



The Regional Collaborative Programme - An Update

Introduction

In the Spring Issue (No 21) of the ICIMOD Newsletter, we reported that the ICIMOD Board of Governors and the ICIMOD Support Group had endorsed the "Regional Collaborative Programme for the Sustainable Development of the Hindu Kush-Himalayas" (RCP) as the basic framework for implementing ICIMOD's mandate. The programme document consists of a long-term vision and a four-year workplan and budget for the period from 1995-1998. Ambitious in its contents, the RCP is the first major effort in many years to change from a project approach to a programme approach in which all the key issues of integrated mountain development can be addressed on an equal footing.

Increased Donor Support

So far, this approach has met with considerable positive response, both from ICIMOD's partner institutions in the region and from the donor community. In the first 18 months, the contributions from the non-regional donors to the RCP (formerly called "core funding") have doubled from \$1.2 million to \$2.4 million per year, and other donors have used the RCP to select particular issues or activities listed to which their support could be allocated.

Strengthened Capabilities at ICIMOD

As a result, ICIMOD has been able to attract highly qualified professionals to work at the Centre for periods of three years or more. At present, 80% of all internationally-recruited professionals fill positions identified under the RCP, and only three positions are left vacant. This provides us with an opportunity to respond to a whole range of issues we are faced with in our daily work.

Sustainable Partnerships

Equally important is the fact that, with a minimum "core" programme, it is now possible to establish and maintain partnerships with institutions and organisations with a mandate in sustainable mountain development in the HKH. Without such partnerships, it would be impossible to have a real impact on the lives of the people of the HKH and their environment.

Monitoring the Progress and Impact of the RCP

Eighteen months into the four-year programme have shown the great advantages of a programme approach. All professional staff have been able to initiate programmes that are related to at least 2-3 of ICIMOD's statu-



Future generations need multiple options

tory functions. To assess the progress in a more systematic way, the First Meeting of the newly constituted Programme Advisory Committee of the Board of Governors met on 27-28 June under the chairmanship of Dr. Zafar Altaf, Secretary of the Ministry of Food, Agriculture and Livestock, Pakistan. Intensive discussions were held with divisional staff and overall agreement was expressed with the steps undertaken. Some concern expressed about the lack of clear priorities and the need to create linkages between the different activities that were undertaken will be taken into account in the report to the next Board of Governors and Support Group Meeting.

Egbert Pelinck
Director General

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Institutional Innovations in Common Property Resource Management

Anupam Bhatia

While the role of community-based institutions in managing common property resources in the mountains is well-recognised, experience indicates that innovations in institutional development are imperative to ensure a better response to the changing development paradigm. This was the key issue discussed by a trans-country panel made up of participants from India and Nepal at the annual conference organised by the International Association for the Study of Common Property Resources in Berkeley, USA, in June 1996.

The panel was constituted by ICIMOD's Participatory Natural Resources' Management Programme. Its five members represented community-level institutions, a non-government organisation, and a forest department. A common theme running through three presentations was the emergence of institutional innovations in community forestry over the last two years in the Hindu Kush-Himalayas. Innovations include the Himalayan Grassroots' Women's Natural Resource Management Network; HIFCOM - Hindu Kush-Himalayan Forum for Forest Conservation and Management, a network of professional foresters; and the Federation of Community Forestry Users' Groups in Nepal.

Radha Bhatt's paper and presentation focussed on the hilly areas of Uttar Pradesh, India, and outlined the history of social action related to forest resources. She examined the social context of these environmental movements, especially reasons for the proactive role women played and continue to play in them. She also analysed the presence of *Van Panchayat*(s) in the hills and the reasons for their inability to manage community forest lands effectively. CHIPKO, the well-known environmental movement, was located in these hills and a regional women's network had been formed to form linkages among women from the Hindu Kush-Himalayas. One of the principal endeavours of the network will be to evolve strategies that will give women more control in decision-making in natural resource management.

A.K. Gulati, from the Department of Forest Farming and Conservation, Himachal Pradesh, India, provided a historical overview of the emergence of participatory forest management in Himachal Pradesh. Although a government order had been passed by the state to encourage joint forest management and some experience had been gained, many new challenges and institutional concerns remained. The process of change from custodial to people-oriented forestry was slow and

gradual. In this context, professional foresters had recently established a regional mechanism called HIFCOM. The key mandate of HIFCOM was to promote and support participatory forest management in the mountain areas of several countries and to ensure that change comes from within the institution and is properly internalised.

The three panelists from Nepal - H. P. Neupane, B. P. Shrestha, and Apsara Chapagain - represented the newly formed Federation of Community Forestry Users' Groups in the country. They highlighted the role of indigenous forest management systems and the impact of state policies and rules in Nepal. Recent developments in community forestry and their impact on community initiatives were shared. In the context of Nepal's mostly inaccessible hilly areas, the role of decentralised institutions in sustainable management of common property resources was discussed.

The group outlined the process which led to the emergence of the Federation in Nepal. The Federation is committed to ensuring that the rights of marginalised communities are not compromised. The Federation aims to strengthen district-level networks and undertake the advocacy and influence of policies at national level.

These institutional innovations aim to address the lacunae existing in mountain areas and to strengthen community-level initiatives.

A.L. Joshi, Ministry of Forests and Soil Conservation, HMG/Nepal, was a discussant, and Anupam Bhatia of ICIMOD chaired and coordinated the panel.

The presence of participants representing community-level institutions and practitioners brought diversity to the IASCP Workshop and the recognition that academic and scholarly perspectives have to be tempered with farmers' perspectives and ground realities.



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Implications of GIS and RS Technologies in the HKH Region

Pramod Pradhan & Basanta Shrestha

Introduction

Geographic Information Systems (GIS) and Remote Sensing (RS) technologies are recognised as a powerful tool in the decision-making process. There is a movement towards convergence of GIS, RS, and GPS (Global Positioning System) and communication technology to provide a multitude of opportunities for the use of modern technology by decision-makers in coping with the management of problems associated with natural resources and the environment. Rapid advances are being made in these technologies, and they are becoming available at ever more reasonable costs.

Since its inception in 1990, the Mountain Environment and Natural Resources' Information Service (MENRIS) at ICIMOD has been creating awareness of and disseminating these technologies in the HKH Region through capacity-building, extensive training programmes, collaborative GIS applications, and information base development. Over the past six years, MENRIS, together with partner institutions in the HKH Region, has built up a sizeable GIS capacity in regional member countries.

It is well accepted that GIS is a powerful tool, which is often regarded as an 'enabling technology', the implications of which reach far beyond the mere automation of tasks previously performed by traditional means. The growing concern for environmental issues, with their socioeconomic dimensions, and sustainable development of mountain areas calls for a sphere of applications demanding realistic integration of technology, human aspects, and institutional frameworks.

Outcome

An established GIS network is serving as a useful instrument for pooling resources, expertise, and facilities as well as providing a platform for work on common problems in the HKH Region for the mutual benefit of participating regional member countries through a network of collaborative national institutions. This partnership initiative is designed to extend the functional capabilities of national institutions by developing mutually-supportive relationships. These relation-

ships initially focussed on training and GIS and RS dissemination activities. Having established a regional network, progress is being made principally in regional, national, and district-level databases and collaborative GIS applications. Academic sectors are being emphasised to close the human resource gaps on a continual basis.

Need

In order to make our investment in GIS worthwhile, there is need for corresponding growth in awareness about the technology on the part of decision-makers and, more importantly, an institutional framework that provides an environment conducive to the adoption of the technology. We now see that there is more to the

organisational aspects of GIS than technical aspects alone; such organisational aspects will determine its future. GIS technology is no longer a luxury, but rather an essential tool for the management of natural resources and environmental problems in the HKH Region.

This has important organisational implications in terms of policy focus for

institutions like ours in the HKH Region where GIS use is growing. Without these advances, the implementation of GIS technology will prove unsatisfactory, and GIS will be seen to have failed to live up to the initial expectations.

There is a need to bring about this awareness among decision-makers and to facilitate an appropriate policy focus within in respect to organisation. It is our experience that GIS in isolation is quite often a failure. A complementary approach amongst various institutions is indispensable for successful implementation of GIS.

Moreover, full realisation of the value of GIS technology demands progress on all fronts - technology, information base, technical calibre, and institutional framework.

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Relief Map of the HKH

File Photo

New Thoughts and Approaches to Sustainable Development in the Mountain Areas of Pakistan

Zafar Altaf

Mountain areas demand a specific approach. The type of approach mountain areas demand, in keeping with current requirements, is cataclysmic. Such an approach would mean moving away from traditional modes of development thinking. A traditional approach, by definition, is a steady approach. Years of neglect and insensitivities can be rectified by a radical approach.

In keeping with this thinking, Pakistan has introduced interventions in the mountain regions to deal with the problems and convert them into opportunities; at the same time being flexible enough to achieve clearly-set objectives. This necessitates a look at the planning situation, establishment of clear objectives, and systematic monitoring and evaluation. The decision to set these objectives and the manner of arriving at optimal decisions are different. The means of decision-making, thus, become relevant. While doing so, knowledge evaluation, replicability, and the heart-breaking failures evidenced in other countries are taken into consideration. Innovative ideas need imagination; expertise and experience, in such circumstances, become limiting factors.

An intellectual ferment of this kind can only come about by looking at intangible factors; factors beyond the normal realm of bioscientists. The applicability of knowledge becomes a priority if ethical, moral, and scholarship variables are examined in the human resources involved in the entire effort. The leadership provided to the system assumes special significance, for it has to be aware of, and indeed sensitive to, issues of equity, efficiency, efficacy, adequacy, marginality, and human suffering. Effective leadership experiences agonising moments. Decision-making is not easy, for there are multiple choices that can be made. The route eventually taken may have more pitfalls than the ones not taken. Yet, one must have courage, based on reason, to take risks. A surgical intervention is called for - and one can cross the difficult bridges when one comes to them.

The social issues that need to be addressed are related to time-honoured concepts of justice, freedom, and balancing paradoxical situations in which alternative positions are examined. The overriding consideration should be the larger interest of the population rather than the vested interests of the few; the icons in the system.

In all this, the role of discretion and its application is central. Discretion is exercised in the context of

inaccessibility, fragility, marginality; a context which is central to ICIMOD's thinking. Conversion of hopelessness to hope - this is a significant and desirable outcome.

Awareness of the role of discretion has to be inculcated into key players, key institutions, and, above all, a godfather as owner has to be found for one's innovations. Such ownership can be used successfully to smoothen ruffled feathers, take care of unnecessary opposition, and modify insensitive actions. The underlying philosophy is to avoid head on adversarial thinking and, on the other hand, develop a lean organisation; the basis being the organisation of human resources supportive to the objective. It is for this reason that a supportive owner, who is influential and resourceful, is a requirement for such areas and in such times.



