Policy Priorities for Sustainable Mountain Development

PROCEEDINGS AND SELECTED PAPERS FROM THE ICIMOD REGIONAL POLICY WORKSHOP

Editors
Golam Rasul
Madhav Karki

About ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD) is an independent 'Mountain Learning and Knowledge Centre' serving the eight countries of the Hindu Kush-Himalayas – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and the global mountain community. Founded in 1983, ICIMOD is based in Kathmandu, Nepal, and brings together a partnership of regional member countries, partner institutions, and donors with a commitment for development action to secure a better future for the people and environment of the extended Himalayan region. ICIMOD's activities are supported by its core programme donors: the governments of Austria, Denmark, Germany, Netherlands, Norway, Switzerland, and its regional member countries, along with over thirty project co–financing donors. The primary objective of the Centre is to promote the development of an economically and environmentally sound mountain ecosystem and to improve the living standards of mountain populations.

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18-20 September 2006
Kathmandu, Nepal

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Golam Rasul and **Madhav Karki**

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Foreword

ICIMOD was established 25 years ago with the mandate of improving the lives and environment of mountain communities in Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. With support from its regional and international partners, it has made considerable progress in developing, testing, and demonstrating mountain- specific knowledge, technologies, and organisations. Adoption of these technologies and knowledge remains poor, however. Experience and knowledge generated in the field of development over the years suggests that technical solutions and development options are neither scaled up nor are they sustainable unless supported by suitable policies and institutions.

While policy formulation and decisions are the prerogative and domain of national governments, sound policy formulation and reform require relevant data, information, knowledge, and appropriate perspectives in order to make wise decisions when adopting and implementing policy options. As a mountain knowledge, learning and enabling centre, ICIMOD is in a unique position to contribute to policy development processes through relevant data, information, good practices, knowledge, and understanding.

As part of its broad mission, ICIMOD organised a regional workshop on '**Policy Priorities for Sustainable Mountain Development**' in September 2006. The purpose was to share lessons, experiences and good practices with partners and develop a common understanding and vision of policy issues, options, and priorities for mountain development in the region. The workshop brought together over 70 participants, amongst whom were senior government officials, development practitioners, researchers, and representatives of civil society organisations from eight regional member countries and beyond. Representatives from international research and development and organisations such as FAO and UNDP also participated. The conference papers and discussions raised critical issues such as prevailing poverty, degradation of natural resources, and the impact of climate change on the Himalayan ecosystem – all of which threaten the livelihoods of millions of people living in the South Asian region. It also discussed issues and options relevant and suitable for ICIMOD's regional member countries. The reflections of the workshop testify to the growing demand for ICIMOD's role as a provider of data, analysis, and perspectives in order to facilitate dialogue and discussion and build a common understanding. It highlighted that policy analysis and advocacy should be carried out only through a sound process and

detailed analysis and understanding of social, economic, and environmental aspects to ensure they are relevant for the regional member countries.

This publication documents the contribution of the participants as well as the key messages and recommendations of that workshop. I hope this will help to bring a greater awareness and understanding of the issues and options discussed at the workshop and contribute to enriching the views and perspectives that can lead to improving livelihoods through better management of natural resources in the Hindu Kush-Himalayan region.

Dr. Madhav Karki, Deputy Director General of ICIMOD, and Dr. Golam Rasul, Policy Development Specialist, organised this important event and were responsible for consolidating the contents of this document. I would like to take this opportunity to appreciate their efforts and those of our many partners whose contributions made the workshop possible. A significant contribution has been made to fulfilling ICIMOD's commitment to devising mountain-specific and valuable policies for the Hindu Kush-Himalayan region..

Andreas Schild
Director General
ICIMOD

Preface

The workshop, 'Policy Priorities for Sustainable Mountain Development' organised by ICIMOD was designed to bring together experienced policy makers, researchers, development practitioners, and development partners to share lessons, experiences, and good practices on mountain development through analysis of issues, priorities, and options. The workshop provided an opportunity to share knowledge and information on good practices in the areas of policy design and implementation for mountain development; discuss policy issues, gaps, and challenges in natural resource management (NRM); and motivate the regional member countries (RMCs) to develop enabling policy environments and strengthen linkages and networks to address the challenges and opportunities for the livelihoods of the mountain people of the Hindu Kush-Himalayan (HKH) region.

The region is the source of ten large Asian river systems and provides water, ecosystem services, and the basis for livelihoods to around 150 million people in the region and nearly 500 million in downstream areas. The people in the greater Himalayan region belong largely to poor, indigenous and marginalised groups and live in an increasingly fragile environment, making them physically and socioeconomically vulnerable. Management of natural resources in the HKH region is confronted with a number of issues most important of which are growing pressure on its natural resources, persistent poverty, inequality, and deterioration of the resource base and environmental quality. Population growth combined with growing commercialisation, industrialisation, urbanisation, and globalisation has increased the demand for mountain natural resources.

Pressure on natural resources is growing to meet the demands for food, fresh water, timber, and fuel. Globalisation and economic liberalisation have been major factors in converting the economies of India, Pakistan, and China into growth poles of the world economy. The erosion of ethnic identities, culture, and indigenous knowledge has aggravated the impacts of globalisation and has resulted in further marginalisation and disenfranchisement, reducing access to natural resources important for the livelihoods of mountain communities.

Innovative policies and mechanisms are needed to create conditions for more equitable and effective livelihood options as well as environmental security. Increased regional cooperation in the conservation and management of natural resources, fair trade in natural resources, new

mechanisms for payment for environmental services (PES) provided by mountain dwellers, and increased equity of access to mountain resources among mountain people and stakeholders, are among the conditions needed. To manage the complexities, policy makers require not only reliable information, knowledge, and evidence but also alternative options, views, perceptions, and understanding as actors and stakeholders have different stakes and views as well as being affected differently by policy decisions. The current approach to policy support includes identifiying policy issues and gaps, exploring options, understanding the policy process and context, enhancing policy dialogues, networking, and advocacy.

The ramifications of many mountain-specific problems, such as deforestation, land degradation, environmental deterioration, biodiversity loss, and watershed degradation, transcend watershed and national boundaries and require broad regional and transboundary collaboration. ICIMOD can play an important role as a knowledge disseminator and facilitator through generation, sharing and analysis of data, information, and good practices aimed at increasing understanding, improving technologies, and promoting best practices. Concerted efforts to mainstream mountain issues and policy solutions at national, regional, and international levels are pivotal in providing a framework for policy and pilots for implementation. The Policy Analysis Group at ICIMOD and a National Policy Working Group in each of the eight regional member countries involving strategic partners that can foster demand-driven policy research and analysis can contribute and feed into national and regional policy processes. Development of dynamic horizontal and vertical linkages by building partnerships with and among national organisations involved in policy research, as well as with global research and development partners to promote mountain-specific policy agendas and solutions would be instrumental. Policy improvements combined with effective and wide-scale implementation are the best methods for translating applied research results produced by ICIMOD and partners into improved mountain incomes and more sustainable management of mountain natural resources.

The participants recognise ICIMOD as a 'think-tank' and a model for integrated mountain development. They also recognise the need to link ICIMOD's knowledge and information to training and education for mountain development. The RMC representatives present believed that ICIMOD could play a better role in developing, influencing, and implementing enabling mountain policies and strengthening the regional and global mountain forum, as many mountain issues transcend geopolitical boundaries and require a coordinated approach from the countries of the region. With the emergence of the World Trade Organisation (WTO) and globalisation, with increasing mobility and access to knowledge and information, and with enhanced regional cooperation and networking among the RMCs, the opportunities to address the challenges and harness benefits have increased. Regional initiatives on disaster mitigation, biodiversity conservation, eco-tourism, and the use of energy and water can be instrumental in addressing challenges and harnessing benefits.

The proceedings documented in this publication are organised into seven thematic sections: one from each of the workshop plenary sessions and a group-work session, which covers various dimensions of the events. Recommendations and areas for future intervention are

given to improve policy-making processes, strengthen regional cooperation, reduce the vulnerabilities of mountain communities, and direct ICIMOD's supporting role in promoting an enabling policy environment. The proceedings contain presentations and inputs from the participants about their learning and experiences in the mountains, successful practices, policy issues, gaps and prospects for sustainable management of the natural resources, the environment, and improved livelihoods for mountain communities in the HKH region.

The workshop was attended by over seventy participants including senior policy makers and professionals from the regional member countries, Afghanistan, Bangladesh, Bhutan, China, India, Nepal, Myanmar, and Pakistan; donor representatives including the German Technical Cooperation Agency (GTZ), the United Nations Development Programme (UNDP), the Food and Agriculture Organization (FAO); and civil society and non-government organisations. Through the workshop, ICIMOD provided an important venue from which to seek contributions in the member countries to address emerging challenges and opportunities for mountain development.

The proceedings give us a rich record of perspectives by distinguished professionals as well as valuable inputs from the workshop participants, and are intended to serve as a useful document for mountain people, researchers, policy makers, donors, and development practitioners in mountain areas. I am grateful to all the participants and my colleagues at ICIMOD who contributed to ensuring the success of the workshop and the publication of its proceedings.

Madhav Karki
Deputy Director General of Programmes
ICIMOD

Acknowledgements

Acronyms and Abbreviations

ABS	access and benefit sharing
AKRSP	Aga Khan Rural Support Programme
BGSRDP	Bhutan German Sustainable Renewable (NR) Development Project
CBBC	community-based biodiversity conservation
CBD	Convention on Biological Diversity
CF	community forestry
CFUG	community forest users' group
ChFDP	Churia Forest Development Project
CoP	Conference of Parties
CPR	common property resource
CSD	Commission on Sustainable Development
DFID	Department for International Development
DoF	Department of Forests
EFA	Education for All
EIA	environmental impact assessment
FAO	Food and Agriculture Organization
FECOFUN	Federation of Community Forest Users Nepal
FFC	Federal Flood Commission
GBM	Ganga-Brahmaputra-Meghna
GEF	Global Environment Fund
GLOF	glacial lake outburst flood
GoB	Government of Bangladesh
GTZ	German Technical Cooperation
GWP	Global Water Partnership
HCRS	Household Contract Responsibility System
HKH	Hindu Kush-Himalayas
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
IGCEDP	Indo-German Changar Eco- Development Project
IPR	intellectual property rights
IUCN	World Conservation Union
IWRM	integrated water resource management

JFM	joint forest management
LFP	Leasehold Forestry Programme
MAF	million acre feet
MAPIS	Medicinal and Aromatic Plants Information System
MAPPA	Medicinal and Aromatic Plants Programme in Asia
MDG	Millennium Development Goal
NEC	North Eastern Council
NERCRMP	North Eastern Region Community Resource Management Project
NGO	non-government organisation
NRM	natural resource management
NTFP	non-timber forest product
P3DM	participatory three-dimensional model
PA	protected area
PIC	prior improved consent
PIDA	Provincial Irrigation and Drainage Authority
PRA	participatory rural appraisal
PRSP	Poverty Reduction Strategy Programme
RBO	River Basin Organisation
RMC	regional member country
RNR	renewable natural resource
RRCAP	Regional Resource Centre Asia-Pacific
SAWF	South Asian Water Forum
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SDC	Swiss Development Cooperation
START	System for Analysis, Research and Training
TK	traditional knowledge
TRIP	Trade Related Intellectual Property
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UPOV	Union for Protection of New Varieties of Plants
VFDS	Village Forest Development Society
WGI	World Glacier Inventory
WUA	Water Users' Association
WWF	World Wildlife Fund

Policy Priorities for Sustainable Mountain Development: An Overview

Madhav Karki, Deputy Director General, Programmes and
Golam Rasul, Policy Development Specialist

Introduction

A three-day regional workshop on 'Policy Priorities for Sustainable Mountain Development' was organised by the International Centre for Integrated Mountain Development (ICIMOD) in Kathmandu, Nepal from 18-20 September 2006. The purpose was to share lessons, experiences, and good practices gained from ICIMOD and partners' work over the last five years. The higher objective was to facilitate a common understanding and vision about mountain policy issues, options, and priorities.

Over 70 participants from Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan, representing government agencies, nongovernment organisations (NGOs) or civil society, research and development organisations, and universities, and representatives from international research and development bodies and organisations such as FAO and UNDP, participated. The workshop was a forum for exchanging policy experiences amongst regional policymakers, and knowledge and information on good practices in the policy arena focusing on the experiences in the regional member countries in the HKH region. Mr. Jagadish Chandra Pokharel, Vice Chair, National Planning Commission, Nepal (NPC/N), inaugurated the meeting.

The workshop's specific objectives were to:
* identify and discuss critical policy and institutional issues, opportunities, and challenges in key natural resource sectors in the HKH region
* share lessons and experiences including good practices gained through ICIMOD and partners' work concerning policies governing renewable natural resource management
* improve insight and understanding of national and global policies as well as the institutional environment of regional member countries and specifically identify areas needing improvement to facilitate an enabling policy environment for sustainable mountain development
* develop a common policy framework within which to address critical issues and gaps in promoting sustainable use and management of natural resources

The workshop sessions were organised into the following themes.
- Sustainable mountain development: the need for enabling policies
- Promoting productive and sustainable community-based management of vulnerable mountain natural resources
- Promoting increased regional and local conservation of mountain biological and cultural heritage
- Promoting improved and diversified income opportunities for vulnerable rural and marginalised mountain peoples
- Reducing physical vulnerability within watersheds and regional river basins
- Promoting greater voice and Influence, dignity, security and social equity for all mountain people
- Policy processes and challenges

Seven thematic sessions followed the opening session to set the scene, and the closing session wound up with key messages for the participants to carry back to their respective countries and organisations. One session was dedicated to group work; four working groups deliberated on recommendations for action and mechanisms to improve ICIMOD's policy research work to assist the RMCs in policy reform and in developing and implementing pro-mountain and pro-poor policies.

Policy makers, researchers, scientists, and ICIMOD staff presented altogether 38 papers on issues related to the policy making processes, practices, and learning based on their experiences applied to the thematic areas of their work, which served as inputs to the workshop deliberations. The presentations yielded valuable experiences, which led to informed discussions on the thematic areas of the workshop. Important recommendations were made with a view to improving ICIMOD's policy work and promoting sustainable use and management of natural resources as a means of reducing poverty and inequality.

Workshop recommendations

At the end of the two-day deliberations, the participants made specific recommendations for ICIMOD and its partners to strengthen their role in shaping mountain policies in the eight member countries. The key recommendations of the workshop are given below.

1. Recognise policy formulation as a continuous process, continuously influenced by stakeholders and governed by dynamic factors at different levels and stages. ICIMOD can play an important role as a regional knowledge base through generation, analysis, and sharing of knowledge and good practices gained in its member countries and in other mountain areas in the region.
2. Make concerted efforts to highlight mountain issues and identify viable solutions through national, regional, and international policy discourse, providing suitable platforms, examples of implementation, and frameworks for policy development.
3. Form a policy analysis group at ICIMOD and national policy working groups in each of the eight regional member countries involving strategic partners to foster demand-driven policy research and analysis that can feed into national and regional policy development processes.

4. Carry out country-level policy studies and in-depth comparative analysis and arrange exchange visits by policy makers to countries in the region to facilitate cross-regional learning.
5. Promote dynamic, horizontal, and vertical linkages by building networks and partnerships with and among national organisations involved in policy research and advocacy, as well as with global research and development partners, to promote mountain-specific policy agenda and solutions.
6. Document and disseminate good practices and approaches to policy development and monitor their impact in the regional member countries to facilitate their adoption and implementation.
7. Identify areas in which regional cooperation can be promoted and strengthen such cooperation across boundaries, sub-regions, and river basins.
8. Strengthen multi-channel communication through e-networks, seminars, symposium, and other media and forums for dynamic exchange on policy issues.
9. Promote the capture of local perspectives through consultative and multi-stakeholder policy- making processes involving civil society and other key stakeholders.
10. Ensure that the reformed policies and legal frameworks developed promote social inclusion, are gender sensitive, and incorporate the needs of minorities and marginalised people.
11. Facilitate policy and programme evaluation by developing and providing the necessary tools for policy makers and other key stakeholders.

Summary opening statements

The opening session was inaugurated by senior policy makers from Nepal and Bangladesh, who provided the broad perspectives on national policy areas. ICIMOD and representatives of donor organisation in Nepal provided the mountain context, mountain specificities, and the sociopolitical environment for the discussions. Mr. Jagadish Chandra Pokharel, Vice Chair of the National Planning Commission, Government of Nepal, and Mr. SK. A.K. Motahar Hossain, Secretary, Ministry of Chittagong Hill Tract Affairs, Bangladesh, both members of the ICIMOD Board, delivered the opening remarks.

In his opening speech, Mr. Pokharel underscored the relevance and timeliness of the workshop's theme for Nepal in the light of the country's ongoing transformation as a result of the people's movement. Recent developments in Nepal have increased people's hopes and expectations on development planners and policy makers and the Nepal government faces the challenge of fulfilling the nation's expectations for peace, stability, and social justice to root out the country's deeply rooted inequalities, and alleviate persistent poverty especially in Nepal's mountain regions. In its long and arduous journey towards peace and development, Nepal sought the support and cooperation of neighbouring countries, development partners, and knowledge centres like ICIMOD. Mr. Pokharel noted the importance of appropriate policies and their proper implementation:

> "…we may have good policies and programmes…(but) implementation is generally weak. The major challenge…is how to create an enabling environment for policy making and implementation for sustainable mountain development and the well-being of mountain people."

He expressed the hope that the workshop be instrumental in developing a common understanding and vision on critical mountain issues.

