



**ICIMOD 2001**

**[www.icimod.org](http://www.icimod.org)**



**Artistic View of Proposed Headquarters  
Khumaltar, Lalitpur  
Nepal**

Copyright© 2002

**Published by International Centre for Integrated Mountain Development**

All rights reserved

**ISSN: 1019-1356**

**Please direct all enquiries and comments to:**

International Centre for Integrated Mountain Development

GPO Box 3226, Kathmandu, Nepal

Telephone: (977-1) 525313

Fax: (977-1) 524509/536747

email: [icimod@icimod.org.np](mailto:icimod@icimod.org.np)

[www.icimod.org](http://www.icimod.org)

Printed at: Quality Printers

# **Annual Report 2001**

**.....providing upstream solutions for  
sustainable mountain development**

International Centre for Integrated Mountain Development  
Kathmandu, Nepal

# Contents

<b>DIRECTOR GENERAL'S OVERVIEW</b>	<b>6</b>
<b>SECOND REGIONAL COLLABORATIVE PROGRAMME</b>	<b>9</b>
<b>SUSTAINABLE LIVELIHOODS OF MOUNTAIN HOUSEHOLDS</b>	<b>10</b>
Himalayan farmers & honeybees	10
Livestock in mixed mountain farming systems of the Hindu Kush-Himalayas	12
Methodologies for assessing mountain agricultural systems in the Hindu-Kush Himalayan Region: an ecoregional framework	14
Globalisation-led risks and opportunities-changing stakeholder perceptions	17
Promoting sustainable energy use	18
<b>GENDER BALANCED MOUNTAIN DEVELOPMENT</b>	<b>20</b>
Effective partnerships in national strategy formulation : women's entrepreneurship development in Bhutan	20
<b>SUSTAINABLE DEVELOPMENT OF MOUNTAIN COMMONS</b>	<b>22</b>
Participatory action research programme on equity and poverty in the management of common property resources	22
Regional rangeland programme	24
People and resource dynamics project	26
Regional cooperation in flood forecasting and information exchange	28
Sustainable water harvesting technologies and management systems	30
<b>CAPACITY BUILDING OF MOUNTAIN DEVELOPMENT ORGANISATIONS</b>	<b>32</b>
Launching the Nepal SoE report	32
ICIMOD receives special ESRI Presidential award	34
About mountain natural disasters and their impact on life in mountain hazard prevention	35
Building together: The second advance	36
The third quinquennial review	38

<b>INFORMATION AND OUTREACH</b>	<b>40</b>
Bookshelf in 2001	44
Additional Contributions	46
<b>CROSS-CUTTING ACTIVITIES</b>	<b>49</b>
Getting ready for the big year, International year of Mountains (IYM)	49
Celebrating mountain women	50
Ongoing Projects - 2001	52
ICIMOD Donors	53
Strategic Partners	53
Collaborating Institutions in 2001	54
ICIMOD Board of Governors 2001	56
Staff Members of ICIMOD	56
New Faces at the Centre: From Them to You	58
ICIMOD Income and Expenditure Accounts, 1991-2001	60



# DIRECTOR GENERAL'S OVERVIEW



The year 2001 is the third year of the Second Regional Collaborative Programme (RCP-II), with one year remaining. Most of our efforts over this year have been to continue our progress towards this programme's objectives. This annual report highlights achievements in critical areas during the year 2001 at the International Centre for Integrated Mountain Development (ICIMOD).

This year provided the opportunity to reflect and review the work of ICIMOD over the last five years. An independent high-level panel was appointed by the Board of Governors to conduct the Third Quinquennial Review (QQR). The constructively critical review produced by the QQR has enabled us to examine our strengths and weaknesses and take immediate steps to improve our work while also improving our planning for the longer-term. We are gratified that this distinguished QQR panel has strongly endorsed the value of ICIMOD to the mountain region we serve while helping identify future directions and recommendations.

The year 2001 is also the first full year with a new management team appointed by the Board. All of us at ICIMOD have continued our efforts to transform our institution into a genuine team of mountain specialists who can build on our strengths and address our weaknesses openly, and together. Through continuing staff 'advances', new gender balanced recruitment, staff training, and programme initiatives we have worked to increase integration, accountability for results, and partner orientation. We have also addressed issues of financial integration of programmes and projects, overhead recovery, and financial stability. While this organisational development process will continue, and much remains to be done, progress is now discernible.

Overall, ICIMOD's progress in achieving its specific RCP-II objectives has been, as noted by the QQR, reasonably satisfactory in many - though not all - of its activities. Methodologies and technologies that have been identified and are being tested and shared with its 300 partner institutions have already made significant impacts.

On-going achievements described in this report are based on both a continuation of existing activities and the introduction of new approaches. Among the latter are several examples that illustrate ICIMOD's initiatives to increase regional collaboration, strengthen internal teamwork, and make ICIMOD's knowledge more useful to end users.

For example, ICIMOD convened the first regional meeting of high-level officials and experts to develop a framework for regional collaboration on flood forecasting in collaboration with World Meteorological Organisation (WMO) and with support from the United States and Denmark. This has resulted in a joint action plan for information sharing that has the potential to save hundreds—and possibly thousands—of lives downstream and build a basis for increased cooperation on vital water resources.

The programme 'Securing Livelihoods in the Uplands and Mountains of the Hindu Kush-Himalayan (HKH) Region' initiated with International Fund for Agricultural Development (IFAD) support has also introduced a new model of collaboration with rural development and watershed projects that combines documentation with technical assistance, information sharing and ICIMOD's on-going research. It is an attempt to bridge the gap between specific implementation activities and their policy implications. It shows considerable promise as a model for more structured interaction with other projects and donor-funded efforts to increase their policy impacts.

Another noteworthy endeavour this year has been the United Nations Environment Programme (UNEP) supported work on State of the Environment reports and glacial lake outburst floods (GLOFs). GLOF mapping was carried out for Bhutan and Nepal and additional regional countries have shown interest in joining this effort. The study identifies 44 potentially dangerous lakes of immediate importance for infrastructure planning and disaster mitigation. This work continues to increase trust in regional information sharing and builds on our regional hydrological and climate change activities as well as our work in risk engineering.

In response to the opportunities presented by the International Year of Mountains 2002, ICIMOD has geared up to play a key role within the region, as well as globally. It is an opportunity to integrate ICIMOD's interests further afield with organisations outside of the HKH. Planning and fund raising work has been carried out to enable us to support conferences, celebrations, policy dialogues, grassroots networks, and initiation of new mountain programmes in the region.

This report also highlights a number of other exciting programmes being carried out in the HKH region together with over 300 partners. These include programmes on beekeeping, livestock, ecoregional assessment, renewable energy, women's entrepreneurship, mountain women, equity and poverty, rangelands, watersheds, water harvesting, flood forecasting, hazard mapping, state of the environment reports, GIS and communication and outreach initiatives.

On the financial side, despite some continuing volatility in exchange rates, the commitments made by some of our regional and European donors to increase their contributions (or reflect them in

US dollar equivalents) have resulted in stable core programme financing. While the anticipated increase in project funding and some staff recruitment are taking longer than expected, most programmes had sufficient resources to carry out most of their planned activities. However, some activities were inadequately funded and staffed and had to be merged with activities that are logically connected, whereas others were discontinued or suspended as reinforced by the QQR which emphasised that ICIMOD should concentrate its activities in areas where it can be most effective.

We are redoubling efforts to raise core programme and project funding and develop new staff positions in innovative ways. Approved by the Board in their last meeting, these efforts will allow us to raise more funds and recruit additional staff. The fund-raising effort has already brought in new donors and shows more promise for the future.

The Board has approved our finally launching an ICIMOD headquarters building with judicious use of Reserve Funds. Savings from 2001 provide almost half of the funding required to turn this long held dream into a reality. The generous allocation of 1.5 hectares of land by the government of Nepal (with a market value of over US dollars one million) enabled the Centre to proceed with its design competition and for the winning architectural firm to be selected for detailed design and building supervision.

In 2002 ICIMOD is challenged to develop its strategic plan for the coming years. We hope that this report will lead to a better understanding of ICIMOD and promote closer interaction and support from you for this next phase in ICIMOD's commitment to serve the people and ecosystems of the HKH region.

**J. Gabriel Campbell**  
Director General





Director General and the Board of Governors and Support Group members, Bhutan

## **SECOND REGIONAL COLLABORATIVE PROGRAMME\***

The Second Regional Collaborative Programme (RCP-II) for the sustainable development of the Hindu Kush-Himalayan (HKH) region commenced in 1999 and will end in 2002. RCP-II, also known as Mountains 2000 and Beyond: Second Regional Collaborative Programme for Sustainable Development of the HKH, was the second phase of the Regional Collaborative Programme for the sustainable development of the HKH (RCP-I). Both RCP-I and RCP-II have been ambitious in attempting to address the issues highlighted by Chapter 13 (Mountain Ecosystems) of Agenda 21. The programmes were designed after extensive consultations with partner institutions in ICIMOD member countries, Board of Governors and Support Group and many others.

During the RCP-II period, ICIMOD has been focussing, and will continue to focus its activities on 5 key programme areas. These reflect the 3 key thematic concerns in sustainable development of the Hindu Kush-Himalayas and the 2 main mechanisms that ICIMOD uses to increase the capacities of local and national institutions to apply the knowledge generated by the thematic programmes.

### **Programme Areas**

- I. Sustainable Livelihoods for Mountain Households
- II. Gender Balanced Mountain Development
- III. Sustainable Management of the Mountain Commons
- IV. Capacity Building of Mountain Development Organisations
- V. Information and Outreach

\* All photographs in this volume are taken from publications of ICIMOD produced under the Second Regional Collaborative Programme. ICIMOD has copyright to these, but the Centre does acknowledge the work of all its authors although limitations of space prohibit mentioning them all by name.

# SUSTAINABLE LIVELIHOODS OF MOUNTAIN HOUSEHOLDS

*The focus in this programme is on poverty reduction in mountain households by introducing appropriate technologies for sustainable farming systems, marketing farm products, promoting opportunities for income generation and enterprise development, and integrating environmental and socioeconomic concerns of mountain households in a sustainable manner.*

## Himalayan farmers & honeybees

### ***Apis cerana* selection**

More than 256 bee colonies in 14 apiaries in Nepal, India, Pakistan and China are maintained by the ICIMOD beekeeping project. The project staff are collecting selection data from three different sites in Nepal: Jumla, Dadeldhura and Kaski.

Dr. YS Parmar University of Himachal Pradesh, India, helped the project run an international course on *Apis cerana* management in Kulu for Bhutanese and Nepalese participants.



Beeswax used for candles & cosmetics

### **ICIMOD's Beekeeping Programme in Jumla**

The project raised awareness about the importance of conserving indigenous honeybees and biodiversity among beekeepers, farmers' organisations, Government Organisations (GOs), and Non Government Organisations (NGOs).

- Two farmer-led NGOs and 67 beekeepers' groups were formed through project facilitation and support - these groups and organisations are now involved in beekeeping research and development.
- A functional beeswax collection and processing centre in Jumla bazaar managed by 4S, an organisation linked to beekeepers' groups, was promoted.
- A number of women farmers have been trained in beekeeping and are participating in various training programmes, meetings, and community development activities.
- One hundred and forty-three local farmers-trainers were trained in beekeeping management and conservation and are playing a very important role in capacity building of local beekeepers.
- The Project facilitated provision of various types of appropriate technologies with full participation of real beneficiaries. One of the successful appropriate technologies considered was the Jumla Top Bar Hive. Farmers were trained in the skills needed for sustainable beekeeping management.
- Awareness was raised about the importance of pollination through beekeeping.
- Farmers are trained on honey harvesting and processing, and producing value-added products like creams and candles. Production of processed and good quality honey is increasing, as is the demand for pure organic honey.
- Farmers have access to information related to beekeeping and there are organisations working together for better linkages.
- There are three selection and multiplication apiaries; farmers are managing the selection and multiplication programme.





Mass queen rearing



Pollination



Indigenous honeybees

### Mass queen rearing

The technique of artificial queen rearing has been perfected for *Apis cerana* with the technical assistance of the Honey Bee Research Institute (HBRI), Pakistan Project. Partners from Jumla, Dadeldhura and Kaski were trained in *Apis cerana* management, selection and queen rearing. During the past year project information about and techniques of queen rearing were provided to grass root beekeepers (See Box text).

### Net working of beekeepers and institutions

Apiculturists' Network (APINET) Nepal - a network of apiculturists, beekeepers and beekeeping institutions was established. It will provide a platform for sharing information and discussing issues related to beekeeping in Nepal (See Cameo).

### Pollination

Studies on pollination issues of apple, citrus and buckwheat crops faced by farmers in India, China, Nepal, Bhutan and Pakistan were carried out. The project focused on raising the awareness of planners, policy-makers, and donors about managed crop pollination. Field demonstrations training and awareness camps were organised.

### Indigenous honeybees

A detailed study of *Apis laboriosa* (Himalayas cliff bee), honey hunting communities and associated flora revealed interesting aspects of an indigenous system that could well disappear.

### Participation in symposiums and international conferences

Dr. Farooq Ahmad attended the 37th International Federation of Beekeepers' Associations (APIMONDIA) Congress in South Africa. He spoke on the topic of indigenous honeybees and honey hunting communities.

The international biodiversity observation year (IBOY) took place in 2001 and the project tried to include awareness about biodiversity in its project activities. The Project Coordinator, Dr. Farooq Ahmad, participated in a symposium organised for core project leaders from around the world.

### Beekeeping Network in Nepal

A larger forum networking meeting held on 26 & 27 September 2001 agreed unanimously to create an ApiNet - Nepal where 33 individuals and 9 organisations decided to be founder members. An eleven member ad hoc committee was formed that will take a lead in registering this organisation with the appropriate government offices of Nepal. The vision of ApiNet - Nepal is 'Conservation and Development of Sustainable Apiculture in Nepal through active participation of member organisations and individuals'. This new initiative facilitated by ICIMOD's indigenous honeybee project will surely help to bring stakeholders together to share experiences and information.

## Livestock in mixed mountain farming systems of the Hindu Kush-Himalayas

In mid-2000 studies were carried out into smallholder dairying in the mixed farming systems of Nepal, Uttaranchal and Himachal Pradesh, and into smallholder dairy farming in Bhutan. A stakeholder's meeting was held in April 2001 to share the study findings, discuss information gaps, and study methodologies. Policy implications and advocacy issues were identified for each country. A common research agenda was identified with the major issues being to:

- promote the sustainable use of common property resources for improved livestock production;
- investigate prospects for the commercialisation of indigenous dairy products;
- characterise and identify the most suitable dairy breeds and species; and
- assess the impact of national dairy policies on smallholder dairy development in Nepal and Bhutan.

The findings of these studies will be published and the original study reports made available on CD-Rom.



Children helping with the farm work, Langtang, Nepal

### ICIMOD's joint partnership with FAO and ILRI

ICIMOD, International Livestock Research Institute (ILRI), Food and Agriculture Organization (FAO), and the International Potato Centre (CIP) together held an international symposium on 'Livestock in Mountain/Highland Production Systems' in Pokhara, Nepal to address the critical issues facing research and the development of livestock in mixed farming systems in the mountain and highlands of Africa, the Andes and the Hindu Kush-Himalayas. This symposium brought together representatives





Smallholder dairy in Bhutan



Buffalo raised in Pokhara



A farmer feeding improved cows, Bhutan

from international research, development and donor institutions and also helped prepare for the 2002 United Nations International Year of the Mountains. In the 'Pokhara Call for Action' participants agreed to:

- prepare a global research and development agenda to improve livelihoods in livestock-dependent mountain and highland communities;
- prepare a livestock agenda for the International Year of the Mountains;
- encourage collaboration across the different mountain and highland eco-regions;
- encourage governments and donor agencies to give a higher priority to gender-balanced participation, empowerment and property rights of livestock-dependent mountain and highland populations; and
- encourage research and development organisations to undertake activities to improve livelihoods in livestock-dependent communities in mountain and highland eco-regions.

#### Further areas for research

The rapid transformations taking place in the HKH region have led to many new issues that need investigation including: conservation of genetic diversity of domestic livestock breeds; the economic profitability of livestock enterprises; gender balance in livestock-related work and the sharing of benefits; the sustainable use of common property resources – especially grazing lands; and the identification of appropriate feed resources, especially during winter.

#### Three-day Stakeholders' Meeting on Systems of Local Livestock Resource Planning

ICIMOD and FAO Rome jointly organised a three-day stakeholders' meeting on Systems of Local Livestock Resource Planning from October 11 to 13, 2001, in Kavre District, Nepal. The meeting provided an opportunity for different stakeholders from Bhutan, India, Nepal and Pakistan to share their study results, work experiences, limitations and gaps in the past and present systems of local livestock resource planning with due emphasis on linkages such as Natural Resource Management (NRM). The participants represented diverse groups of professionals: field-level livestock officers and directors at the centre, experts from INGOs, working with local communities at the grass roots' level and local farmers, village leaders and the district chairman (elected by the people). At the end, the meeting produced a framework for community participation & empowerment in local livestock resource planning in the HKH region. After a fruitful 3-day meeting, Dr. Eklavya Sharma, Dr. Pradeep Tulachan and Juhani Maki-Hokkonen (FAO) agreed on a follow-up activity to further strengthen the collaboration between ICIMOD and FAO. It is to be noted that FAO-Rome has been providing both intellectual and financial support for addressing the critical issues of livestock as an integral component of mixed mountain farming systems under the ICIMOD programme. To this end, Dr. Tulachan visited FAO Rome in January 2002 to develop a follow-up proposal for field-testing and verification of the framework/ methodology in consultation with FAO experts.