Dr Altaf: significant leadership

Having made a general statement on the subject, let me deal with specific interventions, innovative and iconoclastic ones, in the case of Pakistan. Pakistan is excited by the intervention of seabuckthorn elsewhere. It thinks of ICIMOD as the lead agent. Pakistan had made pilot interventions. The failure of these interventions meant that precious time was lost, as these interventions were neither here nor there. An analysis of existing interventions indicates the weakness in institutional linkages. As such, catalysts nominated and given authority by national institutes had weaknesses; were these due to human insensitivity or cussedness in inadvertently running this intervention into the ground? The new project design has to take past failures into account. Is the new intervention research or development? Its success, in a particular culture, was identified. Can we, in Pakistan, come close to this culture? Is Pakistan capable of identifying institutes that have the degree of regimentation which exists in the country where this regimentation has been successful? The model demands not only biotic interventions but also innovative thinking about the externalities that are required and which are essential for success.

Leadership in such an intervention is significant and needs to be carried out in reference to the statements

made earlier. One's reputation has to be put on the line and, to do this, the leadership has to provide internalised power. Paradoxically, a rigid will has to be balanced with a reasoned will. It is this kind of paradoxical balancing which makes all the difference between success and defeat. The answer is to follow a rainbow and realise your dreams. In the past, in the history of nations, good ideas have led to good consequences and vice versa.

One intervention that needed special attention was edible oil, i.e., Conolla; a case in which innovative thinking increased the crop area twelve fold. A second initiative, the use of very saline water to grow another edible crop, created an opportunity to use an exciting institutional partnership based on free market application, a relationship between national and innovative private international organisations. And so it goes on.

Finally, I have been an advocate for establishing an institutional framework in which human resources are differently organised. One has to look beyond degrees earned through formal examination to get a balance and to deliver objectives. Thus, for a particularly exciting and difficult (opportunity) area, a master craftsman (difficult to locate), sociologists (not necessarily PhDs and Masters but people with proven

track records in interpersonal relationships and who are acutely aware of local cultures); and agriscientists are needed; some dynamic young individuals fill this kind of requirement. What we have to avoid are Spanish armadas, slow moving, slow-thinking individuals.

The objective in development of the area is also that of harmonising a tribal culture likely to undergo change. Tribals have to be brought into the mainstream of national life without disturbing their heritage and culture. A tall order - you bet! ▲

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Dr. Zafar Altaf is the Secretary of the Ministry of Food and Agriculture, Government of Pakistan, and a member of the Board of Governors of ICIMOD. This article is based on a presentation by him on 26 June to ICIMOD staff and interested staff members of development organisations based in Kathmandu.

Some Regional Newsletters

Asian WATMANET Newsletter

This Newsletter focusses on issues related to people's participation in watershed management in Asia.

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APMN Newsletter

This Newsletter was launched in April this year and is part of the networking chain of the Asia Pacific Mountain Network. Its intent is to highlight major mountain issues and events throughout Asia and the Pacific. It is published by the APMN Secretariat at ICIMOD. A Russian version of the Newsletter was published by Prof. Yuri Badenkov.

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Habitat Himalaya

This Newsletter examines issues of resource conservation on the grounds of human experiences and self-governance and their applicability far beyond the circumstances in which they originate.

Contact address

Resources Nepal
GPO Box 2448, Kathmandu
Nepal

Irrigation Newsletter

This bi-monthly Newsletter deals with irrigation development in Nepal.

Contact address

Research & Tech. Dev Branch,
Dept. of Irrigation, HMG/Nepal
PO Box 2055, Jawalakhel,
Lalitpur, Nepal
Tel: 527151,
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DPTC Newsletter

This quarterly Newsletter focusses on disaster prevention methods and technologies related to water-induced disasters.

Contact address

Disaster Prevention Technical Centre
Pulchowk, Lalitpur, Nepal
Tel: 535407, 535503,
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Biogas and Natural Resources' Management Newsletter

This Newsletter focusses on 'Management of Biogas and Natural Resources for Sustainable Solutions to Our Problems'.

Contact address

Biogas and Natural Resources' Mngt.
Consolidated Management Services
GPO Box 10872, Kathmandu, Nepal
Tel: 977 1 410498/421654
Fax: 977 1 415886

Hunan Agri. Research Newsletter

The Newsletter provides information on past and current agricultural research in China.

Contact address

Hunan Academy of Agri. Sciences
410125 Changsu
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The Mountain Forum

Background to the Mountain Forum

At the 1992 Earth Summit, heads of state and government endorsed Agenda 21, Chapter 13, "Managing Fragile Ecosystems: Sustainable Mountain Development." This resulted in a unique process to bring about consensus towards concerted action, since known as the **Mountain Agenda**. Following a series of Mountain Agenda events, a meeting in Peru in early 1995 called for the creation of a world-wide network of organisations, NGOs, and others working for and in mountainous regions. This has now become a reality. The **Mountain Forum** was launched jointly last June by the International Potato Centre in Lima, Peru; the Mountain Institute in West Virginia, USA; and ICIMOD. Apart from the above-named organisations, the forum receives financial support from the Swiss Agency for Development.

What is the Mountain Forum?

The Mountain Forum is essentially a global, electronic network of diverse institutions and individuals. It will serve as an innovative and integrative bridge between non-governmental, governmental, intergovernmental, scientific, and private sector organisations and individuals. It will provide a forum for mutual support and for the exchange of ideas and experiences. This will empower participants to raise mountain issues on local, national, regional, and international agendas and to promote policies and actions for equitable and ecologically-sustainable mountain development.

How the Mountain Forum Operates?

The basic operational values of the Mountain Forum are to be open, democratic, decentralised, accessible, transparent, accountable, and flexible. It is organised as a decentralised confederation of networks. Activities for five regional networks (Africa, Asia/Pacific,

Europe, Latin America, and North America) will be catalysed and coordinated by regional focal points and committees. In Asia and the Pacific this will be within the framework of the Asia Pacific Mountain Network, hosted by ICIMOD. A global focal point or, more specifically, an Information Server Node (ISN) — to facilitate inter-regional electronic information exchange — has been established at the Mountain Institute in West Virginia, USA.

Functions of the Mountain Forum

Through improved communications and information exchange, the Mountain Forum will empower and enrich its members; create and strengthen mechanisms for critical dialogue; exchange both successful and unsuccessful experiences; provide a forum for discussing emerging tools and technologies and their applications; exchange lessons for monitoring, evaluation, and assessing impacts; and assist members in influencing regional mountain agendas at the local, national, and intergovernmental levels. The main functions of the Mountain Forum are: mutual support and information-sharing and advocating the Mountain Agenda.

The Mountain Forum Welcomes All

Come join the newly-formed, innovative, and collaborative venture - The Mountain Forum. No fees involved. Simply select the principal geographic region that is of interest to you and send an e-mail or fax to that region asking for the Mountain Forum invitation package and one will be sent to you. Once your completed registration form is received, Members will receive formal confirmation from their regional node.

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The strength of the Mountain Forum is determined by its membership

Programmes and Services of the Mountain Forum

In essence, the Mountain Forum will provide an enabling environment to share knowledge, information, and experiences between and among mountain communities and other interested parties. It will support and respond to enquiries and requests made by Forum members, and it will work with members to form alliances, partnerships, and joint research ventures. Specifically, the Mountain Forum will manage three electronic discussion lists. These lists will increase over time. The three initial lists are:

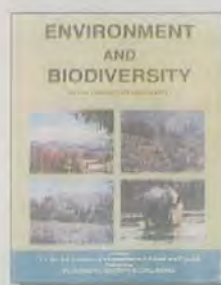
- "mtn-forum", which is an open discussion between and among members and it will be moderated to promote discussions;

- "mf-intro," which is a list dedicated to one another by having each member post a few sentences disclosing their own work and interest as it relates to sustainable mountain development; and

- "mf-summary", which is a weekly, read-only summary of the topics discussed in the open discussion. This weekly summary will also indicate when and where other active discussions are taking place.

The forum recognises the inherent difficulties of providing sophisticated electronic communications to remote mountain areas. To overcome this limitation, and in pursuance of the demarginalisation and empowerment of mountain peoples, the Mountain Forum intends to use a combination of modern and traditional mechanisms for dissemination and exchange of information. ▲

Some Recent Regional Publications



Environment and Biodiversity in the Context of South Asia: Edited by P.K. Jha, G.P.S. Ghimire, S.B. Karmacharya, S.R. Baral and P. Lacoul. 410pp. 1996. Ecological Society, PO Box 6132, Kathmandu, Nepal

The book contains the proceedings of the Regional Conference on Environment and Biodiversity held in

March 1994 in Kathmandu. The proceedings are dedicated to Mr. Toni Hagen who, in the keynote address, highlights the links between poverty and environment. An overview, by Dr. P.K. Jha, on the key elements of environment and biodiversity with basic statistics on the SAARC countries, provides basic background information to the readers.

In all, there are fifty-eight scientific papers in the book. The papers cover a wide range of topics on behavioural ecology, community ecology, ecological genetics, ecophysiology, environmental change, population dynamics, vegetation ecology, ecotoxicology, environmental pollution, habitat restoration, land-use planning, biodiversity conservation in the grasslands, forests, aquatic and agricultural landscapes, etc. Some papers also deal with economics, education, ethics, and policy in environment and development interfaces, providing greater conceptual thinking towards sustainable development.

The publication makes a significant contribution by highlighting the interrelatedness of natural calamities with anthropogenic influences on the environment and provides ample information on the transboundary effects of natural resource degradation, with examples from all over South Asia. This publication has been supported by the Nepal - UK Forestry Research Project and the International Centre for Integrated Mountain Development (ICIMOD).

Changing Perspectives of Biodiversity Status in the Himalaya: Edited by G.S. Gujral and Virinder Sharma. 186pp. 1996. British Council Division, British High Commission, 17 Kasturba Gandhi Marg, New Delhi 110 001, India

The book is a compilation of commissioned research papers written by eminent experts on various aspects of biodiversity conservation in the Indian Himalayas. The book is systematically organised into six sections, starting with an Overview of Biodiversity. The subsequent section on Current Status contains a chapter each on floristic diversity, bamboo diversity, faunal diversity, crop diversity, livestock diversity, and wetland biodiversity.

The sociocultural information has a case study approach; one each on the western, eastern, and trans Himalaya. The Section on Indigenous Approaches to Biodiversity Conservation is mainly drawn from the long experience of the authors in working with shifting cultivators in North-east India and with the community for restoration of degraded lands in the Central Himalaya. The section on Conservation Approaches and Options evaluates the magnitude of loss in biodiversity; the impact of trade on certain species of flora and fauna, highlighting the relevance of the protected area network for *in situ* conservation; and the role of biotechnology in *ex situ* conservation. In the section on Policy and Management Issues, a chapter each is devoted to international issues and national issues. Himalayan Vision, the last section, is a collection of pictures of various parts of the Indian Himalayas.

In brief, this publication provides updated information and good bibliographical references on the biodiversity of the Himalayan region of India.