Mr. J. Gabriel Campbell, then ICIMOD Director General, welcomed the participants and expressed appreciation for their taking time out of their busy schedules to attend the workshop. Reviewing its historical mandate, he traced that ICIMOD was established in 1983 by the eight regional member countries through the active facilitation and support of international organisations. Its dual mandate was to reduce poverty and conserve the environment in the HKH region. Although the Centre has travelled far, it has a long way to go to accomplish its mission, he reflected. Despite the best efforts of governments of the member countries, the mountains remain home to immense hardship, poverty, and social and physical vulnerability. The major challenges faced by policy makers, professionals, and development practitioners in the region are: to improve the quality of life in the mountains and conserve the natural resources and the environment. Mr. Campbell emphasised the need for innovative policies, options, suitable technologies, and supportive institutions. Mountains are different from the plains and require different approaches because of such factors as mountain fragility, vulnerability, and ethno-cultural diversity. Strategies and polices must respond to the needs, priorities, problems, and potentials of mountain communities. He hoped that the intellectual contributions of the participants during the workshop would provide innovative ideas and solutions in dealing effectively with mountain issues and foster regional cooperation.

Ms. Ingrid Schwoerer, Programme Manager, the German Technical Cooperation (GTZ), Nepal, thanked ICIMOD for organising the workshop. GTZ and the Federal Ministry for Economic Cooperation and Development (BMZ) Germany are keen to see such platform events for sharing and discussing innovative policy and institutional instruments for sustainable mountain development, she said. She hoped that the workshop would contribute to shaping mountain policies and enhancing the role of mountain communities in the decision-making processes.

Mr. SK. A.K. Motahar Hossain, Secretary, Ministry of Chittagong Hill Tract Affairs, Bangladesh, and ICIMOD board member, was pleased to see high-level representatives from the regional member countries, and eminent scholars and professionals from the region and abroad at this workshop. This is testimony to the significance of ICIMOD's role as a mountain research and development centre, he said. With such level of support, he added, ICIMOD can enhance its role and relevance in the coming years. Mr. Hossain highlighted that mountain problems transcend national boundaries and therefore need regional collaboration to address. Bangladesh in particular suffers from any adverse effects of conditions and policies on the upper Himalayas. He emphasised the need to develop innovative policies and institutional mechanisms for conserving the mountain environment and ecosystem. He proposed that ICIMOD carry out studies and pilot, test, and disseminate new ideas and options relevant to the member countries.

"We need to know what works, what does not work, what kind of policy, strategy, and model need to be put in place, and what kind of institutions and support mechanisms need to be developed. ICIMOD, being a mountain learning and knowledge centre, can help and guide us with the right information, knowledge, and understanding."

Mr. Madhav Karki, Deputy Director General of ICIMOD, provided a brief background of the workshop: its purposes, objectives, structure, and framework. ICIMOD's past work provided integrated and innovative solutions to the variety of problems faced by mountain people. It is increasingly realised that any solution aimed at solving mountain people's problems would neither be effective nor sustainable unless supported by favourable policies and enabling institutions. ICIMOD, with support from its regional and international partners, has strengthened efforts in policy work since 2003, he said. Efforts are being made to integrate policy components into all six of its integrated programmes. Partnership-based programmes and projects have been reoriented and managed accordingly. Special attention is being given to identifying policy issues, gaps, and weaknesses in the process of developing knowledge, information, approaches, and options to empower mountain communities and reduce physical, economic, and social vulnerability. Mr. Karki outlined the objective, theme, and structure of the workshop, indicating its participatory and multi-sectoral orientation. The workshop was expected to create a platform for facilitating and sharing lessons, experiences, and good practices gained through the work of member country governments in collaboration with ICIMOD. The aim was to develop a common understanding of the issues, priorities, and options for addressing emerging issues and challenges in the HKH region.

Summary of technical papers, presentations, and discussions

Plenary Session I: Mountain Development: the Need for Enabling Policies
Chair: Mr. Bir Singh Parsheera, Additional Secretary, Ministry of Environment and Forests, Government of India

Plenary Session I focused on setting the policy scene, providing the participants with a general overview of mountain policy issues and ICIMOD's role and experiences in supporting policy issues and improving the policy environment. Four keynote papers were read, illustrating different mountain development issues and issues of the environment and the role of policy and institutions.

Mr. J. Gabriel Campbell's presentation, 'Sustainable Mountain Development: Reflections on Supporting the Development of Inclusive and Pro-Environment Policies in the Himalayas' outlined ICIMOD's vision and mission and highlighted its experiences in support of developing mountain policies. He shared his personal reflections on the dynamics of the policy development processes. By emphasising policy-making as a national process, he explained the approach ICIMOD follows and the experiences gained, with examples from community forestry, the Himalayan honeybees and their role in pollination, rangeland management, shifting cultivation, regional cooperation on floods, and work related to ecotourism.

Mr. Mahesh Banskota's presentation, 'Policy and Institutional Reforms in the Context of the Hindu Kush–Himalayas: A Review of Experience in the Context of ICIMOD' explained the relationship between policies, institutions, and organisations. The evolution of policy can take place in two ways: top-down or bottom-up. Using this framework, he assessed ICIMOD's contribution to policy and institutional reforms in the HKH region, analysing the changing context of mountain policies and institutions and ICIMOD's past policy work. He enumerated as successes work in areas such as the application of geographic information systems (GIS), remote sensing (RS), and sloping agricultural land technologies (SALT), and indicated the areas in which ICIMOD could play an important role in promoting these technologies through awareness generation and technical backstopping. He suggested more in-depth studies and policy analysis to identify emerging policy and institutional issues.

Drawing from Indian experience, Mr. N.C. Saxena, an accomplished policy researcher and policy maker, presented the 'Policy Issues for Sustainable Natural Resource Management in the Indian Himalayas' with focus on participation, decentralisation, and regional cooperation. He analysed how Indian policies promoting devolution and participation in forest resource management have influenced the relationship between poor people and their access to natural resources and livelihoods. Policy-making processes and outcomes can be improved and he provides some options, and a mechanism for strengthening people's control over and access to resources for their livelihoods. ICIMOD in collaboration with national partners should pay more attention to key areas such as policy research, analysis, and pilot demonstration, he proposed. He emphasised inter-country and inter-state studies, cross-country comparisons, as well as sharing of knowledge and experience to promote decentralised resource management to benefit the people.

Recounting the experience of natural resource management in the Indian Himalayas, Ms. Reba Paul, with contribution from Mr. Quamrul Islam Siddique, presented their group paper on 'Integrated Water Resource Management in the Ganges, Brahmaputra, and Meghna River Basins in South Asia: Prospects and Challenges'. She examined the prospects and challenges for integrated water resource management in South Asia, discussing the Ganges, Brahmaputra, and Meghna (GBM) river systems and their natural and common features, and highlighting the growing demand for water for domestic, industrial, and environmental needs, and the possible consequences of water-related conflict and tensions in the region. Regional cooperation in the GBM river basins can facilitate integrated and efficient management of water resources for the mutual benefit of riparian countries of the region, her paper concluded.

Discussion

Responding to a question raised about whether increased forest cover in Northeast India was because of a change in ownership from common property to private property or because of the Supreme Court's ruling banning timber logging and leaving land fallow in the shifting cultivation system, Mr. Saxena noted how the timber logging ban has, in fact, created disincentives to forest conservation. The incentive of owning private property, however, proved a stronger force than a Supreme Court decision and has helped to increased forest

cover. On payment for environmental services (PES) for mountain farmers and forest users, Mr. Banskota cited Shivapuri watershed in Kathmandu Valley as the only example of a watershed with a PES policy in the context of Nepal. He emphasised the need for further research to understand complex policy and institutional issues in the context of PES. The experiences from other parts of the world such as Central and South-America could be useful. Concerns were raised about lasting impacts on the well-being of mountain people inspite technological developments. Besides technologies, sound policies and institutional support are essential to creating the desirable impacts. It was suggested that policy recommendations be rooted in facts and in-depth analysis. Many existing policies, for example, do not have a mountain perspective:

> "There is a need to demonstrate what the cost of not having a mountain perspective is to the whole country and not just (to) mountains."

Plenary Session II: **Promoting Productive and Sustainable Community-Based Management of Vulnerable Mountain Natural Resources**
Chair: Mr. Damodar Parajuli, Acting Secretary, Ministry of Forest and Soil Conservation, Government of Nepal

The second plenary session attempted to understand the critical issues in promoting productive and sustainable natural resource management to promote community-based management of natural resources, especially forest resources. Seven papers were presented in this session.

Mr. Madhav Karki began the session with a presentation of 'Issues, Options, Challenges, and Opportunities in Promoting Community-based Natural Resource Management in the Hindu Kush-Himalayan Region'. His paper provided an overview of the status of natural resources in the HKH region, analysed critical issues in community-based natural resource management such as persistent poverty, unclear property rights, dominance of technological and bureaucratic solutions, and ambiguous and unimplemented policies and legislation. Sustainable mountain development and management of natural resources required not only the active and sustained participation of local people who depend on these resources, but also enabling and dynamic policies with improved access rights, and good technical support to facilitate wise management of resources by primary users, he concluded. In developing policies and strategies it is necessary to pursue a people-centred and livelihood-focused model, he added. Under this framework, governments, NGOs, and CBOs should work together to decentralise decision-making and ensure devolution of authority to local communities by strengthening effective community-based institutions. He suggested supporting the accelerated move from mere protection to active participatory management and from subsistence to equitable commercial management of natural resources such as non-timber forest products. Positive action in favour of disadvantaged groups to address second generation issues such as governance, markets, social and gender inclusion and socio-economic empowerment is also needed.

Ms. Yan Zhaoli discussed 'High Mountain Rangelands in the Hindu Kush-Himalayas: Appeal for Proper Recognition and Legislation', where she highlighted critical issues faced by pastoralists in rangeland management in the region. These issues include uncertain land tenure, disputes over boundaries, and lack of coordination among stakeholders. She described ICIMOD and partners efforts to facilitate rangeland co-management in the HKH region, highlighting the necessity for creating an enabling legal environment and institutional arrangements to support collaborative efforts. The co-management approach might be the right option to bring key stakeholders together to jointly manage critical rangeland resources, she concluded.

Mr. Hans Beukeboom's presentation, 'Enhancing Livelihoods through Community-based Technologies and Approaches: Experiences from Bhutan, India, and Nepal' highlighted the importance of forest-based enterprises in improving the livelihoods of local people based on experiences in Bhutan, India, and Nepal. Illustrating selected technical and institutional innovations introduced by natural resource management projects in these countries, Mr. Beukeboom argued for an opportunity to enhance rural livelihoods, achieve the millennium development goals (MDGs), empower women, and improve local economies while conserving the natural resource base through value addition and commercial use of forest resources.

Drawing on the joint learning from same GTZ projects in the three countries, Mr. Jochen Statz's presentation focused on 'Sustainable Institutions and Resource Governance in Managing Renewable Natural Resource…'. The paper highlighted the experience of building local institutions to promote community-based natural resource management and proposed the creation of conditions for robust local institutions to promote community-based natural resource management.

The last two papers for the session discussed the application of models such as participatory 3-dimensional modelling (P3DM) and decision support systems (DSS) in natural resource management. Mr. Dhrupad Choudhury's presentation, 'Participatory 3-Dimensional Modelling: A Pivotal Tool for Sustained Community Engagement and Empowerment in Mountain Natural Resource Management' highlighted the potential of P3DM to address conflicts in participatory resource use by reconciling competing interests in a mutually acceptable way and engaging communities in participatory resource planning and management based on a case study from Meghalaya, India. He recommended the wider application of P3DM for participatory land-use planning and natural resource management.

Mr. Samjwal Bajracharya gave a presentation on 'Developing Decision Support Systems (DSS) for Protected Area Management and Policy Planning', illustrating the potential for applying DSS to improving protected area management.

Discussion

Discussions emphasised the need to enlist stakeholders' participation and use reliable data and information, enabling policies, and favourable institutional arrangements. Questions

were raised about reconciling contradictions and overlaps among sectoral policies and establishing coordination among ministries and agencies of the government to promote sustainable natural resource management. The discussions emphasised sharing research-based information and documenting the process of rangeland co-management experiences in China, community forestry experiences in Nepal, applying the P3D-modelling experiences in Northeast India, and targeted dissemination of information to other countries with similar conditions and problems.

Session III: *Promoting Increased Regional and Local Conservation of Mountain Biological and Cultural Heritage*
Chair: Ms Linxiu Zhang, Centre for Chinese Agricultural Policy, Chinese Academy of Sciences (CAS), Beijing, China

Session III focused on sharing good practices in regional biodiversity conservation and mountain-specific cultural heritage. Four papers covered the different dimensions of increased regional and local conservation of biological resources in the HKH region.

Mr. Eklabya Sharma's presentation, 'Lessons and Prospects for Increased Regional Cooperation on Conservation of Biological Diversity and Cultural Heritage: An Overview of the Hindu Kush-Himalayas,' highlighted the importance of transboundary biodiversity conservation following a landscape approach. He discussed the need to adopt efficient management principles such as participatory forest management, rangeland co-management, and enterprise-linked biodiversity conservation. He elaborated on different aspects of the 'regional cooperation framework' for transboundary conservation in the Kangchenjunga landscape being promoted by ICIMOD. Among the benefits that can be derived from regional cooperation in biodiversity conservation are: participation of local communities within the landscape, ecological sustainability, and landscape-level management of biologically diverse resources.

Mr. Nakul Chettri's presentation, 'Species to Landscape: A Paradigm Shift in Biodiversity Conservation through People's Participation and Policy Reform' elaborated on important research findings of the transboundary biodiversity conservation project in the Kangchenjunga landscape. There are strong linkages between research and policy issues and instruments, specifically in the context of national policies and global conservation goals and covenants. His paper described the planning process for drafting a policy framework for regional cooperation in the implementation of the Convention on Biological Diversity (CBD) between Bhutan, India, and Nepal.

Drawing upon experiences from protected area (PA) management systems, Mr. Gernot Brodnig, Policy Advisor on Natural Resources of UNDP Bangkok, in his presentation on 'Mountain Protected Areas: A Policy Perspective,' illustrated the policy dimensions from the perspective of an international development agency. Providing a brief overview of the status and challenges of managing mountain biodiversity and protected areas, he reviewed and assessed some of the policy issues and dimensions, such as policy processes, using examples from UNDP's mountain biodiversity portfolio.

Ms. Elisabeth Kerkhoff, in her presentation, 'How Can Policy Support Rotational Agroforestry as a Culturally Acceptable Good Practice for Biodiversity Conservation?', shared the research findings of ICIMOD's shifting cultivation project and its links with policy dialogue. She described how research on shifting cultivation in the Eastern Himalayas has led to policy dialogue and advocacy, which is influencing and changing the thinking and attitudes of policy makers towards this traditional practice.

Discussion

A comment was raised concerning whether or not the private partnership approach highlighted in one of the papers contradicted the community-based approach stressed in another paper. Questions were asked about whether depletion of nutrients and loss of topsoil in shifting cultivation plots had been studied, and the relationship between biodiversity quality and tenure, and the impact of the involvement of industries in forestry in the context of biodiversity conservation. Suggestions were made about expanding transboundary work in the eastern Himalayas to the western Himalayas with suitable adaptation, as well as about the need to set up demonstration pilots for incentive-based conservation.

Plenary Session IV: Promoting Improved and Diversified Incomes for Vulnerable Rural and Marginalised Mountain People
Chair: Mr. Masood A. Rana, Commissioner Special Crops and Joint Secretary, Ministry of Food, Agriculture and Livestock, Government of Pakistan

Session IV focused on sharing experiences, good practices, and options available for promoting diversified income generation and reduced economic and social vulnerabilities to benefit mountain communities. Five papers were presented during this session.

Mr. Kamal Banskota's presentation, 'Enhancing Economic Opportunities for the Mountain Poor', provided a detailed account of how ICIMOD through its partners has developed, piloted, and mainstreamed income-generating and drudgery-reducing technologies and practices. His presentation began with a brief discussion on the mountain condition, characterised by absence of conditions historically associated with enhanced economic performance all over the world. He described the experiences and impacts of two important projects: Himalayan honeybees, and 'Women, Energy and Water,' on enhancing livelihood options and environmental sustainability in mountain rural areas. The honeybee programme had increased the incomes of beekeepers and household earnings by an average of US$ 85 per annum, while the women and energy project had reduced women's drudgery and freed up a considerable part of their time to explore and increase their livelihood options.

Mr. Farooq Ahmad of ICIMOD's beekeeping project provided a detailed account of conservation-oriented apiculture for promoting sustainable management of indigenous honeybees in mountain areas of the HKH region. His presentation, 'Honeybees in the Himalayas: Linking Research and Livelihoods to Policy' enumerated the multiple benefits, among them, improved livelihoods, biological conservation, and pollination services from honeybees. He discussed issues related to beekeeping development and managed

pollination and proposed possible policy measures, especially in the international market to lift the exclusion of the Himalayan honeybees from honeybee products accepted in the European market.

Mr. R B S Rawat, in his presentation on 'Poverty Reduction through Medicinal and Aromatic Plant-based Enterprise Development and Private Sector Collaboration,' highlighted expanding livelihood opportunities and biodiversity conservation through community-based conservation and enterprise development, based on the Medicinal and Aromatic Plants Project. He described how ICIMOD, with its partners, has developed and promoted viable options, practical methods, and simple technologies to provide increased benefits for poor and marginalised people while ensuring optimal conservation of the diversity of medicinal plants.

Mr. Bikash Sharma, in his presentation on 'Women Focused Energy and Water Interventions for Poverty Reduction in Mountain Areas', illustrated how a pilot project implemented in Bhutan, India, and Nepal, has made a difference in the lives of women pastoralists, their families, and communities. Highlighting experiences from the project, he argued for ensuring easy access to water and energy as instrumental in alleviating poverty and promoting sustainable mountain development. He believed that it required a drastic change in existing approaches as well as fundamental readjustments to public policies to integrate women's roles and needs into the decision-making process at the micro, meso, and macro levels.

Ms. Linxiu Zhang, in her presentation on 'Investing in Rural China: Tracking China's Commitment to Poverty Alleviation,' provided a detailed background on economic growth and poverty reduction in China. The Chinese economy has grown over the last two decades and has rapidly decreased poverty in China. She analysed the factors contributing to this remarkable growth: the development of markets; liberalisation of trade; improved basic infrastructure such as roads, irrigation, electricity, education; off-farm employment opportunities; and linking rural areas to fast-growing urban and suburban areas. The government must invest heavily in rural infrastructure and human resource development and special attention should be given to poor, mountainous, and minority areas, she concluded.

