustainable use of water to arrest degradation; livestock production; and over-exploitation of natural resources. Experiences in Sustainable Mountain Agriculture in cold and dry areas of HKH were presented by Dr Tej Partap, Head of MFS Division, in his keynote paper. Dr Wang Tao of the Institute of Desert Research, China, also presented a paper on Desertification. Several other papers were presented on the experiences in cold and dry areas' agricultural development. Discussions were held on the presentations, followed by field visits focussed on the development of irrigated apple orchards, protected juniper forests, and traditional underground irrigation systems in Quetta. Group reports were presented after the field visits. Dr Banskota and Dr

Tang Ya also visited the Muree Hills and the demonstration site to see the progress achieved in on-farm testing of Appropriate Technologies for Soil Conserving Farming Systems.

Support for Seabuckthorn Initiatives

Dr Tej Partap was invited by the Government of Himachal Pradesh, India for a progress evaluation and 1996 planning meeting on Seabuckthorn promotion initiatives for the Himachal in order to regenerate its cold and dry areas, from November 17-18, 1995. In early 1995, ICIMOD, under its institutional strengthening programme, provided substantial support for the establishment of the Centre for Research and Training on Seabuckthorn at the YS Parmar University of Horticulture and Forestry at its Regional Research Station at Tabo, Spiti, in the cold and dry Himalayan zone. ICIMOD was also represented by Dr Tej Partap at the International Workshop on Seabuckthorn held from December 12-17, 1995 at Beijing, and organised by the National Seabuckthorn Office, Ministry of Water Resources, China. It was attended by delegates from 11 countries. The occasion was used to formally establish the International Centre for Research and Training on Seabuckthorn with its headquarters in Beijing.

Mountain Enterprises and Infrastructure (MEI)

Mountain Risk Engineering

From 23 September to 7 October, Dr Li Tianchi and Dr Cingolani visited Chengdu, China, in order to discuss the details of the implementation of the Mountain Risk Engineering (MRE) Project and to assist in initial action. The agenda of this visit included discussions on the Project Administration Agreement and on the details of the financial and logistical arrangements. Assistance was given for drafting the first six months' budget, in the first recruitment of the trainers' team, in defining the training schedule, in timing the preparatory phase, and in the planning of the preparatory phase. The project itself became operational on 15 October 1995. Activities in Yaan City included discussions with the Vice Mayor of the city and the Director of the Hydroelectric Bureau. An agreement between the Chengdu Institute and the Yaan City authorities was signed on 29 September. A field trip to the Longxi River Watershed was also undertaken, along with a meeting with Prof. Ai Nashan of Sichuan University who is an expert in training methodology and communications.

Mini- Micro-hydropower

Dr Junejo, the MHP specialist, visited Norway to hold discussions with key personnel in Norwegian Water Resources and Energy Administration (NVE), NORPLAN, and NORAD. The visit included meetings with officers of the energy section of NVE, a meeting with the personnel of the energy department of NORAD concerning future projects, a visit to the Hydropower Division of NORPLAN, and visits to other Mini-Micro Hydropower Small Hydropower (MMHP-SHP) plants. The visit to Norway was followed by one to Milan where Dr Junejo participated in the Working

Conference of International Network on Small Hydropower (IN-SHP) Hangzhou, China. The meeting was held in Milan to combine it with the European Hydroenergy Conference and Exhibition being held at the same venue. Lastly, Dr Junejo visited Switzerland in order to renew contacts with the Swiss Centre for Development Cooperation in Technology and Management (SKAT) and Entec Ag, a consultancy company. Discussions were held with Mr A Arter of Entec Ag and with other officials at SKAT. Dr. Junejo also visited several hydropower plants and Sulzer Hydro (manufacturers).

MENRIS

MENRIS programme implementation for the Bhutan node

A month-long GIS training programme for the Bhutan node was held from 11th September - 7th October, 1995, in Thailand. Altogether eight officials from the Royal Government of Bhutan, five resource persons from ICIMOD, and another eight from the United Nations Environment Programme/ Environment Assessment Programme-Asia Pacific (UNEP/ EAP-AP) participated in the training activities. Pramod Pradhan of ICIMOD led the team of Basanta Shrestha, Hubert Trapp, Sabina Shrestha, and Anjali Shrestha.

Radar Technology

A meeting was held with Professor Shunji Murai, Chair Professor of the Natural Resources' Programme at the Asian Institute of Technology (AIT) and the issues discussed focussed on future developments in Remote Sensing in the Region.

Meetings with UNEP/EAP-AP

Discussions were held with Mr Surendra Shrestha, Regional Coordinator, UNEP/EAP-AP with regard

to the implementation of the Regional Environment and Natural Resources' Information Network in the Asia Pacific region (RENRI) programme.