The G B Pant Institute of Himalayan Environment and Development

Introduction

The G.B. Pant Institute was established during Pundit Govind Ballabh Pant's Birth centenary year in August 1988. It was established as an autonomous institute under the Ministry of Environment and Forests, Government of India, as a focal agency for scientific knowledge, integrated management strategies and demonstration of their effectiveness in conserving natural resources, and environmentally-sound and sustainable development throughout the Indian Himalayas. Apart from research and technology development and demonstration, the Institute has established linkages with national and international organisations committed to environment and development-related issues in mountain regions.

Broad Objectives

- To undertake in-depth research and development studies on the environmental problems of the Indian Himalayan region.
- To identify and strengthen local knowledge of the environment and help strengthen research of regional relevance through interactive networking in scientific institutions/universities/NGOs/voluntary agencies, working in the Himalayan region.
- To evolve and demonstrate suitable technology packages and delivery systems, in harmony with local perceptions, for sustainable development of the region.

Research and Development Programmes

All the research and development activities of the Institute are multidisciplinary, based on a conscious effort to interlink the natural and social sciences to promote the sustainable development of the Indian Himalayas. The present efforts revolve around six Core Programmes, viz., *Land and Water Resources' Management, Sustainable Development of Rural Ecosystems, Conservation of Biological Diversity, Ecological Economics and Environmental Impact Analysis, Environmental Physiology and Biotechnology, and Institutional Networking and Human Investment.*

Project sites are selected carefully, keeping in mind the heterogeneous heritage of the Himalayas along with the specific needs. The thrust of research & development efforts is to provide solutions to location-specific problems through time-bound projects; the research is essentially need based, and the field activities are well supported by laboratory-based 'basic' efforts whenever required. Rigorous data collection and demonstration of science & technology inputs, including packages developed by the Institute, e.g., Sloping Watershed



New campus building, construction in progress

Environmental Engineering Technology (SWEET), are underlying elements of all project activities.

Interactions between the G.B. Pant Institute and ICIMOD

There has been a longstanding partnership between the G.B. Pant Institute and ICIMOD. Under the Mountain Farming Systems' Division, a Memorandum of Understanding was signed with the Institute to implement the Project on Institutional Strengthening for Sustainable Mountain Agriculture. It also has the status of the main focal point for coordinating activities under the Appropriate Technology for Soil-conserving Farming Systems' Project in the Indian Himalayas. Interactions with the Mountain Natural Resources' Division have involved collaboration for Rehabilitation of Degraded Lands in Mountain Ecosystems in Almora.

ICIMOD, through a grant from the Asian Development Bank, provided GIS equipment to the Institute in 1994. MENRIS staff have visited the institute to install the equipment and to discuss the undertaking of a case study. MENRIS and the Farming Systems' Division worked together with the GB Pant Institute on the Agro-ecological Zonation project.

In 1995, MENRIS conducted Cycle II training in GIS applications for the Indian Node and in January 1996 for policy-makers. A programme on Application of Remote Sensing to Biodiversity Conservation was started recently. The Institute is planning to use GIS for most of its current and future research activities.

ICIMOD looks forward to more extensive and fruitful collaboration in future.

The new campus of the G.B. Pant Institute, located in the Central Himalayan District of Almora, will be ready in the second half of 1996. ▲

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Opportunities in and Constraints to the Sustainable Use of Non-Timber Forest Resources in the Himalayas¹

Pitamber Sharma



Bamboo for aesthetics and utility

Imperatives of Integrated Mountain Development

The challenge of mountain development in the contemporary Hindu Kush-Himalayan (HKH) Region lies in using the comparative advantages of the mountain environment to address the concerns of poverty alleviation, to conserve the mountain environment and habitat, and to ensure a measure of social and distributive justice. These comparative advantages (the diversity of the micro-environment and the consequent high degree of variation in physical and biological attributes of natural resources) need to be harnessed so that the constraints imposed by mountain environments are overcome. Inaccessibility is one of the most fundamental constraints. A high degree of fragility of mountain resources, i.e., rapid degradation of resources with high intensity use, resulting in relatively lower carrying capacities, is another such constraint.

In the context of high population growth, and the demise of traditional adaptation mechanisms in mountain areas of the HKH, enhancing the productivity and sustainability of mountain agriculture is a crucial development imperative. However, for a greater impact on the livelihood needs of a growing population, the fundamental search has to be in areas that are non-competitive to agriculture, that address the issues of maintenance of biodiversity and environmental regeneration, that contribute to employment and income generation, that provide mountain areas with some measure of autonomy in bargaining for the value of their resources, and that help in the development of participatory institutions that can assure and facilitate the distribution of benefits to those sections of society that are most in need. This means looking at the mountain environments as systems with

interlinked physical, economic, cultural, and institutional dimensions. Integrated development, in this context, would be the process of searching for complementarities within and among these dimensions.

Non-Timber Forest Resources: Opportunities in the Mountains

Non-Timber Forest Products (NTFP) are one category of resources linking and bringing together all of the implications of integrated mountain development noted above. These alternative forest resources provide a mostly non-competitive and often complementary land use vis-à-vis agriculture in the mountains where one of the main problems is the limited cultivable land. Sustainable reliance on NTFPs as sources of alternative employment and income generation creates the need to maintain and conserve biomass and biodiversity and provide a basis for highland-lowland interaction and exchange. Value-addition, particularly through processing of NTFPs, can provide mountain communities with better terms of trade and bargaining power. A great deal of folk knowledge has been generated around the variety of NTFPs on which mountain communities have depended for centuries for their own consumption or exchange. These indigenous knowledge systems, complemented by modern scientific knowledge, can be used to enhance the utility as well as the conservation of NTFP resources. NTFPs in most of the mountain areas have been, and still continue to be, harvested from common property resources and therefore provide scope for promoting participatory approaches to natural resource management and have the potential to become a vehicle for addressing the economic concerns of poor and disadvantaged groups. Also, traditionally, NTFPs have been the last resort in the distress economy of the poor.

Constraints to the Sustainable Use of Non-Timber Forest Resources

A cursory survey of extant information shows that large numbers of people are involved in collecting and gathering, hunting, processing, trading, and other aspects of production and use of NTFPs. In rural areas, in particular, the use of alternative forest products for own use or exchange is pervasive and, in many instances, household livelihood strategies are closely linked to the availability and use of alternative forest resources. These resources are also an important source of household income, and there is a greater degree of involvement and dependence of the poor on these resources. However, people's involvement in income-generating activities based on NTFPs is affected by a number of factors. These factors include access to

1. This is an abridged version of a paper presented at the Workshop on the Role of Bamboo, Rattan and Medicinal Plants in Mountain Development held from May 15-17, 1996, in Pokhara, Nepal.

and links with the market, patterns of demand, competition, and prices. Also, as many trading activities based on NTFPs are tied to agricultural activity and are also influenced by the seasonality of resources, markets tend to grow slowly. The growth of domestic urban markets and improvements in rural infrastructure are significant influencing factors.

There appear to be a number of constraints and issues that need priority attention if NTFPs are to play a meaningful role in mountain development. Some of these issues are highlighted below.

Ecological Database: The ecological database on NTFPs (the status of the resource base, the trends in harvesting and collection, biological sustainability of the resource base, the probable impact of existing practices, and area-specific sustainable harvesting, is scant). This database is extremely important and its paucity is often a constraint to the formulation of effective policies and programmes.

Management Regime of Common Property Resources: Most NTFPs are harvested from common property resources in situations where access appears to be neither restricted nor regulated. Centralised state control and commercialisation of NTFPs generally have had a number of significant impacts: local control on resources has tended to decline; traditional NTFP production and management systems have eroded considerably; common land per capita has tended to decline; and traditional forms of access control, usufruct allocation, and conflict resolution have become largely ineffective. On the other hand, privatisation or transfer of control to a few individuals can lead to a situation in which needy households are denied access to these resources. This may also lead to overuse and resource degradation. Commercialisation also heightens the pressure for quick exploitation of the resource, particularly when the price situation is favourable.

Sustainable harvesting and management of NTFP resources are not possible without promoting participatory local institutions that can oversee, monitor, and enforce regulations and sustainably manage and benefit from these resources. For this purpose, successful local control systems need to be adapted to fit local situations. Institutional and tenurial arrangements that can combine the positive features of both collective and individual control may need to be explored. Also, relevant community forestry and agroforestry experiences need to be brought to bear in looking at this issue.

Government Policy and Support: The policy of most governments with respect to NTFPs and their sustainable use has often been ambivalent. Small enterprises based on

NTFPs are often discriminated against and excluded from access to available incentives and other forms of support. Policies in general tend to favour the large modern sector and often export-oriented industries. The policy environment has to become more neutral so that biases against small enterprises are eliminated. This is essential because most locally-owned and operated NTFP-based enterprises in rural mountain areas can only be small scale.

Likewise government-supported programmes, such as credit, should be tailored to the different needs and opportunities of different target groups, particularly the needs of the small entrepreneur and small and marginal farmers. Experiences such as those of the Grameen Bank in Bangladesh, the SFDP (Small Farmers' Development Programmes), and PCRW (Production Credit for Rural Women) in Nepal may help in designing a support programme to promote income-generating activities through the sustainable use of NTFPs.

Extension has a key role to play in terms of disseminating ideas and techniques, in terms of backstopping, in terms of providing selective inputs, and in terms of educating as well as learning from the farmers. Such a style of extension demands that local personnel are involved in extension activities and that extension is planned with the participation of the local community. This means that government policies on extension support related to forestry and NTFPs need reorienting to address these needs.

Marketing and Marketing Institutions: NTFPs represent one of the most challenging product groups from the marketing point of view because of their number, end-use variation, and dissimilarities of producer base. The important marketing elements are dissemination of product and price information; creation of local benefit sharing organisations to market the produce; and creation of marketing organisations at different levels. Village traders and middlemen appear to be performing a useful role in marketing produce based on NTFPs. However, the scope for cooperative institutional arrangements to share the costs and benefits of direct marketing; to develop a system of regular and up-to-date market information; to ease access to credit and technology; to help local producers organise themselves to gain advantage in the market; and to promote specific products with comparative advantage in specific areas/regions is considerable. Local Marketing Cooperatives could also engage in basic processing and quality control of NTFPs, for example, of medicinal plants. Low-volume, high-value products can offer wide scope for cooperative arrangements, particularly in the context of inaccessibility. Such arrangements could also



Photo
Multipurpose fruit - oil, pickles and vitamin C

be instrumental in the organisation and empowerment of local communities.

Increasing Value-added in Collection/Harvesting Areas: In the context of poor mountain communities, collection and transportation of alternative forest products are not going to bring in much return, unless attempts are made to increase value-added at the point of origin. In the case of medicinal plants therefore, it may be through proper cleaning, sorting, packaging, and through simple processes of distillation or extraction at the village level. In the case of other related products, it may be value-added through weaving and the production of a number of necessary household essentials, furniture, and handicrafts that have a wider market.