Discussion

Questions asked during this session related mainly to the ways in which to increase the share of mountain farmers in the growth pie and reduce the influence of middlemen and intermediaries in the market chain. ICIMOD has made efforts to understand and minimise hidden transaction costs in the marketing of mountain products and has been assessing actual returns to different groups from the commodity chain's total gain. According to its findings, middlemen are taking up to 55% of market margins in some cases, but this includes the cost of functions and services they provide. Other hidden costs have not been accounted for and hence, we need to do a critical breakdown to estimate exact returns to different members of the chain. Suggestions were made to conduct in-depth studies in order to develop practical measures to protect poor communities from price shocks (such as increased prices of agricultural commodities and market fluctuations in natural products). Questions were asked

whether agricultural modernisation, such as use of inorganic pesticides and insecticides, have adverse impacts on beekeeping, as well as whether overemphasis on medicinal and aromatic plants for income generation would lead to overexploitation of these resources. It was asked whether the poverty data in China were segregated by gender and ethnicity. The response was that there are no available disaggregated data on these at present.

Plenary Session V: Promoting Decreased Physical Vulnerability within Watersheds and Regional River Basins
Chair: Md. Abdul Aziz ndc, Member, Planning Commission, Government of Bangladesh

Session V focused on promoting decreased physical vulnerabilities within watersheds and river basins. Four papers were presented in this session.

Mr. Mats Eriksson's paper, 'Integrated Water Resources and Disaster Management', highlighted the importance of integrated water resource management in addressing conflict related to water use and management in the mountains. He emphasised that although water is crucial for life, it also creates hazards, therefore, water can be dealt with both as a hazard as well as a service. From this perspective, there is need for holistic planning of strategies for and stakeholder participation in the management of water resources. He pointed to ICIMOD's work in the Regional Flood Project which, supported by the Lhasa Declaration, is one of the efforts to promote integrated water resource management in the HKH region.

Mr. Xu Jianchu, in his presentation on 'Rewarding Environmental Services to Mountain Ecosystems; Where are We and Where to Go (from Here)?' explained the concept of payment for environmental services (PES). Hazards and services are mutually linked in a double feedback system, he explained. He proposed key steps and methods for assessing and identifying environmental services and preparing a framework for developing a mechanism for PES, using the example of Shivapuri Watershed Conservation Area in which IUCN and ICIMOD had jointly conducted a study on the feasibility of PES. PES can be a means to improve management of water resources in the HKH region, he concluded.

Mr. Pradeep Mool presented 'Mapping of Glacial Lakes and Glacial Lake Outburst Floods in the Himalayas', providing a brief overview of climatic variations in the HKH region over the past few years. Drawing on examples from the Indian Himalayas, Bhutan, China, and Nepal, he explained how unprecedented warming has led to widespread glacial retreat. He warned that current deglaciation might lead to major shortages in water supply. In addition, rapid increases in lake water and weak moraine dams can lead to occasional glacial lake outburst floods (GLOFs), with serious consequences on the lives and livelihoods of people living downstream. He described the work carried out by ICIMOD preparing a database on glacial retreat and glacial lakes in the HKH region,and classifying glaciers and glacial lake outburst floods into different GLOF categories. He stressed the need for policy support for sound disaster preparedness and community-awareness-raising campaigns.

Mr. Sanjeev Bhuchar, in his presentation on 'Emerging Options in Watershed Management: Lessons Learned in PARDYP' described the key findings and achievements of ICIMOD's work under the People and Resource Dynamics in Mountain Watersheds Project (PARDYP). Water scarcity was found to be more critical than flooding in the study watersheds. Other important issues included soil erosion, degradation of common lands, soil fertility loss, and nutrient leaching. He provided examples of how low-cost technologies promoted by PARDYP and implemented by farmers in the PARDYP project sites were improving soil and water conservation. Appropriate policies and institutional support were essential for wider adoption of suitable technologies, he concluded.

Ms. Lin Zhen, in her presentation on 'Land-use Dynamics and Policy Implications: Experiences from Mountain Watersheds of West China, began by highlighting current problems faced by Jinghe Watershed in China. While at the macro level in China land use patterns were stable, at the micro level changes were taking place in land use over time. She described policies on land use which have been implemented by the government between 1950 and year 2000 and examined how they influence land use patterns at micro levels. Local people prefer to grow food crops rather than develop nearby forests and grassland because of their concern for food security. She suggested the need for a comprehensive natural resource conservation strategy, one based on a framework integrating resource conservation into policy making, institutional reforms, and local participation, as well as the need to promote indigenous technology for resource conservation and management, and population planning.

Discussion

Recognising the need for regional cooperation in integrated water resource management and disaster risk reduction, discussions centred on how to promote regional cooperation. ICIMOD could take on a proactive role by using regional cooperation to promote the concepts of integrated water resource management and disaster management. Concerns were raised about overlooking the efficiency and economic issues of water, as water is often misused and also monopolised in the form of groundwater by rich and powerful people. The participants noted that misuse of water needs to be stopped and rules, regulations, policies, and institutional arrangements put in place for groundwater management. One suggestion was that water be considered a human rights issue rather than purely as a commodity. Whether in a poor region like the HKH or elsewhere, payment for environmental services (PES) for water is seen as applicable and feasible. Both positive and negative aspects such as drinking water and soil erosion should be considered in arrangements for PES. The difficulty in estimating the value of environmental services because of the flow aspects was recognised. It was suggested that ICIMOD develop the capacity to estimate the true value of environmental services. The reasons behind the poor rate of adoption of simple soil and water conservation technologies introduced by PARDYP should also be studied, and how to promote their wide adoption explored.

Plenary Session VI: *Promoting Greater Voice and Influence, Dignity, Security, and Social Equality for all Mountain Peoples*

Chair: **Mr** S.K. Das, Additional Chief Secretary and Commissioner, Forest and Rural Development, Government of Uttaranchal, India

This session focused on various tools and approaches for raising voice for mountain communities to promote equitable and sustainable development. Five papers were presented addressing the topic.

Mr. Michael Kollmair, in his paper on 'Greater Voice for All Mountain People in the Himalayas,' introduced the concept of equity, empowerment, participation, and social inclusion in development and politics, particularly in the context of mountain areas. He argued that although there was a move towards democratisation throughout the Himalayan region, the necessity for equitable distribution of growth, welfare, and income was often overlooked. Drawing examples from the gender, caste, class, and ethnicity dimensions of inequality in different parts of the Himalayas region, he explained how ICIMOD and its partners had contributed to raising the voice of mountain communities to reduce inequality and create fair opportunities for 'levelling the playing field', and good governance measures to bring those who have historically been marginalised into mainstream socioeconomic and political life.

Mr. Nani Ram Subedi's presentation, 'People-centred Advocacy: A Central Tool for Improving Governance for Mountain People,' described advocacy's role in ensuring better governance for mountain people. He provided a brief overview of the concept of advocacy as a political and collective effort to bring about accountability and increase transparency in policy processes and development, elaborating on various approaches and tools used in people-centred advocacy and lessons learned from ICIMOD's work in this field.

Drawing from the experiences of ICIMOD's work on the state of indigenous peoples, Ms. Radhika Gupta presented 'Policy Priorities for Indigenous People of the Himalayas'. Generally, indigenous people have limited political representation and voice in decision-making as well as limited access to resources. Indigenous communities, specifically tribal and ethnic minorities, can provide the lens through which to view the situation of mountain people in many parts of the HKH: the overlap of cultural diversity and biological diversity, and the underlying causes of conflict. Strengthening tenurial and property rights and access to and sharing the benefits of biological resources can give people a voice, she summed up.

In his presentation on 'Information and Knowledge Support for Promoting Greater Voice and Influence of Mountain Peoples', Mr. Zbigniew Mikolajuk highlighted the challenge of effective communication among different stakeholders and how to deliver policy inputs to meet diverse needs. He explained the approaches and tools ICIMOD uses to 'strengthen two-way information exchange with and access to knowledge by different communities. He emphasised the need to create a supportive environment and tools for sharing knowledge and information with policy makers.

Geography plays a critical role in shaping the unique needs and challenges of mountain regions. In his presentation on 'Geospatial Tools and Methods for Informed Decision Making and Policy Training', Mr. Basanta Shrestha described the multiple applications of geospatial tools and methods such as information and communications technologies (ICT), geographical information system (GIS), and global positioning system (GPS) technologies in helping to understand mountain geography and ecosystems. Drawing on an example from Nepal, he described how the application of geospatial tools can be used to understand socioeconomic problems and public policy making.

Mr. Krishna P. Oli, in his paper on 'Access and Benefit Sharing (ABS) from Genetic Resources and Associated Traditional Knowledge: Key Issues for Policy Makers,' reviewed relevant features of the Convention on Biological Diversity and highlighted the various international processes that have emerged out of it to promote access to and benefit sharing of genetic resources. His paper focused on ICIMOD's approach to developing access and benefit sharing processes, and explained why access to genetic resources and associated traditional knowledge is important in the HKH countries. He explained that the approach studies the state-of-the-art in the ABS process in the HKH region and highlights key issues in implementation. He focused on key issues important for equitable sharing of benefits in the use of plants, animals, microorganisms, and traditional knowledge resources as they can generate benefits through instruments such as bio-prospecting and equitable commercialisation of natural products.

Discussion

Discussions after this session covered questions related to whether access and benefit-sharing mechanisms for biological resources generate significant benefits for poor local communities and how to ensure their participation in the policy formulation and development processes when they are economically and socially marginalised. The participants recommended that ICIMOD support the creation of an enabling policy environment for improved access to resources and for building capacities of poor and marginalised groups.

Plenary Session VII: Policy Processes and Challenges
Chair: Mr. Noor-ul-Haq, Secretary, Government of the North West Frontier Province, Peshawar, Pakistan

This session was devoted to understanding the policy-making process in the regional member countries and the role of different actors and factors involved in different stages of the process. Six papers were presented during the session.

Mr. Md. Abdul Aziz, member, Planning Commission, Government of Bangladesh, presented 'The Policy-making Process in Bangladesh: Past Experiences and Present Trends.' He explained the key factors influencing the policy-making process in Bangladesh, drawing examples from the country's education policy. The demand for improved education and education policies was the main driver of policy reforms in Bangladesh. Donor influence in policy making had declined since the 1990s because of decreasing financial assistance, and strengthening political leadership in a democratic setting was taking an active role

in the policy-making processes. The bureaucracy, because of its multi-sectoral knowledge, experience, and power, continues to play a significant role in policy-making. The media, civil society, relevant stakeholders, independent research institutes, and think-tanks now share and play a role in policy-making. Implementation of policy recommendations, however, remains weak due to frequent changes in policy decisions.

Mr. Kezang Jamtsho presented 'The Policy Development Process in Bhutan with Special Reference to Water Policy', where he provided an account of the availability of water resources in Bhutan, and hydropower generation's potential to contribute to the country's economic development. He described the water management scenario in the past, characterised by lack of proper coordination, inadequate policy, and an unclear legal framework. He discussed the Bhutanese government's initiative after 2001, when it formulated a national policy to ensure coordination among organisations to improve the management of water resources. He described the steps taken and processes adopted in formulating Bhutan's National Water Policy, including consultation and coordination mechanisms, and shared some of the lessons and experiences gained in the process.

Ms. Wang Meiping, in her presentation on 'Policy Development Process in China with Special Reference to Rangeland Policy' described changes in China's rangeland policy since 1949. Taking the example of Gansu province, she cited some of the policies and laws that influenced grassland management. The concept of sustainable development is not properly integrated and needs to be integrated into government and research policies under the present pastoral tenure policies, she urged.

Mr. Hakim Shah gave a presentation on 'Policy Implications for Water Resource Management in Pakistan', where he described the challenges faced by Pakistan in water resource management because of high temporal and spatial variations in the availability of water and the growing water needs from economic activities and livelihoods. He outlined the key issues facing the water sector, such as the absence of a holistic and integrated approach to water resource management, low water productivity, and the inadequate capacity of institutions in the water sector. To address these challenges, he recommended the development of a comprehensive and integrated water policy with adequate representation of relevant stakeholders as well as coordination among government agencies, civil society, and private organisations in the water policy formulation processes.

Mr. Golam Rasul presented 'ICIMOD's Strategy for Enhancing Policy Support for Sustainable Management and Use of Renewable Natural Resources in the Hindu Kush-Himalayan (HKH) Region.' He described the status of natural resources in the HKH region, highlighting the importance of natural resources in sustainable mountain development. Policy and institutional support play an important role in the management of natural resources. He presented the objective and scope of ICIMOD's strategy for enhancing policy support for natural resource management in the HKH region, describing ICIMOD's guiding principles for viable regional policy development, and its advocacy strategy as well as a strategic plan to support policy development for the sustainable management of natural resources.

Discussion

A stimulating discussion followed around the argument that good policy alone will not have the desired impacts: policy has to be supported by an enabling legislative framework, implementable action plans, and the participation and commitment of the government and other stakeholders. There is an increasing need for participation of key stakeholders in the policy development process to ensure ownership of the implementation process. Participants asked how ICIMOD could help the RMCs analyse existing policies and the difficulties faced in implementing them. It was felt that capacity building, effective monitoring, national commitment, and public participation were crucial in order to improve policy formulation and implementation processes. ICIMOD could contribute through knowledge management, information sharing, and regional networking.

Synthesis of Discussions

After the presentations of thematic papers, participants were divided into four working groups for focused group discussions to develop and distill new and innovative ideas and practices to facilitate improving policy formulation and implementation processes in the region and in the member countries. The groups examined approaches that could strengthen regional sharing and cooperation in developing policies to address transboundary issues; link good policies to reduce poverty, inequality, and vulnerability of mountain communities; and ensure active regional sharing of successes and failures. Participants were encouraged to share their knowledge, experiences, and good practices in policy and institutional innovations. Each group selected a leader to facilitate discussions. Group findings and recommendations were presented for discussion in a plenary. Mr. Gabriel Campbell chaired the presentation and reflection session.

Reflections and Recommendations

After presentation of the outputs of focus group discussion, the participants were asked to share their thoughts and perceptions of ICIMOD's role and how this role could be strengthened. Most of the participants found the workshop useful and an 'eye opener' on mountain-specific issues. They considered ICIMOD a 'think-tank' and a model for integrated mountain development. They felt the need to strengthen the link between ICIMOD's knowledge and information systems, and training and awareness raising of decision makers, in order to develop and reform pro-mountain development policies. ICIMOD can play an important role in facilitating policy processes through generation of data, information, knowledge, and understanding required and by working closely with national partners, as was the case in preparing a the Water Policy for Bhutan. ICIMOD could contribute to the policy development process as an objective broker, providing a regional platform and facilitating cross-country learning. The participants regarded ICIMOD to be a neutral forum for sharing regional state-of-art, experiences, national information, regionally adaptive knowledge, mountain-specific technologies, and good practices. The RMC representatives believed that ICIMOD could improve its role in mainstreaming mountain issues in regional fora (e.g., in collaboration with SAARC) and in international fora (e.g., the UN). ICIMOD should have a collaborative framework for integrating learning into national development planning processes through advocacy and knowledge management.

Conclusion

The workshop identified key policy issues, approaches, and strategies to promote sustainable use and management of natural resources in the HKH region. It provided important guidelines for ICIMOD on how to plan policy research and development work in the field of natural resource management, developing effective collaboration between ICIMOD and its partners in the region. It also updated and shared knowledge and information provided by participants to update the status of, issues in, challenges to, and opportunities for managing mountain natural resources in a sustainable way. One of the key outputs of the workshop was the launching of a national policy working group linked informally to a regional policy working group to advise ICIMOD on policy work. The workshop recommendations will be useful for launching and strengthening policy-related networks and research groups. They can also facilitate the provision of a variety of platforms, including virtual ones, to actively share lessons and experiences that facilitate dialogue and discussions and analyse critical policy issues for promoting sustainable use and management of natural resources in the Himalayan region.

Session I
Mountain Development: The Need for Enabling Policies

Sustainable Mountain Development: Reflections on Supporting the Development of Inclusive and Pro-Environment Policies in the Himalayas

J. Gabriel Campbell, Senior Fellow, The Mountain Institute
Former Director General, International Centre for Integrated Mountain Development

Introduction

Developing effective policies suited to the diverse conditions of mountain areas such as the greater Himalayan region depends on the ideas policy makers bring into the process. Understanding the nature of the problem and the kinds of possible solutions held by diverse stakeholders (from government official to local farmer) exert a significant impact on whether the proposed policy is feasible, adopted, equitable, or environmentally sustainable. The actors involved in policy change will almost always have differing and often conflicting perspectives and interests. The ability to introduce change that key actors can support is shaped not only by the nature of the solutions introduced but also by the processes used to develop and introduce them. All these factors are critical to whether a policy can actually work, and whether it can work for the benefit of poor and excluded communities as well the environment.

The most effective policies, with equity and positive environmental outcomes, are developed by involving diverse stakeholders every stage of the process. The framework or paradigm used to understand the problem empowers local actors to find a workable solution that fits their unique conditions rather than just imposed solutions developed by outsiders. The institutional rules governing the implementation of policy are developed locally taking into account the interests of stakeholders, including the poor and the socially excluded. In effective policies, these rules are flexible enough to be adapted by households and communities to their diverse conditions, while resilient enough to resist attempts by different stakeholders to bend the policies to their own benefit.