# Methodologies for assessing mountain agricultural systems in the Hindu-Kush Himalayan Region: an ecoregional framework

## Framework for assessing mountain agricultural systems in the HKH region

A comprehensive, systematically stored and programmed interactive software, containing a set of methodologies and tools for assessing mountain agricultural systems is being developed. Included in this is the Mountain Agricultural System Information Files (MASIF) relational database and the user-friendly environment - the Land Use Analyst (LUA) - software. The MASIF enables access, storing, handling and integration of both spatial and socioeconomic data. The LUA is a functional digital platform integrating methodologies for retrieving, analysing and displaying both spatial and non-spatial information about agricultural systems. The LUA works with the MASIF database and forms a user interface through which planners and developers can interactively identify and evaluate mountain agricultural resources to support planning. The methodologies software are being tested and refined in three pilot areas. Once tested and validated, they will be made available for use in other mountain areas.

## Comprehensive database development

The MASIF database is being developed for the whole of the HKH region: it has census data for one year for more than 450 districts/counties across the HKH region on crops, livestock and human population.

Coordinates and basic meteorological data for more than 280 meteorological stations, a digital elevation model, hydrology (rivers and basins) data, over 105,000 geo-codes and 16km and 1km resolution Normalised Differentiation Vegetation Index (NDVI) images are provided for the entire region.

A 1:50K scale digital Soil and Terrain (SOTER) database for Nepal has been developed.

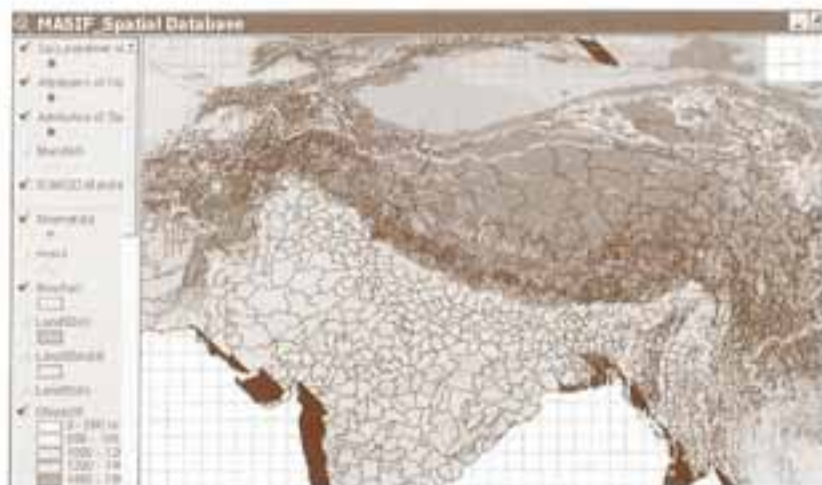


Fig. 1: MASIF digital maps and geo-referencing framework in GIS



Attribute data are systematically stored in Microsoft Access relational database format and all spatial data are in ArcView format with the same projection (Fig 1 & 2).

**How we do it: user-friendly software development**

LUA Version 1.0 was developed using ArcView software and Object Data base Connectivity (ODBC) access linkage. It identifies agricultural resources, evaluates them, characterises agricultural systems and supports agricultural planning. Under each main menu, several submenus are created by combining different modules of methodologies. These modules are based on integrating and programming theoretical and practical procedures of biophysical and socioeconomic analyses. (Figs 3 & 4)



### Remote sensing imagery process and intensive ground-truthing and field work

Weekly Advance Very High Resolution Radio Meter (AVHRR) imagery of 16 km resolution over a period of 15 years and 1 km resolution over 5 years are analysed for agro-meteorological analysis.

Changing NDVI trends over a 15-year period for Lhasa, greening pattern for one year, and monthly equivalent brightness temperatures of NDVI and crop growing periods for the whole HKH region are being analysed. (Figs 5 & 6)

Integrated analyses of temperature and rainfall data at nearly 300 meteorological stations were compared with National Oceanic & Atmospheric Administration - Advance Very High Resolution Radio Meter (NOAA - AVHRR) imagery and a digital elevation model.



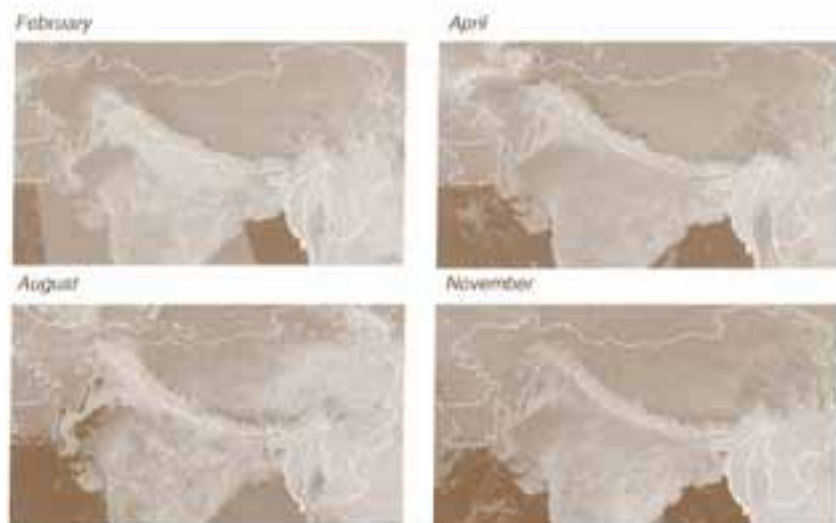


Fig.5: Variable greening patterns of the H00H at four distinct times of the year

Intensive field work and ground-truthing are important for the project. So far, over 150 Global Positioning System (GPS) points have been surveyed in Tibet, China; Himachal Pradesh, India; and for two districts in Nepal. The field information with GPS points is being used for land-cover/land-use mapping of the pilot areas based on high spatial and spectral resolution Indian Remote Sensing Satellite - Linear Imaging Space - Self-scanning Sensor (IRS-LISS III) imager (Fig. 7).

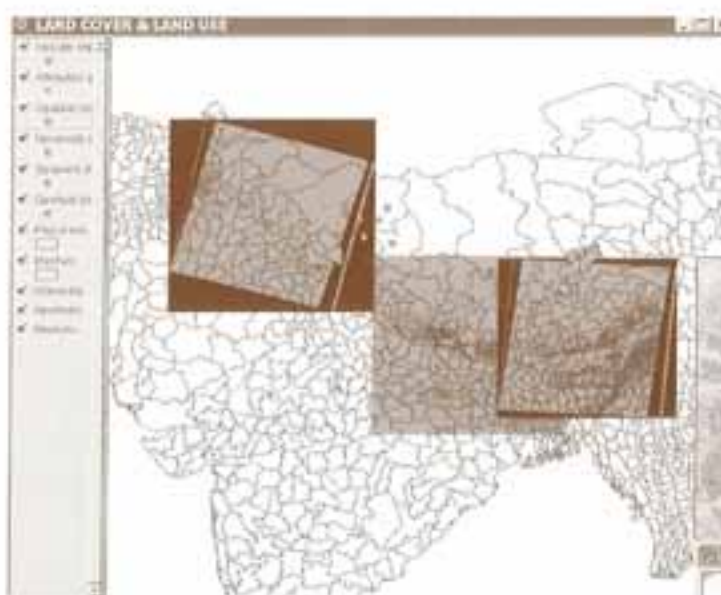


Fig. 6: Pilot areas and GPS ground-truthing

#### Partnership and testing methodologies in pilot areas

MASIF Land Use Analyst Version 1.0, is being tested with real examples in the pilot areas for characterising agricultural systems and for land use planning.



Fig. 7: IRS-LYSS III imaging process and GPS points collection and field work

## Globalisation-led risks and opportunities-changing stakeholder perceptions

Two unique and unexpected results came out of an exploratory research project supported by the MacArthur Foundation on repercussions of globalisation for fragile mountains and their communities. Frequent and prolonged interaction with different stakeholders (e.g. policy people, NGOs, communities, researchers and media groups) and sharing of inter-country experiences led to concurrent generation and use of the findings in a policy-programme context by agencies dealing with World Trade Organisation (WTO) and other globalisation issues, and a visible change in the stakeholders' perspectives took place. The former is reflected by the use of even tentative findings, understanding and inter-country comparative experiences on the topic by groups both directly or indirectly associated with negotiations with WTO committees. The second result is shown by the fact that two years' previously stakeholders perceived globalisation only as a source of risk for fragile mountains. Over time their views moved towards the positive repercussions of globalisation. Accordingly stakeholders began to perceive globalisation as a source of potential opportunities (besides risks). They, however, emphasised the need to evolve adaptation strategies to harness opportunities and minimise risks.

### 'Stakeholder Conversations'

- "Sharing and enhancing of understanding of potential consequences of globalisation for mountain communities is appropriate, useful and very timely, when the country is preparing to join WTO" - (a statement of the team from China collaborating in the project work).
- Globalisation is not a source of gloom and doom, but a creator of potential opportunities besides risks - (posting by a senior mountain specialist, endorsed by most of the participants in the E-Conference on Globalisation and Fragile Mountains).
- "The synthesis of multi-country evidence on emerging issues due to globalisation and approaches to address them in a mountain context has strengthened our agenda as well as advocacy role in the global discourse on the subject." (statement of an NGO representative in a South-Asian NGO Meeting in Kathmandu)



Forests are sources of fuelwood and fodder, Nepal



## Promoting sustainable energy use

### Impacts and highlights

Outputs of ICIMOD's work to promote sustainable energy use have been mainly focused on raising levels of awareness: the publication and dissemination of documents; seminars, workshops, training events, and regional consultations; production of audio visual aids; and equipment support to partner institutions.

### National workshop on wind energy

A two-day 'National Workshop on Wind Energy' was organised by the Ministry of Science and Technology, ICIMOD, and Intermediate Technology Development Group (ITDG) Nepal on the 7th and 8th of March 2001 with the twin objectives of sharing the Sri Lankan experience of 200-watt, small windmills developed by ITDG and developing a national course of action for the development of wind energy in Nepal.

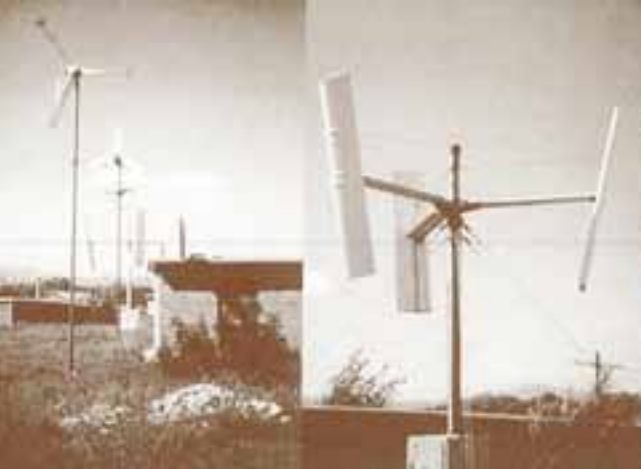
A 6-member task force (including the Renewable Energy Specialist, ICIMOD ) was formed to set priorities and bring into effect the recommendations prepared by the participants. The task force made the following recommendations.

- Publish proceedings of the workshop
- Select sites and run pilot projects on small-scale wind energy plus wind pumping
- Conduct wind mapping in most potential areas
- Prepare guidelines for private sector participation in wind energy development
- Develop a methodology for data generation and analysis
- Document Nepalese experiences and experiences of Bihar/Gujarat in India on wind pumping and of Mongolia on wind energy through field visits by a team
- Conduct a National Workshop on Wind Energy in 2002 to discuss the experiences from 2001 and make further plans
- Form a Coordination Committee under the Ministry of Science and Technology to facilitate coordination and follow up on planned activities

### National dissemination seminar of the 'Asian regional research programme on energy, environment and climate

The 'National Dissemination Seminar of the Asian Regional Research Programme on Energy, Environment and Climate' jointly organised by the Asian Institute of Technology (AIT) and ICIMOD was held on 9 February 2001. Representatives from AIT, Dr. Ram M. Shrestha, Dr. Rabin Shrestha, and Professor S. C. Bhattacharya, and from the Swedish International Development Agency (SIDA), held technical sessions on 'Assessment of Energy Efficient Options for Mitigating Emission of Greenhouse Gases from the Electrical Sector' and 'Study of Biomass as an Energy Source and Technical Options for Greenhouse Gases' Emission Reduction'.





Wind generator installed at wind research station,  
Badaling, P. R. China



Solar water heaters on the roof of an apartment  
building in Kunming, P. R. China

### **Strengthening organisational capacity of 'Ghatta' (traditional water mill) owners in Makawanpur and Kavre District, Nepal**

Moderate support has been provided to the Centre for Rural Technology (CRT), Kathmandu, to carry out activities with traditional water mill owners.

The initiative taken by ICIMOD along with CRT resulted in attracting the Netherlands Development Organisation and His Majesty's Government, Nepal's (SNV and HMG/N) interest to promote the improved water mill programme from 2002.

ICIMOD has facilitated the Renewable Energy Technologies (RETs) initiatives of partner institutions. The roles of Aga Khan Rural Support Programme (AKRSP) in promoting passive solar building technologies, and Uttar Pradesh Academy of Administration (UPAA) and Society for Promotion of Wasteland Development (SPWD), in India, in promoting micro-hydro have particularly been notable. The following impacts mainly resulted from the active roles played by partner organisations .

- The increasing commercialisation of RETs by government agencies and donors
- Nepal, India and Pakistan are now encouraging private sector participation in hydropower development. In Nepal, some of the revenue generated from the sale of electricity is set aside for the electrification of rural mountain areas.
- The acceptance of a need-based rather than a technology-driven approach to energy programme implementation; community-based energy planning has been incorporated in Nepal's Ninth Five Year Plan (1997-2002) and in UNDP-Nepal's Rural Energy Development Programme,
- The capabilities of village-level extension workers to implement RETs in parts of Nepal, India, and China have been improved.
- RETs such as improved cooking stoves, biomass briquettes and solar panels, are being introduced in Nepalese communities through rural energy programmes.
- More attention is being given to the social objectives of energy development in remote areas.
- Manuals on Mini- and Micro Hydropower (MMHP) have been translated into the national language and adopted by Development and Consulting Services (DCS) in Nepal; the Alternate Hydro Energy Centre in India; and the Aga Khan Rural Support Programme (AKRSP) in Pakistan.
- Asian Development Bank (ADB) supported the Pakistan Council of Appropriate Technology in establishing 200 micro-hydropower plants in the Malakand Watershed, and this was facilitated by a report prepared by ICIMOD.

# GENDER BALANCED MOUNTAIN DEVELOPMENT

*The focus here is on ensuring that women will be equal partners in and beneficiaries of the development processes taking place in the HKH and on removing inequities. Although this is also an integral part of the main programme areas, it is presented separately because of the special emphasis needed in the early stages of development and integration.*

## **Effective partnerships in national strategy formulation : women's entrepreneurship development in Bhutan**

Experience gained from the implementation of a small but intensive, one-year long project funded by Australian Agency for International Development (Aus-Aid), Delhi is worth sharing. The success of the project demonstrated how active involvement of strategic partners can pay off, leading to effective and significant results in policy formulation at the national level. From the onset, ICIMOD decided to involve and work with the apex national body for enterprise development viz the Entrepreneurship Promotion Centre (EPC) of the Ministry of Trade and Industry, Royal Government of Bhutan to implement the activity. Close collaboration, through the EPC was actively sought with all the other relevant promotional and support agencies including the private sector. The cluster of relevant organisations were as follow.

- The Bhutan Finance Development Corporation(BDFC) - a development bank with a significant rural credit support port-folio
- National Women's Association of Bhutan (NWAB) - the sole national NGO for the development of women
- Bhutan Chamber of Commerce and Industry (BCCI) - to represent the private sector
- Agriculture Marketing Unit of the Ministry of Agriculture (AMU-MoA) - the major marketing promotion and support agency in Agri-business sector

Above all, about 35 women entrepreneurs (the ultimate target group) provided the inputs to the deliberations at a national workshop.

As a result of a proactive approach in involving all the relevant bodies and stakeholders as partners, the main output of the activity - a strategy document 'Enterprise Development in Bhutan with a special Focus on Women Entrepreneurs' jointly prepared by EPC and ICIMOD, incorporating the recommendations for





Hay making, Bhutan



Making butter, Bhutan



Delivering milk, Bumthang, Bhutan

sectoral priorities, regional specialisation, policies and procedures, infrastructure and services, technologies, entrepreneurship training, credit support and institutional strengthening, evoked a high degree of 'ownership' on the part of Bhutanese authorities and agencies. There is a strong possibility that its recommendations will be incorporated in the official enterprise development policies and strategies as suggested by the Hon'ble Minister for Trade and Industry, His Excellency Lyonpo Khandu Wangchuk in his Foreword to the strategy document. The Minister also urged donors to take note of the areas of support recommended by the document in order to target their assistance to bring about positive change.



Gendered elements of organisation and culture

# SUSTAINABLE DEVELOPMENT OF MOUNTAIN COMMONS

*This programme focuses on the sustainable management of more than 60% of the HKH which consists of rangelands and forests, of the water resources that are so essential for maintaining and/or improving farming systems, livelihoods as a whole, and of the biodiversity of this unique ecosystem.*

## Participatory action research programme on equity and poverty in the management of common property resources 🌱

In view of the absence of an organised body of knowledge on equity and poverty in the management of mountain commons ICIMOD launched a two-year programme entitled 'Participatory Action Research Programme in Equity and Poverty in the Management of Common Property Resources in the HKH'. The programme was launched in mid-2001 and is yet another milestone in ICIMOD's history of taking up challenging issues that affect the lives of mountain people.