Human Resource Development: Human resource development is an essential corollary to any effort directed at economically and environmentally sustainable use of NTFPs. Literacy levels in many mountain communities are extremely low. Creation of conditions for universal literacy is the first step to human resource development. In many areas, traditional uses of many NTFPs have been forgotten or lost. In such cases, the need may be to popularise the uses of such products and link them with the existing or potential market. Adaptation of traditional uses to contemporary needs and introduction of new skills and products are areas that need to be emphasised in human resource development. An inventory of traditional skills has to be established and the ethno-botanical knowledge of women and farmers and their traditional skills need to be adapted to contemporary requirements.

The second area of human resource development is that of creating and nurturing the latent entrepreneurial capabilities of mountain communities. Skill training programmes, designed to induce self-employment, need to be tied to entrepreneurship development. This is essential to inculcate a sense of business and economics into the activity, for ultimately the real test of sustainability lies in the extent to which an activity is economically viable and can contribute to improving the livelihoods of mountain communities.

The third area of human resource development is that of environmentally-sound NTFP harvesting/collecting practices and relevant technologies. Such technologies

may relate to energy, transportation, preservation and storage, processing and construction, etc.

Better Access to Resources and Distribution of Benefits: The shrinking of the common property resource base has serious implications for the livelihood strategies of the poor and marginal households in terms of access to NTFP resources. This means that we need to look at processes that protect the access rights of the poor to these resources. Organising poor households for the sustainable use of NTFPs by forming Users' Groups may be one method of ensuring better access for the poor. Using some of the royalties derived from specific NTFPs, such as medicinal plants from specific areas, for local community development and conservation work, which is being tried with the tourism returns in Protected or Conservation Areas in Nepal at present, may be another method. A rational royalty system, also tied to the resource situation, is needed for this.

Gender Issues: While women are involved in the collection and basic processing of most NTFPs, their involvement is restricted to low-return, labour-intensive activities. Women tend to be systematically displaced from high value-added activities. However, there are some areas in which women's roles could be enhanced. The potential of specific NTFPs to contribute to women's income within households needs to be especially analysed and explored.

Promotion of Cultivation on Private Land: There are a number of NTFPs, particularly medicinal plants, that have potentials for cultivation on private land. These NTFPs need to be identified and their market potential assessed and promoted at farmer's level. Cultivation can be encouraged in the case of unmanaged and threatened species. In Nepal it is believed that cultivation of high-altitude medicinal and aromatic plants, in particular, assures sustainable yield harvests. Aspects of extension, as well as research and demonstration to promote commercial cultivation of species with potential, therefore require priority attention. ▲

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Call for Proposals Regarding Mountain-specific Products

The Mountain Enterprises and Infrastructure Division of ICIMOD intends to publish a document on unique, mountain-specific products that are based on natural fibre resources available in the Hindu Kush-Himalayas. Researchers, scholars, and entrepreneurs willing to contribute to such a publication are requested to write to us with a proposal. The proposal should highlight their expertise in the particular product, its environmental and natural resource implications, and its potential to provide income and employment to mountain communities. A bio-data should also be submitted.

ICIMOD will provide support to deserving individuals to enable them to contribute to the proposed publication. The proposal should reach the following address by September 31, 1996.

Attn. Head, Mountain Enterprises and Infrastructure Division
ICIMOD, GPO Box 3226, Kathmandu, Nepal
Tel: 977 1 525314, Fax: 977 1 524509/524317
E-mail: mei@icimod.org.np

Chinese Rangeland Scientist Completes ICIMOD Internship



Jiang Yulin with Daniel Miller

Ms. Jiang Yulin, a rangeland scientist associated with the Gansu Grassland Institute of the Chinese Academy of Agricultural Science, recently completed a four-month internship

programme with ICIMOD in Kathmandu. Ms. Jiang, who is a Ph.D. candidate at the Institute, and who has conducted rangeland survey work in Naqu Prefecture of the Tibetan Autonomous Region, began her internship programme with ICIMOD in December 1995.

In the first half of December, Ms. Jiang, as a participant, attended the ICIMOD-UNESCO Planning Workshop on Application of Ethnobotany in Sustainable Management of Plant Resources and Conservation. As an observer she attended the ICIMOD Regional Consultation Workshop on Biodiversity Assessment, Monitoring, and Management. Both were held at ICIMOD in Kathmandu.

Attached to ICIMOD's Mountain Natural Resources' Division, she worked under the supervision of Daniel Miller, ICIMOD's Rangeland Specialist, and Professor Pei Shengji, Biodiversity Specialist and Head of the Division. Through discussions with Mr. Miller and an intensive study programme on the current literature, Ms. Jiang became familiar with some of the new concepts and fresh perspectives that are emerging in the scientific world concerning rangeland management and pastoral development. Working with Profes-

sor Pei, She had the opportunity to learn about biodiversity conservation issues in the Himalayan-Tibetan Plateau region and ethnobotanical approaches for natural resource management. Accompanied by Daniel Miller, Ms. Jiang made field trips to southern Nepal to observe subtropical grasslands and to northern Nepal to Mustang region to see first-hand some of the problems Nepal is facing in rangeland management and pastoral development. A highlight of these trips was to see the value of participatory development approaches and working closely with pastoralists to better one's understanding of current rangeland management systems before recommending changes or development activities.

Ms. Jiang was especially interested to learn more about remote sensing and Geographic Information Systems' (GIS) applications in the management of rangeland resources and worked with ICIMOD's MENRIS to become more familiar with these technologies. She prepared a number of maps of the Tibetan rangeland areas using GIS.

ICIMOD staff, particularly staff from MNR and MENRIS, as well as other Nepalese she interacted with while in Nepal, benefitted from her perspectives on her work in China and the Tibetan Plateau rangeland areas. ICIMOD believes that this sharing of information and ideas among professionals in the HKH Region can help to solve some of the development problems mountain areas are facing. Based on the success of this internship, ICIMOD hopes to provide additional internships in the future for young, aspiring scientists in the region. ▲

Three Fellowships Awarded

The three fellowships that were announced in Newsletter No. 23, Winter 1995, have been awarded. There were altogether 31 candidates and from them the three listed below were selected to work on the subjects indicated.

Dr. Vir Singh
GB Pant Inst. Agri. & Tech.
Rani Chauri, Tehri, Garhwal
India

Draught Animal Power in Sustainable Development of Mountain
Agriculture

Dr. Archana Godbole
Applied Envir. Research Found.
Pune 411 004, India

Use of Indigenous Knowledge in Managing Mountain Natural Resources
in Arunachal Pradesh, India

Dr. Durga Prasad Poudyal
Jet Express, PO Box 3269
Tukucha, Kathmandu, Nepal

Access Improvement and Sustainable Development: A Case of Agricultural
Road Development in Nepal

The fellowships have been awarded with the principal objective of providing research support to outstanding scientists from the Hindu Kush-Himalayan Region to contribute to Sustainable Mountain Development.

The awardees commenced work in June 1996 to complete by December 1996.

Project Profile

Title : Hazard Mitigation in the Northern Sunkoshi and Bhotekoshi Water Catchment Areas (Central-Eastern Nepal)

Division : Mountain Natural Resources

Duration : December 1994 - December 1996

Date of Signing : 19 August 1994

Budget : US \$ 30,000

Donor Org. & Official Contact : HGNS(Switzerland) and SDC; Alexis Wagner, ITECO, Switzerland

Objectives

1. To implement research on thick and specially fragile specific soil deposits and to determine their origin
2. To map such soils and their instabilities within the water catchment areas of the northern Sunkoshi and Bhotekoshi and to produce hazard maps
3. To propose practical solutions for hazard mitigation and present recommendations
4. To hold a workshop at ICIMOD on the findings of the project with participants of concerned government agencies in Nepal

Project Coordinator

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ICIMOD Coordinator

Prof. S. R. Chalise
Water Resources' Specialist
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Important Geological Findings in Sunkoshi and Bhotekoshi, Nepal

The research project on "Hazard Mitigation in Northern Sunkoshi and Bhotekoshi Water Catchment Areas" has come across major geological findings in the area, indicating the need to adopt a new approach to infrastructural development and watershed management. The project, implemented by ITECO Eng. Ltd, a Swiss company with a great deal of experience in the Himalayan region, in collaboration with ICIMOD, ITECO-NP, and the Swiss National Survey of Hydrology and Geology, carried out research on the fragile thick quaternary deposits of the Bhotekoshi and upper Sunkoshi catchment areas. A National Group comprised of representatives from HMG line agencies, including the National Planning Commission, carried out an extensive review of the project proposal and provided important inputs to the project activities.

Geological and hazard mapping, as well as surveillance of specific instabilities damaging farmlands and threatening the Arniko Highway, were among its activities. The design of small-scale engineering and bioengineering measures to control the instabilities surveyed was also finalised. Hydrological studies linked to debris flows and instabilities on specific streams and sites were also carried out.

The research results confirmed that the fragile and thick quaternary deposits in the area were of glacial origin. Very deep glacial Paleo-valleys, filled by glacial or glacio-fluvial sediments, were identified as low as 700masl by means of the seismic reflection method, and this confirmed the output of electrical soundings implemented earlier on the occasion of the Arniko Highway Project. Such Paleo-valleys are located below or along the present riverbeds. The study of sediment exposures with typical glacial depositional features, the presence in deposits of pollens indicating cold climate vegetation, and other findings are convergent facts indicating that the valleys were glaciated in the remote past. The Charnawati Rehabilitation Project as well as the HMWA project could also identify a typical till and thick glacial sediments in the Charnawati catchment area. It is therefore highly probable that other valleys of the northern hills were also glaciated at low altitudes during the same period. This is a new and important geological finding in Nepal.

Such a new sight of quaternary geology has important implications. Besides the input brought to the science of glacial geology and what the presence of low altitude glaciation implies for a better understanding of climatic changes during the Quaternary Era, the presence of major glacial depositional zones within populated areas of the northern foothills' belt is fraught with other consequences.

One important issue rests in the fact that, when flowing through thick glacial sediments, the rivers and streams strongly undercut their banks and undermine their beds, mainly during high flow periods and floods. These processes result in landslides which infill the stream-riverbeds and may dam them, with obvious catastrophic consequences, e.g., floods and debris flows. These whole processes recur again when the rivers and streams have acquired a new bed profile. The nature of the sediments is also favourable to the storage of perched water tables, another cause of landslides and mudslides.

This throws light on the causes of recurring landslides taking place on farmlands. Bridges constructed on the margins of or within the corridor influenced by stream-river erosion processes cannot be safe. The same applies to dam and dam reservoirs. In the case of the reservoirs, the slopes located in glacial deposits are weakened by the buoyancy effect and may fail with, as a result, rapid silting and, if a major landslide occurs, wave flooding. In the worst situation, damaging or breaching of the dam may take place. In addition piping may occur below the dam.

The finding of these glacial deposits at low altitudes implies that new approaches to infrastructural projects and watershed management are needed. This means that quaternary mapping, especially mapping of the glacial deposits, is crucial for Nepal. This is the first time that such mapping has been carried out.