Relatively successful examples of sustainable mountain development policies in the Himalayas include community forestry and ecotourism. Following a brief discussion of the critical factors in policy development, reflections on these examples' key success factors are discussed along with lessons for the future. The discussion draws heavily on experience gained with colleagues while working at ICIMOD.[1]

From research to policy

Most research-oriented policy development organisations such as ICIMOD try to map out a logical sequence to the development of policy. This starts with collecting and analysing knowledge about the problem, identifying options and strategies, and disseminating and advocating strategies to key policy makers and intermediary organisations in such a way that an enabling environment is developed, policies are adopted, and outcomes achieved. Such an approach is illustrated in the following chart (Figure 1).
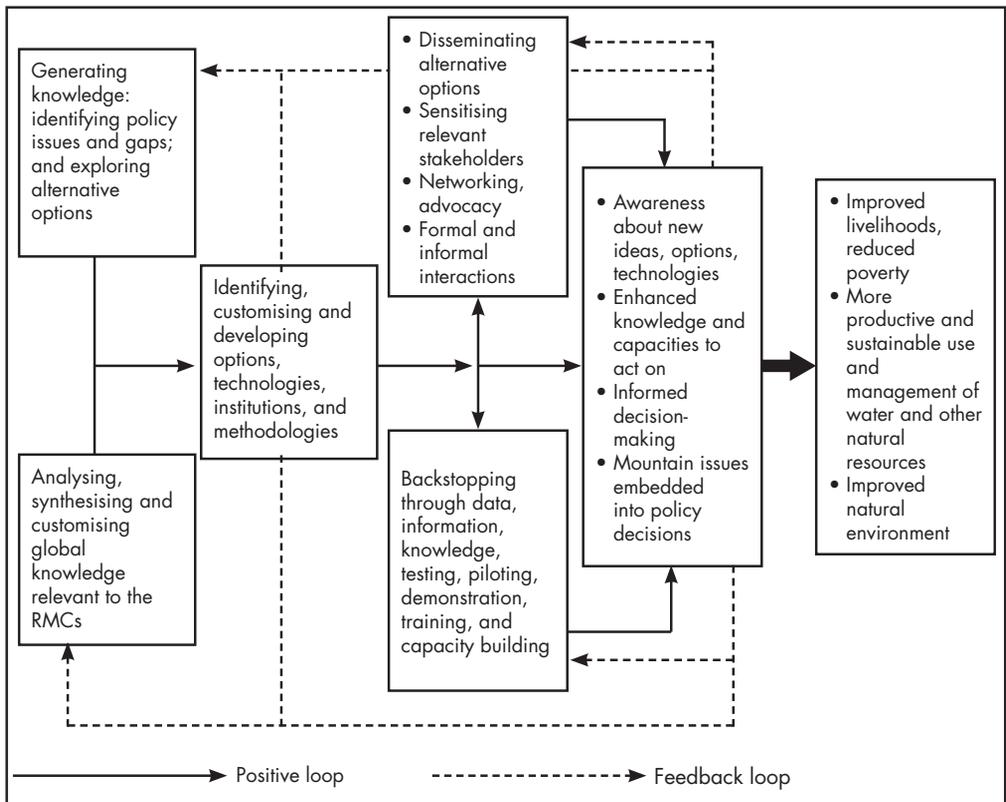
Figure 1: **A framework for policy development** (G. Rasul 2007)

Advancing from knowledge to policy, to implementation and impact, is a complex and uncertain process and rarely follows a linear roadmap (Blaikie and Sadeque 2000). Understanding the policy process helps to highlight the role of the different stages involved and the distance traversed from knowledge to outcomes.

[1] The author was Director General of ICIMOD from 2/2000 – 3/2007. This paper was expanded from his presentation at the workshop.

To be effective, the approach requires that:
- research is credible, applicable, adequately specific, and accessible;
- there is a compelling story to translate research into understanding;
- there are powerful examples in the region;
- there are champions and ownership driven by passion; and
- there is effective advocacy and lobbying by interest groups.

Adequate financial and human resources are also needed, and timing and luck are often more critical than is usually admitted.

Framing the policy question
Underlying this compressed version of an idealised policy formation process, we know that the shape of the policy question posed determines the shape of the answers obtained. Within the context of mountain policies, we find two differently shaped versions of the key development question which yields markedly different policy answers and requires different policy processes.

Question A - Are rural mountain people victims of poverty as a result of their own practices and outside exploitation, and trapped in self-destructive cycles (Figure 2) requiring rescue and massive inputs of paternalistic aid?

Question B - Are mountain people capable of improving their own condition, environment, and livelihoods, given appropriate facilitation and access to knowledge and resources (Figure 3)?
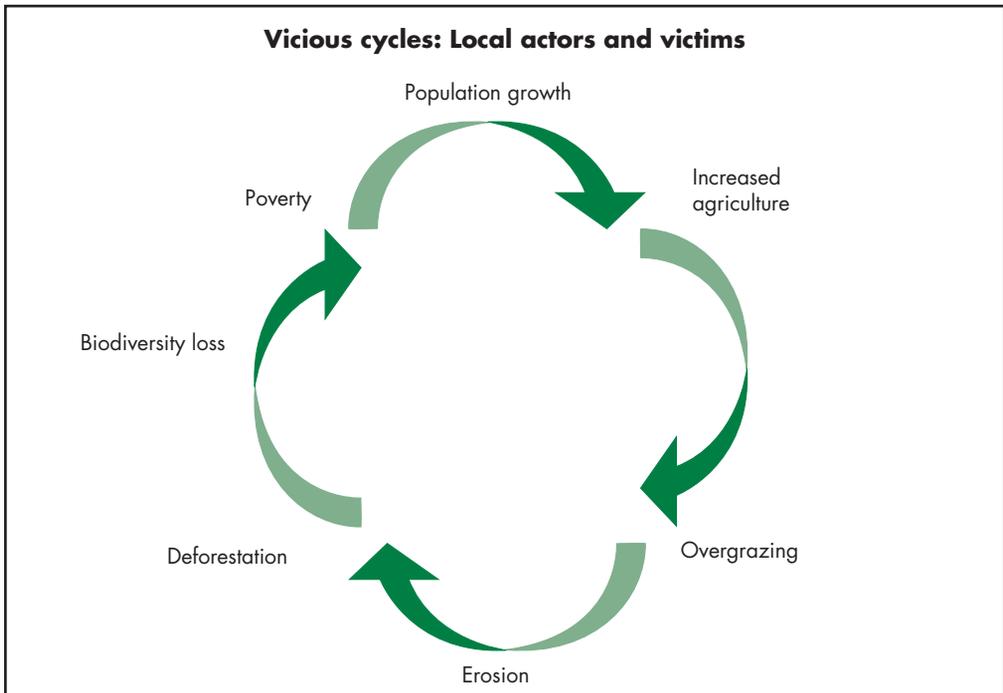
Figure 2: **Self destructive cycles, the traditional story: Question A**

Virtuous cycles: local upstream actors, downstream and global beneficiaries

Out migration

Re-investment

Decreased agriculture

CBNRM

New fuels

Increased forest

Stall feeding

Nutrient replenishment

New Markets
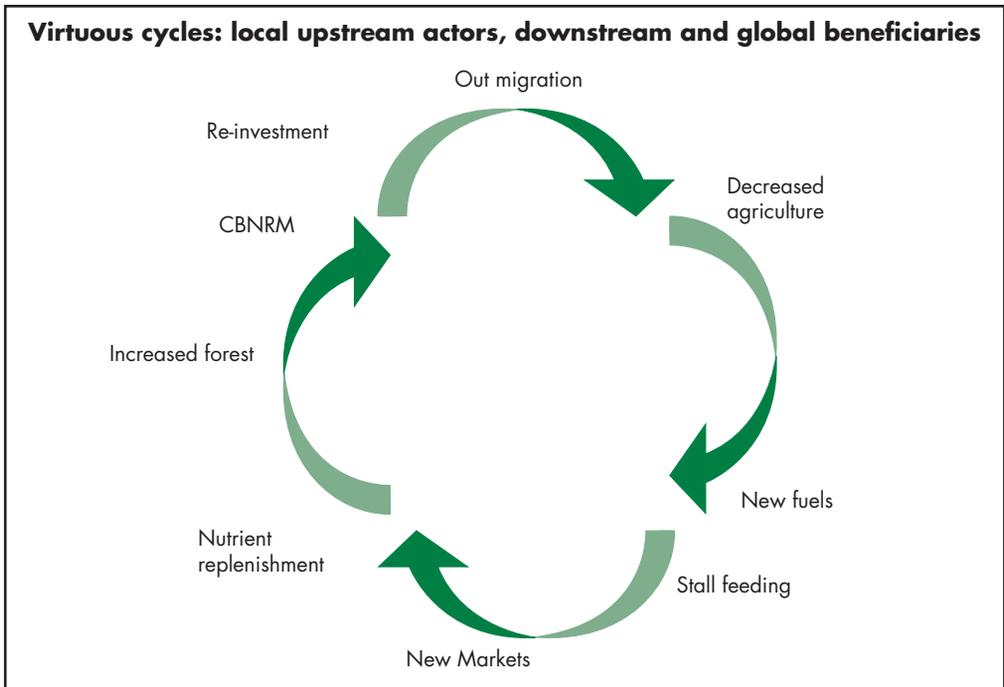
Figure 3: **Virtuous cycles, the alternative story: Question B**

In the classic version of question A, mountain people are caught in a vicious cycle in which they are the major actors and victims. They are often considered responsible for their poverty and the destruction of their environment. Their overexploitation of resources increases the mountain landscape's physical vulnerability and their social, economic, and political vulnerabilities as well as downstream disasters. The future emerges as bleak, unless massive interventions are put in place to change agricultural practices, population demographics, and to slow down erosion processes.

The other story associated with Question B depicts a world of virtuous cycles where the primary actors are local mountain people, and the beneficiaries are expanded to include downstream populations benefitting from ecosystem services provided by improved watershed management. Understanding the causal chains triggered by such actions as outmigration from the mountains, widescale adoption of community forestry, stall feeding, and new dairy markets, yields a much different and more positive set of predictions for the future and the kind of policy support required to sustain it. Effective policy interventions focus on empowering local mountain people to create their own development. Benefits accrue not only to local and downstream actors but to the world at large through conservation of carbon and genetic resources.

There has been enough research to support both of these paradigms of environment and development. Both are true: while there tends to be more adherents to the traditional story of vicious cycles, there is increasing realisation that mountain people have also demonstrated the capability to act together to take advantage of favourable policies and drive development in positive ways.

Example 1: **Community forestry in Nepal**

The evolution of community forestry in Nepal is an example of a policy process that is yielding successful outcomes for institutional and environmental sustainability as well as for ecosystem services downstream and for global beneficiaries. Studies have examined the process and factors that have led to success, as well as debated the degree of inclusive equity obtained. Undeniably, community forestry has reversed deforestation trends in Nepal, and over the last 25 years has resulted in the formation of over 20,000 community forestry user groups managing over 1.2 million hectares of forest, with significant increases noted in community income, equitable access to forest products, increased environmental services, and biodiversity.

Each of the steps noted at the outset played a key role in bringing in a shift in thinking, legislation, and support, which has made the introduction of community forestry possible. Research focused on the use of forests for fuelwood, small timber, fodder, and food supplement, has brought in a new understanding of forests as a critical element in rural livelihoods rather than only a national income source from logging. Research into how communities could manage common property forests successfully while continuing to degrade open access and nationalised forests provided examples and a theoretical framework for developing new policies to shift use and management rights from the government to local communities. Innovative legislation was prepared, widely debated, and adopted. Highly committed individual forest officers and development actors provided advocacy and supported dissemination efforts that were effective through the timely release of popular books of ecological doom such as *Losing Ground* or the innovative film, 'Fragile Mountain' (Eckholm 1976). Multilateral and bilateral donors such as World Bank, the United Nations Development Programme (UNDP), the United States Agency for International Development (USAID), Swiss Development Cooperation (SDC), Danish International Development Agency (DANIDA), and others took the work of the Australian project to scale and provided the resources and long-term support essential for its success.

The ultimate success of community forestry in Nepal, however, was driven by the local communities – the main actors in adopting the new policy. Critically, their engagement only took place after a few key policy adjustments in the first few years of the programme. Initial legislation provided the means for turning over community forests to the administrative unit, then called the 'village panchayat' (now 'village development committee'). This unit usually included several villages and forests and there was little congruence between the administrative unit and the forest or its users. Initial legislation required that the panchayat first pay funds raised from the forest to the government, then apply for reimbursement the following year while claiming 75% of the returns from the government. When, on the basis of monitoring and research carried out by the project and government policy makers showing that these policies changed a previously resistant rural population into enthusiastic adopters, enabling changes were introduced to allow user groups made up of forest users to be legally registered as the direct recipients of community forests and the funds obtained from them. Once this framework was in place, applications for community forests started to pile up on the desks of forest officers, and still do – at rates beyond their capacity to process. A national Federation of Community Forestry User Groups (FECOFUN) was established with the help of ICIMOD and Ford Foundation, which provides for the first time in South Asia an organised advocacy and mutual self-help association representing millions of users. This group has withstood both insurgency and bureaucratic attempts to reduce its influence.

Several issues are not covered by this summary. The critical role of management plans and how they are developed and administered; the sets of new skills needed by both forestry and community personnel and training that could provide them; the role of markets and the mix of products suitable for harvesting and planting in community forests; and the degree of equity achieved when local elites seek resource capture. These are examples of policy issues that continue to need attention. These issues notwithstanding, it is clear that when local communities are enabled to take the driver's seat through supportive policies based on their own interests and practices success on a large scale is possible. The prevailing understanding of the role of forests in development and the role of local people in forest management had to change radically to enable effective policies to be developed.
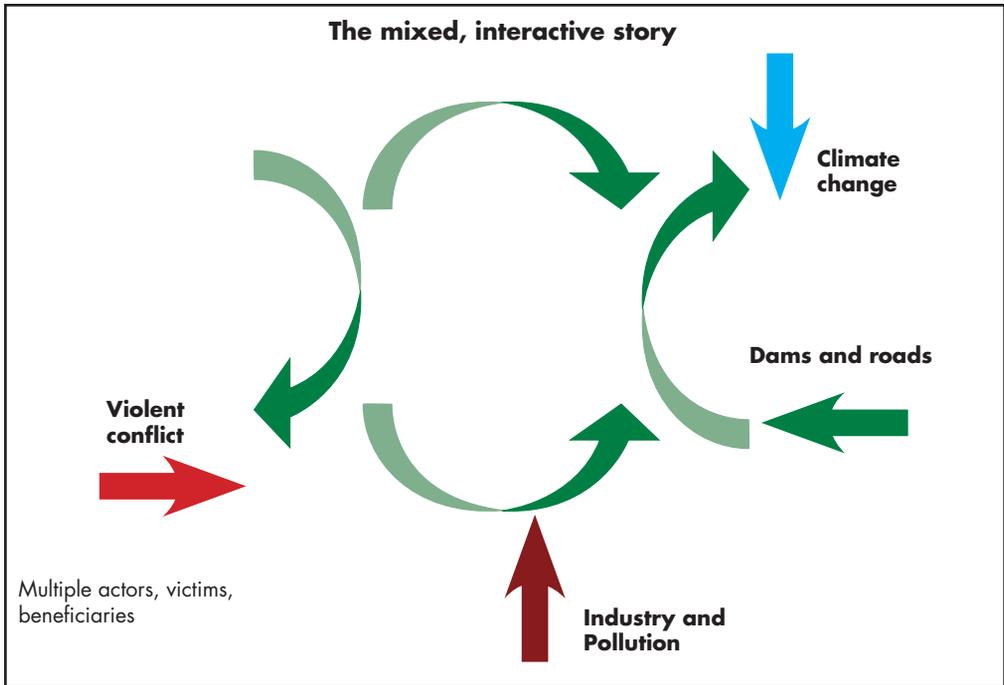
Figure 4: **New threats and dynamics with intersecting and interacting cycles: Question C**

In the world of Himalayan uncertainty (Ives and Messerli 1989), a mixed paradigm that recognises the truth of both these models but brings in the significant impacts on mountain livelihoods and the environment brought about by outside actors, is likely to be a closer approximation of the complex realities we find in the Himalayan region and mountains in general. This mixed interactive story recognises the effects of climate change, constructed infrastructure, globalisation, and rapid economic development, as well as widespread violent conflict. It demonstrates an understanding of mountain conditions subject to multiple actors, multiple beneficiaries, and multiple victims.

This approach modifies question B by adding the need to identify and deal with outside forces and opportunities, for example, climate change and remittances flowing in opposite ways. This formulation appears to provide a more realistic and fruitful basis for arriving at policies that are feasible, potentially positive, and equitable environmentally. This leads us to a more realistic formulation of the central policy question, one that enables policy solutions to be found that recognise mountain people as both actors and victims and also recognise the coexistence of destructive and constructive interactions. The question recognises that there are multiple actors and physical forces at work in the making of effective, equitable, and sustainable policy.

Question C - How can diverse mountain peoples be provided with opportunities to develop livelihoods and environmental security within the context of dynamic interactions in the mountains and with the world downstream and outside the mountain area (Figure 3)?

Example 2: **Ecotourism in mountain development**

Tourism in mountain areas required a similar shift in the prevailing underlying paradigm in order to develop policies that support poor mountain communities and the environment rather than the urban elites. Traditional commercial tourism, still widely practised in the Himalayan region, shapes policies to ensure that state and private tourism entities based in urban settings capture tourism benefits by requiring permits and fees levied centrally, group formation and pre-payment of costs, urban supply procurement, and international marketing networks. All of these mechanisms exclude local community operators. In addition, they do not provide a stake for local communities to encourage them to conserve the main products that mountain tourists are looking for: rich natural and cultural environments.

Practices introduced in Nepal and researched by ICIMOD professionals and other scholars have shown that alternative policies can shape mountain tourism to benefit the poor and the environment if done right (Banskota 1998; Chettri et al. 2005). These can cover pilgrimage and religious tourism as well as adventure trekking and mountaineering activities. Mountain tourism accounts for 15-20% of worldwide tourism revenues, or US$ 70-90 billion per year. Mountain communities have demonstrated that they can be ideal service providers for mountain tourism, running lodges, homestays, and camp grounds, and working as guides, porters, and travel agents. Where policies and training have been introduced to support local communities such as in the Annapurna Conservation Area, or Yuksum area in Sikkim, India, ecotourism has increased substantially (Chettri et al. 2005). It has provided positive links to greenhouse production systems for vegetables, poultry and eggs, milk production, handicrafts, and other general supplies.