Yunnan women resting after a hard day's work, P R China

The need to address issues related to equity and poverty has emerged out of ICIMOD's past work on common property resources. These include the ongoing programme on Participatory Natural Resources Management, addressing issues of forest resources and governance; Analysis and Promotion of Sustainable Water Harvesting Technologies and Management Systems in the HKH; and the Regional Rangeland Programme for the HKH. The sustained work carried out under ICIMOD





Sacred Forest, Yunnan, P.R. China



Forest User Group, Joint Forest Management, Tripura, India

programmes to address the three major commons of forest, water and rangeland resources highlights the urgency for undertaking sustained and organised work to gain a better understanding of equity and poverty. At present there is no known cross-country empirical effort to research, analyse and monitor the impact of these development outcomes in the HKH from an equity perspective. This is especially important as poorer marginalised sub groups among resource appropriators depend disproportionately on the resources for their livelihoods.

The overall goal of the programme is to gain a better understanding of equity and poverty linkages and to advocate and mainstream appropriate strategies in policy and practice that ensure equitable access and distribution of benefits from common property resources of the HKH. The programme aims to evolve a conceptual framework of interlinkages of equity and poverty with common property resource management, undertake analysis of policies that aim to address equity-related issues in the forestry, local water use and rangeland sectors and identify policy and practice-level interventions that aim to mainstream equity and poverty concerns.

The programme is being implemented in six HKH countries of Bangladesh, Bhutan, China, India, Nepal and Pakistan. In these countries, management regimes for common property resources differ in policy and practice. Some examples include customary collective management of resources in the state of Meghalaya in India, private tenure of grasslands in China and institutional innovations like community forestry and joint forest management in Nepal and India respectively.

**The expected outcomes of the programme are as follow**

- Contribute to gaining a better understanding of equity and poverty linkages in relation to common property resources in the HKH
- Generate empirical case studies on development initiatives in the HKH that have attempted to mainstream equity in different common property resources
- Identify best practices and findings that can be used to influence policies and practices in the sustainable management of common property resources
- Highlight the urgency and need to address equity issues in the HKH as a precursor to sustainable management of resources
- Document and disseminate specific examples of successful advocacy in favour of marginalised communities in the Hindu Kush-Himalayas
- Publish and disseminate case studies, manuals, policy briefs on equity issues to overcome major lacunae in literature and practice
- Establish a network of committed individuals and professionals and explore possibilities of continuing linkages



## Regional rangeland programme

The Regional Rangeland Programme (RRP), funded by the Federal Government of Austria, began in 1999 and will run through June 2002. It aims to reduce poverty among rangeland dependent mountain people and to improve the productivity of the rangeland ecosystems of the HKH-Tibetan Plateau region. RRP's guiding principals are to diversify and improve pastoral livelihoods; to maintain or improve rangeland quality; to improve participation, principally at the local level; and to promote social and gender equity.

### Conceptual framework and strategy

The RRP takes an interdisciplinary approach, focusing on the linkages between pastoralists, the environment, the market, and government policies and development plans. Participatory action research is used to assess, plan, and implement strategies among actors in the process of development, in an environment in which issues are complex and opinions are diverse about how best to proceed. This approach has encouraged participants to reflect on their assumptions and outcomes to identify possible best practices to implement at the local level.

ICIMOD has formed partnerships with institutions concerned with rangeland conservation and development in Pakistan, India, China, Nepal and Bhutan. Interdisciplinary diagnostic case studies to identify the socioeconomic and environmental conditions that affect pastoral communities are being carried out. Subsequent phases of the programme involve innovation testing and policy analysis. The case studies are complemented by remote sensing analysis to correlate trends in climate, vegetation and livestock populations in the HKH region.

Since its inception, the project has moved from focusing on technology transfer towards a commitment to a process of continuous learning and collaborative decision-making among all stakeholders, from local herders to policy-makers.

This approach requires local commitment to change, but the capacity of local people to participate in a process of change needs to be developed over time. The needs of the local



Mongol camp, Qinghai, P R China



Rangeland



Nomad camp, Sichuan, China

people must be identified and their access secured to resources and information. Herders are likely to reject innovations that put their livelihoods at risk due to their uncertain socioeconomic and climatic environments. Acceptable innovations will need to be introduced in ways that empower stakeholders and encourage collaborative decision-making.

### **Impacts of the programme**

The programme has had wide-ranging impacts. Partner institutions have an increased awareness of the need for an inter-disciplinary and participatory approach to addressing rangeland issues. Action plans to incorporate participatory approaches in their own projects, as well as ICIMOD sponsored ones, have been prepared by partner institutions. Many collaborating institutions have shared the costs of research and training events, and have organised many of these activities.

Forums have been organised to provide feedback to decision-makers about the outcomes of training events and diagnostic studies. For example, the Sichuan Provincial Animal Husbandry Bureau, China, has shown strong interest in supporting the action plan prepared by ICIMOD's Sichuan partner group. The Balochistan government (West Pakistan) has pledged to increase focus on livestock and rangeland issues and to help support participatory research with local nomadic communities. The Ladakh (North India) coordinating partner has used the participatory tools it learned to conduct planning meetings in the nomadic areas of the Ladakh Changtang. These plans were received favourably by the Ladakh Hill Council.

The seed has been planted for further organisational change to facilitate participatory rangeland management in institutions such as the Sichuan Grassland Institute. This should lead to improved performance, more networking, and ultimately policy change in Sichuan.

Local initiatives have included one in northwest Yunnan, China, to test and develop native forage species (Spring 2001). The State Key Laboratory of Arid Agro-ecology, China, has used the new approaches to improve implementation of its development project in Maqu County, Gansu, by basing rangeland management plans on the indigenous knowledge of the herding community. They are also using indigenous indicators to challenge the scientific assumptions for determining the carrying capacity of pastures.



## People and resource dynamics project

The Middle Mountains of the HKH region are the most populated mountain area in the world and the population is still growing rapidly. Increasing population demands mean increasing amounts of natural resources for production of adequate food and water supplies. This in an area where water and land resources are already limited and pressure has led to widespread degradation.

### **PARDYP Findings**

Research work in the Jhikhu Khola watershed, 45 km east of Kathmandu, has been carried out by PARDYP and its predecessor projects since 1989. In this watershed, water is the main concern, not only for scientists, but also for local residents. Inadequate water supplies for irrigation and for domestic purposes top the list of concerns. These shortages are mainly during the dry months of the year from October to May, and this affects staple crops, such as wheat and potato, and increasingly a range of cash crops.

The People and Resource Dynamics of Mountain Watersheds in the HKH Project (PARDYP) is investigating these issues and factors leading to resource degradation on a watershed scale in five watersheds across the region (one in China, one in India, one in Pakistan and two in Nepal).

Local residents are concerned about the quality of their drinking water sources. This was the finding of a watershed-wide survey of public water sources, which revealed heavy microbiological contamination. Chemical pollution is limited but elevated nitrate levels and often high phosphate levels in wells and springs close to the intensively used valley bottom are likely to get worse. The effect of the pollution is evident from a survey by a health organisation of the watershed. About 25% of the patients visiting a health post are suffering from water-related diseases.



Rain water harvesting

Trials to increase water availability through roof water harvesting and surface runoff water harvesting show promise. Demonstrations of alternative methods of irrigation, such as drip irrigation, can reduce the water requirements for a bitter melon crop by half compared to bucket irrigation. Increased efforts to protect springs and catchments will hopefully lead to improvements in water quality in the long term. In the short term inexpensive treatment methods such as the use of locally fabricated water filters set in plastic buckets can significantly reduce coliform levels.



Low cost drip irrigation trial for cash crop production



Cauliflower production during the dry period in a dryland area



Water quality awareness training to local science teachers and women health volunteers

Degradation of land resources and lowered soil fertility are widespread in the watershed. Five point five per cent of the watershed is considered to be heavily degraded with little or no vegetation cover. These areas produce large amounts of sediment as the erosion plot experiments have shown. Degraded areas produced on average 21 t/ha per year over a three-year period between 1998 to 2000. Grassland produced only a negligible amount of sediment, less than 1 t/ha per year over the same period. High rates of soil erosion are observed at the start of the monsoon but, as crop cover is established, erosion decreases, however, on degraded lands with very poor ground cover, erosion rates are constant throughout the monsoon season.

Soil fertility is declining on the intensively cultivated irrigated terraces. In the early 1990s phosphorous deficiencies were common, and this has been corrected by large doses of phosphate fertiliser. Potassium levels have now fallen. No doubt farmers will overcome this new nutrient deficiency but micro-nutrients are likely to be in deficit soon. Farmers used to apply only urea (nitrogen based fertiliser) up to the mid 1990s. Since about 1995, heavy doses of DAP (phosphorous and nitrogen based fertiliser) were applied leading to water quality concerns and eutrophication. The use of potash (potassium based fertiliser) is limited in the area. The importance of organic matter management is increasingly recognised by farmers in the area to the extent that they now buy farmyard manure from as far away as Kathmandu and are also bringing straw from outside the watershed to increase soil organic matter levels.

While these results are from just one watershed, very similar patterns and issues are emerging from PARDYP work in China, India, and Pakistan.



## Regional cooperation in flood forecasting and information exchange

Countries in the HKH face flood disasters regularly. In particular, the Ganges, Brahma-putra, Meghna, and Indus flood plains are affected by floods every year. This region contains one of the greatest concentrations of people in the world, with a high rate of poverty; and population growth has increased the vulnerability to flood disasters. Flooding is a part of the growing spiral of poverty. Economically disadvantaged people move to the flood-prone lowlands as they lack other options; at the same time they lack the resources to respond to and recover from floods. Flooding poses severe constraints on socioeconomic development and investment in agriculture, infrastructure and industrial production; thus management of floods is vital. The impact of floods must be lessened both to reduce poverty and to save lives.

Building dams and other river control measures plays a role in flood mitigation, but one of the most cost-effective means of reducing the impact of floods is the non-structural approach of providing

### Flood Forecasting: Headline News

*Press Report The Kathmandu Post (May 16, 2001)*

With a vision that timely forecasting of floods can save lives and property, experts from the Hindu-Kush Himalayan region and various international organisations have converged here for a consultative meeting on developing a framework for flood forecasting in the region.

Minister for Science and Technology Surendra Prasad Chaudhary on Wednesday opened the four-day meeting attended by experts from Bangladesh, Bhutan, China, India, Nepal and Pakistan. The meeting is jointly organised by the International Centre for Integrated Mountain Development (ICIMOD), and the World Meteorological Organisation (WMO), and supported by HMG's Department of Hydrology and Meteorology (DHM).

"The 1993 flood disaster in Nepal claimed more than 1,300 lives and caused enormous damage to property and infrastructure," Chaudhary said. "It has taught us a painful lesson on why timely flood warning systems should also be in place on some of the major rivers in order to save lives and property and avoid disasters." Dr Adarsha Pokharel, Director General of the DHM, spoke of the urgent need to carry out extensive research for enhanced data acquisition and management, analysis, and plausible interpretations of hydro-meteorological data on the basis of which flood forecasting is done. ICIMOD Director General, Dr J Gabriel Campbell, New Delhi-based UNESCO Director, MS Alam, and other experts also emphasised the need for an effective flood forecasting mechanism in the region.

Flash floods and landslides routinely leave trails of destruction in the region every year. In Nepal, floods and landslides are considered as the second biggest killer after epidemics, with the average annual toll standing at 350. Between 1983 and 2000, at least 2,300 livestock and more than 6,700 houses and 4,760 hectares of arable land have been damaged by landslides and avalanches, according to data made available by the Home Ministry.





Flood 2000, Bangladesh, Source: Sustainable Development Networking Project (SDNP), E-17 Agargaon, Sher-e-Bangla Nagar, Dhaka-1207, Bangladesh, <http://www.sdnbd.org>

people with sufficient advance warning. To forecast floods with any degree of accuracy, timely and reliable hydrometeorological information is needed from the whole of the river basin. Since many of the rivers in the HKH region flow through more than one country, information must be exchanged across national borders. As yet, however, there is no regional framework for multilateral exchange, although there are successful examples of agreements for bilateral exchange of data.

Particular concern about this was voiced during the 2nd Steering Committee Meeting of the hydrological research network HKH-(FRIEND) Flow Regimes from International Experimental Network Data, part of UNESCO's International Hydrological Programme held in April 2000 in Kathmandu. In response, ICIMOD has now started on a long-term project with the final aim of establishing an operational flood information system for the HKH region. As a first step, ICIMOD and the World Meteorological Organization (WMO), supported by the US Department of State Regional Environment Office for South Asia (REO South Asia), US Office for Foreign Disaster Assistance, and DANIDA, organised a high-level consultative meeting on 'Developing a Framework for Flood Forecasting and Information Exchange in the HKH' in Kathmandu in May 2001. Participants from Bangladesh, Bhutan, China, India, Nepal and Pakistan, agreed on an initial action plan for regional co-operation for flood information exchange.

The second phase to be implemented in 2002 will continue the dialogue on regional cooperation and develop a project document for the operationalisation of a flood information system based on WMO's World Hydrological Cycle Observing System (WHYCOS) system, the HKH - Hydrological Cycle Observing Systems (HKH-HYCOS). Several activities are planned amongst which formation of a Consultative Panel with representation from each of the participating countries is one of them. The panel will meet in Kathmandu in May 2002 to finalise the concept. ICIMOD, in collaboration with the WMO, and with input from the member countries is developing a website that will function as the means of sharing and disseminating flood information. The website, registered as [www.southasianfloods.org](http://www.southasianfloods.org), is intended as a regional communication platform for the exchange of data and information. It will be launched for testing in 2002.

## Sustainable water harvesting technologies and management systems

With support from the Ford Foundation, ICIMOD has been supporting research and training on water harvesting in the HKH region since 1997, first under the regional project 'Analysis and Promotion of Sustainable Water Harvesting Technologies and Management Systems' (to March 1999), and then under the integrated project on 'Policies, Governments, Participation and Practices for the Sustainable Management of the Mountain Commons of the HKH' (May 1999 to April 2002).

The main objectives of the project are to:

- create greater awareness of the technical, organisational and managerial aspects of local water harvesting systems (LWHS) in micro-watersheds of selected mountain areas. This includes publishing information on local participatory water harvesting;
- increase national support and awareness for local participatory water harvesting programmes. This includes influencing policy-makers to promote water harvesting and sustainable water management;
- encourage the installation of LWHSs by raising awareness of the benefits amongst potential users. The project aims to establish demonstration sites amongst local user groups that can be used in training activities.



Water  
Harvesting

- establish, promote and strengthen the capacities of water users' associations to enable local communities to harvest water; and
- increase the number of people trained in LWHS by establishing research, demonstration and training centres. The project intends to produce training manuals.





Landslides that killed 16 people and damaged 19 houses in Bahakot VDC of Syangja District



Debris flow deposited in Syangja District



Bridge damaged by the Pampa Khola in Aug 2001 in Kathar VDC of Chitwan District

## Risk, vulnerability assessment and hazard mapping for community disaster management

Nepal is a country highly prone to water induced disasters, such as floods, landslides, debris flows and soil erosion, that cause considerable loss of lives and property every year, impacting 70% of Nepal's 75 districts. During the period from 1983 to 2000, about 20,000 people were killed and loss of property was reported to the tune of 13,500 million rupees. Nearly 29% of annual deaths and 43% of the economic loss are caused by floods and landslides, with a great impact on sustainable development.



Distribution of Landslides in Bahakot VDC of Syangja District, field survey, 2001



Flood levels in different years, in Gulariya Municipality of Bardia District, field survey, 2001



VDC-level group discussion in Raiti VDC of Tanahu district

### Risk assessment and hazard Mapping

Risk assessment and hazard mapping are the basis of effective disaster mitigation and preparedness planning of the communities in disaster prone areas. Hazard mapping activities were carried out in the 8 pilot Village district communities (VDCs) of the above four districts. Remote Sensing and GIS technologies were used for risk assessment and mapping activities to help to identify gaps in the district and community capabilities and the what where how and when of the external assistance required. Local farmers and the district staff of PDMP and VDC members assist our technical team in carrying out field data collection and map verification.



# CAPACITY BUILDING OF MOUNTAIN DEVELOPMENT ORGANISATIONS

*This programme concentrates on strengthening the capacities of partner institutions and organisations in the HKH to implement their mandates in aspects of sustainable development with focused training programmes and tailor-made institutional strengthening activities.*

## Launching the Nepal SoE report

On 26 March 2001, 'Nepal: State of the Environment 2001' was launched by Dr. Klaus Töpfer, United Nations Under Secretary General and the Executive Director of United Nations Environment Programme (UNEP) – before 200 dignitaries, representing government, non-government and international agencies and universities – at Soaltee Holiday Inn Crowne Plaza, Kathmandu, Nepal.

The State of the Environment (SoE) report for Nepal, prepared through the project for Strengthening Environmental Assessment and Monitoring Capabilities in South Asia and the Greater Mekong Subregion (SEAMCAP) – was produced jointly by the Ministry of Population and Environment (MoPE), the UNEP/Environmental Assessment Programme for Asia and the Pacific, South Asia Cooperative Environment Programme (SACEP), and ICIMOD. This report, prepared in coordination with government, non-government and private sectors working in different environmental fields, is one of nine national reports for the

SEAMCAP regional countries: Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka in South Asia and Laos and Vietnam in the Greater Mekong Subregion. The report will contribute to the 'Preparation of the Global State of the Environment Report 2002', which UNEP is to produce.