Landslip - Landslide

Greta Rana

One of the most disconcerting features of dictionary definitions is that they don't always give the importance to a word that it merits; at least that's how it seems to the word-seeker. Naturally that is a value judgement. The Shorter Oxford (on historical principles) is a classic example. The word landslide, which to anyone working in the Hindu Kush-Himalayas denotes thunder and fear, destruction, loss of life and livelihood far beyond the initial event, is defined to mean 'a great majority of votes, an overwhelming victory in an election', whereas the rather milder landslip is 'the sliding down of a mass of land on a mountain or cliffside'. Neither of which truly portrays the dreadfulness of such events and their ramifications in the lives of mountain inhabitants.

Dictionaries apart, one group of people who take their landslides and earth movements seriously came together from the 8th to the 10th of May this year to discuss Hazard Mitigation in the Northern Sunkoshi and Bhotekoshi Water Catchment Areas (HMWA) in Nepal (Project Profile, p13).

This 'discussion' was actually the final workshop of a project that had commenced in October 1994 with a reconnaissance survey by Dr.Ch. Schluter, Professor in Quarternary Geology from the University of Bern, Switzerland. Professor Schluter was accompanied in this survey by the Deputy Project Leader of ITECO Nepal and five teachers of graduate students from the Department of Geology of Tribhuvan University. During this initial phase, the Nepalese geologists were trained in identifying and mapping Quarternary deposits' morphological and sedimentological features with specific stress on glacial-like samples. Material samples were collected and morphometrical assessments carried out on sample particles to identify the origin of the sediments.

The first phase of the project mapped the Quarternary deposits, land use, and the rivers/streams of the project area and drafted five maps on a scale of 1:10,000, covering a total area of 66 square kilometres. Twenty-one electrical soundings were carried out on thick fragile, glacial-like deposits. In addition, morphometrical and petrographical studies were conducted on the 36 samples collected, as well as grain size analyses on 16 of these samples. Topographical maps were digitised and a Consultative Committee met for the first time to discuss the objectives of the project and the progress so far.

The second phase carried out hydrological, seismic-reflection, and instability studies. This phase was carried out by a multidisciplinary team including six

Swiss nationals and the Nepalese team. The phase involved 12 seismic reflection and refraction studies. The hydrological studies were carried out on six sites and involved assessment of the capacity of tributaries in the area to dam the main rivers; discharge measurement and erosional capacities, including discharge measurement by the salt dissolution method; landslide studies by uranin tracer; and line sampling. These proved to be an important contribution to hazard assessment in the area.

Ten areas of instability were selected and local stabilising plants assessed in the context of present use and possibilities in future for their use in low-cost stabilising measures. Discussions were held with local farmers in this respect.

After finalising the geological and hazard maps and preparing a final draft project report, a workshop was held at ICIMOD, coordinated by the Mountain Natural Resources' Division. During the workshop a general presentation was given on the project results and conclusions. This was followed by an excursion to the project area, followed by final discussions and conclusions and recommendations. The workshop lasted for three days in all.

The excursion was a highlight of the three-day workshop. It involved travel to the project area, which is located within the Sindhupalchok district of the Bagmati Zone of Nepal. The area is drained by the Upper Sunkoshi River and its main tributary, the Bhotekoshi. It is traversed by the Arniko Highway which runs alongside both rivers up to the border of the Tibetan Autonomous Region at the Friendship Bridge at an elevation of 1,740masl. The main villages in the area are Balephi, Kaudichaur, Lamosangu, Bahrabise, Chaku, Tatopani, and Kodari-Liping.

Notwithstanding the altitudes along the road, which follows the river valleys, the area is rugged and covers middle and high mountain zones. In the south, the mountains have relatively gentle slopes, not exceeding 2,000masl and then, from Kilometre 82 of the Arniko Highway onwards, altitudes rise above 2,500 to 4,000 masl and more. Rivers and streams are fierce and torrential and gradients steep. It was through this area that the excursion took the workshop participants, from landslide to landslide.

It was a unique occasion, right from the first observation of glacial deposits at Balephi at Kilometre 69 to observations of glacial till at Kodari itself. It created an occasion to trace the steps of the project workers and go through their findings at the operations' level. It also

provided an opportunity for frank discussion of opinions in an informal atmosphere. A great deal of discussion was excited by the *Pancha Kanya* (five virgins) boulder just before Balephi. This is a boulder weighing approximately between 60,000 to 70,000 tons. It lies in the river, close to the highway, and is constituted of augen gneiss. The project personnel explained that this type of rock outcrops 40 kilometres upstream near Kodari as well as at shorter (15-20km) distances away.

Project hydrologists argued that it was not possible that this huge boulder could have been brought there by fluvial transport as the river gradient was too low for this. Its geology differed from surrounding rocks and from those along the roadside. This led them to speculate that the boulder had been transported by glacier. Lively discussions took place concerning the origins of the boulder, which the project personnel called Hanuman, and the likely methods of its transportation. Needless to say it was not the only stop on the route to be marked by friendly debate.

An awesome sight was the landslide at Hingdi on the right bank of the Lang Khola at Kilometre 104. The material here was about 60 metres' thick and the landslide itself about one kilometre long. Here the material was thought to be typical of glaciation, and it was proposed that it had resulted from a progressing glacier.

Most of the discussions arising from the field excursion were brought up again the following day in the final sessions of the workshop. The participants had retained vivid impressions of the observation sites and discussions were interesting and informative. Two working groups were formed, viz., 'Understanding, Identification and Practical Implications of Glacial Quaternary Deposits in Nepal and the Hindu Kush-Himalayan Region' and 'Hazard Mapping and Soft Engineering'. Within these groups participants were able to examine the achievements, limitations, and future directions of the project and, considering the regional mandate of ICIMOD, the role the Centre could play. The groups conducted their discussions accordingly and presented recommendations to the plenary session. ▲

Details of this Workshop can be found in the ICIMOD publication 'Workshop on Hazard Mitigation in the Northern SunKoshi and Bhote Koshi Water Catchment Areas (ANWA), Nepal' (see Page 19).

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Pancha Kanya rock, how did it get there?



In friendly debate, faith in science



Local women, faith in the gods



Landslide threatening crop lands

Mountain Agricultural Biodiversity and ICIMOD Initiatives

Tej Partap

Mountain agriculture includes all land-based activities, such as cropping, horticulture, animal husbandry, and forestry, and their linkages and is the prime source of sustenance for mountain populations.

Biodiversity provides a fundamental base to mountain agriculture and to the overall economic system. It is the source of resiliency and regeneration necessary for sustainability of agricultural systems. It is also the ultimate basis for local self-sufficiency and a global asset, bringing benefits to people in terms of material welfare in more ways than we realise.

It is often assumed that any form of biological diversity can be of importance to agriculture, because diversity maintains or contributes to stability. This might be an oversimplified statement. Increasing diversity for its own sake will not necessarily improve agricultural sustainability. Poorly-designed diversity may actually be destabilising. Underlying the **new view of diversity in agriculture** is the critical distinction between natural biodiversity and planned diversity. Biological diversity in an agro-ecosystem cannot be increased randomly. Species' selection certainly requires that consideration be given to spatial and temporal arrangements, management tactics, and agro-ecosystemic stability.

Certain misconceptions about the agrobiodiversity of mountain agricultural systems prevail. For example, the agrobiodiversity of agro-pastoral systems, high mountain subsistence crop farming, and swidden farming may not be as prevalent as they appear. For agri-biodiversity at the farm level, we should differentiate between (a) **diversity in overall species/varieties used** and (b) **diversity in the main production system**. The diversity in overall crop and animal species and varieties can contain important genetic resources but may not provide stability to the production system. Historical examples from Mexico and Ireland refer to lack of crop diversity as a key factor leading to depletion of agricultural production.

The implications of this for mountain agriculture are far-reaching. Research indicates that the qualitative basis of stability means that **agricultural ecosystems cannot be made more stable simply by increasing complexity**. Instead, interactions occurring in agro-ecosystems must be carefully evaluated to determine the stabilising and destabilising elements and to design systems accordingly. Genes, species, and agro-ecosystems with actual or potential value are physical mani-

festations of agricultural biodiversity. The environmental setting, population and social organisation, modern technologies, capital investments, and other kinds of intervention, can strengthen or deplete agricultural biodiversity. It can actually be managed, consumed, or replenished, and can be the subject of directed conservation actions. Effective management systems can ensure improvements in biological diversity and can facilitate sustainable development. Practical use of this concept of stability in designing and managing sustainable mountain agricultural systems requires realistic expectations for mountain agro-ecosystemic stability vis à vis genetic diversity of the agricultural systems.

To maintain sustainable agricultural systems to what extent is biological diversity required? Our current understanding of biological diversity does not provide an answer. However, based on global experience, it is clear that seed banks, national parks, zoos, and nature reserves are insufficient.

Issues Facing Mountain Agrobiodiversity

The Asian, African, and Latin American mountains are the home of an agricultural biodiversity that, in aggregate, provides humanity with 95 per cent of its sustenance and nutritional requirements. Biodiversity is particularly concentrated in or near the high mountain ranges of the Hindu Kush-Himalayas, the Near East, the Balkans, the Apennines, and the Andes. Agriculture in the HKH Region is currently typified by two scenarios vis à vis agrobiodiversity.

A Predominant Scenario of Subsistence Farming with Economic and Environmental Deterioration and Decrease in Agrobiodiversity

There is a degree of desperation in the people's approach to resource base use. Food shortages are common among mountain farming communities, because the production of adequate amounts of food on small landholdings, with ever-declining farm productivity, is impossible. This has set in motion a chain reaction of poverty - resource degradation - scarcity - poverty. Agrobiodiversity here faces threats from habitat destruction and overexploitation of resources for sustenance by mountain farmers.

Emerging Scenario of Commercialisation of Agriculture and Economic Prosperity of Mountain Populations

Another trend in parts of the Hindu Kush-Himalayas is the growing commercialisation of mountain agricul-

ture. This represents the efforts of mountain farmers to use scarce land resources more efficiently for gainful employment and increased incomes. The farming approach is based on cash crop farming and intersystemic linkages; new forms of diversification. While it has raised the hope that hunger can be eliminated from mountain areas, the cost in terms of losses of agribiodiversity, as a result of crop and animal substitution, and ecological sustainability raise doubts. The scale of impact on agricultural biodiversity, under this scenario, is certainly different.

Both scenarios increase the extinction of agribiodiversity of indigenous genetic resources, species, and agro-ecosystems. Many underutilised, underexploited, neglected crops in mountain areas fall into this category.

Global interest in gene pools has given a new meaning to the term genetic resources. There is a struggle for control of breeding materials - seeds and genes - on both the economic and political fronts between nations and companies. This is leading to profiteering through patent monopolies, global opportunities, and multinational gene supply corporations. The more genes, the more opportunities to develop new varieties, new crops, and new controls over the food system. With plant and gene patenting, international companies attempt to corner the market for vanishing genes. The result may be, in the words of Fowler and Mooney (1990), the **shattering of agriculture**.