Ecotourism has also demonstrated that it can foster environmental protection. As the numbers of local residents benefiting from tourism activities increase, and as they get organised with appropriate policy support into informal associations (as has happened with community forestry) they have shown that they are capable of protecting the natural beauty and cultural heritage that attracts their clients.

As outside interventions increase, however – whether they are roads and vehicles, or plastic bags and increased garbage – new interactions are developing that will require fresh dialogues to develop workable policies. Local efforts are still the most critical for adapting policies that benefit poor locals and the environment and, as outside forces expand, innovative policies involving these stakeholders become even more critical. As in the case of community forestry, second generation issues require added capabilities on the part of local communities to deal with new technologies and political constituencies. Rapid expansion of mobile phones and the Internet provide new opportunities for marketing and advocacy for which local communities will need to acquire skills to realise these opportunities effectively.

Examples of policy gaps and opportunities in rangelands and shifting cultivation areas

While community forestry in Nepal, and ecotourism in Nepal, (Sikkim) India, and some other pockets of the Hindu Kush-Himalayan region, have changed prevailing paradigms to some extent and introduced policies that have partially succeeded in providing pathways to benefit the poor and the environment, there is considerable scope for continuing to adapt and extend these policies to benefit more countries and areas.

Surprisingly, however, the major domains of natural resource management are only beginning to be subject to a change in mindset in ways that can yield socially and environmentally beneficial outcomes. Management of mountain rangelands which cover over 65% of the

area of the greater Himalayan region, and shifting cultivation which covers vast areas of the eastern Himalayan and foothill regions, are characterised by a jumble of left-over policies mostly based on a paradigm of centralised government control. In most of these policies government responsibility is unclear and tenure rights are ambiguous and often conflicting. Very few nomads or shifting cultivators have tenurial security over the resources upon which they depend. Policies are geared, either directly or indirectly, to get them to change traditional practices and adopt either livestock rearing or settled agricultural practices suited environmentally to other ecosystems. There is little incentive for sustainable local community management. Changes such as construction of roads and other infrastructure on a wide scale; new markets and demand for meat, wildlife, and medicinal herbs; and aspirations of nomads and the youth for education, health, and modern amenities, offer opportunities to transform these negative cycles. Unfortunately, they are too often extra burdens and barriers to local people and encourage government to treat semi-nomadic peoples as though they were settled agriculturalists.

ICIMOD and partners' work in these areas has shown that there are real opportunities to find policy solutions that are beneficial to the poor and the environment (Miller and Craig 1997; Rasul 2005; Gyamtsho et al. 2006; Sharma and Kerkhoff 2006; Rasul and Karki 2007). As with community forestry and ecotourism, these opportunities depend on the central pillar of providing far greater ownership of resources (tenurial security) and putting local communities in the driver's seat. They also require extensive research and dialogue with the other actors and stakeholders – from the private sector to government agencies – to negotiate frameworks and actions that can facilitate more sustainable action.

Policies and institutions

As the preceding examples indicate, the interaction between policies and the institutions through which they have been created and implemented is complex. Policies provide the up front legal, programmatic, and organisational rules that try to shape individual and collective behaviour. Institutions provide the often hidden rules that determine social stratification and social dynamics, group and individual interactions, and the application of systems for organising behaviour sought by more explicit policies.

Different stakeholders and individuals play within and with the rules to either promote or resist policy adoption and implementation of policy. Stakeholder motivation depends largely on the prevailing institutional culture, the perception of benefit distribution to others and one's self, the degree of individual integrity, and the structure of implementation. Poor and marginalised mountain peoples, especially Dalits, excluded ethnic groups, and women, rarely have equal voice. As is the case in community forestry or successful ecotourism models, an enabling environment for appropriate policies are required that specifically target institutional constraints and opportunities and build group strength through associations and similar platforms for collective action. Since policies are intermediated by institutions, hidden institutions are as relevant to their success as explicit policies – a point too often lost in typical economic models for policy action.

Stakeholders' voices: lessons for increasing inclusiveness

It is crucial that the process of policy development and the institutional innovations introduced specifically address the concerns of and give voice to excluded groups. Mechanisms should be built to empower women and excluded groups to become full members of the community, with equal access to benefits. This is easier said than done. While the participatory approach can be effective in accommodating issues and opinions of dominant stakeholders, explicit measures are needed constantly to provide a more inclusive and level playing field for silent and vulnerable groups.

Some important lessons learned in making explicit provisions for greater inclusiveness are covered in the following passages.

- *Identify real users* - It is important to understand the real users of resources who may or may not be within the traditional or administrative boundaries, whether on the micro- or macro-scale. At the local level, user groups are an effective starting point, but issues of natural resource management in the mountains of the Himalayan region are often linked to transboundary networks and need to be addressed at a multi-state level as they affect the livelihoods of people across countries. The benefits must be shared with legitimate owners and users through delegating judicial rights. There is, however, always the danger of elite capture of resources and power while marginal sectors continue to suffer poverty and injustice. Stakeholder power imbalances need to be reddressed by putting the interest of voiceless and marginalised community members first in the process of intervention.

- *Differential impacts of technology choices on stakeholders* - The choice of technology often determines which group of stakeholders will benefit and who will lose. For example, plantations of fuelwood, fodder, and non-timber forest product species tend to skew the benefits towards women and the poor. Mono-culture timber plantations are often subject to capture by the elite. Similarly, tourism policies that insist on large groups and tour buses direct the market towards richer urban companies while policies enabling individual tourists (free independent tourists or trekkers - FITs) to make their own arrangements, direct the benefits towards local buses, lodges, guides, and porters. Ultimately, the degree to which a technology or policy is more inclusive and equitable depends on the degree to which resilient and adaptive local institutions are developed through an inclusive process and empowered to make key decisions about implementation. Details make the difference.

Lessons

Without doubt, good empirical research is critical in developing sound mountain development policy, here defined in terms of a pro-poor and pro-environment orientation. As the examples of community forestry and ecotourism in the Himalayan region illuminate, good research is a function of not only scientific rigour but, even more importantly, the ability to ask the right questions. Policy solutions are generally adopted and effective if they understand the critical need to put local communities in the driver's seat, legally and institutionally. Mountain policies need to recognise and provide appropriate returns to multiple stakeholders, but they are generally only inclusive and sustainable if they provide a level playing field for excluded groups through the choice of pro-poor technologies and institutions with accountability.

Policy innovations, building on the positive attributes of existing institutions that support a culture of collective behaviour, are more likely to be adopted and maintained. As outside threats and opportunities arising from rapid infrastructural development, new markets, new technologies, and new aspirations and social norms, intervene more strongly within the local mountain communities, the importance of resilient local institutions and supporting legislation continues to increase. ICIMOD and The Mountain Institute's (TMI) experience in a number of fields has shown that successful examples abound in the Himalayan region and that the opportunity to expand appropriate mountain policies is both vast and urgent.

Active government and academic and NGO partnerships, with an understanding of and mandate for mountain policy analysis and support, are essential to meet the mountain policy challenge. New information technologies and computer-based analytical programmes such as GIS provide unprecedented tools for researchers and policy analysts, but will only be useful if accessible and used by a rural population increasingly literate in terms of technology. It is this partnership between those with research and policy literacy and local communities and individuals who must be responsible for driving and carrying out mountain policies that will allow this challenge to be met in ways that can be both equitable and sustainable.

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Policy and Institutional Reforms in the Context of the Hindu Kush-Himalayas: A Review of Experience in the Context of ICIMOD

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Introduction

In the past, there has been considerable focus on economic policy and related institutional reforms. The conventional model of economic, policy, and institutional reforms has a standard set of prescriptions: establish property rights, enforce contracts, remove price distortions, maintain macroeconomic stability, remove restrictions on trade and industry and, with a little bit of good luck, account for uncertainty. The economy should move ahead predictably and vigorously. Policy and institutional reforms face a number of significant difficulties. While it is a favourite topic for multilateral and bilateral agencies including academics, most governments see this as an intervention into their territory (Blaikie 2006). Many of the recent policy and institutional reforms also focus on removal of government control to promote liberalisation and privatisation of the economy. The government is not about to fade away completely, however, and as a matter of fact, given the marginal impact on poverty of liberalisation policies, there is already some softening for the state through advocating engaged governance (Khan 2003). This paper reviews policy and institutional reforms in the context of policy and institutional reforms in mountain areas.

The changing context of mountain policies and institutions

In the competition for resources, unless highlighted by some natural event, mountain areas tend to fall back to their remote, inaccessible, tribal, and minority status. Clearly, the work thus far has not identified one characteristic or unique feature that will help policy makers modify their traditional way of thinking and looking at mountains. As the review clearly shows, policy and institutional changes in mountain areas have been influenced by changes in the prevailing development thinking about a particular area, sector, or resources. The impact of these changes, however, may not be due to anything specific to the mountains but rather to other changes in the economy and society.

From biophysical to people focus

For a long time, biophysical processes dominated the research agenda in mountain areas. Earthquakes, glaciers, storms, climatic changes, geological structures, hydrology, vegetation identification and mapping, were among the common research areas. With increasing development activities in mountain areas, the research agenda has also gradually moved towards people in the mountains (Rosser 1983). If at first researchers had found mountain people to be destroying their environment, more intensive studies have revealed them to be in fact guardians of the environment. Both of these positions have influenced forest policies and institutional reforms in the region (Blaikie and Sadeque 2000). While there are many inappropriate indigenous practices throughout the mountains, many potentially valuable areas of indigenous knowledge and activities have also been identified (Jodha and Shrestha 1994).

Disciplinary to interdisciplinary

With increasing development focus on mountain areas and people, many complex questions are being raised. A soil erosion problem is linked to deforestation and farming practices, and this is further related to population growth, gender roles, land policies, tenure, and market prices (Schrier et al. 1995). In the field of watershed management new research has helped to alter predominantly engineering-oriented, structure-based government interventions to include biological solutions that are implemented through participatory methods.

Upstream-downstream relationships

In the past, many important decisions regarding mountain areas were dominated by the needs of downstream and urban areas. Water resources projects were implemented for the benefit of the plains and urban areas. Mountain forests were mostly used to meet the timber needs of the plains (Jodha 2000). Dams built during the fifties and sixties were primarily oriented to serving the needs of the plains, so much so that, in many areas where dams were built, local people did not even have electricity until very recently. Little attention was given to the needs of upstream people. River training and watershed management activities were also limited to protecting the immediate structures around the dam (Bandyopadhyay and Gyawali 1994).

Projects to integrated approaches

More research is calling for a change from a narrow sector-based project intervention method to the adoption of integrated approaches which are based on participatory planning and management. Many development activities were in fact carried out as single projects. The multiplication of projects had reached a point where projects appeared to be working against each other. Similar types of project were being recycled over and over again. Rapid changes in projects limited the time horizons of many organisations to project periods, making it difficult to focus on development of longer-term capacities. Projects also reinforced many inter-organisational rivalries and rigidities. While the proposal for integrated approaches made a lot of sense, these have been difficult to organise and implement in practice (Pradhan 1985).

Forestry and watershed development

The prevailing position regarding forests during the sixties was that deforestation was caused by farmers who did not care much about the environment and were relatively ignorant about the consequences of removing trees on their farms, about water supplies, and about overall watershed conditions. This thinking resulted in widespread extension of government control over forests in the late fifties and sixties (Gilmour et al. 1988). It did not take long to see the consequences of this decision, and it resulted in widespread deforestation even in areas that had well protected forests in the past. Communities had, in fact, protected their forests relatively well in the past, and it was only after government interference that deterioration occurred. Similar experiences were observed in erosion control practices in the public sector, with check dams and structures which were not effective and sustainable. A closer study has revealed that many farmers were forced to cut down trees because of various taxes and levies (Mahat et al. 1984).

There is also considerable debate about the link between deforestation in the Himalayas and downstream flooding, particularly in Bangladesh. A similar position has been observed in the Yangtze River Basin where the main reason given for downstream flooding was the reckless deforestation in the upper reaches of the Yangtze (UNEP 1999). While some argue that mountain people are recklessly destroying their environment and causing significant downstream damage, others maintain that mountain people are not only the custodians of their environment, they also contribute to downstream services by protecting water, forests, soil, and biodiversity and, hence, need to be compensated for their environmental services (Pratt 2002).

Rural development, poverty, livelihoods, and social exclusion

Many attempts have been made to address poverty in mountain areas, but these have failed mostly from lack of enabling policies, dominance of a public sector approach, and lack of political commitment. While district-based integrated rural development programmes have been launched as part of devolution, a decentralised community participatory approach is receiving priority in the present context (Dhungel and Shrestha 2006). Poverty is still widespread although recent data shows some decline. The Poverty Reduction Strategy Programme (PRSP) has focused on improving livelihoods and removing social exclusion of different groups in the country (NPC 2005). These are some of the situations in which policies and institutions are changing with time and external environments.

Mountain agriculture

The bulk of mountain people continue to depend on mountain agriculture. It would, therefore, be reasonable to assume that this was a high research priority. This has not been the case, however, and it is only recently that research programmes have begun to look at some of the specific aspects of mountain agriculture. Even teaching about mountain agriculture was conspicuously absent (Banskota and Partap 1996). Comparative reviews of experience in other contiguous mountain areas reveal that there was no comparative advantage for food grain production in many areas of the upper slopes (Jodha and Shrestha 1994). Slowly,

cultivation of high-value crops is replacing food grains throughout the mountains where access has improved and farmers have had opportunities to link with wider market economies.

ICIMOD's contribution to policy and institutional reforms

Overall and sector aspects of policy and institutional reforms

ICIMOD's major contribution has been in the areas of promoting better understanding of mountain environments and strengthening the capacities of some organisations in the HKH countries. This includes providing training in GIS and RS applications and mountain risk engineering. Some of the other popular ICIMOD subjects, such as seabuckthorn and sloping agricultural land technology (SALT), appear to have been sidelined. It is important to note that all the above have strong components of technology. The exposure and training that has gone along with support in kind for capacity building has contributed to improving capabilities in beneficiary organisations. What impact this has had on the work of different organisations in their national contexts has yet to be documented. The contribution of policy and institutional reforms from the above is indirect and quite difficult to assess.

Looking at some of the recent important publications of ICIMOD, it is evident that there is no shortage of proposals for policy and institutional reforms (Gyamtsho et al. 2006). Regional knowledge centres are needed with the necessary infrastructure and competence to evaluate or even participate in global programmes and to transfer important information from the national and local levels to the regional and global levels and vice versa for proper verification of ongoing processes (Messerli 2006).

In his keynote speech, Phrang Roy of IFAD (Roy 2006) points out the challenges of making institutions work in the interests of the poor and women, creating enabling conditions for the poor to help themselves, ensuring the enhancement of women as agents of change, and restoring peace through promotion of social justice, human rights, and elimination of unequal power and development relationships. Siddique (2006), discussing integrated water and resource management, emphasises the need to develop alternative institutional models to public sector management of water resources. As Upadhayay (2006) points out:

> "policies are only as good as their positive impact and impacts are positive only when policies address the specific factors that constrain sustainable land use in mountain areas. Many public institutions that provide agricultural and forestry services in rural areas have tended to neglect mountain areas. They are poorly oriented towards addressing the unique problems of mountain areas."

Tone Bleie (Bleie 2006) highlights the role of transboundary conservation in not only promoting water and biodiversity conservation, but also in conflict prevention and reduction through building confidence and recognising common economic and political interests, and by reducing mistrust and easing acute memories of past grievances. Facilitating scaling up at the local, national, and sub-regional levels; the struggle for institutional power for grassroots movements, and democratising decision making will remain the major challenges in this arena.

The Director General of ICIMOD, in his introduction, points out that "past efforts have failed to deliver the level of livelihood improvement, of hope, peace, and security that our mountain people want and deserve. Redouble our efforts and learn how to make them more effective; redesign, empower, and bring self-respect, and give voice and dignity to mountain people (Campbell 2006). The framework of mountain specificities and their imperatives (Jodha et al. 2003) raise interesting policy-related questions. While farmers have started to innovate, they require policy changes and research support to optimise the benefits.

Micro lessons for policies and institutional reform
The project, 'People and Resource Dynamics (PARDYP) in Mountain Watersheds of the Hindu Kush-Himalayas' has been the most carefully organised of ICIMOD's field research projects. Carried out in five countries of the HKH, it has carefully built the credibility of working with farmers in the watersheds and responding to farmers' priorities while carrying out different research activities (White and Bhuchar 2005). When it comes to making any claims for macro level policy or institutional recommendations, however, it is complex.

Another interesting aspect of policy and institutional reform is that whereas problems may be common on a wide scale, the actual solution requires fairly specific local modifications. Pokhriyal (2005), while discussing the new institutional imperative to improve livelihoods based on land resources writes:

> "the consolidation of fragmented and distantly located land parcels could be seen as the fundamental institutional reform for marginal mountain farming in Uttaranchal… The initiative for land consolidation was taken around 1975 and in the last 25 years almost all the land of villagers has been included in the consolidation frame… The success was due to local leaders who constantly motivated the people and demonstrated the economic viability of a ploughing unit…Women gained the most from these efforts, as they could save time for household activities and caring for their children…major areas related to agriculture and other primary sector activities have been legally assigned to the local government".

What this suggests is that important institutional changes can also take place at the local level, with local initiative and effort. The focus at the top to bring about changes may not always be necessary and researchers must devote more time to finding local solutions to many seemingly intractable problems.

Debate about policy and institutional reforms
The second part of this paper outlines the comments by different professionals on the enormously complex interactions of factors behind policy and institutional reforms. The third part reviews some of the changes noted in policy and institutions in the region in different sectors – including the most recent responses to conflict and social exclusion through the poverty reduction strategy programme (PRSP), governance reforms and livelihood support programmes, and a brief review of ICIMOD's output with regards to the policy and institutional (PI) recommendations. Except for conflict, the other reforms may be considered neutral with

respect to political stability and longevity of its system incumbents in the short run. The fact that conflict has escalated in spite of the many changes in policy and institutional approaches suggests that much of the reforms may have been cosmetic and window dressing without any significant impacts.