Dr. Töpfer was very impressed by the work carried out by the SEAMCAP and Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia (MALE) project and announced that UNEP will be opening an office in Kathmandu to coordinate air pollution research. The background to this occasion follows.



### NOBEL LAUREATE PAUL CRUTZEN

An interaction on 'Atmospheric Pollution and Its Effects' was held on 13rd March 2001 at Hotel Yak and Yeti. The distinguished Nobel Laureate, Paul Crutzen, gave a talk on 'The Impact of Biomass Burning in the Tropics and Subtropics on the Chemistry of the Atmosphere, Regionally and Globally.' This was followed by a presentation on 'Global Atmospheric Pollution and Effects, with particular focus on South Asia' by Professor V.

Dr. P. Crutzen, Nobel Laureate Ramanathan. The function was attended by participants from many government, non-government, donor, and other organisations. Following the lectures there was a lively discussion on the 'Asian Brown cloud' and its impacts on other parts of the globe.

In May 1999 an agreement was signed with the Nepalese MoPE and ICIMOD to implement the Nepal component to this project: 'Strengthening Environment Assessment and Monitoring Capabilities in Nepal – State of Environment Report'. The project was assisted by the UNEP, the SACEP, and the Norwegian Agency for Cooperation and Development (NORAD). The project's aim was to produce data sets on important environmental components, and to prepare SoE based on this information. The intention was also to increase the capacity of the Nepalese government to make accurate environmental assessments.

Around 70 agencies and 150 individuals were involved in the process with ICIMOD designated as Nepal's national collaborating centre. First of all training programmes and orientations were held on collecting information and database design. The data were then collected, processed and entered into the SoE database format. MoPE played a crucial role in soliciting data from government agencies. Data and information were derived from government annual reports, statistical reports, published papers, unpublished official records and from informal discussions with experts and heads of various organisations. Several meetings were held with government and other environmental experts to gather further data.

A fundamental problem in determining the state of the environment and natural resources of Nepal and the countries in the HKH region is that data are scanty and scattered. The lack of adequate and aggregate data has made it difficult to evaluate the status of the environment of individual countries. Poor data also make it difficult to build a sound legal foundation and to support wise decision-making for sustainable development and conservation of the environment.

Nepal's SoE report is based on the best available data. It was processed in a consistent and compatible manner, but there were many limitations and gaps. The preparation of the report helped to highlight the need for more consistent collection of data in Nepal.

Once the data were processed, 56 environment experts were asked to select the five most important issues from amongst 18 environmental parameters. The index value for an issue was scored according to the percentage of experts selecting that issue. Of the five issues, forest depletion was selected by 85% and air pollution by 60%.



UNEP's Executive Director Dr. K. Topfer launching the report 'Nepal State of Environment 2001'





Receiving the ESRI's presidential award, USA

## ICIMOD receives special ESRI Presidential award

ICIMOD received a prestigious Presidential Award on 9 July 2001, before 10,500 geographers and GIS professionals at the 2001 ESRI User Conference.

Jack Dangermond, President of ESRI, personally selected ICIMOD for this award for promoting GIS and developing the capacities of and networking with GIS users in the HKH region. The award reflects ICIMOD's substantial work, research, and dedication to GIS education in the last decade within the HKH region.

ICIMOD also had an excellent display of posters, publications, and training materials during the exhibition.

### Training and Workshop

#### Geomatic and Space Science Workshop

A Geomatic and Space Science Workshop was jointly organised by the Ministry of Science and Technology, National Remote Sensing Academy, India, and ICIMOD in Kathmandu on 12 April 2001. Around 100 participants from Nepal and India took part. An exhibition on GIS/RS related themes was also organised and there were 15 exhibitors. The Workshop was presided over by the former Honourable Minister for Science and Technology, Mr. Surendra Prasad Chaudhary. Mr. Jack Dangermond, Founder and President of ESRI, gave the keynote address and inaugurated the exhibition.

#### Training on Application of GIS and Remote Sensing to Integrated Mountain Development

A four-week training course on 'Application of GIS and Remote Sensing to Integrated Mountain Development' took place from September 17th to 12th October, 2001. Altogether 12 participants - 4 from Bhutan, 1 from China, and 7 from within ICIMOD-participated in the training programme. This programme was organised mainly at the request of the Ministry of Agriculture of Bhutan.

#### Training for Managers

Training on application of GIS for managers was organised from 5 - 7 December, 2001. Altogether 10 participants from different government organisations of Bangladesh participated in the training course.

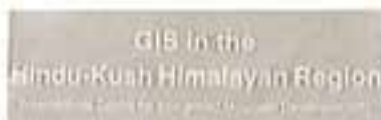


Exhibit during the ESRI users conference, USA





Street flood of Aug 2001 in Shanti Bazaar Kathar-4 of Chitwan District, Nepal



Landslide in Syangja District, Nepal

## About mountain natural disasters and their impact on life in mountain hazard prevention

Improving local and national capacities to reduce and prevent the loss of life and property in vulnerable mountain areas is a task that not only involves coping with disasters as they occur but also preventing damage to expensive infrastructure. Natural disasters are many in the Himalayan region. In 2001 attention was focused on a number of activities designed to alert people to as well as address natural hazards and the damage they cause.

### Regional Workshop on Water-induced Disasters in the HKH Region

ICIMOD and the Participatory Disaster Management Programme/UNDP organised a four-day regional workshop on Water-induced Disasters in the Hindu Kush-Himalayan Region from 11 to 14 December 2001 in Kathmandu with support from the Japanese Women in Development Fund/UNDP. The workshop aimed to (i) share information on disaster preparedness, management, (ii) facilitate understanding and implementation of disaster mitigation activities based on a community disaster management approach, including integration of the gender perspective into disaster mitigation.

The workshop participants, about 40 in all, included senior government officials engaged in disaster management; academic experts from Bangladesh, Bhutan, China, India, Myanmar, Nepal and Pakistan; resource persons from Japan, the Philippines and Thailand; and representatives of Asia Disaster Reduction Centre (ADRC), Asia Disaster Preparation Centre (ADPC) and UNDP/Nepal. Twenty-four papers were presented at the workshop. They dealt with risk and vulnerability analysis and hazard mapping; flash flood forecasting; community awareness and disaster response preparedness; natural hazards; and poverty and development and gender aspects in disaster management.

On the basis of presentations and discussions in the plenary sessions and intensive discussions in three groups on Types of Regional Level Hazards, National and Community Approaches to Mitigate Disasters, Replication of New Techniques, Exchange of Information at National and Regional Level, and Regional/ International Cooperation, the workshop arrived at a number of conclusions and made detailed recommendations on various aspects of effective disaster management in the Hindu Kush-Himalayan region.

- We mapped hazards using remote sensing and GIS in 8 Village Development Committees (VDCs) and 4 districts of Nepal: Syangja, Tanahu, Bardiya and Chitwan.
- We carried out disaster vulnerability analysis and developed a vulnerability index.
- Training reference materials on landslide and debris flow hazard mitigation were prepared. These were used for national and regional training to support training activities organised by the Participatory Disaster Management Programme/UNDP.
- A Regional Workshop on Water-induced Disasters in the Hindu Kush-Himalayan Region was held in December 2001 in Kathmandu, Nepal (see inset).

## Building together: The second advance

Under new leadership, ICIMOD initiated an organisational development (OD) process to steer the Centre towards the new direction it has envisioned. To shape ICIMOD in order to meet the challenges of the 21st Century, the management of the Centre has, over the last 12 months, launched different learning processes. Advance 1 began the OD process. Advance 2 was organised to consolidate the achievements and to make plans for continuing the next phase of the process.

Advance 2 was organised by the management of ICIMOD with the main objective of reviewing progress made since Advance 1; formulating a vision for the future of the Centre, and developing strategies for 2003 - 2007.

### *Specific Objectives of Advance 2*

- Develop ICIMOD's future vision
- Develop strategies for working with partners (memorandum of understanding, criteria for selecting partners, data sharing, co-financing, capacity building objectives)
- Finalise an action plan for the proposed OD process
- Review ICIMOD's personnel policy
- Prepare for the forthcoming QQR

Several issues were raised and discussed over the five days of the meeting. A summary of key issues raised is presented below.

- Formulation of a vision and the development of long-term strategies to guide the management of the Centre over the next five years
- Significant progress made since Advance 1, in terms of achievements of objectives and goals of projects and other activities initiated during Advance 1
- Dealing effectively with personnel issues: employment and separation, training and development, terms and conditions of service, ethical issues at the work place, conflict of interest of employees and job satisfaction
- Developing a new organisational culture: openness, multinational, multiracial, religious tolerance and trust and respect of all for all



Participants  
of 2 Advance





Envisioning a brighter future for the HKH - ICIMOD staff at the Advance 2, Dhulikhel, Nepal

- Dealing effectively with the issue of gender: employment of women to management positions, training of all staff on issues of gender and gender sensitivity, establishing a gender sub-unit within the Institutional Strengthening Unit (ISU)
- Finding effective ways of working and strengthening ICIMOD's partners: developing partnership strategies, selection of partners and determining type and mode of partnerships
- Developing project proposals: deciding on the rationale for writing the proposal, purpose and objective and contents of the proposal, proper procedure for producing a convincing final report for submission to donors
- Preparing for the quinquennial review (QQR): report on self-assessment, final date, logistics and organisation

*Key Achievements of Advance 2.* The meetings achieved the stated objectives. Some of the key specific achievements are presented below:

- Approval of a new draft vision for ICIMOD
- Review of achievements made in the past 12 months and defined work to be completed
- Developed new concepts for working with partners – more work to be done on developing strategies during the OD process
- Clarified some important policy issues – including personnel policy issues such as terms and condition of employment: maternity leave, paternity leave, ethical issues conflicts of interest, and training and development
- Important decisions taken on gender issues – including employment of women at professional and managerial levels and developing gender sensitive HR policies
- OD Action plan was presented and accepted
- QQR self-assessment reports were presented and discussed - some modifications were suggested in light of new materials produced that were not included in the report

The Advance enabled staff members at all levels to participate in important processes that aim to prepare the Centre to respond to the changing environments of the HKH. The Advance also brought all staff members together in a way that has not been experienced for a long time. Such an initiative will encourage staff to be more relaxed, trusting and develop confidence as well as to be motivated to perform their duties effectively. The key outcome of Advance 2 in terms of developing positive interpersonal relationships was the positive feedback given at the end of the last day. All participants acknowledged that the meeting has enabled them to deal with important issues such as working to develop effective interpersonal relationships within ICIMOD and with partners. It has helped management and staff to break communication barriers and has enabled staff to improve the way they communicate within the Centre. The meeting also enabled them to make decisions on major, challenging policy and strategic issues such as partnerships, personnel policy and the OD process.



## The third quinquennial review

The Centre has reason to be grateful to its reviewers for undertaking their task in difficult circumstances but with a commitment and thoroughness of which both they and the Centre can be proud.

The members of the review team were Dr.Mohan Man Sainju (Team Leader), Dr.Uwe Kievelitz (Report Coordinator), Professor Li Wenhua (Member), Mr. Ivar Jorgensen (Member) and Ms. Bharti Gupta Ramola (Member). Coming from different nations and different disciplines, the team concluded a comprehensive evaluation over the course of a month which included field visits in the HKH region.

In brief, the team found that ICIMOD had achieved significant impact in a number of areas. Most importantly it had *"infused a mountain perspective into the work of many of its more than 200 partner organisations in the region and by capacity building of 6,000 participants in 280 training workshops and programmes"*. The team mentioned specific highlights of the different areas of work at ICIMOD as commendable achievements, at the same time pointing out the structural weaknesses that remain. The Centre was urged to pay direct attention to programme monitoring and evaluation to ensure an impact in its two key areas, poverty alleviation in mountain areas and conservation of natural resources. Increased integration of programmes was strongly recommended.

The review team acknowledged the role of ICIMOD in preparing and disseminating mountain-specific knowledge in a policy relevant manner, its advisory capacity, and promoting the use of knowledge gathered in its member countries.

Other recommendations include establishment of a Trust Fund, strategic focus of thematic and regional priorities, a sound programme monitoring and evaluation (PME) system, strategic networking and partnerships, and an 'innovative, electronically-based, knowledge-sharing network that can push the region into the 21st century.' Finally, the QQR recommended aligning internal structures to priorities through an organisational development process.

To quote Charles Dickens, "It was the best of times and it was the worst of times." In times to come, the Centre will be able to look back on receiving a fair and insightful evaluation of its work and guidance for the future during the difficult times in its host nation.

Many thanks to the review team who lived through it with us and worked with sincere and industrious commitment. This Review will be presented to the Board of Governors and ICIMOD Support Group for their consideration at the forthcoming meeting in Thimphu, Bhutan, in the first week of December.

# Mountain Environment Management

## State of the environment of Nepal

### Solid waste

Kathmandu Municipality Solid Waste Generation by Ward



#### STATE

- Implementation of the Solid Waste Management Project with support of the German government (1980)
  - Establishment of Solid Waste Management and Resource Mobilisation Centre (SWMRMC)
- Currently SWMRMC is only a small unit under the Ministry of Local Development

#### PRESSURE

- Rapid and haphazard urban growth (6.5 % per annum, the highest in South Asia)
- Migration to the cities especially from the hill areas
- Composition of municipal waste has changed tremendously with the introduction of new materials such as plastics, paper, and glass.
- People in large cities dump their waste on the streets or in other public places and only a very small portion of the waste is recycled
- Use of chemical fertiliser in place of organic fertiliser derived from waste



Garbage dumped into the river polluting the water and detracting from its aesthetic value.

#### RESPONSES

- Solid Waste Management National Policy 1996
- Local Self-Governance Act, 1999 makes the municipalities totally responsible for solid waste management
- Cities such as Kathmandu and Biratnagar have begun involving the private sector in waste management

Think of the health of people living near such a haphazard garbage site!

#### RECOMMENDATIONS

- The government should take action for proper management of wastes and institutions at the local strengthened to support response rates
- Community and private action for solid waste management should be replicated on a larger scale
- The Solid Waste Management National Policy should be implemented and legislation to replace the Solid Waste Act (1987) enacted

### Water quality

Kathmandu Valley Water Quality Classification of Bagmati River System



#### STATE

- Total estimated water demand in 1998 (domestic, industry, commerce) 1240 mld Gross
- Main source of drinking water in the Terai
- Annual potential of extraction 5.8-9.6 billion m<sup>3</sup>; current withdrawal 0.52 billion m<sup>3</sup>/year
- High concentrations of iron and manganese; widespread coliform contamination Kathmandu Valley
- Total sustainable withdrawal of groundwater 28.3 mld - current extraction 58.1 mld - dropping water table
- Headwaters of almost all major rivers have been tapped for drinking water
- Supply of (piped) drinking water at best 115 mld; estimated daily demand 145 mld



Use of polluted water from the Bagmati River in Kathmandu Valley for bathing

#### RESPONSES

- Legislation like the Water Resources Act (1992)
- Limited public efforts to treat waste water; some successful local initiatives

Disturbance in the river ecology due to sand quarrying in the Manohara River, Kathmandu Valley

#### PRESSURE

- Rapid growth of population
- Rapid urbanisation
- Increase in industries
- Development of agricultural infrastructure: irrigation
- Damage caused to water reservoirs, and irrigation canals by landslides, floods, and other disasters
- Poor maintenance of existing water resource infrastructure



#### RECOMMENDATIONS

- Managing waste disposal, maintain drinking water and sewer pipelines, control open defecation, and impose minimum urban housing standards
- Set up a lead agency to coordinate water-related organisations, control water quality
- Invest in provision of potable water to all
- Establish waste water treatment plants for all effluents in urban areas, and cease disposal of solid waste in rivers
- Adopt and enforce industrial effluent standards
- Minimise leakage of piped drinking water



# INFORMATION AND OUTREACH

*The collection of information and its distribution to as wide an audience as possible is continually being strengthened. While traditional publication methods continue to be used, innovative approaches and technologies for reaching out to the 140 million inhabitants or their representatives are also being explored.*

The introduction of functions additional to the Regional Collaborative Programme in 2001, as a means of gearing up to the International Year of Mountains 2002, and attempts to develop products that will reach a much wider audience and increase overall understanding of the mountain situation, advocacy in the broadest sense, have increased the workload and output of the Information, Communications and Outreach Division (ICOD). The division's regular work of maintaining the web and facilitating access to web-based information; running the library; hosting the interactive media centre; running a distribution unit responsible not only for distribution but bookfairs, exhibitions, and poster displays; processing and publishing ICIMOD's technical and general publications; and hosting the Asia Pacific Mountain Network produced a number of critical changes this year.

The library was finally put on line and the physical premises, as if in celebration, received a facelift. The impetus this gave staff led to them planning library development linkages as they moved into the new year.

Distribution staff broadened their outreach by becoming involved in the Sustainable Tourism network, and it was through their auspices that our Web unit became involved in assisting the network with their web page. Distribution staff with the help of Publications designed and commenced marketing of T-shirts and cards for the International Year of Mountains unit. The web received an award of excellence for its educational material from the US American University.net

OneWorld is a community of over 1,000 organisations working for social justice. Its South Asian Office, based in New Delhi, India, and ICIMOD jointly organised a 4-day workshop on "ICTs and Development" from 16-20 July 2001 at ICIMOD. The main objective of the workshop was to familiarise NGOs on the potential of using information communications technology in their day-to-day work and how to use the Internet as an effective communications tool. Three members of staff, Saleem Sial, Sangeeta Pandey and Sudas Sharma, participated in the workshop. Sangeeta and Sudas were also responsible for organising it. Among the fifteen participants, four were from Pakistan, two from Bhutan, and the rest from Nepal.