Meeting with Professor Psidhi Karasudi

Discussions with Professor Psidhi Karasudi, Vice President Development, AIT, regarding research grants for AIT students who are conducting research in the HKH region. Also, initiatives to set up a formal publications' exchange was put into motion.

Second Asia Regional Globe SAR Workshop

This workshop, held in Beijing, China, from October 9 to 12, was jointly organised by the Canadian Centre for Remote Sensing (CCRS) and the Institute of Remote Sensing Application (IRSA), CAS, Beijing. The ICIMOD representative was Mr Pradeep K Mool.

Remote Sensing (RS) and GIS in Managing Tropical Forests

This month-long training/workshop which began on September 4th in Samarinda/East Kalimantan, Indonesia, was conducted by the German Foundation for International Development (DSE). Eighteen participants from nine southeast Asian countries

were present. Mr Sushil Pradhan (MENRIS/ICIMOD) presented a paper on 'Implementation of GIS and RS Technology in the HKH region'.

Training for the Indian node

The second cycle of GIS Professional Level Training was conducted in GB Pant Institute, Almora, from 6 - 25 November, 1995. Eleven professionals from different organisations of India participated in this training programme. Two resource persons, Mr Basanta Shrestha and Mr Birendra Bajracharya, were available for this training activity.

Training in Pakistan

The Pakistan Forest Institute (PFI) conducted GIS training for professionals in collaboration with MENRIS/ICIMOD from October 29 to November 16, 1995. Mr Hubert Trapp of MENRIS participated as a resource person/ instructor for this training programme. Twelve professionals from different organisations in Pakistan participated in this training programme which was conducted mainly by staff of PFI.

ESRI Conference

In September 1995, 4th Annual ESRI South Asia Users' Conference was held in Singapore. Mr Pramod Pradhan, Head of MENRIS, and Mr Basanta Shrestha, Systems' Specialist,



Conflict Resolution Workshop participants

attended and presented a paper on Implementing GIS in Mountain Regions - An Experience from the Hindu Kush-Himalayan (HKH) Regions.

WORKSHOP REPORT

Conflict Resolution - Forest Resources' Management

The first regional workshop on 'Conflict Resolution in Forest Resources' Management' was held in Kathmandu. This workshop was organised by ICIMOD in collaboration with the Regional Community Forestry Training Centre (RECOFTC) and the Forests, Trees, and People Programme (FTPP) of FAO for Asia. The collaboration itself was a result of the work being carried out in the HKH region by the Participatory Natural Resources' Management Programme of ICIMOD and the RECOFTC and FAO's activities on conflict resolution.

The objectives of the workshop were:

- to review mechanisms and strategies that the different stakeholders use in Asian countries to address and resolve conflicts arising from the use of forest resources,
- to provide opportunities for participants to exchange information about problem-solving and decision-making in community forestry disputes,
- to document case studies on conflict resolution in Asian countries and develop them for use as training materials, and
- to provide visibility and sensitise policy-makers to issues related to conflicts in forest resources.

A total of 58 participants from eleven countries attended the workshop. Representatives came from India, Thailand, Pakistan, Indonesia, Kenya,

RECENT PUBLICATIONS

DISCUSSION PAPERS

MEI

- 95/9 Economic and Natural Resource Conditions in the Districts of Bagmati Zone and their Implications for the Environment. An Adaptive Simulation Model - *Kamal Banskota and Bikash Sharma*
- 95/10 Mountain Tourism for Local Community Development. A Report on Case Studies in Kinnaur - *M. Shreedhar*
- 95/11 Tourism for Mountain Community Development. Case Study Report on the Annapurna and Gorkha Regions of Nepal - *Kamal Banskota and Bikash Sharma*
- 95/12 Tourism for Local Community Development in the Mountain Areas of NWFP - *Development Research Group, Peshawar, Pakistan*
- 95/13 Urban and Industrial Development Process and Opportunities in the Mountains - *Pitamber Sharma*
- 95/14 Carrying Capacity of Himalayan Resources for Mountain Tourism Development - *Kamal Banskota and Bikash Sharma*

MNR

- 95/3 Biodiversity of the Quinghai-Tibetan Plateau and its Conservation - *Li Bosheng*

MFS

- 95/4 Participatory Approaches to Agricultural Technology Promotion with Women in the Hills of Nepal - *J.D. Gurung*

WORKSHOP REPORTS

Challenges in Mountain Resource Management in Nepal: Processes, Trends and Dynamics in Middle Mountain Watersheds

- *H. Schreier, P.B. Shah, S. Brown*

Tourism for Local Community Development in Mountain Areas: Perspectives, Issues and Guidelines - *P. Sharma*

Proceedings of the Pakistan National Seminar on MMHP Development in the HKH Region - *Wahaj-us-Siraj*

The Orientation-Cum-Training Programme on MMHP Development in the HKH Region - *A. Junejo*

Rehabilitation of Degraded Lands in Mountain Ecosystems of the HKH Region

- *P. Shengji, assisted by S. Karki*

Hill Districts of Bangladesh Experiences in Development - Report of the National Workshop

OTHERS

Bibliography of Meteorology, Hydrology and Glaciology of Nepal

FAO (Rome), GTZ, and so on. Government officials as well as individuals from other institutions were invited to share and exchange their views, ideas, and experiences on conflict resolution.