Endorsing Himalayan degradation

Many new insights have occurred concerning the relationship between environment and poverty at the micro level (Reardon and Vosti 1995) as well as about the consideration of the environment as part of an entitlements system (Forsyth et al. 1998). Both poverty and the environment contain complex sub-components, with each interacting to produce different impacts on outcomes. The extent to which these are relevant for mountain communities and their environment must be assessed. More micro- and meso-level studies are needed that can contribute to formulating a robust macro-level understanding for policy and institutional reforms.

The mountain perspective and mountain specifities revisited

The Mountain Perspective Framework conceived by Jodha (1992) was an important development in the early years of ICIMOD's work in integrated mountain development. The Mountain Perspective Framework is useful as an advocacy tool for mountain development and a methodology for developing better understanding of mountain economies and the environment. Rasmussen and Parvez (2002) point out that the relative status of mountain countries in different income categories is not as bad as the general literature from ICIMOD makes it out to be. If the lowlands depend on mountains, mountains also depend on lowlands. Mountain areas tend to benefit quite significantly from overall growth in the countries concerned through the possibility of increased investments, more demand for mountain resources, markets for mountain labour, and diversification of livelihood opportunities for mountain people. They emphasise that analysis of mountain areas should not be limited to the mountains alone but be undertaken in a broad context of country-wide economic growth and its increasing linkages.

Barbier and Homer-Dixon (1996) point out that in many countries resource scarcity itself could be the problem for policy and institutional failures and conflicts. Resource scarcity causes social conflicts and leads to disruption in the institutional and political environment, severely constraining the capacity to promote social and economic progress. This can be seen as an environmental perspective on progress and underscores the fact that, for various reasons, deterioration in the environment may be responsible for poverty, conflict, and policy and institutional failures.

Review of land policies in the HKH countries

Blaikie and Sadeque (2000), in a comprehensive review of land policies in the context of forests, agriculture, and protected areas, point out that it may be premature to condemn past land policies in mountain areas. Conservative and strongly protection-oriented policies may not have been the best but, in their absence, there might have been even greater deterioration of the mountain environment. Organisations like ICIMOD must discover the extent to which

this is happening and how more could be done. Development must find more effective ways to deal with these challenges in mountain areas. They advocate that:

"Decentralisation and local participation, of course, are no panaceas, but to continue with centralised state-driven policies is not appropriate…and less and less practical."

Compensation for upland services

In the context of global environmental security, the role of freshwater dependence of lowland communities on mountain areas has been identified as a critical issue (Koch-Weser and Kahlenbom 2006). To date, there are only few cases of compensation for upland services provided to the lowlands. They emphasise the need for environmental service agreements in mountain areas and a careful study of legal and institutional frameworks required is needed to implement payment for environmental services.

On the question of environmental services, Pratt (2002) discusses typologies that link services and linkages in mountain areas. The author discusses four typologies for classifying mountain areas, and these are: (i) low environmental service value and poor linkages to downstream populations and the mountains; (ii) low environmental service value and strong linkages (because of minerals); (iii) high environmental service value (rich biodiversity, ecotourism potential, and so on) and poor linkages; and (iv) high environmental service value and strong linkages. Considerable work remains to be done along these areas which are critical for the sustainability of mountain areas.

Where do we go from here?

The review, so far, is quite discouraging for policy and institutional reform work. This is why it is most challenging and important for ICIMOD to continue working in this area. The next issue is to learn from ICIMOD's rich experience in development, in working together with governments, in building community and NGO groups, and in working together with donors and partners. It may be useful to record that until recently large parts of the HKH region were not linked to ICIMOD. It was only through patience and building trust among member governments that the HKH region is now open to ICIMOD. The work in policy and institutional issues, sensitive as it is, needs to be disaggregated, debated, negotiated, and desensitised so that we can arrive at a win-win situation. ICIMOD must build an inventory, a live memory of its policy learning events.

There is an issue of internal capacity for policy and institutional analysis and proposals for reforms. Workshop outputs or its recommendations are only starting points. Given the sensitivity and difficulty of work related to policies and institutions, it is useful to have a proper orientation. ICIMOD must invest in building this capacity. The role of the ICIMOD Policy Unit is particularly important as a repository of the history, lessons, events, conditions, key players, policy environment, policy actors, policy drivers and breakers in the HKH region. While at times special reviews like the one on land policies (Blaikie and Sadeque 2000) are helpful for overall learning, the role of the unit should be to provide policy and institutional analysis and guidance to other projects, both in and out of ICIMOD. This unit should be able to guide the other programmes so that they are properly informed about these changes and

their implications. It should also help to identify potential entry points for new policies and institution-related analyses and reforms. The impact of policy interventions may be complex and may take time, but these interventions have to be continued employing new frameworks, capacities, and resources.

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Policy Issues for Sustainable Natural Resource Management in the Indian Himalayas: Participation, Decentralisation, and Regional Cooperation

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Introduction

About 150 million people live in the mountains of the Hindu Kush-Himalayas which include all or parts of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. This paper discusses how policy in the areas of devolution and participation has influenced the relationship between poor people and natural resources and how, in the future, policy might increase their influence to an advantage. In particular, the paper suggests ways of strengthening people's control that are inclusive and which support conservation. This requires us to examine policies formulated by ministries other than those dealing with natural resources. In other words, the key to sustainable natural resource management (NRM) may lie outside sectoral policies and in strengthening decentralisation and making forest services more effective, service-oriented, and pro-poor. In the absence of such reforms, options of joint management or privatisation are not likely to work. Since such policies are country-specific, the paper concentrates on policy issues in the Indian states, with examples drawn from other Himalayan countries. The paper also discusses how ICIMOD can facilitate regional cooperation in the Indian Himalayan Region (IHR).

The people of the IHR, as elsewhere in other mountain ecosystems, are heavily dependent for their livelihoods on their immediate natural resources and production from primary sectors such as agriculture, forestry, and livestock. The dependency of the continually growing population on finite resources, the lack of viable technologies to mitigate mountain specificities, and increased production to meet the demands, are depleting resources, increasing the marginality of farmers, and ultimately, promoting poverty. As natural areas are transformed into agricultural land, the growing scarcity of indigenous plants and animals can mean a loss of natural safety nets in times of stress and, consequently, increased vulnerability to price shocks, cyclical food shortages, and natural catastrophes. Reduction in the density of forest cover, accelerated soil erosion, increased siltation of water bodies, drying-up of springs,

replacement and disappearance of species, and increased ratio of energy expended in fodder and fuel collection and agricultural activities, and increasing drudgery for women and children, are among the tell-tale symptoms of environmental ill health.

One should acknowledge that improved livelihoods and enhanced conservation are not necessarily coincidental. Opportunities for win-win solutions can be limited, and in many cases there are trade-offs between the two goals. Therefore, the challenge is to discover such options that complement the two objectives of reducing poverty and conserving natural resources, establish their feasibility through field projects, and upscale successful models through networking and advocacy. How does one achieve better ecosystem management? What is its potential for poverty reduction? What governance changes are required to route environmental income to the poor?

It is well established in the literature that forests are overexploited because of the absence of clear tenurial rights. Forests and grazing lands become open access properties and the lack of clear property rights leads to their overuse. Even poor farmers maintain private lands, but where property rights are not clear, such as over encroached or common lands, degradation is common.

It follows that problems associated with degradation of common grazing lands and forests are more a result of the absence of clearly and equitably defined common property rights and weak institutions rather than due to low discount rates for the future in the case of the poor, as generally viewed. The poor overexploit natural resources because of the lack of other livelihood options. Poverty can force people to exploit natural resources unsustainably; for example, cultivation on steep slopes, which often leads to erosion and declining yields over time. In this context, it is meaningful to examine property rights to forests in the HKH region.

Rights and ownership patterns

For resource-dependent people and communities, it is not only resource scarcity per se that leads to livelihood insecurity but insecure rights to resources regardless of whether they are scarce or abundant. Tenurial insecurity may exist in a variety of situations, of which three are fairly widespread in the Himalayan region. First, when the government is not able to enforce its property rights and free access to government lands is quite common. Second, when there are no property rights and the resource is an open access one. Third, when there is conflict between law and policy, or between customary practice and formal law. Open access is as iniquitous (and injurious to the environment) as an ill-managed government or industrial monopoly. In addition, effective management by local people cannot be taken as an automatic outcome of the transfer of resources to them; rather, it is a process that needs support from donors and civil society, at least in the initial stages, in order to build the capacities of local people. The effectiveness of management will also depend on the nature of the resource.

The government generally owns forests in the western Himalayan states. In the eastern Himalayan region, however, forests are outside government control. North East India is unique in having separate land tenure systems from the rest of India. Out of the total forest cover in this area, about 35% belongs to the government as reserved forests, protected forests, and protected areas, and the government controls them. Forests belonging to district councils, village communities, and private parties in states in the North East have their own status and are managed differently. In Arunachal Pradesh, indigenous people living traditionally acquire their rights over as much land and forests as they inherit. In Manipur, over 60% of the total forest area is still unclassified. In Meghalaya, 73% of the land falls under community ownership. In Mizoram, about 51% of the forests are unclassified and 11% of the forest area is controlled by the district council. Most of the unclassified forests are owned by village councils. In Nagaland, about 93% of the total forest area is still unclassified. In most tribal groups, immovable landed property is in four categories: (1) private land, (2) clan land, (3) morung land, and (4) common village land. Most unclassified forests belong to one or the other of these categories. Jhum or land for shifting agriculture does not belong to individuals. It is the property of the entire community and the people living in the village.

Whereas the Forest Department controls almost 80% of the total area declared as forests in Uttaranchal, this percentage is only 5% in Meghalaya, and most of the forests are settlement areas of tribal communities. The difference in ownership, however, has not made much difference as far as degradation is concerned. In actual practice, most forests in both states are de facto open access, and hence subject to overexploitation.

Even when the Forest Department (FD) has the legal right to forests in western Himalayan states, the villagers' access to forests and development of forest goods and services are mediated by a complex web of rights, notifications, legislation, regulations, management arrangements, institutional influences, and markets. This tends to dilute the Forest Department's control over forests and converts them into open access lands.

The case for public management of forests hinges on a number of factors. First, forest management is associated with a wide range of externalities as forests provide external benefits to the rest of the ecosystem. Second, forestry professionals often argue that forest management requires a level of professional training and scientific competence that lies outside the capacities of rural farmers and forest users. Third, the time horizons for forest management favour public ownership and public investment. Finally, professional management will allow for major economies of scale and a longer-term planning framework. Given the ease of access to forests, indiscipline, and the sociopolitical culture, it has been impossible in practical terms for the Forest Department to enforce its property rights. To do so would require people not to interfere with state-owned property and a symbolic presence of forest staff would be sufficient to caution them against doing so. Such conditions do not exist in India today. The strong case for exclusive government management becomes diluted because the government is not in a position to enforce its property rights. Forests are subject to intense pressure from human beings, livestock, and urban markets.

Creation of private tenure: should leasing be encouraged?

If state control over forests is inefficient, it could be argued that a radically different approach to the system of property rights is needed. Conventional wisdom in economics favours the establishment of well-defined private property rights over resources. Such rights are clearly specified, exclusive, and secure, and therefore reduce uncertainty in interaction and induce individuals to internalise externalities. Leasing of forests, however, even in favour of the poor, may not be advisable in India as it has several other implications.

First, a great deal of private land, often owned by the poor, is already uncultivated in India but may be suitable for trees. In semi-arid regions, a substantial proportion of private land is either lying fallow or produces very low yields. In addition, more than five to six million hectares of land has been leased to the poor in the last two decades. The total area of degraded private land is estimated at 35 M ha, which is comparable to the area of degraded forests. Clearly, the first priority should be to address impediments to reforesting this land. Hence, there is no case for further privatisation unless suitable technological and institutional arrangements are put into operation to place huge area of degraded private land under trees or agroforestry.

Second, privatisation may encourage the poor to plant short-term exotics, or use land for agriculture. Both forms of land use are environmentally undesirable for degraded land in the uplands. Limited market demand is another constraint, amply demonstrated by the phenomenon of a eucalyptus glut in north and west India. What is appropriate is to cultivate degraded public lands with grasses, shrubs, bushes, or slow growing multipurpose trees which, although yielding only low-value output, are environmentally more sustainable. This option, however, does not bring returns commensurate with the individual efforts expended, hence, the poor are unlikely to use leased lands for shrubs and bushes only.

Third, the number of poor families is large and privatising in favour of some while ignoring others is likely to result in social tensions. Fourth, villagers have rights of collection in most degraded forests, thus privatisation would be against existing settlement laws and will be opposed by other villages with usufruct rights in these forests. Fifth, forest management has considerable potential for scale economies and, given the ecology of most Indian forests, the area required to carry out satisfactory work is relatively large.

Sixth, the agricultural economy of the uplands is heavily dependent on forests for energy supplies in the form of fuelwood and fodder for livestock and, ultimately, for soil fertility in the form of leaf litter and animal manure. Each hectare of cultivated land requires a sufficient area of uncultivated vegetated land for these needs. Privatisation of public lands may not be conducive to fulfilling the complementary role between private property resources (PPR) and common property resources (CPR) essential in upland economies.

Lastly, several watershed areas are a part of such lands and require comprehensive, integrated land-use planning. Creating private rights may delay the implementation of such a plan, as securing the willingness of landowners is time consuming.

Joint Forest Management: reasons for limited success

Realising these realities, the Government of India introduced people's participation in forest management by issuing a Joint Forest Management (JFM) resolution in June 1990, making it possible for the Forest Department to involve people in forest management. Has the adoption of JFM resolutions by the state government brought about major changes in the prevailing relations between the state and the people on FD lands, or does the new policy herald the beginning of a new era of people's power? The short answer is no, at least not in the near future. There are several reasons why JFM has not resulted in sustained improvement.

Although the concept of JFM is based on a philosophy of care and share, this is often not reflected in the right regime, leading to potential socioeconomic conflicts. There is no one-to-one correspondence between forests and villages, as the traditional rights of communities are quite contentious in India: these can be categorised into four groups.
1. More than one village has rights to the same forest.
2. People living far away from forests have customary rights.
3. New settlers have no traditional rights.
4. Migratory communities are outside the control of village bodies.

No doubt, many donor-assisted projects have had some success, but this has not been sustained. When a project brings new funds and opportunities of wage employment to a village, it is greeted with enthusiasm which is interpreted as support for the JFM methodology. Poor farmers are able to shift pressure to other forests which are not under JFM. The project area, hence, looks greener, but at the cost of a non-project area which is not visited.

Protection of a degraded area under JFM often increases women's drudgery, as they have to travel greater distances than before to collect their daily requirements for fuelwood and fodder. Despite its good intentions, community forest management has often burdened women with additional hardships, or the hardship is imposed on younger women. Women also have to switch over to inferior fuels like leaves, husk, weeds, and bushes.

JFM has also failed to pay proper attention to the poorest forest-dependent communities such as artisans, head loaders, and 'podu' (shifting) cultivators. The best friends of the Forest Department are the village elite who dominate JFM committees. They do not depend on the forest resource and benefit most from protection in several ways. Apart from the long-term benefit of groundwater recharge that helps the farming community more than the landless, the elite also look for leadership in controlling JFM funds that bring contracts and commissions. The Forest Department, being new to interacting with people, is making the same mistakes (of identifying the interests of all with the interests of the elite) committed by the development departments in India in the sixties and seventies. Clearly, forest service needs to be sensitised to the realities of the rural social structure.

The success of JFM depends to a great extent on the capability of the group to handle community matters. Most state government orders lay down the rule that all voters in the village should be members of JFM committees and that the executive committee should give

representation to women and landless persons. In practice, the larger village body is non-functional, the better off are in positions of leadership, and the chairperson, often male, is selected by the Forest Department on the basis of his proximity to them. The forest guard, as ex-officio secretary, keeps tight control over records and the amount of money received. In many villages, people have no idea how much money has been allocated to their committee, or how it is put to use.

This is not only the case with JFM, but is true of most other village institutions (panchayat raj institutions [PRIs], watershed committees, primary cooperative societies, to name a few) in India. These are dominated by the elite and serve their interests and the interests of their political bosses. Even the self-initiated community forest protection groups, although better than the JFM groups in letting the people have their say, do not always represent the interests of poor people or women.

Emergence of community cohesiveness and participation cannot always be taken for granted, even when people face distress. Moreover, the balance of power between the Forest Department and communities has always been a sensitive, unresolved issue.

Decentralisation

If joint management has not worked, would it be better to transfer control to local bodies so that they can manage the resource sustainably? This has been tried in the northeastern states, but has not worked. We discuss the case of Meghalaya below.

Councils parasitic and redundant

Under the Sixth Schedule of the Constitution of India, autonomous district councils (ADCs) were constituted for the tribal areas of Meghalaya, with the power to make laws for management of land, forests, shifting cultivation, appointment or succession of chiefs or headpersons, inheritance of property, marriage and divorce, social customs, and any matter relating to village or town administration.

The three main tribes of Meghalaya had vibrant and functioning traditional democratic institutions such as the customary council of the village durbar, where all adult members of the village met and decided collectively about all matters connected with their welfare. The Sixth Schedule was to protect these institutions; unfortunately the functioning of the autonomous district councils has had just the opposite effect. These councils, rather than working with the traditional committees, decided to have their own bureaucracy dominate over the traditional institutions and put them in a subordinate role.

The district councils have passed a large number of Acts, laws, rules, and regulations, but implementation is weak with the result that such rules and regulations often result in harassment of local people and delay. The council could not properly implement and control illegal felling of trees, and wanton destruction of forests has continued throughout the last three decades. This is not only because of lack of staff or management capabilities; often the council succumbs to pressures from contractors. For instance, contractors had, from time

to time, asked for special permission from the council to remove undersized timber claiming that the immature trees were felled by the natural impact of mature trees when the latter were felled. The result was that the removal of undersized timber carried on as usual. The possibility of corruption among contractors and the council staff cannot be ruled out.