## **The Asia Pacific Mountain Network (APMN)**

APMN spread its wings in 2001. Of the small grants given one in particular, 'Mountains Forever', a proposal from the Nepalese NGO Spiny Babbler, deserves focus. Mountains Forever is a collection of 60 stories by children and teenagers from the mountain areas of Asia. The stories are for other





Mayor of Lalitpur opening the Book Fair, ICIMOD's Stall and ICIMOD Library

young mountain dwellers, telling them how they feel about the mountains and how they enjoy being in them, their adventures and visions. A young Nepalese mountain artist, Param Meyangbo illustrated them with oil paintings that burst out of the pages with a riot of colour. With the assistance of HELVETAS, Nepal, was published with a view to introducing the mountains to children. Discussions will take place later next year( 2002) to animate the book and make a series of children's adventure films. Different plans for reaching out to young people will also accompany this endeavour.

The Asia Pacific Mountain Network (APMN), a Swiss-funded project managed by the ICIMOD. The main objective of APMN is to focus on information sharing and exchange on the issues recommended by the Sustainable Development of Mountain Areas (SUDEMAA) of Asia Conference, as follows.

- Poverty eradication and economic development,
- Sustainable management of natural resources,
- Gender-balanced decision-making in environment and development policies and programmes,
- Preservation of cultural heritage, and
- Reducing the vulnerability to mountain disasters.

The total MF-Asia Discussion List subscription was, as of December 2001, registering an impressive growth of 86% in just one year.

### **Membership**

As of January 2001, there were 614 (586 individuals+28 organisations) APMN members. As of December 2001, there were 893 (834 individuals+59 organisations) APMN members. The annual membership growth was 45%.

### **MF-Asia postings**

During the year 2001 a total of 709 messages were posted to the MF-Asia list, registering an average of 60 per month or 2 per day.

### **Training workshops in "Internet Technologies and Web Publishing"**

Mr. Deependra Tendukar, Networking Assistant for APMN/ICIMOD, organised the Kathmandu training workshop on 'Advanced Web Publishing', 8-19 January 2001, for three participants from Kyrgyzstan, Tajikistan and Uzbekistan. By the end of the training the three participants were able to use signature and filters in email, use forms and frames in web pages, create animated GIF images, use and create style sheets, understand the basics of JavaScript, use Java applets and create CD-ROM. The follow-up to the Kathmandu Workshop - On-site Training-cum-Assessment - was held in Kyrgyzstan, 25-30 April, 2001. Mr. Tendukar was not able to do the follow-up in Uzbekistan and Tajikistan owing to visa problems. Nonetheless, all the three trainees have trained their colleagues to create web pages and publish them on the www, to manage electronic information using email, and to do Internet searches, etc. The main objective of the training was to train trainers in order to build the capacity of their institutions to manage and disseminate information better. This training has been made possible by a grant from the Central Asia Department of Swiss Development Cooperation (SDC).

### **The APMN E-conferences**

The APMN organised a regional e-conference on the broad topic 'The Intervention of Technology in Mountain Areas: Strategies for Developing Fresh Approaches and Mainstreaming of Local Innovations in the Asia/Pacific Region' through the Mountain Forum (MF)-Asia Discussion List, February 4 through March 6, 2001. Dr. Sudhirender Sharma of the Energy Environment Group based in New Delhi, India, moderated the e-conference with the technical support of the The Mountain Institute/Global Information Server Node (TMI/GISN) and ICIMOD/APMN teams. The broad objective of the e-conference was to contribute to the ongoing debate on the impact of technology intervention in mountain areas, showcase innovative approaches that helped reduce or reverse negative impact, identify local innovations which can be mainstreamed, and identify areas of research.

APMN organised a second e-conference on the topic 'Renewable Energy Technologies for Mountain Areas', Nov 17-Dec 19, 2001, moderated by well-recognised energy specialists of Nepal. The discussions on 'Micro-hydro' were moderated by Mr. Girish Kharel, on 'Solar Energy' by Mr. Gyani Ratna Shakya, on 'Biogas' by Mr. Govinda Prasad Devkota, on 'Improved Cooking Stoves' by Mr. Rajan Thapa, and on 'Institutions and Policies' by Mr. Bikash Pandey. The e-conference web pages are maintained at <[www.mtnforum.org/apmn/RETs.htm](http://www.mtnforum.org/apmn/RETs.htm)>. Preparation of the Synthesis is currently underway.

### **The APMN team visits Switzerland**

The APMN team, comprising the Coordinator, and Node Manager, represented APMN at a MF Node Managers' Meeting in Rolle, Switzerland, Sept 26-28, 2001. Mr. Ujol Sherchan made a presentation of APMN's progress-to-date to the Board. Ms. Rana outlined a vision for APMN for International Year of Mountains (IYM) 2002 and beyond. The APMN team attended the World Mountain Symposium, where Mr. Sherchan presented a paper on 'The State of Mountain Children in Nepal'.



### **The CAMIN team visits APMN/ICIMOD**

The Director of CAMIN, Mr. Andrey Fesensko and his CAMIN colleague, Dr. Alexander Sorokin, visited ICIMOD, 27 Nov - 3 Dec, 2001, at the invitation of APMN to discuss the partnership for sustainable development in Central Asia and Xinjiang Uygur Autonomous Region (XIUR) (P.R. of China).

By 2001 the IYM had so firmly become planted in our minds as a United Nations year, that we forgot the instrumental role ICIMOD played in getting it on the map through APMN.

In 1997 a MF meeting was held in Kathmandu at ICIMOD. At that meeting, the Kyrgyz delegates fielded the idea of asking the UN to declare an IYM. From 25-27th May 1998, APMN/ICIMOD and the International University of Kyrgystan, and Kyrgyzstan National Academy of Sciences, held an international seminar in Bishkek on 'Mountains of Central Asia: Problems, Experiences and Perspectives.' Two resolutions related to IYM were proposed and accepted.

Resolution 4: to recognise duly the initiatives of scientists, government and the President of the Kyrgyz Republic in promoting the proclamation of an IYM.

Resolution 5: to actively participate in realising this proposal to have an IYM and to develop regional, subregional and national plans for it.

On November 10th of 1998, the UN declared 2002 as an IYM. In its preamble to the declaration the role of APMN/ICIMOD is clearly mentioned.

It is ICIMOD's function to serve as an information and knowledge hub. That the function gets lost in operation is rather a sign of its success. As 2001 progressed many more people bought in to IYM 2002. Some of their initiatives and achievements were merged with ours. Through the Sustainable Tourism Network, we were very well aware that 2002 would be the Year of Ecotourism too. It will be a very full year and all of our resources in information delivery will be needed. Fortunately, 2001 in particular has laid the groundwork for us to go ahead and bring the HKH to the attention of the world.

*(Information on publications is given on pp 44, 45, 46 and 47)*

## Bookshelf in 2001

### Technical publications

#### Proceedings and Workshops

**Contributions of Livestock to Mountain Livelihoods: Research and Development Issues** - Pradeep Tulachan, Mohamed Saleem, Juhani Maki-Hokkonen and Tej Partap  
**Waters of Life (Volume:II)** - Mahesh Banskota and S. R.Chalise  
**Widening Horizons (Hindi)** - Workshop Report, MNR

#### Manuals

**Gender and Organisational Change: Training Manual** - Verona Groverman and Jeannette Gurung, MFS  
**GIS for Beginners: Introductory GIS Concepts & Hands-on Exercise** - Basanta Shrestha, Birendra Bajracharya and Sushil Pradhan, MENRIS

#### Special Editions

**Bamboo in the High Forest of Eastern Bhutan: A Study of Species Vulnerability** - D. Messerschmidt, K. J. Tempel, J. Davidson and W. D. Incoli  
**Landslide and Hazard Mitigation in the Hindu Kush-Himalayas** - Li Tianchi, S. R. Chalise and B. N. Upreti, MNR  
**Proceedings of a National Stakeholders Workshop on Strategy Papers Prepared for Nepal on Information Technology for Development** - NPC, ICOD  
**Information Technology for Development: IT Policy & Strategy: Nepal (English)** - NPC, ICOD  
**Information & Communication Technology Policy & Strategy: Nepal (Nepali)** - NPC, ICOD  
**Market Towns in the Hindu Kush-Himalayas: Trends and Issues** - Pitamber Sharma, MEI  
**Inventory of Glaciers, Glacial Lakes and Glacial Lake Outburst Floods, Monitoring and Early Warning System in the Hindu Kush-Himalayan Region: Nepal** - Pradeep K. Mool, Samajwal R. Bajracharya and Sharad P. Joshi, MENRIS  
**Inventory of Glaciers, Glacial Lakes and Glacial Lake Outburst Floods, Monitoring and Early Warning System in the Hindu Kush-Himalayan Region: Bhutan** - Dorji Wangda, Pradeep K. Mool, Samajwal R. Bajracharya and Sharad P. Joshi, MENRIS  
**The Living Plateau: Changing Lives of Herders in Qinghai** - Nico Van Wageningen and Sa Wenjun, MNR  
**Mountains Forever** - Para Limbu, Spiny Babbler, APMN  
**HIMAWANTI: Women of the Hindu Kush-Himalayas** - Anupam Bhatia, MNR

#### Case Studies

**Feeding the Herds: Improving Fodder Resources in Bhutan** - W. Roder, K. Wangdi, P. Gyamtsho, and K. Dorji, MNR

#### Discussion Paper

**Status of Mountain Agriculture in the Hindu Kush-Himalayan Region: A Comparative Analysis** - Pradeep Man Tulachan

#### Others

**Nepal State of the Environment Report** - Bandana Kayastha, MENRIS





## Internal Documents

Summary of ICIMOD's Achievements  
ICIMOD Selected Project Profiles

**Technical Report on Hazard and Risk Mapping** Landslide hazard maps were prepared on the basis of bivariate statistical methods compared to those prepared by Mountain Risk Engineering methods and found to be more reliable. Flood hazard mapping using various parameters and identifying different levels of risk areas in selected VDCs was carried out. These maps can be used as guidelines for land use and hazard mitigation.

**Technical Report on Community Vulnerability Assessment** Three volumes discussing the community risk and vulnerabilities. Volume (i) Profile of Village Development Committees; Volume (ii) Hazard, Susceptibility, Exposure, Vulnerability and Mitigation; Volume (iii) A Comparative Vulnerability Analysis of the 8 Selected VDCs.

**An Overview of Hazard, Vulnerability and Disaster Management in Nepal** Summarises the current hazard and socioeconomic impacts of natural disasters, particularly landslides and debris flows and floods. The report also analyses the relationship between poverty and vulnerability at national, community and household levels.

## General Publications

Introducing the NEPBIOS method of surface water quality monitoring - PARDYP, MNR

Mountain Flash Floods: Newsletter No. 38

International Year of Mountains 2002 Newsletter 39

Mountain Risks and Hazards: Newsletter 40

APMN Bulletin/MF Bulletin

Mountain Forum Brochure

Bees in Development Brochure

Catalogue of Publications

Annual Report 2000

Folder with 9 fact sheets and one programme overview

Celebrating Mountain Women - Brochure

Declining Apple Production and Worried Himalayan Farmers: Promotion of Honeybees for Pollination IMD 2001/01

Interacting Processes of Environmental and Social Vulnerabilities in Mountain Areas - N. S. Jodha, MEI - IMD 2001/6

Glacial Lakes and Glacial Lake Outburst Floods: MDP 2001/2 - Pradeep Mool, MENRIS

Mountain Development Profile: Mountain Tourism Programme - Dr. Joddha

The HKH-Friend Project: MDP # 3 - S. R. Chalise, Mandira S. Shrestha, MNR

Folder with 11 fact sheets - MF, ICOD

Mountain Forum: Annual Report 2000 - MF, ICOD

International Year of Mountains 2002: Brochure

Livestock, Fodder, Pastures and People: An Integrated Study in the Karakoram Region of Pakistan, - Technical Bulletin

International Year of Mountains 2002: Year Planner - IYM

The Changing Face of Pastoralism in the Hindu Kush-Himalaya-Tibetan Plateau Highlands - Camille Richard, MNR Project Brochure

IFAD Newsletter (Pilot Issue) - Atsuko Toda

## Additional Contributions

The multidisciplinary staff of ICIMOD present many papers at ICIMOD-sponsored conference and workshops. These are documented in the reports of these workshops or in the other ICIMOD publications. In addition, ICIMOD staff contribute to other journals and are invited to present papers at conferences for which ICIMOD does not have the primary responsibility. The papers in this category, published/presented during 2001, are listed below

Ahmad, F., Partap, U., Joshi, S. R. and Gurung, M. B. **The Himalayan Kingdom of Nepal: An Island of Apis cerana beekeeping.** 2001. Published in *Beekeeping and Development* 61: 13.

Chettri, N.; Sharma, E.; Deb, D.C. **Bird community structure along a trekking corridor of Sikkim Himalaya: A conservation perspective.** 2001. Published in *Biological Conservation* 102 (1), pp 1-16.

Partap, U. and Partap, T. **Farmers' strategies to manage declining crop productivity declining crop productivity of apples due to pollination failures.** 2001. Published in the proceedings of 7th IBRA and Fifth AAA Conference held in Chiang Mai, Thailand held on March 19-25, 2000, pp 271-275.

Partap, U., Partap, T. and Yoghua, H. **Pollination failure in apple crop and farmers' management strategies in Hengduan, China.** 2001. Published in *Acta Horticulturae*, 561: pp 225-229.

Partap, U., Partap, T. and Yoghua, H. **Himalayan farmers feel the need to manage crop pollination: An example of hand pollination of apples in Maoxian county, China.** 2001. Published in the Proceedings of 7th IBRA and Fifth AAA Conference held in Chiang Mai, Thailand on March 19-25, 2000, pp 277-279.

Rijal, K. **New and Efficient Ways of Managing Fuelwood Supply from HKH Mountain Forest.** 2001. Paper presented at the International Workshop on Biomass Strategies for Europe and Developing Countries held on 19-21 November 2001. Organized by Swedish National Energy Administration, Stockholm Environment Institute and sponsored by SIDA, Eskilstuna, Sweden.

Rijal, K. **Role of Nepalese Energy in South Asia.** 2001. Paper presented at the Seminar on Energy Policy: National and Regional Implications organized by Nepal Foundation for Advanced Studies, Coalition for Action on South Asian Countries and Friedrich-Ebert-Stiftung, Kathmandu, Nepal.

Rijal, K. **Methodological Framework for Gender Relation Analysis in Household Energy Management.** 2001. Paper presented at Training of Trainers' on Improved Cooking Stoves, June-July 2001, organized by Centre for Rural Technology, held in Dhulikhel, Nepal.

Rijal, K. **Relevance of Arun- III Project in the National Development (in Nepali).** Published in a special Arun - III issue of *Environment Monthly*, Kathmandu, Nepal.

Rijal, K. **Status of Wind Energy Systems in Nepal.** 2001. Published in *Wind Energy Development in Nepal - Proceedings of a National Workshop*, 7-8 March 2001, HMG/N Ministry of Science and Technology, Intermediate Technology Development Group, Nepal and International Centre for Integrated Mountain Development, Kathmandu, Nepal.

Rijal, K. **Solar Energy in the Hindu Kush Himalaya.** 2001. Published in *Mountains of the World: Mountains, Energy and Transport*, prepared for the UN Commission on Sustainable Development (CSD) and its 2001 Spring Session, Mountain Agenda, Swiss Agency for Development and Cooperation (SDC), University of Berne, Switzerland. pp. 16-17.



Rijal, K. **Sustainable Fuelwood Use in Mountain Areas. 2001.** Published in Mountains of the World: Mountains, Energy and Transport, prepared for the UN Commission on Sustainable Development (CSD) and Its 2001 Spring Session, Mountain Agenda, Swiss Agency for Development and Cooperation (SDC), University of Berne, Switzerland. pp. 20-21.

Rotmans, A. **Methodologies Development for Assessing Mountain Agricultural Systems in the HKH Region and presentation of the MASIF platform. 2001.** Presented during the International Symposium on Mountain Agriculture for the HKH region, Kathmandu, Nepal on May 23, 2001.

Rotmans, A. **Methodologies for Assessing Mountain Agricultural Systems in the HKH Region. 2001.** Presented during a training course on Operational Tools, Feb. 19 2001, at IAC/ Wageningen University, the Netherlands.

Rotmans, A. **Methodologies for Assessing Mountain Agricultural Systems for Sustainable Planning and Development in the HKH region. 2001.** Presented at CIP, Lima, Peru, April 27, 2001.

Sharma, E. **Environmental Management in the Himalayan Region: Issues, Concern and Strategy. 2001.** A panelist presentation at the workshop on Himalayan Ecology: Main Issues and Concerns organised by Tata Energy Research Centre, New Delhi, November 29, 2001.

Sharma, E., Rai, S.C., Sharma, R. **Soil, Water and nutrient conservation in mountain farming systems: case study from the Sikkim Himalaya. 2001.** Published in the Journal of Environmental Management 61(2): pp123-135.

Sharma, E.; Jain, N.; Rai, S.C.; Lepcha, R. **Ecotourism in Sikkim : Contributions toward conservation of biodiversity resources. 2001.** Paper published in Marothia, D. (ed) Institutionalizing Common Pool Resources, Concept Publishing Company, New Delhi. pp. 531-548.