The decrease in biological diversity in these circumstances, and its impact on the long-term, sustainability of mountain agricultural systems is critical. Growing awareness of this problem, at local, national, and international level, has prompted initiatives to increase understanding of the factors causing reduction of agribiodiversity, in the context of both the unsustainability and sustainability processes in mountain agriculture, in order to find technological and institutional options to address the problem.

In this respect, the following five imperatives for management of mountain agricultural biodiversity are important guidelines for any future strategy.

- Mountain Communities must save their agricultural diversity, in order to retain their options for development and self reliance.
- Agricultural biodiversity cannot be saved unless it is used. The value of diversity is in its use. Only in

use can diversity continue to evolve and be appreciated enough to be saved.

- It can only be safeguarded through the use of diverse strategies.
- What is saved will depend on who is consulted. How much will be saved depends on how many mountain farming communities are involved.
- The need for agribiodiversity is never ending, therefore conservation/management efforts will have to continue.

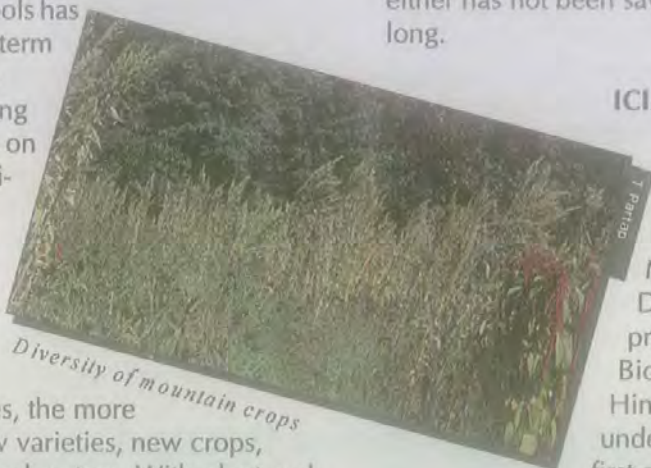
These five imperatives serve as the ingredients of a successful strategy. Anything less means that diversity either has not been saved or will not be conserved for long.

ICIMOD Initiatives

ICIMOD has a programme on Biodiversity in the Hindu Kush-Himalayan Region. The Mountain Farming Systems' Division is developing a regional programme on Agricultural Biodiversity Management in the Hindu Kush-Himalayan Region under the overall programme. As a first step, efforts are focussed on

acquiring knowledge and information about status and management issues facing mountain agricultural biodiversity. This is being carried out through commissioned studies and by organising national expert meetings. Three themes are being studied.

- Agricultural biodiversity perspectives and assessment of genetic species and agro-ecosystemic diversity in the HKH Region.
- Agricultural transformation processes in the HKH and dimensions of the impact on agribiodiversity.
- Mountain agribiodiversity management concerns and thrust areas for regional programme development.



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Honoured

The Institute of Geography, Beijing, is one of the oldest and largest institutes of the Chinese Academy of Sciences under the Planning Commission of the Peoples Republic of China. Its 562 professional staff members, grouped under 16 research departments, work primarily on resource and environmental management, regional sustainable development, and geo-informatics.

Over the past few years, the Institute has been actively involved in the implementation of ICIMOD's Mountain Farming Systems' Programme on Institutional Strengthening for Sustainable Mountain Agriculture in Tibet. Owing to his contributions to sustainable



mountain agricultural research and development initiatives in the HKH Region, in general, and the Chinese Himalayas in particular, in May this year the Institute invited **Dr. Tej Partap, Head of the Mountain Farming Systems' Division**, to become an Honorary Professor in the field of Mountain Agriculture. As Honorary Professor, Dr. Partap will be involved in guiding postgraduate and doctoral research students in mountain agriculture.

Nominated

Since its inception ICIMOD has been closely associated with UNESCO, and programme linkages with UNESCO's International Hydrological Programme have grown steadily since 1989. UNESCO and ICIMOD provide the joint secretariat to the Regional Working Group on Mountain Hydrology and were successful in launching HKH-FRIEND - a regional programme of research on mountain hydrology - in March 1996. This was established at the Regional Workshop on Hydrology of the HKH, organised jointly by UNESCO/IHP and ICIMOD in collaboration with regional countries, WMO, and the German IHP/OHP Committee.

Prof. S R Chalise, Water Resources' Specialist of ICIMOD has been closely associated with all these activities. In appreciation of his contributions to achieving the goals of the FRIEND Project, the IHP Bureau has nominated him as a member of the newly-established International Steering Committee for IHP-V Project 1.1, i.e., Application of Methods of Hydrological Analysis Using Regional Datasets (Flow Regimes from International Experimental and Network Datasets/FRIEND).



Contributions Beyond

ICIMOD staff, as part of their normal duties, present many papers at ICIMOD-sponsored conferences, workshops, and seminars. They are documented in the reports of these meetings and/or in other types of ICIMOD publications. In addition, ICIMOD staff are contributing to journals and present papers at conferences, for which ICIMOD does not have the primary responsibility. Here are some recent distributions.

Gurung, J. D. Alternative perspectives: gender dimensions of traditional environmental management. Paper presented at the UNESCO Regional Conference on Rethinking Culture and Environment: A Conference on the Cultural Context of Environmental Management in the Himalayan Region, held from January 5-9, in Pokhara, Nepal.

Rijal, K. Framework for biomass energy technology promotion in mountain areas. Paper presented at the International Conference on Biomass Energy Systems held from 26-27 February, 1996, in New Delhi, India.

Pei Shengji. Ethnobotany in mountain development and conservation. Paper published in S. K. Jain, ed., *Ethnobiology in human wel-*

fare. New Delhi: Deep Publications, 1996. p.297-299.

Pei Shengji. Ethnobotany of indigenous non-wood forest products in Xishuangbana of Yunnan in southwest China. Paper published in S. K. Jain, ed., *Ethnobiology in human welfare.* New Delhi: Deep Publications, 1996. p.415-423.

Akhtar, S.; Neelamegham, A.; Laviolette, L. Telecoms policy reaches out to the private sector and villages of India. Paper published in *Inter Media (UK)*, Vol. 24, No. 3, 1996, p.30-34.

Neelamegham, A.; Akhtar, S. National information policies with special reference to developing countries. Paper published in *Information Studies (Bangalore)*, Vol. 2, No. 1, 1996, p.25-72.

Pradhan, P. Implementing GIS in mountain regions: an experience from the HKH region. Paper presented at *Arendal III Workshop on the Use of GIS in Agricultural Research Management.* Norway, June 17-21, 1996.

Trapp, H. Applications of GIS for planning agricultural development in Gorkha and Lamjung district, western development region of Nepal. Paper presented at *Arendal III Workshop on the Use of GIS in Agricultural Research Management.* Norway, June 17-21, 1996.

Li Tianchi. Management of Mountain Watersheds in the HKH: the Role of ICIMOD. Paper presented at the 20th session of the EFC Working Party on the Management of Mountain Watersheds, Norway, June 1-5, 1996.

Some Recent ICIMOD Publications

Workshop on Hazard Mitigation in the Northern Sunkoshi and Bhotekoshi Water Catchment Areas (HMWA), Nepal. pp 44, 1996

This is a report of the final workshop on Hazard Mitigation which was held at ICIMOD from 8 to 10 May 1996. The report is in three sections. The first section deals with presentation of the draft final report of the project. The second section deals with a field trip along the Arniko Highway to examine the sites and discuss the findings. The third section is about specific discussions on the findings and recommendations by selected groups for future action and research.

Developing Energy Options for the Hindu Kush-Himalayas (MEI/96/1). pp 46, 1996

This paper provides a brief review of the current energy situation in the countries of the HKH Region and compares it with the situation that prevails in the HKH Region *per se*. The paper also examines the energy use variability and concludes that there is a strong correlation between the human development index and energy requirements. It also examines implications on and for the energy sector as a result of mountain-specific constraints and opportunities, besides presenting the energy sector barriers. The paper highlights lessons that

should be learned while implementing energy programmes.

Report on a National Seminar on Mini- and Micro-hydropower Development in the Hindu Kush-Himalayan Region - Nepal Perspective. pp 103, 1996

This report is a summarised version of the proceedings of the Seminar, including the speeches during the Inaugural Session, the papers presented, the discussions held, and the conclusions arrived at by the participants. Part A presents the highlights of the seminar and Part B contains the actual papers prepared for the seminar in a somewhat abridged form.

Visitors to the Centre

Zhang Jiujuan, Ambassador of the People's Republic of China
 Jurgen Lottmann KfW, Frankfurt, Germany
 J. Kassum, Vice President, Operations, Int. Finance Coop., Walhaph, RC
 Herman Warth, Landsberg, Kech, Germany
 Christine Grieder, SDC, Bern, Switzerland
 Makito Minami, National Museum of Ethnology, Osaka, Japan
 Jill Blockhus, IUCN, Gland, Switzerland
 Guido Broekhoven, IUCN, Nairobi, Kenya
 Jesper Jespersen, Journalist, Free-lance (Head of Delegation); with Niels Tobiesen, Aalborg Stiftstidende, Henrik Mundbjerg, Lotte Jorgensen, Jorgen Schytte
 Veadimiz Kotlyakov, Inst. of Geog., Russian Academy of Sciences
 Kristin Hefre, 2nd Secretary, Norwegian Embassy, New Delhi
 John Graham, International Development Research Centre, Singapore
 Ernst Schaltegger, Consultant, Swiss Development Cooperation
 Jeruo Higa, University of the Ryukyus, Japan
 U. R. Sangakikara, APNAN, Thailand/University of Peradeniya, Sri Lanka
 Masaki Shintani, Technical Officer, APNAN, Thailand
 Hiejihiko Okubo, Int. Nature Farming Research Centre, Atsugi, Japan
 Arthur Ebregt, IAC/DGIS, the Netherlands
 Urs Hodel and Monika Gessler, IPGRI, Singapore
 R. K. Arora, IPGRI, Office for South Asia, New Delhi
 Tone Bleie, Chr. Michelsen Institute, Bergen, Norway
 R. B. Singh, Department of Geography, University of Delhi, India
 Anthony Lee, BBC, England
 E.A. Nonis, Fang Chun Choon, Asian Development Bank
 Muhammad Ishaque, JEA W/O Science and Technology, Pakistan
 Alfred Decker, Institute for Climate Impact Research (PIK)
 Martin Price, Environmental Change Unit, University of Oxford, England
 Devi N. Utami, Programme Department, West 1, ADB
 Ian Oxenford, UNE, Australia
 Robert Robelus, World Bank, Environment Department, Washington D.C., USA
 P.K. Monga, Commissioner, Municipal Cooperation, Shimla, H.P., India
 N. Hazarika, Area Convenor, Teri Northeastern Centre, Assam, India
 Tan Jingzheng & Ma Mingdong, Soc. Forestry Off., Sichuan, China
 M. de Montalembert, Pol. & Planning Div., Forestry Dept., FAO, Rome