Three decades ago, there was better leadership and some of the councils did show commitment to tribal welfare. Ultimately, however, human weakness and greed for money and power watered down the enthusiasm and enchantment with which the councils were started. Funds were diverted for salaries and did not reach the field. A power struggle over chairmanship and wooing members ate away development funds. The secretariat is overstaffed and corruption among the members has percolated down to the entire department. There has been a lot of deforestation of unreserved forests with the council's collusion and no measures have been taken to regenerate them.

Strengthening the panchayats in India

Elsewhere in India, democratic decentralisation has been achieved by creating self-governance institutions at the district, block, and village levels. As forests are to be managed on a long-term basis, their management has to be in the hands of statutory bodies which, in the Indian context, are the panchayats. At present, however, there are limitations to forests being managed by village panchayats. Two conditions are needed for success: first, local bodies must have a high degree of managerial capability (success in enforcing unpopular decisions) and an equally high degree of concern for the poor and for equity (inclusiveness in decision making); second, an oversight mechanism must be in place and hand holding with panchayats, and this role needs to be provided by the Forest Department. A high degree of flexibility as well as credibility and faith in grassroots' functionaries are needed.

The creation of panchayats raised hopes initially, as decentralisation was expected to achieve an increase in economic efficiency, more accountability, improved resource mobilisation, lower cost of services, and greater satisfaction of local preferences. Studies show that, although some village-level panchayat leaders have done commendable work, PRIs (panchayti raj institutions) on the whole have not benefited the people to the extent of the funds provided by the government. Their record in empowering excluded people is disappointing.

The picture is worse at the sub-district and district levels. Elected members of the PRIs at these levels behave more or less like contractors as there is no village institution that level to put moral pressure on them. The members of these institutions look upon devolved funds as the equivalent to quota funds, and the district and the block presidents distribute these funds equally among the members. They, in turn, choose contractors and the nature of schemes. Schemes that offer maximum commission and least risk of verification such as earth work, which is often done by machines but is shown to be performed by fake labourers are preferred.

Panchayats at all levels are mostly busy implementing construction-oriented schemes as they promote contractor-wage labour relationships. These do not require the participation of the

poor as equals; on the other hand, they foster dependency of the poor on elected leaders and government staff. In such a situation panchayat activities are reduced to a collusion between politicians and the block engineers. The panchayats are not active in education, health, self-help groups, watershed management, nutrition, pastures, and forestry programmes, through which people come together as equals and work through consensus. Recommendations for improving their performance are given below.

Change the financing system

Considerable amounts of money flow to the panchayats from the government. The panchayats hardly raise internal resources such as taxes and revenue from common pool resources and, instead, depend upon external funding. The current system of funding is reinforcing dependency on government funding and is the source of much corruption in local institutions. It is necessary to reconsider the current funding system. More emphasis should be given to panchayats generating internal revenue at all three levels with matched funding from the government. This would introduce more flexibility in the way the panchayats use their resources.

Tamil Nadu, for instance, collects land tax through the government machinery and transfers 85% to the collection to the panchayats. It will be more cost effective if the entire burden of collection is shifted to the village panchayats. Today, the PRIs hesitate to levy and collect taxes, as they prefer the soft option of receiving grants from the government. This must be discouraged. The more dependent a PRI is on the mass of its citizens for financial resources, the more likely it is to use scarce material resources to promote human development and reduce poverty. External funds with no commitment to raising internal funds make PRIs irresponsible and corrupt.

The share of the panchayats in state revenues should be improved. The formula of transfer should no doubt give weight to population and poverty, but it should also give weight to pro-poor performance in looking after common property, whether this is water or land. State grants should be given to them only when the PRIs are able to collect a minimum percentage of the taxes assigned to them. The flow of funds from the government should also be dependent on good work or mobilisation carried out by them.

Decentralisation that actually works for the poor is more the exception than the rule. It requires, at the minimum, that local institutions, whether they belong to official government institutions like village councils, or informal institutions such as user groups, cooperatives, or watershed committees, are accountable to their low-income constituents. This accountability needs to be measured periodically and should influence the flow of funds.

The situation in other countries

In Nepal, the success of community forestry has been confined to the mid-hills and did not spread to the Terai region or the high mountains. When community forestry was being promoted in the hills the major objective was the protection of a dwindling, degraded resource. At that time it was not anticipated that forests could rejuvenate and provide

significant economic returns. The potential for economic returns from community forestry has understandably made the government cautious about replicating the community-based hill model in the rich forest resources in the Terai.

Even in the midhills the elite still dominate decision making, and the lack of supportive community-based policies is said to have turned community forestry into committee forestry. In 2002, the Nepal Biodiversity Strategy (NBS) is said to have undermined community approaches to biodiversity conservation. Notably, the Local Self Governance Act (LSGA) still has several provisions that contradict community forest user group (CFUG) rights established by the Forestry Act of 1993. Decentralisation and devolution policies strengthen the local elite rather than equitability among NRM stakeholders and newly-formed policies often run counter to the more traditional forms of local natural resource governance.

In the Chittagong Hill Tracts of Bangladesh, formal institutions promoted by the government are replacing the traditional authority structure.

In China, devolution policies included the transfer of forest management from collectives to households. Families now enjoy the flexibility to plant fruit trees or timber, bamboo, and other species on leased lands. Villagers or communities participating in the management of state forests, however, did not enjoy the full scope of decision-making rights that they did in household-based management and collective management. There is very little space in China for villagers to influence policy-making and policy implementation. The government is also said to have a preference for large-scale 'demonstration' type projects because they are perceived to generate quick economic gains.

In Bhutan, governance of forest and water resources under state ownership are devolved to an elected Council of Ministers, and there is little widespread community involvement in management processes as community forestry has not been widely implemented. In part, the Department of Forests (DoF) embarked on policy implementation slowly because they were unconvinced that communities have the capacity to manage the resources well and feared that this would result in overexploitation. There are no examples of 'official' community forestry practice in Bhutan aside from customary management regimes. In addition, most forestry officials were trained to operate under conventional, centralised management practices and had not been exposed to participatory community forest management practices.

The Forest Department's inflexible approach

Failure of JFM is often attributed to the inflexible and landlord-like attitude of the Forest Department, which is unwilling to pass on real power to the village bodies. If the contribution of the Forest Department to the failure of the Joint Forest Management programme is to be assessed objectively, it may be worthwhile to study how the Forest Department compares with other cases of NRM management where FD is not involved, such as the following.
• Public health engineering department (PHED) water boards for rural water supply
• Irrigation department for surface irrigation
• Rural development and agriculture in watershed development
• Revenue department for common lands

For instance, between 1970 and 1998, with a view to improving the productivity of crop lands in monocropped regions in India, roughly 16.5 million ha of land were placed under watershed management, yet the net gain in cultivated land has been nil. The government has spent more than Rs 21.95 billion on drought-prone area programmes (DPAP), and yet drought-prone areas increased from 55.3 m ha in 1973 to 74.6 m ha in 1995. Most government watershed development investments have yielded disappointing results despite vast resources allocated to date. This shows that the lack of sustainability of land-based programmes are rooted in factors other than the rigidity of the Forest Department, as it plays an insignificant role in the implementation of watershed-based programmes. The main factor is the weak capacity of local communities which have to manage and maintain local resources, and poor delivery on the part of government institutions – whether in watershed activities or in forest management.

Institution building

Local collective action has been undermined in the last thirty years by a number of political and economic processes. Village societies have become heterogeneous, and market forces have commercialised the erstwhile subsistence economies integrating them with urban and national economies. Possibilities for migration and mobility tend to work against cooperation. This adversely affects the sustainability of people coming together for a common cause.

The wider political economy of development in India does not often support community empowerment despite the rhetoric; it favours individual advancement and dependence on the bureaucratic and political elite. Although rural development programmes in health, irrigation, drinking water, and schools, require a strong village community, socioeconomic developments in India in the last four decades, starting with the green revolution, have unfortunately stressed the household-based approach as opposed to the community-based one. People in the villages tend to see themselves as households and seek vertical alliances with those with power over rural society rather than trying to build horizontal ties within the village. They see more advantage accruing to them from hobnobbing with block officials, the revenue inspector, or the MLA, and little in developing village cohesiveness and capabilities.

Anti-poverty programmes such as Indira Awaas Yojana (a programme that gives $400 to a poor villager to build a house), increase the dependence of the poor on the village elite and the petty bureaucracy, at the same time, making them compete among themselves for limited favours from the government. This adversely affects the coming together of people for a common cause. The programme benefits them individually but disempowers them collectively. Therefore, no project that aims at generating social capital can be successful in isolation in the long run unless all development programmes follow the community approach.

Mobilising investment resources alone is not enough to guarantee management success. Programmes that fail to address the institutional issues of resource management necessarily fail or perform poorly, and this is true of resources managed by the state or by people's groups, whether rich or poor. This issue is particularly salient in the case of resources that require collective management, and these constitute most of the resources in the mountains. The fact

that organising costs tend to be consistently underestimated suggests that part of improving the management of the mountain environment for and by poor people lies in reorienting state policy-making bodies and line agencies towards new structures of governance.

Increasing the organisational capacity of the villages so that their management is both equitable and effective is, therefore, not an easy task. It takes time to mobilise a village community into a coherent and empowered group, and the project must allocate sufficient time and start this as early as possible. Greater transparency within village groups, and between the local leadership and the wider group membership, is essential to ensure that marginalised groups benefit from participatory forest management. At the same time, efforts need to be built to improve the effectiveness of government departments including the Forest Department. This requires improved governance, productivity, and accountability of the government machinery. Conversely, over the last two decades there has been a sharp decline in the quality of services provided by the government to its citizens, especially the poor.

Both a top-down and a bottom-up approach are needed. Strong support from the top political or administrative levels is essential to provide legitimacy and priority to an outcomes orientation and to make sure that it will actually happen. Unless there is support throughout the system, and particularly at the middle-management levels, a bottom-up approach runs the risk of becoming a mere reporting exercise rather than representing an actual change in thinking or management.

Good governance is undermined by lack of transparency, weak accountability, poor organisation and lack of technical capacity, lack of responsiveness, inefficiency, and poor motivation. The problem of bad and declining governance is more alarming in the northeastern states of India. The main manifestations of weakening governance is an increasingly politicised administration, administrative fragmentation, an expanding civil service squeezing resources for investment and operations and maintenance, and poor management of expenditure in the context of an unsustainable fiscal position.

Many reforms are needed to improve personnel policies, shift attention from input controls to monitoring of outcomes, measure people's satisfaction, and increase transparency at all levels. Some aspects of governance reforms have immediate political costs and are, therefore, difficult to introduce, but several processes and procedures of government can be changed without hurting the political elite and can be undertaken in the short run. For instance, the training syllabus of the forest service could include more human and natural resource interactions. Financial procedures could be improved also so that there is certainty of funds at the village level for watershed and land-related programmes.

Regional cooperation

Regional cooperation is needed to protect the environment as well as to fight poverty. The best way is to protect the asset base of the poor and expand it. In practical terms, this would mean the following.

- Prevent land alienation of indigenous and other poor communities.
- Strengthen community forest management.
- Ensure that water is not privatised by rich farmers and that it stays as a community resource.
- Support participation of the poor in decisions affecting their livelihoods.
- Promote access of the poor to markets.
- Ensure that involuntary displacement due to development projects does not lead to pauperisation.

The following are the main issues for which we need to promote regional cooperation.

- The conditions under which sustainable forest management leads to improved livelihoods, and vice versa, need to be assessed.
- The socially optimal allocation of forests to different uses (i.e., conservation, forest production, and smallholder agriculture) needs to be considered.
- The conditions under which decentralised forest management leads to sustainable forest management need to be assessed.
- Appropriate sets of incentives need to be developed when there is a mismatch of objectives among decentralisation, forest management, and livelihood improvement programmes.
- Policy analysis to identify constraints, contradictions, and gaps in the policy environment, concentrating initially on areas where improvements can be made without challenging vested interests, should be conducted.
- Success stories should be built upon (i.e., successful pro-poor innovations and partnerships) and relevant policy and institutional issues should be noted and pursued.
- Research findings should be disseminated through appropriate forums and aimed at key policy and decision makers (including donors).

ICIMOD should study how large water-related projects, especially dams and hydel power stations located in the hills have helped or harmed local people and in what manner their interests can be safeguarded. Water is essential for the sustenance of local people, but often its management is obscured by political boundaries and a legacy of mistrust. This is one sector where we urgently need regional cooperation.

Most of the Himalayan forests are outside protected areas. ICIMOD should pay more attention to conservation of biodiversity outside protected areas.

One of the most important roles that ICIMOD can play in Himalayan environmental governance is to provide up-to-date information about critical issues. Governments would then turn to ICIMOD to research problems that stand in the way of effective decision-making. Thus, ICIMOD should be dedicated to the production of accurate, up-to-date research and data on the most pressing environmental issues.

Conclusion

Policy frameworks followed by the Himalayan states should be reoriented to establish that environmental conservation must go hand in hand with economic development because any economic development that destroys the environment will create more poverty, unemployment, and disease and, thus, cannot be called economic development. It may just be a transfer of resources from the poor to the rich. This is because the poor depend on nature for their daily survival. For them the gross natural product is more important than the gross national product. Environmentally destructive economic development will impoverish the poor further and destroy their livelihood resource base. Even when the intentions of government are good, the translation into practice is tardy because of the institutional factors we have described.

There should be regional cooperation to promote environmental management and economic development as mutually supportive aspects of the same agenda. In particular, agricultural policy in the hills needs to incorporate environmental concerns. A poor environment undermines development, while inadequate development results in a lack of resources for environmental protection. The vicious cycle of this interrelationship between poverty and the environment could be broken down through redistribution of economic opportunities and empowerment of communities. This is where participatory community-based development programmes appear to be the most effective entry points for reversing trends. The two goals of environmental protection and poverty alleviation reinforce each other, just as there are some programmes that address the issue singly. Ecological poverty may, in fact, be the starting point for dealing with economic poverty. Removal of poverty, nevertheless, is not a necessary precedent for checking environmental or resource degradation. Similarly, there are poverty alleviation programmes that are neutral to the environment. Therefore, the two objectives can be pursued independently of each other, but the most effective way of addressing both is to approach them simultaneously.

Lastly, it is particularly important that we continually assess the impacts of actions against expressed goals. What is really happening to the poor? What is happening to the environment? What have the impacts been? Who will better tell us what has happened to the rural poor than the people themselves? All this suggests that participatory assessment and participatory evaluation are important components of pro-poor environmental management.

Integrated Water Resource Management in the Ganges, Brahmaputra, and Meghna River Basins in South Asia: Prospects and Challenges

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Introduction

Freshwater systems all over the world continue to undergo natural changes in terms of quantity and quality. These changes are accelerated in South Asia by increases in human exploitation of water resources caused by increasing population pressure and rising levels of urbanisation and industrialisation. Growing concern for environmental degradation has increased pressure on water resources. In many regions of the world, these pressures are intense within national borders and even more intense in the case of international rivers where two or more countries share the same river basins. Growing competition for water resources in international rivers across several countries is expected to intensify the potential for acute upheaval and conflict in many regions. South Asia is not an exception. This issue calls for integrated water resource management and basin-wide development within countries as well as beyond country boundaries.

The Ganges, Brahmaputra, and Meghna (GBM) river systems constitute the second largest hydrologic region in the world. The three river systems, with a drainage area of about 1.75 million square kilometres and an average runoff of around 1200 cu km, stretch across the Tibetan Autonomous Region of China, Bhutan, Nepal, India, and Bangladesh. All three river systems originate from the Himalayan and Vindhya ranges outside Bangladesh, but they fall into the Bay of Bengal through a single outlet, the Meghna estuary, over Bangladesh. Average rainfall in the Ganges varies from 35 cm in the west to 250 cm in the east; in the Brahmmaputra it varies from 250 cm in the north to 200 cm in the south. The Meghna Basin receives the highest rainfall intensity in the world of around 1100 cm at Cherapunji. These river systems are not only rich in land and water resources, they are also rich in ancient civilisations on fertile agricultural flood plains. About 10% of the world's population of over

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half a billion lives in the GBM basins. The region contains the largest number of the world's poor, about 40% of the total number of poor in the developing world.

At present, irrigation is the main consumer of water. With rapid industrialisation and urbanisation in South Asian countries and the implementation of poverty alleviation programmes, water demands for domestic, industrial, and environmental needs are increasing rapidly. Increasing population and growing concern about the environment have aggravated the situation. There is growing tension among countries of the region over sharing water from the international rivers, especially during periods of lean flows. In this respect, river-basin planning and management, with due consideration to the potential environmental impacts, is a concern to riparian countries in the GBM basins.

Regional cooperation in the GBM river basins is important for integrated water resource management in the basins. Despite some developments, the GBM's abundant human and natural potentials have not been harnessed creatively and cooperatively. Development in the GBM basins must be people-oriented, ensuring regional equity and social justice for all sections of the population.

Why integrated water resource management?

If effective and lasting solutions to the water problems are to be found, a new water governance and management paradigm is required. Such a paradigm is encapsulated in the integrated water resource management (IWRM) concept which has been defined by the Global Water Partnership (GWP) as a 'process which promotes the coordinated development and management of water, land, and related resources in order to maximise the economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems' (TEC-2000).