Sharma, H.K., Partap, U. and Sharma, J.P. **Madhumakhion mein gan chhoot ki smasya wa samadhan (Swarming of Bee Colonies and its control) in Hindi. 2001.** Presented at the Beekeeping Research Station of Dr. YS Parmar University of Horticulture and Forestry, Katrain, District Kulu, Himachal Pradesh, India.

Sharma, H.K., Partap, U. and Sharma, J.P. **Madhumakhion mein ghar chhoot ki smasya wa samadhan (Absconding of Bee Colonies and its control) in Hindi. 2001.** Presented at the Beekeeping Research Station of Dr. YS Parmar University of Horticulture and Forestry, Katrain, District Kulu, Himachal Pradesh, India.

Sherchan, U. **Mountain Children of Nepal: A Lost Generation? 2001.** Presented at the World Mountain Symposium, Interlaken, Switzerland, October 2001.

Sowerwine, D. and Rana, G. **Ropeways in the Hindu Kush-Himalayas: Helping to Solve the Problems. 2001.** Published in the Field Guide to Appropriate Technology, Brown University, USA, March 2001.

Tashi, N. **An Explorative Analysis on Productivity of Croplands in Tibet Autonomous Region, P.R. China. 2001.** <http://www.ciat.cgiar.org/inrm/workshop2001/docs/titles/9-1AAbstractNTashi.pdf>,

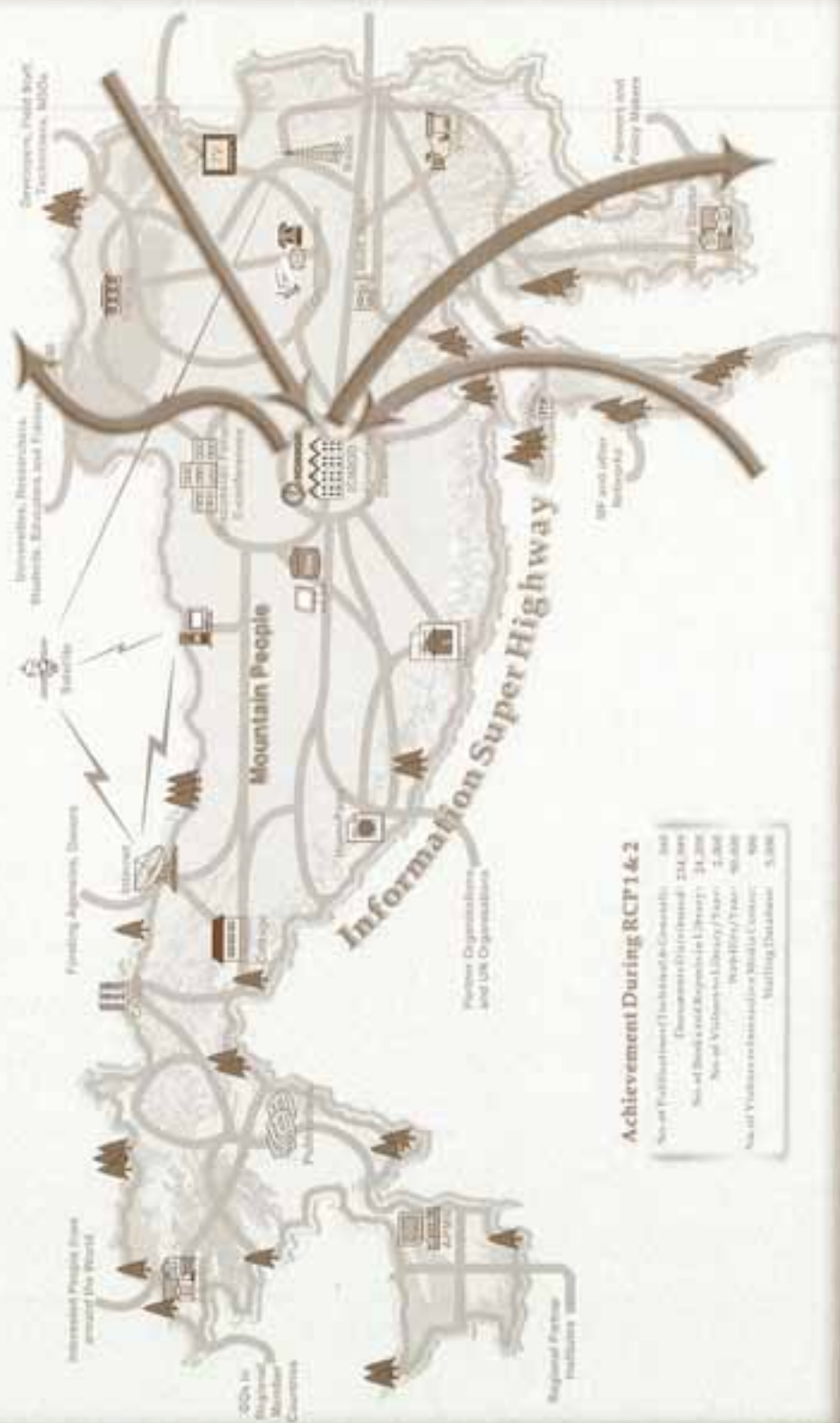
Tashi, N. **Delineating Mountain Farming Systems from Socio-economic Data: Testing Methodology in Tibet Autonomous Region. 2001.** <http://www.ciat.cgiar.org/inrm/workshop2001/docs/titles/8-1AAbstractNTashi.pdf>,

Tashi, N. **An explorative analysis on the cropland productivity of different agricultural systems in Tibet. 2001.** Presented during the International Symposium on Mountain Agriculture in the HKH region, May 24, 2001.

Tulachan, P. M. **Mountain Agriculture in the Hindu Kush-Himalayas: A Regional Comparative Analysis. 2001.** Published in Mountain Research and Development Vol 21 No 3, August 2001: pp260-267.

Tulachan, P. M. **State of Mountain Agriculture in the Hindu Kush-Himalayas: A Regional Comparative Analysis. 2001.** Published by ICIMOD, Kathmandu, Nepal,

# Mountain Development Information Network Strategy for Banking & Disseminating Knowledge



## Achievement During RCP1 & 2

No. of Publications/Technical Documents	345
Documents Distributed	224,000
No. of Books and Reports in Library	34,200
No. of Videos in Library/Year	7,200
Replicas/Year	40,000
No. of Videos and Replicas in World Circulation	500
Staffing Reduction	5,000



# CROSS-CUTTING ACTIVITIES

## Getting ready for the big year, International year of Mountains

In a sense ICIMOD has been getting ready for International Year of the Mountains (IYM) since the topic was first broached on campus at a MF Meeting 1996. Kyrghiz delegates fielded the idea which found enthusiastic support, particularly from the APMN group who went on to organise a meeting in Kyrghizstan which resolved to take the issue to the UN. In the UN articles concerning IYM, the Asia Pacific Mountain Network is commended for its support for the Kyrghiz idea. Since APMN is, so to speak, born of ICIMOD's efforts, it was only natural that an enthusiasm for IYM should precede the inception of 2002.



Mountains taking centre stage during 2002

Events in 2001 included a Curtain Raiser; Press Conference on 8 November 2001 in Kathmandu, Nepal. ICIMOD, together with MF, FAO and the National Coordination Committee for IYM in Nepal, held a press conference as for IYM 2002 in Nepal and the HKH. The event took place at Hotel de l'Annapurna during a week-long photo exhibition on the Swiss Alps organised by the Government of Switzerland.

On the occasion, the media was briefed about the various initiatives planned at the global, regional, national and local levels, particularly those being led by the Nepal National Committee for the IYM and ICIMOD. Representatives in Nepal of national, regional and international media organisations attended the event.

### **United Nations global launch of the IYM 2002, 11 December 2002, New York, USA**

Before a gathering of nearly 100 people, the official IYM launch ceremony was held at the UN headquarters in New York during the 56th session of the General Assembly. Launch Chair, Adolf Ogi, former President of the Swiss Confederation, officially opened the event. FAO's Director-General, Acting President of the General Assembly, the UN Under Secretary-General for Economic and Social Affairs, and the Prime Minister of Kyrghizstan were among the high profile speakers. Following the official opening ceremonies, TMI organised an informal launch, consisting of a week-long series of events, including a panel discussion with prominent mountain experts, including ICIMOD Director General J. Gabriel Campbell. A variety of cultural activities took place. More photo information can be found at: [www.iisd.ca/linkages/sd/mountains/index.html](http://www.iisd.ca/linkages/sd/mountains/index.html)

## Celebrating mountain women 🌿

A Secretariat was established at ICIMOD, 'Celebrating Mountain Women' (CMW), to launch a long-term programme for mountain women starting with the international conference. This conference is a chance to celebrate the drive, spirit and diversity of mountain women everywhere. The FAO and IFAD funded the Planning Meeting, which was held in May 2001 in Kathmandu. Financial support for the conference has also been committed by IFAD, the Japanese Government Overseas Development Agency (ODA), and the United Nations Development Fund for Women, South Asia (UNIFEM, ROSA). However, although preparations are advanced, further support will be needed if the conference is indeed to become a reality.

The conference will try to facilitate much-needed face-to-face interactions by bringing together indigenous women, donor agencies, policy-makers and planners, entrepreneurs, and researchers to share the problems and progress of mountain women. It will provide a new beginning through interaction, participation, and expression. It will give mountain women a forum through which to articulate their concerns and share experiences and ideas about the future of mountain livelihoods and cultures. Such a gathering will enable the mountain women's networks to not only grow and strengthen as agents of change, but also to make a significant contribution to policies and practices that empower mountain women and their communities.



Ensuring that mountain women's voices are heard





Women threshing buckwheat, Upper Mustang, Nepal



Post-harvest: women separating wheat from husk using natural wind, Upper Mustang, Nepal



Women separating wheat from husk using wind power, Upper Mustang, Nepal

The first-of-its-kind global celebration of mountain women will focus on empowerment through innovation and entrepreneurship. It is unique in that it will facilitate face-to-face interaction of various actors in the development sectors that do not normally come together. The activities planned will put mountain women centre stage, mainstream their reality into the IYM discussions and Rio+10, and enable a major paradigm shift.

During the planning meeting of CMW, which was held in Kathmandu from May 8-10, 2001, the organising committee elected women representing various parts of the world to form the Steering Committee (SC). These members will have an instrumental role in planning and organising upcoming events. They will advise, guide, support, assist, and inform the Secretariat staff throughout the year. In addition, the SC members will organise regional meetings in their respective regions.

During the planning meeting the committee also proposed five theme areas around which activities will be planned. These theme areas include Natural Resources and Environment; Health and Well Being; Entrepreneurship; Legal, Political and Human Rights; and Culture and Indigenous Knowledge. These themes will be highlighted in the framework of research, policy, and practices through various presentations, songs, stories, theatre, videos and so on.

A strategic media plan is being developed to increase and improve public awareness through coverage of mountain women's issues and of the events being planned; it will include electronic networking and e-conferences. A series of specific preparatory activities will ensure appropriate dissemination and coverage of the event viz. identifying mountain women's groups and networks, documenting mountain women's initiatives, organising regional meetings between mountain women and policy-makers, building interactive databases, and locating mountain women's cultural resources such as songs, crafts, films, videos and stories. Throughout the conference, a bazaar of mountain women's products will be held. Stalls will be available for those wishing to participate.

It is envisioned that a gathering on an international scale like this one will help change the prevailing perceptions of mountain women. It will help create new coalitions, networks, and partnerships of women to influence policies and encourage mountain women and others to celebrate their champions, and give voice to their issues related to the future of mountain livelihoods and cultures. Finally, the role of women as agents of change and peacemakers in conflict in mountain areas will gain significance.

## Ongoing projects - 2001

Within the overall framework of the Regional Collaborative Programme (RCP- II), ICIMOD managed several special projects financially supported by bilateral donors and donors with substantial counterpart contributions in cash and in kind so as to achieve its core programme objectives. The special projects (excluding those related to organisation of meetings, seminars and workshops) operational as of 31 December 2001 are listed below by title, duration, donor and participating countries.

- **GMP: Investigating Issues and Options for Improving Livelihoods of Marginal Mountain Farmers**  
(July 1999 - June 2002) Australian Centre for International Agricultural Research/Bhutan, India, Nepal, and Pakistan
- **Indigenous Honeybees in the Himalayas: A Community-based Approach to Conserving Biodiversity and Increasing Farm Productivity**  
(January 1999 - December 2002) Austroprojekt (Austria)/ Bhutan, China, India, Nepal, and Pakistan
- **Methodologies for Assessing Sustainable Agricultural Systems in the HKH Region**  
(February 1999 - December 2002) International Service for National Agricultural Research (Netherlands), Bangladesh, China, India and Nepal
- **PAR on Equity and Poverty in Community Forestry**  
(May 2000 - April 2002) Swiss Agency for Development and Cooperation, Bangladesh, Bhutan, China, India, Nepal and Pakistan
- **Participatory Disaster Management Programme in Nepal**  
(February 2001 - March 2002) Japan Government through UNDP
- **People and Resource Dynamics in Mountain Watersheds of the HKH 3.25 years**  
(October 1999 - December 2002)  
Swiss Agency for Development Cooperation International Development Research Centre (Canada)/ China, India, Nepal and Pakistan
- **Policies, Governance, Participation and Practices for the Sustainable Management of Mountain Commons of the HKH**  
(May 1999 - April 2002) The Ford Foundation/Bangladesh, Bhutan, India and Nepal
- **Regional Rangeland Programme in the HKH Region**  
(January 1999 - June 2002) The Austrian Government/Bhutan, China, India Nepal, and Pakistan
- **Securing Livelihoods in Uplands and Mountains of the HKH**  
(September 2000 - September 2004), International Fund for Agricultural Development, Bangladesh, Bhutan, China, India and Nepal
- **The Asia Pacific Mountain Network (Phase II)**  
(May 1999 - April 2002), Swiss Agency for Development and Cooperation
- **Local Livestock Resource Planning in the HKH**  
(2000 - 2002) FAO (Rome)/India, Nepal



## ICIMOD DONORS

### CORE DONORS

#### Regional Member Countries

- Bangladesh
- Bhutan
- China
- India
- Myanmar
- Nepal
- Pakistan

#### European Core Supporters

- Austria
- Finland
- Germany
- Netherlands
- Norway
- Sweden
- Switzerland

### PROJECT DONORS

- Asian Development Bank
- Australian Centre for International Agricultural Research
- Austroprojekt, GmbH
- Centre for Ecology and Hydrology
- Danish Hydrological Institute
- Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
- Food and Agriculture Organization
- Ford Foundation
- Government of the Netherlands
- Government of the United States of America
- International Development Research Centre
- International Fund for Agricultural Development
- International Livestock Research Institute
- MacArthur Foundation
- Swiss Agency for Development and Cooperation
- The International Service for National Agricultural Research
- The Macaulay Land Use Research Institute
- United Nations Educational, Scientific and Cultural Organisation
- United Nations Environment Programme
- United Nations Office for Project Services
- United States Agency for International Development
- United States Department of State
- World Conservation Monitoring Centre
- World Meteorological Organisation

## STRATEGIC PARTNERS

- Asian Disaster Prevention Centre, Bangkok, Thailand
- Asian Rural Life Development Foundation  
Mindanao, Philippines
- Austroprojekt, GmbH, Vienna, Austria
- Centre for Ecology and Hydrology, UK, Wallingford, UK
- Centre for International Forestry Research  
Bogor, Indonesia
- Environmental Systems Research Institute, Inc.  
Redlands, NY, USA
- Federal Institute of Hydrology, Germany, Koblenz,  
Germany
- Food and Agriculture Organization, Rome, Italy
- Indian Institute of Remote Sensing, Hyderabad, India
- Intermediate Technology Development Group  
Kathmandu, Nepal
- International Development Research Centre, Singapore
- International Fund for Agricultural Development  
Rome, Italy
- International Institute for Aerospace Survey and Earth  
Sciences, ITC, The Netherlands
- International Institute of Environment and  
Development, London, UK
- International Livestock Research Institute  
Nairobi, Kenya
- International Union for Conservation of Nature and  
Natural Resource, Bangkok, Kathmandu and Karachi
- Mountain Forum, Kathmandu, Nepal
- Nanjing Institute of Soil Sciences, Nanjing, China
- PANOS - South Asia, Kathmandu, Nepal
- The Mountain Institute, Kathmandu, Nepal
- United Nations Development Programme  
Kathmandu, Nepal
- United Nations Environment Programme  
Bangkok, Thailand
- University of Bern, Bern, Switzerland
- University of British Columbia, Vancouver, Canada
- University of East Anglia, Norwich Norfolk, UK
- University of Georgia, Athens, Georgia, USA
- Wageningen University, The Netherlands

## Collaborating Institutions in 2001

### AFGHANISTAN

Currently inactive

### BANGLADESH

- Bangladesh Council for Advanced Studies, Dhaka
- Bangladesh Institute of Development Studies, Dhaka
- Bangladesh University of Engineering Technology, Dhaka
- Bangladesh Meteorological Department
- Bangladesh Water Development Board
- Chittagong Hill Tracts Development Board, Rangamati
- Chittagong University
- Development Policy Group, Dhaka
- Directorate of Land Records and Survey, Dhaka
- Green Hills\* NGO, Chittagong
- Jahangirnagar University
- Joint River Commission, Dhaka
- Local Government Engineering Department, Dhaka
- Ministry of Chittagong Hill Tracts Affairs, Dhaka
- Ministry of Land, Dhaka
- Ministry of Environment and Forest, Dhaka
- Ministry of Water Resources, Dhaka
- University of Dhaka