Dr Mahesh Banskota, Deputy Director General of ICIMOD, gave the welcome address in which he identified scarcity and inequitable access to resources as common sources of conflict. Ms Marilyn Hoskins, Senior Community Forestry Officer from the FAO's Community Forestry Unit, took the opportunity to discuss the FTTP's global, regional, and national networking activities on conflict resolution.

The first day and a half of the workshop were devoted to the presentation and analysis of the case studies. This was followed by a field trip to the Patle Community Forest in Lalitpur District and further discussions. On the final two days, participants concentrated on various issues in small working groups. Finally, country and regional plans were formulated. Mr Egbert Pelinck, Director General of ICIMOD, gave the concluding remarks, underlining the relationship between environmental conservation and common property resource management. He noted that the workshop has contributed to developing preventative measures and increasing awareness; important considerations since the potential for conflict grows as resources become more valuable.

Visitors to the Centre

Fred Roos, Director, Development Cooperation Asia, Ministry of Foreign Affairs, The Netherlands

Stephen Gibbons, Canadian High Commission, New Delhi, India

Prof. A.K. Sinha, Wadia Institute of Himalayan Geology, Dehra Dun, India

Brian Sims, Silsoe Research Institute, U.K.

Auke Koopmans, Regional Wood Energy Development Programme, Bangkok

Prof. Dr. H.G. Bohler, South Asia Institute, Heidelberg, Germany

Paul Egger, Agriculture Service, Swiss Development Cooperation

Marilyn W. Hoskins, FAO Community Forestry Officer, Rome, Italy

Prof. Dr. I. Yamada, CSEAS, Kyoto University, Japan

S. Tahir Qadri, ADB, Manila, Philippines

Carl Wachmeister, Fjall Foundation, WPPSALA, Sweden

Tom Derksen, Director, SNV, Nepal

Arthur Egbert, International Agriculture Centre, Wageningen, The Netherlands

Jim Socknat, Chief, Human Resources and Social Development Division, Asia Technical Department, World Bank, Washington D.C., USA

Maria MacDonald, Principal Population specialist, World Bank

Marinette Oomen, Operations Review Unit, Ministry of Foreign Affairs, The Hague, The Netherlands

Tom J. Segaar, Operations Review Unit, Ministry of Foreign Affairs, The Hague, The Netherlands

Dr. Clark Gibson, International Forestry Resources, Indiana University, USA

Elinor Ostrom, Co-director, Arthur S. Bentley, Professor of Political Science, Indiana University, USA

José R. Benites, FAO, Soil Service, Rome, Italy

Yung K. Choi, World Bank, Washington D.C., USA

Mr and Mrs Quist-Hoffmann, Inter-regional Project for Upland Participatory Conservation and Development, Gorkha, Nepal

Dr. D.C. Misra, Chief Secretary, Government of Arunachal Pradesh, Itanagar, India

G.P. Shukla, Principal Chief Conservator of Forests and Secretary, Environment and Forests, Government of Arunachal Pradesh, Itanagar, India

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Osman Atit, Japan Forest Technical Association, Tokyo, Japan

Patrick Lefort, CNRS, France

Geroud Vidal, ENS-LYON, France

John Moore, Counsellor, Canadian Cooperation Office, Kathmandu, Nepal

Olivier Chave, SDC, Multilateral Cooperation, Switzerland

Monika Kapil Mohta, 1st Secretary, Information, Embassy of India, Nepal

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(As of December 13, 1995)

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Prof. Klaas Jan Beek International Institute for Aerospace Survey and Earth Sciences (ITC)	Netherlands
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Ms. Jeannette D. Gurung ,	Gender and Development Specialist
Dr. Shaheena H. Malik ,	Agricultural Extension and Training Specialist
Mr. Sugandha Shrestha ,	Coordinator/Strategies for Mountain Agriculture
Dr. Tang Ya	Assistant Coordinator ATSCFS Project
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PUBLISHED BY

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Telephone: (977-1) 525-313, Telex: 2439 ICIMOD NP, Fax: (977-1) 524-509, (977-1) 524-317, Cable: ICIMOD, NEPAL

Typesetting: ICIMOD Publications' Unit