Lisbeth Bostrand, SIDA, Sweden
 Jan Erik Stadsrod, Environmental Division, NORAD, Norway
 Rick McTaggart, SIDA, Hull, Canada
 Paul T. Dyke, Texas, A&M University, Temple, USA
 Suresh C. Modgal, VC, G. B. Pant Univ. of Agri. & Tech., U.P. India
 Dr. Christoph Gutermann, Austroprojekt, Vienna, Austria
 Ian Hill, World Bank, Washington D.C.
 Walter Klingenberg, BMZ, Bonn, Germany
 Adrian Hoppenstedt, PIG Okololil, Itanove
 Christina Aristanti & Michelle Schulein, ARECOP, Yogyakarta, Indonesia
 Maria Nystrom, Lund University, Sweden
 Abdou-Salam Ouedraogo, Int. Plant Genetic Resources' Inst., Rome
 Tara N. Bhattarai, Wood Energy Resources Spst., FAO/RWEDP, Bangkok
 K.D. Singh and Patrick Van Laake, FAO, Rome
 Jurg Krahenbuhl, ITECO, Switzerland
 Andre Pugin, Department of Geology, University of Geneva
 Günter Dressrusse, Dir. Agriculture, Forestry and Emergency Aid, GTZ
 K. K. Chakravarty, Director, Rashtriya Manav Sangrahalaya, Bhopal, India
 Marshuk Ali Shah, RR, ADB, Kathmandu
 Karl Kirch, Min. Econom. Coop and Development, Bonn, Germany
 Peter B. Mohnhaupt, KfW, Frankfurt, Germany
 D. P. Rao, Associate Director, National Remote Sensing Agency, India
 Mr. J. Arokyadas and K.M. M. Rao, Department of Space, Govt of India
 Daniel Taylor- Ide, President, Future Generations, USA
 Walter Roder, RNR Research Centre, Jakar, Bhutan
 K. C. Khandelwal, Administrator, MNPI, GOI, New Delhi, India
 M. Nurul Islam, Prof., Inst. of Appropriate Tech., Dhaka, Bangladesh
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 Jaap Meyer, POO, FAO, Rome
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 Johannes Baur, Australia
 Chukhui Zhimomi & Bendang Yabang, NEPED, Nagaland, India
 S. M. Kulshrestha, Former DG of Meteorology, India
 N.K. Jain, Joint Assistance Centre, India

Programme News

Focussing on Hydrology, Ecology, and Glaciology

In an attempt to increase understanding of the hydrology of the region, UNESCO/IHP and ICIMOD, in cooperation with UNESCO/MAB, WMO, IGBP/BAHC, and IAHS organised a **Regional Workshop on Hydrology of the Hindu Kush-Himalayas** from 23 to 24 March 1996.

The Workshop, held at ICIMOD, focussed on the importance of water resources and the efficient use and delivery of water. It discussed collaboration between the countries of the HKH in hydrological studies. The Workshop launched the establishment of a new FRIEND-type project within the region.

There were altogether 30 participants; including nominees from the the HKH countries and experts representing the Institute of Hydrology - UK, Global Runoff Data Centre, and also experts from Japan and Germany.

The **International Conference on Ecohydrology of High Mountain Areas**, held from March 24 to 28 in Kathmandu, was an important international joint initiative of UNESCO, ICIMOD, the German IHP/OHP, WMO, and DHM to facilitate understanding, monitoring, and management of issues related to high mountain areas. The conference attracted substantial attention from the scientific community and decision-makers at global level, in general, and from the South Asian Region, in particular. The papers presented covered wide-ranging scientific investigations and empirical studies from different mountain areas of the world. The scientists adopted the Kathmandu Declaration to push regional issues in ecohydrology higher on their national agenda.

As a response to UNCED Agenda 21, Chapter 13, the IGBP scientific community held an **International Workshop on Global Change Impacts on Mountain Hydrology and Ecology** at ICIMOD. It was sponsored by IGBP and START, for

BAHC by the German Federal Ministry of Education, Research and Technology, for GCTC by the Swiss Academy of Natural Sciences and ICIMOD. The key objectives of the Workshop were to define the key global change-related scientific questions in hydrology and ecology; to identify the likely major impacts on mountain hydrology and ecology; and to develop a draft workplan for collaborative and coordinated BAHC and GCTC research in mountainous regions. Fourteen participants came from the South Asian (SASCOM) region, 15 from Europe, four from the US, and one from Africa to fulfill these objectives.

The **Meeting of the Working Group on Himalayan Glaciology**, formed by the International Commission on Snow and Ice (ICSI), was hosted by ICIMOD in Kathmandu on 29 March 1996. The members of the group from Pakistan, India, and Nepal presented detailed glacial-related research information from their respective countries that dated from the middle of the 19th century. The group deliberated at length on various chapters to be included in a proposed IAHS book on Himalayan Glaciology.

Addressing Challenges in Hazard Mitigation

A final workshop of the research project on "Hazard Mitigation in the Northern Sunkoshi and Bhotokoshi Water Catchment Areas" was held at ICIMOD from 8 - 10 May. The results were analysed and discussed by a total of 45 participants, including Nepalese scientists, HMG line department officers, representatives of development cooperation agencies, and practitioners from private companies. A field trip along the Arniko

Highway (with a visit to glacial deposit exposures and landslides) was part of the programme. The last day of the workshop was dedicated to final discussions and recommendations (see also pages 11-13).

Regional Pilot Training on Landslide Hazard Management and Control in the Hindu Kush-Himalayas was organised by ICIMOD from May 14 to June 7. The training programme was organised in joint collaboration with the Water-induced Disaster Prevention Technical Centre (DPTC) of the Ministry of Water Resources, HMG/Nepal, with financial support from the Government of Japan.

The primary objective of the training course was to assist civil engineers and geologists involved in planning and establishing physical infrastructure and land-use activities in landslide hazard mitigation techniques. The course concentrated on imparting practical knowledge and skills through illustrations from real-life, landslide-related problems encountered in this region.

There were altogether 18 participants from the five regional countries of Bangladesh, China, India, Nepal, and Pakistan.

At the Community Level

Funded by SDC, a **Planning Workshop on Community-based Research and Extension for the Rehabilitation of Degraded Mountain Ecosystems of the HKH** was organised in Kathmandu from March 18 to 21. The main objective of the Workshop was to formulate a project proposal on Resource Dynamics in Mountain Watersheds. There were altogether 17 participants from China, India, Nepal, and Pakistan. This was the first time that a regional collaborative programme was conceptualised in consultation with the professional community of the region for addressing environmental issues and degradation processes through in-depth, scientific assessments of the problems and opportunities at watershed level.



Inaugurating the pilot training course

Mountain Niche

Under the auspices of ICIMOD, and cosponsored by a number of international agencies, the Institute of Forestry, Tribhuvan University, hosted a Workshop on the **Role of Bamboo, Rattan, and Medicinal Plants in Mountain Development**, from May 15 to 17, in Pokhara. A group of experts on forest and agricultural resource management and economics, indigenous peoples and cultural traditions, and mountain development from six Himalayan countries met to discuss ways and means to develop specific non-timber forest resources in a more sustainable manner. The group formulated "The Pokhara Declaration."

Gender Issues

The Gender and Development Programme of ICIMOD organised a **Fact-finding Methodology Workshop on Gender and Development** from April 28 to 30 in Kathmandu. The workshop was organised basically to impart skills to researchers on methods of collecting all existing data and publications related to mountain women and gender issues; inventorising relevant organisations, agencies, and individuals involved in gender and land use; identifying national and district/state-level policies for women in development and relevant sectors; conducting gender analysis in selected mountain communities to gain detailed information on the problems and priorities of men and women; and assessing the gaps between policies and development initiatives to assist rural women. Eight researchers from Afghanistan, Pakistan, India, and Nepal benefitted from the workshop with financial assistance from ENGENDER, a Singapore-based NGO working on issues related to environment, gender, and development in the Asia/Pacific region. ICIMOD organised a **Methodology Training Workshop for GEDNET Himalayan Researchers** from May 30 to June 8 in Pokhara. The ICIMOD gender and development specialist, Jeanette D. Gurung, was the coordinator of this workshop. Piggy-backed with the workshop, ICIMOD co-hosted with ENGENDER a **Planning Workshop on Gender, Environment and Sustainable**

Livelihoods' Methodology from May 26 to 29 in Pokhara. The choice of the venue and time was to allow researchers from Bhutan, Tibet, Himachal Pradesh, and Nagaland to meet and interact with the researchers from South East Asia. The participants learned of PRA, gender analysis, and other methods of indigenous knowledge elicitation. The trainers and researchers spent five days in a village in the ACAP area practising the use of these tools with villagers there.

Capacity Building and Consultative Services

A three-day programme, "**Training for Managers on the Application of GIS and Remote Sensing**," was conducted from 27 to 29 May in Kathmandu. There were altogether 17 participants, including project leaders, project managers, and other senior executives. The programme provided the participants with the latest information about GIS and RS technology and its application to various disciplines. Hands-on exercises for planning and decision-making were also provided. The training programme highlighted the need for coordination and complementary approaches amongst institutions for database development, database standardisation, and exchange of information.

A **Policy Workshop and Consultation on Geographic Database Development, Standardisation and Exchange of**

Information was held on 31 May in Kathmandu. The 54 high-level participants from various agencies in Nepal shared experiences in implementing programmes and policies. Discussions were specifically related to data quality, accessibility, and useability.

A **Workshop on Remote Sensing Data, Services and Application for Natural Resources' Management** was organised on 30 May in Kathmandu with the primary objective of introducing participants to the benefits of Remote Sensing applications and the range of satellite data products, technology, and applications. The workshop was jointly organised by ICIMOD and the National Remote Sensing Agency (NRSA) of India in close collaboration with our partner institutions in Nepal. Eighty Nepali participants benefitted from this Workshop, 91 per cent of whom evaluated the workshop as very useful.

Agenda 21 for Tibet

The MFS Division in collaboration with the Bureau of Agriculture, Xizang, organised a two-day workshop on "**Agenda 21 for Sustainable Mountain Development in Tibet**." The participants of the workshop included top functionaries and the deliberations centred around improving the draft Agenda 21 for China to present it at the second round table conference on Agenda 21 of China in Oct.

Upcoming Events

Workshop on Effective Management of National Parks and Protected Areas in East Asia and South Asia

Jui-Zhia-gou, Sichuan, China

August 25 - September 2,

Coordinator: Prof. Li Bosheng, Chinese Academy of Sciences

Jointly organised by: CNPPA/IUCN, MAB, The Sichuan Provincial Authority and ICIMOD

2nd Space Informatics Seminar for Sustainable Development - Mountainous Resources Management

December 2 to 5, 1996

Jointly organised by the Earth Observation Planning Department of National Space Development of Japan (EOPD-NASDA) and United Nations Centre for Regional Development (UNCRD)

Coordinator: Pradeep Mool, ICIMOD

e-mail: mool@icimod.org.np

Third International Conference on FRIEND (Flow Regimes from International Experimental and Network Data)

Postjna, Slovenia - 1 to 4 October 1997

FRIEND 97 Conference Secretariat:

c/o Mitja BRILLY, University of Ljubljana, FGG - Chair of Hydraulic Engineering and Hydrology, Hajdrihova 28, 1000 Ljubljana, SLOVENIA

ICIMOD

Other

Travel News

Establishing Linkages in the Region

The Director General, Mr. Egbert Pelinck, travelled to **China** from April 8 - 18 to visit the training site for the China Project on Mountain Risk Engineering, to visit the field sites for Appropriate Technologies for Soil Conserving Farming Systems, to participate in the International Symposium on Agricultural Development in Mountain and Hill Areas, and to visit potential partner institutions. Mr Pelinck also visited the Sichuan Academy of Agricultural Sciences, the Chengdu Institute of Biology, and the Chengdu Institute for Mountain Hazards and Environment and discussed present and potential collaboration between ICIMOD and these institutions.