### BHUTAN

- Bhutan Chamber of Commerce and Industry
- Bhutan Development Finance Corporation
- Department of Agriculture and Livestock Support Services, Thimphu
- Department of Health Services
- Department of Mines and Geology
- Department of Power
- Department of Survey, Thimphu
- Department of Agriculture and Livestock Support Services, Thimphu
- Department of Power
- Department of Health Services
- Enterprise Promotion Centre, MOTI, Thimphu
- Ministry of Agriculture, Thimphu
- National Jersey Breeding Centre
- National Women's Association of Bhutan
- Natural Resources Training Institute, Lobaysa
- National Planning Commission, Thimphu
- Planning and Policy Division, Thimphu
- Renewable Natural Resources\* Research Centre
- Royal Society for Protection of Nature
- Tourism Development Board
- Third Forestry Project

### CHINA

- Animal Husbandry Bureau in all provinces
- Bureau of Hydrology Tibet, Lhasa
- Chengdu Institute for Mountain Hazards and Environment, Chengdu, Sichuan
- Chengdu Institute of Biology, Chengdu, Sichuan
- China Meteorological Administration
- Chinese Academy of Agricultural Sciences, Beijing
- Chinese Academy of Sciences, Beijing
- Cold and Arid Regions Environmental and Engineering Research Institute (CAREERI), Lanzhou
- Eastern Bee Research Institute
- Forest Bureau of Yunnan, Kunming, Yunnan
- Institute of Geographical Sciences and Natural Resources Research, Beijing
- Lanzhou University - State Key Laboratory of Arid Agroecology, Gansu Province
- Kunming Institute of Botany, Kunming, Yunnan
- Kunming Institute of Rural Economics, Kunming, Yunnan
- Kunming Institute of Zoology, Kunming, Yunnan
- Ministry of Water Resources, Beijing
- Ningnan County Government
- Northwest Plateau Institute of Biology, Xining, Qinghai
- State Key Lab of Arid Agroecology, Lanzhou, Gansu
- Sichuan Grassland Institute
- Southwest Forestry College, Kunming
- Tibet Academy of Agriculture and Animal Husbandry Sciences, Lhasa, Tibet
- Tibet Hydrology and Water Resources Bureau, Lhasa
- Tibet University
- Yunnan Academy of Social Sciences, Kunming, Yunnan
- Yunnan Agricultural University
- Yunnan University, Kunming, Yunnan

### INDIA

- Central Water Commission
- Centre for Development Studies, Academy of Administration, Nainital
- CSK Agricultural University, Palampur
- Directorate of Agricultural Husbandry
- G.B. Pant Institute of Himalayan Environment and Development, Sikkim Unit, Sikkim
- GB Pant Institute for Himalayan Environment and Development, Almora
- GB Pant Institute of Agriculture and Technology, Pantnagar



- Giri Institute of Development Studies
- Guwahati University
- Himachal Pradesh University, Shimla
- Himalayan Action Research Centre, Dehradun
- HNB Garhwal University, Srinagar
- Indian Meteorological Department
- Indian Council for Agricultural Research, New Delhi
- Indian Institute of Management, Lucknow
- Jawahar Lal Nehru University, New Delhi
- Khawkylla Community Resources Management Society, Ladweitung
- Ladakh Hill Development Council, Leh

- LBS National Academy of Administration, Mussoorie
- Ministry of Water Resources
- National Centre for Agriculture, Economics and Policy Research, New Delhi
- NEI Institute of Bank Management
- Senapati District Community Resources Society, Manipur
- Shree Bhubaneswori Mahila Ashram
- Tata Energy Research Institute
- Wildlife Institute of India
- YS Parmar University of Horticulture and Forestry, Solan

## MYANMAR

- Central Agricultural Research Institute
- Forest Department, Yangon
- Institute of Agriculture, Yezin

- Institute of Forestry, Yezin
- Yangon University, Yangon
- Yezin Agricultural University

## NEPAL

- Alital Mauri Palak Samuha, Dadeidhura
- Annapurna Beekeeping and Environment Promotion, Kaski
- Central Bureau of Statistics, Kathmandu
- Centre for Resource and Environmental Studies, Kathmandu
- Centre for Rural Technology, Kathmandu
- Department of Agriculture, Kathmandu
- Department of Forest, Kathmandu
- Department of Hydrology and Meteorology, Kathmandu
- Department of Soil Conservation, Kathmandu
- Department of Survey, Kathmandu
- District Development Committee, Humla
- Eco Nepal, Kathmandu
- Energy Systems, Kathmandu
- Federation of Nepalese Chamber of Commerce, Kathmandu
- HELVETAS
- Institute for Industrial Enterprise Development, Kathmandu
- Institute for Integrated Development Studies, Kathmandu

- Institute of Engineering, TU, Kathmandu
- Intermediate Technology Group, Kathmandu
- Kathmandu University
- King Mahendra Trust for Nature Conservation, Kathmandu
- Light, Chitwan
- Ministry of Population and Environment, Kathmandu
- Ministry of Science and Technology, Kathmandu
- Mustang District Development Committee
- National Planning Commission, Kathmandu
- Nepal Agricultural Research Council, Lalitpur
- New Era, Kathmandu
- Rural Women's Development and Unity Centre, Dadeidhura
- Sanday Kentro Associates, Kathmandu
- Surya Social Service Society, Jumla
- The Mountain Institute, Kathmandu
- Tribhuvan University, Kathmandu
- Universal Consultancy, Kathmandu
- Water and Energy Commission Secretariat, Kathmandu

## PAKISTAN

- Aga Khan Rural Support Programme, Gilgit
- And Zone Research Institute, Quetta, Balochistan
- Balochistan Department of Agriculture & Livestock
- Department of Economics, University of Peshawar
- Federal Flood Commission
- Flood Forecasting Division
- Honey Bee Research Institute
- Integrated Pest Management Institute
- Khush Hali Associates, Quetta
- Ministry of Agriculture, Islamabad
- National Agricultural Research Centre, Islamabad
- National Arid-land Development and Research Institute, Islamabad

- Pakistan Agricultural Research Council, Islamabad
- Pakistan Council for Research in Water Resources, Islamabad
- Pakistan Council of Renewable Energy Technologies, Islamabad
- Pakistan Forestry Institute, Peshawar
- Pakistan Meteorological Department
- Punjab Geological Society
- Sarhad Rural Development Support Programme
- Sungi Development Foundation
- University College of Agriculture
- University of Peshawar
- Water Resource Research Institute, Islamabad

# ICIMOD Board of Governors 2001

## Regional Board Members

**Prof. Sun Honglie**

CHAIRPERSON

Academician, The Chinese Academy of Sciences  
China

**Dasho Sangay Thinley**

Secretary

Ministry of Agriculture, Bhutan

**Mr. Chowdhury Mohammad Mohsin**

Secretary

Ministry of Chittagong Hill Tracts' Affairs,  
Bangladesh

Afghanistan

(currently vacant)

**Mr. P. V. Jayakrishnan**

Secretary, Ministry of

Environment and Forests, India

**U. Shwe Kyaw**

Deputy Director General

Forest Department, Myanmar

**Dr. Mukti Narayan Shrestha**

Secretary

Ministry of Population and Environment  
Nepal

**Dr. Hafeez Akhter Randhawa**

Secretary

Ministry of Food, Agriculture and Livestock  
Pakistan

## Independent Board Members

**Dr. Hans Gsaenger**

VICE CHAIRPERSON

German Development Institute, Berlin, Germany

**Dr. Karin Inmann**

Salzburg, Austria

**Mr. J. W. F. Cools**

First Secretary

Royal Netherlands Embassy  
Philippines

**Prof Zhao Qiquo**

Institute of Soil Sciences,  
Chinese Academy of Sciences  
Nanjing, China

**Dr. Anne Whyte**

Mestor Associates

Ontario, Canada

**Dr. Shoaib Sultan Khan**

Senior Advisor

UNPD, Islamabad, Pakistan

**Dr. Ruth Egger**

Deputy Executive Director  
Intercooperation  
Switzerland

**Dr. J. Gabriel Campbell**

(Ex-officio Member)

Director General

ICIMOD

## ICIMOD Support Group

**Dr. Brigitte Dekrout**, CHAIRPERSON, Austrian Coordination Bureau, Thimphu, Bhutan

## Staff Members of ICIMOD

### Directorate

Dr. J. Gabriel Campbell, Director General

Dr. Binayak P. Bhadra, Director of Programmes

Mr. Milan Raj Tuladhar, Head, Administration & Finance

**Support Staff:** Ms. Tika Laxmi Gurung, Ms. Anjali Shrestha,

Ms. Prema Thapa, Mr. Man Bahadur Katwal

### Institutional Strengthening Unit

Dr. Jit Pradhan 'Bhutan', Planning Monitoring & Evaluation Specialist

Mr. Prem Krishna Manandhar, Programme Officer

### Mountain Farming Systems' Division (MFS)

Dr. Eklabya Sharma, Senior Agricultural Specialist/ Div. Head

Dr. Tang Ya, Agroforestry/Soil Conservation Specialist

Dr. Pradeep Man Tulachan, Farm Economist

Mr. Arjen Rotmans, Associate Prof. Officer (FAO seconded)

Dr. Nyima Tashi, Researcher, Mountain Agricultural Systems

**Support Staff:** Ms. Sami Joshi, Ms. Neetu Ghale,

Ms. Beryl Rajbhandari, Mr. Sudeep Pradhan



#### **Beekkeeping Project, MFS**

Dr. Farooq Ahmad, Project Coordinator, Beekkeeping Project

Dr. (Mrs.) Uma Partap, Research Officer

Dr. Surendra Raj Joshi, Action Research Officer

Mr. Min Bahadur Gurung, Institutional Development Officer

**Support Staff:** Mr. Anirudha Nath Shukla,

Ms. Shova Bhandari, Satananda Upadhaya

**Trial and Demonstration Site, Godavari**

Mr. Suraj Bahadur Thapa, Farm Manager/Horticulturist

#### **Mountain Natural Resources' Division (MNR)**

Prof. Chen Guang Wei, Division Head/Natural Resources' Specialist

Mr. Anupam Bhatia, Common Property Resource Mngt. Specialist

Prof. Suresh Raj Chalise, Senior Advisor

Ms. Camille Richard, Rangeland Management Specialist

Ms. Mandira Shrestha, Water Resources Specialist

Mr. Suman Rai, Coordinator, Equity and Poverty

**Support Staff:** Ms. Reeta Rana, Ms. Sarita Joshi, Ms. Tenzing,

Mr. Govinda Shrestha, Ms. Sapana Sharma, Consultant Librarian

#### **Landslide Hazard Mitigation Project**

Prof. Li Tianchi, Hazard Mitigation Specialist

Mr. Rajesh Thapa, Research Assistant

#### **Sustainable Water Harvesting in the HKH Project**

Mr. Saleem Akhtar Sial, Assistant Coordinator

Mr. Rupak Rajbhandari, HKH Friend Data Analyst

#### **Mountain Resources Management Project (PARDYP)**

Mr. Roger John White, Regional Programme Coordinator

Mr. Pravekar Bickram Shah, Country Coordinator/Land Use Analyst

Mr. Juerg Merz, Hydrometeorology Research Associate

Mr. Gopal Nakarmi, Geomorphologist

Mr. Bhubaneswar Shrestha, GIS Specialist

**Field (SSA) Staff in PARDYP:** Mr. Pradeep Man Dangol,

Mr. Madhav Prasad Dhakal, Mr. Bhawani Shankar Dangol,

Ms. Bandana Prajapati, Mr. Bal Gopal Shrestha,

Mr. Giri Bahadur Shrestha, Ms. Samina Shakya, Smita Kumari Shrestha

#### **Mountain Enterprises & Infrastructure Division (MEI)**

Dr. Trilok S. Papola, Division Head / Marketing Economist

Dr. Kamal Rijal, Energy Specialist

Ms. Phuntshok Chhoden Tshering, Gender Specialist

Ms. Atsuko Toda, Assistant Coordinator, IFAD-ICIMOD Project

Ms. Maria Armila C. Shakya, Coordinator, Int. Year of the Mountains

Ms. Ojaswi Josse, Asst. Coordinator, Secretariat for Celebrating

Mountain Women (IYM 2002)

Ms. Mousumi Chaudhury, Assistant Coordinator, Asia High Summit 2002

**Support Staff:** Mr. Rajendra Shah, Ms. Samjhana Thapa

#### **Mountain Development Policies & Programmes Project**

Dr. Narpal Singh Jodha, Policy Analyst

#### **Mt. Environment & Natural Resources Info. Systems (MENRIS)**

Mr. Basanta Shrestha, Acting Division Head

Mr. Pradeep P. Mool, Remote Sensing Analyst

Mr. Sushil Man Pradhan, GIS Analyst

Mr. Sushil Panday, Systems' Officer

Mr. Binendra Bajracharya, GIS Analyst

Mr. Andrew Inglis, Australian Youth Ambassador (GIS)

**Support Staff:** Mr. Saisab Pradhan, Mr. Govinda Joshi, Mr. Anirudha Man

Shrestha, Ms. Monica Moktan, Mr. Mohan Man Banepali

**Project Staff:** Ms. Banadana Pradhan, Kiran Shakya, Amit Vaidya

#### **Information, Communication & Outreach Division (ICOD)**

Ms. Greta Rana, Division Head

Dr. Anne Beatrice Shrestha - Editor (Consulting)

Mr. Raj Bahadur Shrestha, Librarian

Ms. Nira Gunung-Burathoki, Distribution Officer

Ms. Sangeeta Panday, Documentation Officer

**Support Staff:** Mr. Asha Kaji Thaku, Ms. Shanti Prabha Bajracharya,

Mr. Ram Sharan Thapa, Mr. Dharma Ratna Maharjan, Mr. Sushil Man Joshi,

Mr. Bishwanath (Sudas) Sharma, Ms. Punam Pradhan, Mr. Shiva Hari Khatri

**Asia Pacific Mountain Forum - Mr. Ujol Sherchan**

**Capacity Building in Internet Technologies in Central Asia Project**

Mr. Deependra Tendukar, Networking & Training Assistant

#### **Administration and Finance**

##### **Budget & Finance Section**

Mr. Rajendra Prakash Mali, Budget & Finance Officer

Mr. Kiran Man Shrestha, Ms. Prabha Raj Shrestha,

Mr. Nabindra Raj Shrestha, Ms. Pramila Shrestha

##### **Store Unit**

Ms. Jenny Vaidya, Mr. Rabindra Ranjit

##### **Personnel Section**

Mr. Chandra Bir Singh Kansakar, Personnel Officer

Ms. Shree Mani Amatya, Ms. Nani Keshari Bajracharya

##### **Communications' Unit**

Ms. Sharda Gurung, Ms. Geeta Pant, Mr. Pashupati Sadashankar,

Mr. Akil Nepal

##### **Staff Canteen Unit**

Mr. Guneswori B. Pradhan, Mr. Prakash Nepal, Mr. Kumar Thapa,

Mr. Sukra Tamang, Mr. Pramod Aryal, Mrs. Chanchal Rajak

##### **Security and Maintenance Unit**

Mr. Jeet Bahadur Rai, Mr. Prem Dhoj Malla, Mr. Krishna Tamang,

Mr. Sher Bahadur Gurung, Mr. Ram Bahadur K. C., Mr. Ram Singh Rai,

Mr. Birkha Jirel, Mr. Kishore Maharjan, Mr. Babukaji Thapa,

Mr. Mohan Bhuja, Mr. Hari Govinda Maharjan, Mr. Shambhu Thapa

##### **Procurement and Equipment Maintenance Section**

Mr. Nirarjan Khanal, Procurement & Equipment Maintenance Officer

Mr. Narendra Bajracharya

##### **Photocopy Cell**

Mr. Shyam Shrestha, Mr. Ganga Rana

##### **Travel & Hospitality Section**

Mr. Rajen Upreti, Travel Officer

Mr. Rishi Ram K. C., Ms. Pratiba Chhetri, Mr. Manoj Rajak,

Ms. Sheela (Kausheela) Lama

##### **Motorpool Unit**

Mr. Mohan Krishna Shrestha, Mr. Kishore Shrestha, Mr. Ram Lal Maharjan,

Mr. Bishnu Magar, Mr. Krishna Maharjan, Mr. Pancha Narayan Maharjan, Mr.

Jai Bahadur Subedi, Mr. Sabak Singh, Mr. Dhurba K. C.,

Mr. Sudama K. C., Mr. Chinikaji Maharjan, Mr. Ram Maharjan

#### **GLOBAL MOUNTAIN FORUM SECRETARIAT (Hosted by ICIMOD)**

Dr. Alejandro Camino - Executive Secretary,

Ms. C. P. Jayalakshmi, Networking Specialist, Ms. Anju Rana - Support Staff

## New Faces at the Centre: From Them to You

**Ojaswi Josse**, Assistant Coordinator Secretariat for Celebrating Mountain Women  
(July 2001), MA in International Relations, San Francisco State University, USA

"It is indeed a great honor to work for an organisation as renowned as ICIMOD and for a cause as important as Celebrating Mountain Women. This is indeed one of the most exciting years to be a part of the ICIMOD family. The International Year of Mountains provides a unique opportunity to highlight the issues of mountain people and their environment as well as to project the unique issues of mountain people at the very forefront of the international agenda.

Through CMW, we hope to get mountain women's voices heard and their issues concretely addressed. Let us all look forward to a future where there is gender equality, environmental sustainability and economic viability in the mountains and elsewhere!"



**Andrew David Inglis**, GIS Officer (August 2001), MSc in Geography, University of Western Australia

"I joined ICIMOD in August 2001 as a GIS Officer, under the Australian Youth Ambassador for Development (AYAD) programme that funds young Australians to work in developing countries to gain experience and to generate strong links between Australia

and developing countries. So far, I have worked on various GIS projects and am involved in the development of other projects within ICIMOD within the HKH region. I look forward to working in MENRIS and throughout ICIMOD on the unique challenges that are faced in the HKH region."



**Dr. Jit Pradhan 'Bhuktan'**, Planning, Monitoring and Evaluation Specialists

(August 2001), PhD in Community Development, University of the Philippines, Philippines

The type of poverty in the HKH is characterised by a complex network of interlocking problems vis-à-vis opportunities. With slope and altitude, climatic and biological diversities abound. There is a rich complex of cultures. Development history has portrayed mountain people as simply a factor of production. I joined ICIMOD because I believe that the Centre has the institutional commitment and potential to transform perspectives on mountain people from being seen as factors of ecologically degenerative

production into actors of ecologically regenerative and gainful economic production. Mountain people do not lack skills or potential, they lack opportunities. Through a sound Planning, Monitoring and Evaluation system, I aspire to contribute to the Centre to 'prove' and 'improve' its organisational excellence in the pursuit of transformation of mountain areas and sustainable mountain development.



**Armila C. Shakya**, Coordinator International Year of Mountains

(August 2001), BSc in Business Administration, University of the Philippines, Philippines

"I am delighted to be working in ICIMOD at this exciting time when mountains take centre stage worldwide in response to the UN declaration of 2002 as the International Year of Mountains. Despite a rich heritage, most mountain communities are poor and marginalised due to their isolation and complex ecosystems. It is a

privilege for me to learn more about mountain development and be able to contribute to ICIMOD's efforts in this special year at catalysing actions that will lead to positive and timely changes in the conservation of mountain ecosystems, for the benefit of mountain people and those dependent on them, including ourselves."





**Mandira Shrestha, Water Resources Specialist**

(August 2001), MSc in Civil Engineering, University of Washington, USA

"The project 'Development of a Framework for Regional Cooperation on Flood Forecasting and Information Exchange in the HKH Region' aims to promote regional cooperation, build confidence and trust among the countries to share hydrometeorological information to provide reliable and timely warnings in order to save lives and property. One of the tangible outcomes of the project is a website [www.southasianfloods.org](http://www.southasianfloods.org) that has been developed as a regional platform for

sharing flood information and data. It has indeed been very challenging as well as interesting to work in this Project, particularly with the interest, enthusiasm and cooperation shown by the participating countries. Besides this, I have been assisting in the coordination of HKH-FRIEND (Flow Regimes International Exchange Network) a regional network for hydrological research and data exchange."



**Suman Rai, Coordinator, Equity & Poverty**

(September 2001), MA in Economics, North Bengal University, India

"The mountains are my home where I was born and bred. Working with ICIMOD in the HKH allows me to combine profession with personal mission. I feel proud to acknowledge the rich cultural diversity, resources and the pristine panorama that is the hallmark of mountains. On the other hand mountains are characterised by lack of infrastructure, lack of access to markets and marginalisation from mainstream development processes. This means

that mountain people significantly depend on available natural resources in their locality. In this regard, mountain commons are especially important, as they are often part of the high livelihood strategies of mountain people; especially in terms of the degree of dependence of poorer and marginalised sections on mountain commons. This compels us to think and analyse issues of equity and poverty in the management of mountain commons from the perspective of poorer and marginalised people's lives, rights and dignity."



**Dr. Eklavya Sharma, Senior Agricultural Specialist/Division Head, MFS**

(September 2001), PhD in Botany (Ecology), Benaras Hindu University, India

"Sharing experiences of mountain farming system management problems and solutions from different countries of the HKH region can be rewarding and valuable. Food crop cultivation and livestock rearing in the mountains have centered around subsistence and throw is a great challenge for improving the livelihoods of 150 million poor inhabitants in these mountains. An open market economy and globalisation risks have cornered the poor mountain

farmers. The challenge is to use this opportunity for exploiting mountain specific niche products for the benefit of poor people in the mountains. Resolving conflicts over sharing and management in natural resources, and securing year round food availability for vulnerable groups of mountain people need attention from all.



**Moushumi Chaudhury, Assistant Coordinator (November 2001)**

I believe one of the biggest challenges in the HKH region is to link the needs of the highlands and the lowlands in a way that is fruitful wherein all can equitably share natural resources and the benefits of development. ICIMOD is the place to initiate such a

connection, and therefore, I am very enthusiastic about taking part in ICIMOD's endeavour to exchange ideas, create awareness, and build concrete relationships among those who face the complexities of sustainably using natural resources over national and geographical boundaries.



## ICIMOD Income and Expenditure Accounts, 1991-2001

The financial management of the Centre is implemented through the establishment of Core Funds and Project Funds. All unrestricted contributions made by sponsors and member countries are credited to the Core Programme Funds. All restricted contributions, made by sponsors, governments, and non-government sources for specific projects, are credited to Project Funds.

### Income and Expenditure Account Core Programme Funds

In US Dollars

SOURCE OF FUND	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>A. Regional</b>	140,540	108,404	98,572	86,640	83,525	134,265	98,333	111,011	90,597	115,667	137,158
01. Bangladesh	—	10,000	10,000	9,905	10,000	—	10,000	9,670	1,000	9,710	18,594
02. Bhutan	3,873	—	—	—	—	2,870	5,000	5,000	5,000	7,500	—
03. China	14,836	20,000	20,000	20,000	20,000	20,000	30,000	30,000	30,000	30,000	45,000
04. India	92,958	46,479	39,184	—	34,532	79,861	44,522	37,870	37,427	44,889	42,050
05. Myanmar	—	—	—	20,000	10,000	10,000	—	10,000	—	10,000	10,000
06. Nepal	11,737	11,737	10,204	20,408	8,993	9,023	8,611	7,601	7,396	13,568	13,359
07. Pakistan	17,136	20,188	19,184	16,327	—	12,511	—	10,870	9,774	—	8,155
<b>B. Non-Regional</b>	1,031,789	1,207,205	1,161,966	1,140,698	1,522,843	2,344,680	2,267,440	2,538,437	2,478,183	2,354,315	2,276,530
08. Austria	222,000	222,965	215,827	229,620	234,336	259,272	—	217,675	108,837	88,821	86,160
09. Denmark	—	—	—	—	200,000	200,000	300,000	300,000	—	—	—
10. Finland	—	—	—	—	—	—	157,285	157,285	133,554	133,554	133,555
11. Germany	555,212	635,040	596,939	561,878	728,507	780,264	651,742	682,379	648,078	566,336	541,543
12. Netherlands	—	—	—	—	—	605,144	487,600	515,350	471,700	513,943	500,000
13. Norway	—	—	—	—	—	—	—	—	450,837	394,047	387,616
14. Sweden	—	—	—	—	—	—	170,813	165,748	165,177	155,614	127,456
15. Switzerland	254,577	349,200	349,200	349,200	360,000	500,000	500,000	500,000	500,000	500,000	500,000
<b>C. Other Income</b>	158,052	214,539	137,446	309,060	232,946	269,328	346,277	346,739	377,691	215,741	200,868
<b>Total Core</b>	1,330,381	1,530,148	1,397,984	1,536,398	1,839,314	2,748,273	2,712,050	2,995,187	2,946,471	2,685,723	2,614,556
<b>Projects Income</b>	1,143,764	1,362,357	1,886,886	1,745,057	1,995,749	2,433,696	2,623,893	2,095,088	3,011,391	2,367,552	1,840,082
<b>GRAND TOTAL</b>	2,474,145	2,892,505	3,284,870	3,281,455	3,835,063	5,181,969	5,335,943	5,091,275	5,957,862	5,053,275	4,454,638

EXPENDITURES	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Programme Cost	462,839	523,959	615,910	624,197	711,922	1,982,734	1,880,088	1,651,917	1,908,356	1,670,389	1,315,311
Projects Cost	1,201,438	1,043,221	1,285,857	1,758,173	2,062,290	1,863,210	2,875,476	2,581,775	2,440,590	2,513,433	1,986,899
Support Cost	305,214	424,965	418,729	408,786	439,674	562,708	611,501	627,543	617,522	613,343	610,486
Directorate Cost	260,565	521,813	415,412	410,427	334,436	454,255	415,843	382,067	445,591	472,263	436,209
<b>Total Expenditures</b>	2,320,056	2,513,958	2,735,908	3,201,583	3,548,322	4,862,907	5,782,908	5,443,302	5,412,059	5,269,428	4,348,905



**International Centre for Integrated Mountain Development**  
**Income and Expenditure Account**  
**Project Funds**  
 In US Dollars

SOURCE OF FUND	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
01. Australia	-	-	-	-	-	88,000	175,610	-	95,941	127,818	75,835
02. Austria	-	-	71,386	125,658	-	151,584	100,000	170,000	388,722	341,518	164,181
03. Canada	-	-	-	-	-	-	68,165	3,760	-	-	11,693
04. Germany	59,725	6,052	118,098	214,334	210,342	15,000	-	-	-	-	2,800
05. Japan	-	-	100,000	-	100,000	100,000	100,000	100,000	-	-	-
06. Netherlands	-	313,262	-	454,241	633,862	437,470	556,000	305,424	428,134	202,266	45,277
07. Norway	-	-	450,749	114,808	181,762	281,264	140,449	146,637	-	-	-
08. Sweden	-	-	-	-	-	-	-	-	50,000	-	-
09. Switzerland	109,281	27,726	65,000	50,000	122,235	454,214	342,616	561,704	450,000	472,701	994,408
10. USA	22,961	49,156	69,571	26,664	5,988	13,296	1,702	30,000	-	44,850	25,565
11. ADB	682,554	428,188	453,000	315,000	-	282,992	84,008	200,000	160,990	110,000	129,010
12. CEC	-	64,768	-	-	192,645	92,976	339,318	70,412	-	-	-
13. CIP	-	-	-	-	-	-	-	-	100,000	-	-
14. FAO	8,856	5,000	-	20,550	10,000	17,000	15,000	29,000	21,900	22,000	36,500
15. ILRI	-	-	-	-	-	-	-	-	63,000	26,000	20,000
16. ISNAR	-	-	-	-	-	-	-	-	100,000	50,000	217,982
17. UNEP	-	-	113,000	126,250	212,250	97,520	10,000	27,617	179,063	161,737	46,032
18. UNESCO	2,519	7,000	-	-	27,033	66,480	118,087	51,000	39,000	-	9,650
19. WWF	-	-	-	-	-	-	-	-	28,500	1,500	-
20. IFAD	-	-	-	-	-	-	-	-	-	250,000	36,545
21. UNOPS	-	-	-	-	-	-	-	-	-	-	98,000
22. FORD	153,382	167,000	215,000	39,600	225,000	200,000	275,000	175,000	380,000	300,000	250,000
23. IDRC	69,001	179,722	122,544	176,935	40,632	105,896	214,765	132,336	374,447	93,874	48,392
24. MacArthur	-	65,000	85,000	36,000	24,000	30,000	60,000	35,000	30,000	100,000	-
25. Others	35,485	49,483	23,538	45,017	10,000	-	21,173	57,198	121,694	63,288	27,312
<b>TOTAL</b>	<b>1,143,764</b>	<b>1,362,357</b>	<b>1,886,886</b>	<b>1,745,057</b>	<b>1,995,749</b>	<b>2,433,696</b>	<b>2,623,893</b>	<b>2,095,088</b>	<b>3,011,391</b>	<b>2,367,552</b>	<b>1,840,082</b>

EXPENDITURES	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total Expenditure	1,291,438	1,043,221	1,285,857	1,758,173	2,062,290	1,863,210	2,875,476	2,581,775	2,440,590	2,513,433	1,986,899

**Auditors' Report to the Board of Governors of  
International Centre for Integrated Mountain Development**

1. We have audited the accompanying Financial Statements of the International Centre for Integrated Mountain Development comprising Statement of Assets, Liabilities and Fund Balances as of 31<sup>st</sup> December, 2001 and the Operating Statement for the year ended on that date, which have been signed by us under reference to this report and which are in agreement with the books of account of the Centre. These Financial Statements are the responsibility of the Centre's management. Our responsibility is to express an opinion on these financial statements based on our audit.
2. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Financial Statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the Financial Statements. An audit also includes assessing the accounting principles used and significant estimates made by the management, as well as evaluating the overall Financial Statement presentation. We believe that our audit provides a reasonable basis for our opinion.
3. The aforesaid Financial Statements have been prepared on the basis of accounting policies described in Schedule 10 to the Financial Statements. On such basis, in our opinion, the Financial Statements give a true and fair view of state of affairs of the Centre as at 31<sup>st</sup> December, 2001 and the results of its operation for the year ended on that date.

Kathmandu  
20<sup>th</sup> February 2002

  
**CHARTERED ACCOUNTANTS**

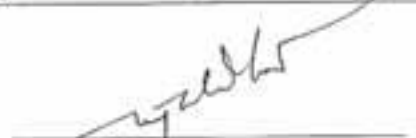


**International Centre for Integrated Mountain Development**  
**Statement of Assets, Liabilities and Fund Balances**  
**as of 31st December, 2001**

INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT  
Statement of Assets, Liabilities and Fund Balances  
As of 31st December, 2001

	Schedule Reference	Amount US \$
<b>Fund Balances</b>		
General Reserve	1	221,932
Operational Reserve	1	256,274
Other Reserves	1	940,540
Special Project Balances (Net)	2	635,112
<b>TOTAL</b>		<b>2,053,858</b>
<b>Current Assets</b>		
Cash in Hand		1,291
Cash at Bank		
Current and Savings Accounts		70,501
Time Deposits		2,450,000
Advances and Deposits		26,614
Committed Core Fund Receivable		
Government of Nepal		6,570
Government of Myanmar		10,000
Government of India		42,050
		<b>2,607,026</b>
<b>Less, Current Liabilities and Provision</b>		
Accounts Payable		339,230
Core Contributions Received in advance		
Government of China		45,000
Government of Finland		133,554
Government of Sweden		35,384
		<b>553,168</b>
<b>TOTAL</b>		<b>2,053,858</b>
Significant Accounting Policies	10	
Notes on Financial Statements	11	

  
Budget & Finance Officer

  
Head of Administration and Finance

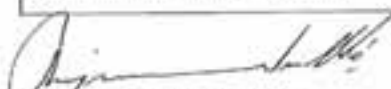
  
Director General

This is the Statement of Assets, Liabilities and Fund Balances referred to in our report of even date.

**International Centre for Integrated Mountain Development**  
**Operating Statement for the Year ended 31st December, 2001**

**INTERNATIONAL CENTRE FOR INTEGRATED MOUNTAIN DEVELOPMENT**  
**Operating Statement**  
**for the year ended 31st December, 2001**

	Schedule Reference	Amount US\$	Amount US\$
<b>Income</b>			
Contributions from Donors -			
Core Operations	3		2,399,745
Special Projects	4		1,840,082
Other Income	5		214,811
<b>Total</b>	<b>(A)</b>		<b>4,454,638</b>
<b>Expenditure</b>			
Core Programme Cost	6		1,315,311
Special Projects Cost	7		1,086,899
Support Cost	8		610,486
Directorate Cost	9		436,209
			<b>4,448,905</b>
Less: Overhead Cost Recovered from Special Projects			122,134
<b>Total</b>	<b>(B)</b>		<b>4,226,771</b>
	<b>(A-B)</b>		<b>227,867</b>
Add: Unspent Balances (Net) of Special Projects carried forward from earlier year			781,929
			<b>1,009,796</b>
Less: Year end Unspent Balances (Net) of Special Projects carried forward			635,112
<b>Excess of Income over Expenditure</b>			<b>374,684</b>
Less: Overhead Cost Recovered from Special Projects allocated (Refer Note (viii) on Schedule 10):-			
General Reserve		78,166	
Publication Reserve		3,664	
Fixed Asset Reserve		23,205	
Personnel Reserve		17,099	122,134
			<b>252,550</b>
Surplus transferred to Operational Reserve			
Significant Accounting Policies	10		
Notes on Financial Statements	11		

  
 Budget & Finance Officer

  
 Head of Administration and Finance

  
 Director General

This is the Operating Statement referred to in our report of even date.

Kathmandu  
 20th February 2002

  
 CHARTERED ACCOUNTANTS





*Established in 1983, ICIMOD aims to promote sustainable development in the HKH Range of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan through the identification, testing, and exchange of mountain knowledge. With a multidisciplinary staff of over 40 professionals, ICIMOD is a focal point for documentation and information, training and applied research, and demonstration on a wide range of issues that the governments and peoples of this 3,500 km mountain range face. Most activities are carried out by or through over 120 collaborating institutions and organisations in its member countries. ICIMOD provides for regional perspectives and exchange of information and experiences along with access to knowledge on mountain subjects. Additional information can be obtained from:*

**ICIMOD, P. O. Box 3226  
Kathmandu, Nepal**

**Tel. (977-1)-525313**

**Fax. (977-1)-524509**

**(977-1)-536747**

**[www.icimod.org](http://www.icimod.org)**

**email: [icimod@icimod.org.np](mailto:icimod@icimod.org.np)**

Participating countries of the Hindu Kush-Himalayan Region



Afghanistan



Bangladesh



Bhutan



China



India



Myanmar



Nepal



Pakistan



International Centre for Integrated Mountain Development  
4/80 Jawalakhel, G.P.O Box 3226  
Kathmandu, Nepal

Tel: (977-1) 525313  
Fax: (977-1) 524509, 536747  
e-mail: [icimod@icimod.org.np](mailto:icimod@icimod.org.np)

[www.icimod.org](http://www.icimod.org)