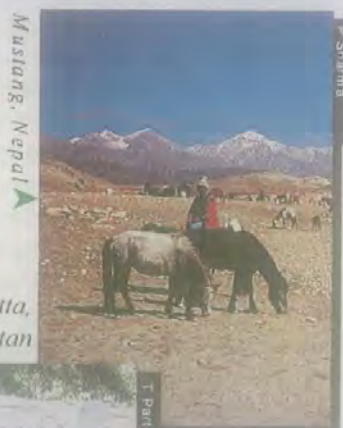
Dr. S. Malik, Agricultural Extension and Training Specialist, visited Pakistan to review and assess the MFS programme in **Pakistan**. Discussions on the PARC-ICIMOD Institutional Strengthening Project and meetings with several staff from the Ministry of Food, Agriculture and Livestock, were held. Dr. Malik also held discussions on the arrangements for an experts' meeting on "Agricultural Biodiversity in the HKH Region: Status and Management Issues in Pakistan," the SALT project, and the Gender Programme.

Dr. Tang Ya, Acting Coordinator for the Soil Improvement Project, travelled to **Myanmar** in May to coordinate the training programme on Appropriate Technologies for Soil Conserving Farming Systems' and the MFS Institutional Strengthening Programme and to monitor the progress of the ATSCFS Project. The training was held in Lashio in the Northern Shan State of Myanmar from May 20 - 31.

Mr K. K. Shrestha, Coordinator of the Beekeeping Project, travelled to the **Dolkha District of Nepal** from February 28 - March 2 to identify new areas of operation, to identify poten-

tial areas for the establishment of JTs, to identify prospective partners, and to visit local beekeepers.

Dr. P. Sharma, visited Pokhara from March 12-17 to attend the Planning and review Meeting for Phase II of Mountain Tourism for Local Community Development Project. From April 27-May 4 he went to **Beijing** in connection with the Status of Environment and Development Project. He went to **Lomanthang, Upper Mustang, Nepal** in connection with Mountain Tourism Case Study from 18-28 May.



Quetta, Pakistan



Dr. A. A. Junejo, Coordinator of the Mini-& Micro-Hydropower

Project, travelled to **Butwal, Nepal**, to participate in the E-net Consultative Meeting-cum-Exchange Workshop on "Sharing Information on Rural Energy Options: Supporting Initiatives for Sustainable Development" on March 11 & 12. The meeting was attended by delegates from Nepal, Sri Lanka, India, the U.K., and Germany. This workshop was organised by ITDG, Sri Lanka, and ITDG, Nepal, in collaboration with DCS, Nepal. The E-net is a proposed network on MMHP. Dr Junejo also travelled to **Galyang in Syangja District, Nepal**, to attend a meeting on rural electrification organised by the Butwal Power Company and the Andhi Khola Rural Electrification Project from 16-18 April. He went to **China** to attend an Expert Meeting on Small Hydro Task' which was sponsored by IEA

and coordinated by Canda Centre for Mineral and Energy Technology.

Dr. T. S. Papola, Head of the MEI Division, visited **India** from March 16 - 31 to establish contacts with ICIMOD nodal and partner institutions and for discussions with planning agencies at the national and local levels on the Training Programme on Integrated Environment and Economic Planning in Mountain Areas. Meetings were held with the Member Secretary of the Planning Commission, the Director General of the Indian Council for Agricultural Research, the Secretary of the Ministry of Environment and Forests, and Heads of Departments of the G. B. Pant University. He went to **Chengdu** to discuss programme implementation with present and potential partner institutions.

Dr. K. Rijal, Energy Specialist, visited **Pakistan** from April 14 - 27 to study energy-use patterns and issues relating to the energy sector in Pakistan, to initiate a formal study on energy-use patterns in Pakistan, and to discuss a methodological framework for the said study. Meetings were held with professionals from the Pakistan Council for Appropriate Technology, the Pakistan Forest Institute, the Pakistan Academy for Rural Development, the Sarhad Rural Support Corporation, and so on.

Prof. Li Tianchi, Project Coordinator of the MRE Project, travelled to **China** from April 6 - May 7, to assist in and monitor the technical aspects of on-the-job training in MRE in Yaan in Sichuan Province and to make cost estimates of the stabilising measures required for on-the-job training activities in Dongchuan in Yunnan Province. The trip included site visits and lectures to the trainees.

Mr. Pramod Pradhan visited **Pakistan** and **Thailand** to supervise the GIS training in PFI organised by the Pakistan Node, to hold meetings with nodal agencies in Pakistan and the Ministry of Environment, and to attend the ENRIN meeting organised by UNEP/EAP-AP in Bangkok.

Mr. Anupam Bhatia, Common Property Resources' Management Specialist, travelled to **Darjeeling and Sikkim in India** from March 31 - April 6 to study the Participatory Natural Resources' Management Programme (PNRM) developments and linkages in North Bengal and Sikkim and to expand the focus of the PNRM Programme in the Western and Eastern Himalayas. Meetings were held with members of the Federation of Societies for Environmental Protection, the staff of the Department of Forests, and Dr. Awasthe of the WWF, Sikkim Chapter

Global Linkages

The **Director General** visited Europe from April 27 - May 5. He visited **Scotland** to participate in the third meeting on the follow-up to Chapter 13 of Agenda 21 of the UNCED. The meeting provided the opportunity to assess the progress made in the implementation of Chapter 13 and for organisations to plan programmes of common interest. This was followed by a visit to **Denmark** for discussions with the Head of the Environmental Programme about present and future support to ICIMOD. Mr. Pelinck then visited **Finland** for discussions with the Ministry of Foreign Affairs on support for the Regional Collaborative Programme, for a meeting with the Secretary General of the Finnish Commission for Sustainable Develop-

ment, and to visit the Finnish Environment Institute. He then visited **Sweden** where he met with staff of both the natural resources' sector and the bilateral sector at SIDA and discussed the possibility of support for ICIMOD. He also had meetings with concerned officials of the **European Commission** on Mountain Risk Engineering, on the Regional Collaborative Programme, and on environmental issues and, in particular, natural resources' management. Mr. Pelinck visited **Belgium** and met the staff of the Asia Department and the research and environmental sections. He then visited the **Netherlands** and met with the Deputy Director General and other staff of the Dutch Development Cooperation and had discussions on project proposals for the "Applications of GIS" and for "Capacity-building for Gender and Land-use Policies." He also visited the International Service for National Agricultural Research (ISNAR) and held discussions on Global Sustainable Mountain Agricultural Development, a prospective seminar on mountain development and on linkages between National Agricultural Research Centres, Research Programmes of Agricultural Universities, and ICIMOD. Useful discussions took place with the Federal Ministry for Development Cooperation during Mr. Pelinck's visit to **Germany** on present and future support to ICIMOD and on other issues of common interest. He also

visited the Federal Institute of Hydrology and the German Development Institute.

Mr M. R. Tuladhar, Head of Administration and Finance, visited the **Netherlands** from May 13 - 16 to study the administrative and financial management systems of ISNAR. The Computer Section of ISNAR has acquired a Polycon Management System with the help of which its multitude of servers can now be handled through a single computer. ▲

Announcement

We are pleased to inform our readers that the following persons have been appointed for the vacant positions that were advertised in our Newsletter No 23.

Farm Economist, Mountain Farming Systems Division
Dr. Pradeep Tulachan
Nepali

Soil Scientist/Land Use Planner, Mountain Natural Resources' Division
Mr. Richard Allen
UK

Social Scientist, Mountain Enterprises and Infrastructure Division
Dr. S.Z. Sadeque
Bangladesh

ICIMOD is very fortunate to have these persons as new international staff. They will be in a position to strengthen considerably key aspects of the work of each of the three thematic divisions.

New Support to ICIMOD

Regional Collaborative Programme for Sustainable Development of the HKH Region (1995-98)

This core programme of ICIMOD received a considerable boost and recognition when the Government of the Netherlands became the fifth non-regional donor to the RCP. Others are the Governments of Austria, Denmark, Germany, and Switzerland. The contribution by the Netherlands amounts to US \$ 600,000 per year for the period from 1996-98.

Projects

So far during 1996, ICIMOD has entered into new agreements for the implementation of projects, for which specific sectors, objectives, and activities have been negotiated with separate donors. They were either new phases of ongoing activities or new projects.

- Management of Forest Lands
US \$ 300,000 for 1996-98 - Donor: The Ford Foundation
- Gender, Environment and Sustainable Development
US \$ 35,000 for 1996-97 - Donor: ENGENDER/IDRC
- Mini- and Micro Hydropower
US \$ 420,000 for 1996-98 - Donor: NORAD

Postscript

Dear readers, you may notice that in this Newsletter we have provided contact addresses of the authors. This is to facilitate readers' responses to the articles either in the form of a debate, commentary, or observation. We also wish to open up two-way communications through the Newsletter itself. Therefore readers are encouraged to write generally to the Editor.

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Ms. Jeannette D. Gurung,	Gender and Development Specialist
Dr. Shaheena H. Malik,	Agricultural Extn. and Training Specialist
Dr. Pradeep Tulachan	Farm Economist
Dr. K.K. Shrestha	Coordinator, Beekeeping Project
Dr. Tang Ya	Assistant Coordinator ATSCFS Project
Dr. Naomi Saville,	Ass. Prof. Officer Beekeeping (ODA Sponsored)

Mountain Enterprises and Infrastructure

Dr. Trilok S. Papola,	Division Head
Dr. Pitamber Sharma,	Regional Planner
Dr. Kamal Rijal,	Energy Specialist
Dr. S. Z. Sadeque	Social Scientist

Dr. Anwar A. Junejo,	Coordinator, MMHP
Prof. Li Tianchi,	Coordinator, Mountain Risk Engineering

Mountain Natural Resources

Prof. Pei Sheng-ji,	Division Head
Prof. Suresh R. Chalise,	Water Resources' Specialist
Mr. Anupam Bhatia,	Common Property Resource Mngl. Specialist
Mr. Daniel Miller,	Rangeland Management Specialist
Mr. R. Allen (1/10/96)	Land-use Planner/Soil Scientist
Mr. A. Rastogi,	Assistant Coordinator, Ethnobotany Project

Mnt. Env. and Natural Resources' Information System

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