Integrated water resource management explicitly challenges conventional water development and management systems. It commences with the recognition that traditional top-down, supply led, technically-based and sectoral approaches to water management are imposing unsustainably high economic, social, and ecological costs on human societies and on the natural environment. If they persist, water scarcity and deteriorating water quality will become the critical factors limiting future economic development, the expansion of food production, and the provision of basic health and hygiene services to millions of disadvantaged people. Business as usual is neither environmentally sustainable, nor is it sustainable in financial and social terms. The traditional paradigm of publicly financed and managed low-cost or no-cost recovery provision of water services is beyond the financial capacity of most governments. Under investment and exacerbated conflicts over the allocation of water goods and services are inevitable, with potentially disastrous economic and social consequences. The IWRM perspective is explained in Figure1.
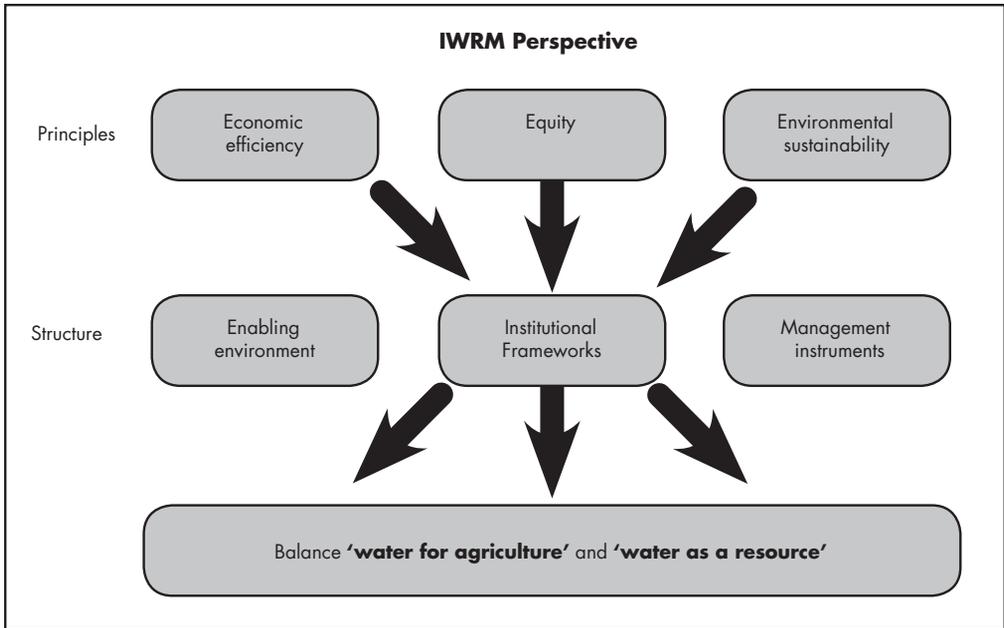
Figure 1: **Integrated Water Resource Management Perspective**

Common water issues in the GBM river basins

The common water issues in the GBM river basins are floods, droughts, riverbank erosion, sedimentation, water pollution, salinity intrusion, arsenic contamination in groundwater, and climate change (Siddique 2006). Floods are an annual and common phenomenon in the GBM basins. Loss of lives and assets due to floods in Bangladesh, India, and Nepal is huge.

Figure 2 shows the Ganges, Brahmmaputra and Meghna river basins.
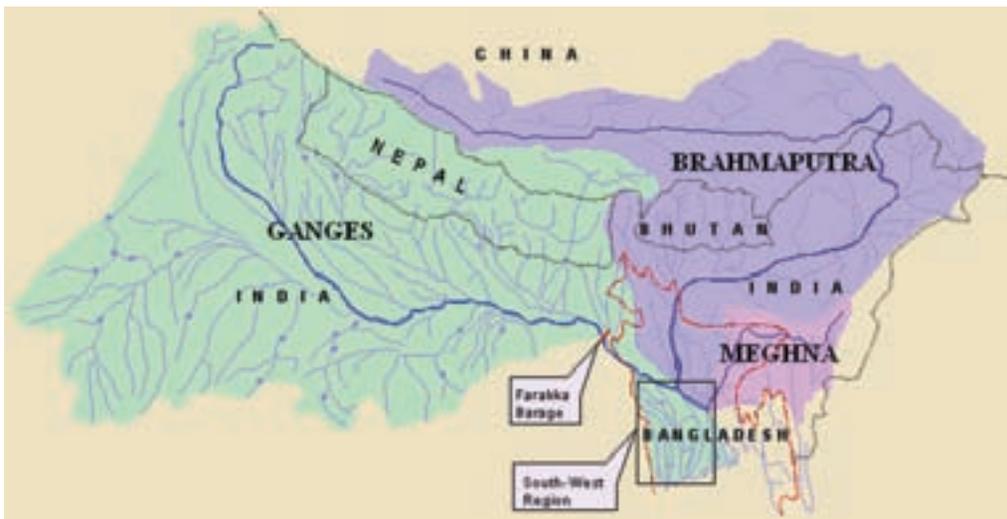
Figure 2: **The Ganges, Brahmaputra, and Meghna river basins**

Like floods, droughts are a common problem. The reduced flow of the Ganges during the dry season due to diversion in the upper catchment exacerbates the northward movement of the salinity front, thereby threatening the environmental ecosystem of the region. River bank erosion renders at least 20,000 families homeless every year in Bangladesh. According to the World Disaster Report, about 100,000 people suffered and 9,000 hectares of precious cultivable land eroded.

Figure 3: **River bank erosion**

Sedimentation

The Ganges, Brahmmaputra and Meghna rivers carry enormous amounts of sediment load from the mountains to the plains, compounding the adverse effects of floods.

Water pollution in the basins is progressively increasing with withdrawals of water for various uses in the upper catchment, particularly in the Ganges Basin, leaving insufficient flows in the rivers for dilution of pollutants during lean periods. Increased use of agrochemicals and discharge of untreated domestic sewage and industrial effluents into the rivers have aggravated the problem. In recent years, arsenic in groundwater has caused panic in Bangladesh, India, and Nepal. In Bangladesh, 61 districts out of 64 are affected by arsenic in the water. This has been a national health hazard issue.

Like water pollution, salinity intrusion has become a serious problem, particularly in the coastal areas of Bangladesh. The reduced flow of the Ganges due to upstream diversion in the dry season has exacerbated the upward movement of the salinity front, threatening environmental balance in the region.

The impact of climate change in the GBM region could be significant. Monsoon rainfall could increase by 10-15% by 2030. Increased evaporation resulting from higher temperatures in combination with regional changes in precipitation characteristics (e.g., total amount, spatial

and seasonal variability, and frequency of extremes), might affect mean runoff, frequency, and intensity of floods and drought, soil moisture, and surface and ground water availability in the GBM countries. It could also increase the rate of snowmelt in the Himalayas and reduce the amount of snowfall if winter is shortened. In the event of climate change altering the rainfall pattern in the Himalayas, the impacts could be felt in downstream countries such as the northern part of India, and Bangladesh.

Prospects and challenges for integrated water resource management in the GBM river basins

The GBM river basins enjoy tremendous agroclimatic diversity, a rich fertile and arable land area of about 79 M ha, 2.6 billion tons of silt load, an enormous delta consisting of Bangladesh and part of the state of West Bengal in India, about 110,000 MW of identified hydropower potential with additional power through pump storage capacity, vast navigable waterways, varied forest resources including the largest mangrove forest in the world, a treasure house of biodiversity, and abundance in fish resources. Water is the most important natural resource in the GBM countries and can contribute towards shaping the future of millions of people living in the region. Integrated water resource management in the GBM rivers addresses the following areas.

1. Dry season flow augmentation and sharing of transboundary international rivers
2. Sharing of data and information about common rivers to facilitate flood forecasting and water quality control
3. Cooperative development of water resources

Dry season flow augmentation and sharing common rivers

Owing to the seasonal variability of water volume in the GBM river systems, the dry season flows of the GBM rivers, particularly of the Ganges, are inadequate to meet the combined needs of the region. As early as 1974, the Prime Ministers of India and Bangladesh had recognised the need to augment the dry season Ganges flow. The Ganges Water Sharing Treaty of 1996 also includes a provision for the two governments 'to cooperate in finding a solution to the long-term problem of augmenting the flows of the Ganges during the dry season'.

One possible option to substantially augment the Ganges which could benefit Nepal, India, and Bangladesh, would be to construct large storage areas on the Ganges tributaries originating in Nepal. Because of the availability of high water-holding capacity for monsoon flows in the potential reservoir sites of Nepal there is an excellent opportunity to create storage reservoirs. On the basis of studies carried out in 1983, Bangladesh proposed construction of seven large storage reservoirs at Chisapani, Kaligandaki 1, Kaligandaki 2, Trisulganga, Seti, Saptokosi, and Pancheswar in Nepal to augment the dry season flows of the Ganges by 1,670 cumecs (built at normal height) and 5,385 cumecs (with the storage reservoir at Chisapani, Trisulganga, Seti, and Sapta Koshi, built above normal heights). Studies indicated that construction of the proposed storage reservoirs were technically feasible. Moreover, the storage reservoirs would produce enormous amounts of hydroelectricity that could meet the power demands of the region. Another beneficial effect of the storage projects would be

significant flood mitigation in the downstream areas of the Ganges. According to studies carried out by the Institute for Integrated Development Studies, Kathmandu, the terrain of the northern and middle belts of Nepal offer excellent sites for storage reservoirs. The studies identified 28 potential reservoir sites, nine of which are classified as 'large', having a live storage capacity of over three billion cubic metres. A highly favourable project from this perspective is the Sapta Koshi high dam in Nepal, the revived third phase of the original Koshi project. The Koshi dam will have a significant storage capacity that should provide both North Bihar (India) and Bangladesh with a flood cushion and augmented dry season flows after meeting Nepal's full irrigation requirements. Bangladesh would receive an additional share of water (around 50000 cusec) during the dry season according to the provisions of the Indo-Bangladesh Water Treaty signed in 1996.

Nepal would also be the sole beneficiary from selling 25000 MW of electricity to India and Bangladesh. All three countries, India, Nepal, and Bangladesh would have to work together to develop this immense water potential and the hydropower prospects of the Ganges River basin. To make a beginning in this respect, the Third South Asian Water Forum (SAWAF-III), a regional water forum established under the Global Water Partnership (GWP)-South Asia Regional Water Partnership which includes Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka, recommended at its regional forum meeting held in Dhaka in July 2004, the formation of a supra national body called the 'Ganges River Basin Organisation (GRBO), with a political mandate to work on the integrated use of the Ganges River basin by the three countries.

In Bangladesh, there is a possibility to construct a Ganges barrage at Pangsha, 30 km upstream from the confluence of the Ganges and the Brahmmaputra rivers near Aricha. This can resuscitate 28 rivers by diverting monsoon flood flows in the southwestern part of Bangladesh and provide a much needed freshwater balance to the Sundarbans.

China, Bhutan, India, and Bangladesh are the four riparian countries in the Brahmaputra basin. A storage project could be built in appropriate locations in this basin. It must be repeated here that storage reservoirs in the Himalayas would have to be multi-purpose in nature in order to be economically justifiable. Issues of population displacement and seismic hazards have often been raised against the schemes for large reservoirs in the Himalayas.

Sharing data and information for common rivers to facilitate flood forecasting and water quality control

Among the non-structural flood management approaches, the greatest potential for regional cooperation lies in flood forecasting and warning. Currently, bilateral cooperation exists between i) Nepal and India, ii) Nepal and Bangladesh, and iii) India and Bangladesh for the transmission of flood-related data. This cooperation needs to be strengthened. More reliable forecasts with additional lead-time would be possible if real-time and daily forecast transmissions could be made from additional upstream points, and even more frequently on the three rivers. Effective flood data-sharing arrangements are also necessary with the upper riparian countries of Nepal and Bhutan, to provide Bangladesh with more lead time to

undertake disaster preparedness measures. Increased lead time to ensure reliable forecasts can be achieved through the following arrangements.

- Three-hourly real-time daily forecast data transmission between May and October, irrespective of warning stage
- Real-time and forecast data transmission from upstream stations such as Mangy, Patna, and Allahabad on the Ganges; Guwahati, Tejpur, and Dibrugarh on the Brahmaputra; and Teesta Bazar, Gajaldoba, and Jalpaiguri on the Teesta
- Joint calibration of hydrodynamic simulation models by Bangladesh and India to improve the accuracy of lead-time and forecasts

Improvements in model development for effective flood forecasting in Bangladesh are possible if data exchange arrangements can be made with India in the following sectors.

- River cross-section data of upstream stretches on the Ganges, Brahmaputra, Meghna-Barak, and Teesta
- Three-hourly water levels and daily forecasts for several upstream stations on the four rivers
- Daily discharge data from these stations and the outfalls of Koshi, Gandak, and Ghagra
- Daily rainfall data from several upstream stations in all the four systems: the Ganges, the Brahmaputra, the Meghna-Barak, and the Teesta
- Water-level discharge and rainfall data from representative stations along medium and flashy rivers in the northwest, north, and east of the country

Exhaustive sharing of data with India, Nepal, and Bhutan will enable Bangladesh to develop a dynamic river routing model for its river systems and this could generate a state-of-the-art flood forecasting scenario to benefit the flood-prone population of the GBM region.

Cooperative development of water resources

Development of hydropower and meeting the energy need in the GBM basins

Nepal is the lead country in the GBM region in terms of hydropower potential. Abundant rainfed and snowfed water resources and a topography with favourable relief provide an excellent setting in Nepal for ample and economic electricity. These resources are spread in the Koshi, Gandak, Karnali, and Mahakhali river systems of the Ganges Basin. Theoretically, Nepal has a potential of about 83,000 MW and an economic potential of about 40,000 MW, Bhutan has a hydropower potential of about 25,000 MW, and India an identified potential of over 40,000 MW in the GBM region.

Nepal is the uppermost riparian country in the Ganges Basin. It contributes as much as 41% of the total runoff and 71% of the lean flows. Most of the flows (80%) occur during the four months of the monsoon and the rest occur in the other eight months. To derive the full and multipurpose utility from the waters of the Ganges, storage dams need to be established to control floods but to also yield substantial benefits from the development of hydroelectricity

and irrigation facilities. Monsoon storage can augment dry season flow, improve navigation, and help maintain the ecological balance of the region.

Water quality management and overcoming implications for water supply and health

Because of its geographical location as a downstream riparian state of three catchments (the Ganges, Brahmaputra, and Meghna), Bangladesh faces specific cross-border issues concerning water quality. Quality parameters that concern Bangladesh as well as the region include sediment load, industrial effluents, agrochemicals, and domestic waste. The probable causes are environmental damage in the upper catchments in China and India, where removal of vegetative cover has intensified gully erosion. Similar processes may also be active in the Nepalese Himalayas, triggering sediment load generation in the Ganges system. This problem can be addressed through regional initiatives within an appropriate institutional structure for integrated catchment planning and management. Pollution from industrial effluents, agrochemicals, and domestic wastes are diluted in the monsoon but often rise to alarming proportions in the low flow season, especially near densely-populated zones. Industries engaged in the production and use of chemicals, paper or pulp, sugar, dyes, and various metals as well as large urban centres near rivers discharging untreated wastes into them are often responsible for cross-border water quality problems by virtue of their location.

Countries sharing the GBM basin should review their existing water quality and pollution laws and make efforts to enforce the 'Polluter Pays' principle. At the regional level, several measures are needed over the medium and long terms to control water quality. These should include (a) standardisation of water quality parameters for different users, (b) coordination of water quality monitoring at cross border sites, and (c) a mechanism for data and information exchange about the status of pollution in the rivers.

Navigation improvement in GBM River basins to ease road transport

The Ganges, Brahmaputra, and Meghna-Barak have served as major arteries of trade and commerce for centuries. In recent years, their importance has diminished as traffic has moved from the waterfront to the alternative modes of road and rail corridors. The lower part of the GBM basin, however, is still dependent on waterways, especially in Bangladesh. Nonetheless, the GBM countries can look forward to rejuvenating this natural asset under an integrated and coordinated scheme for the development of inland navigation throughout the region.

As a landlocked country, Nepal has a vital interest in securing access to the sea through the rivers. The establishment of links with the inland water transport networks of India and Bangladesh would provide Nepal with access to the Kolkata (India) and Mongla (Bangladesh) ports. The strategy should be to ensure that structures constructed in water development projects do not impede the development of inland water routes. India has already designated the Ganges between Allahabad and Haldia (1629 km) as National Waterway No.1 and the Brahmaputra between Sadiya and Dhubri (891 km) as National Waterway No 2. The maintenance and further development of navigable depth, navigational aids, and terminal

facilities would augment the navigation potential in the GBM region. India and Bangladesh have a bilateral protocol renewed every two years for using the Ganges, Brahmaputra, and Meghna rivers for water transit between West Bengal and Assam and to renew navigational routes in the Ganges connecting Aricha and Rajbari in Bangladesh with Murshidabad and Allahabad, ensuring year-round navigational flow along the Ganges.

The state of cooperation on the Ganges, Brahmmaputra and Meghna rivers

Political mistrust among countries in the Ganges, Brahmmaputra, and Meghna basins, which has lasted over half a century, the absence of enlightened leadership in the past, and serious differences in perceptions on development approaches are major impediments.

Sharing the riparian river waters has been a bone of contention between India and Nepal in the Koshi River Agreement which was signed on April 23, 1954. It involved a canal system, flowing channels on both sides, a barrage across the river, and a hydropower station. There was nationwide opposition to this agreement in Nepal on the following grounds: extraterritorial rights to India for an indefinite period, loss of fertile land in Nepal without equivalent gains in exchange, and the inordinate delay in payment of compensation to project-affected people (PAPs). The second joint venture between the two neighbouring countries was the Trisuli Agreement, signed on November 20, 1958, which again faced rough waters as is evident from the fact that its final phase was completed as late as 1971.

The problem with Bangladesh is one of sharing water from the common rivers. The major dispute is about the sharing of Ganges water during lean periods. India has constructed a barrage on the Ganges at Farrakka in West Bengal to divert water through the Bhagirati-Hoogly system to flush mainly the port of Kolkata. Bangladesh claims that there is not enough flow in the Ganges due to diversion of water through Bhagirathi-Hoogly and, at the same time, there is insufficient water to maintain agriculture, ecology, and the economy of areas downstream, particularly the southern delta area of Bangladesh. On 12 December 1996, Bangladesh and India signed the Ganges Water Sharing Treaty. The treaty provides Bangladesh with an opportunity to invest in long-term sustainable projects to develop freshwater resources in the Ganges. One big question about the treaty concerns the guarantee of minimum flow to Bangladesh.

The Mahakali Treaty envisages the construction of a 315-metre high dam called the Pancheshwar on the river which divides India and Nepal. The project is expected to generate 6480 MW of power to supply India's Northern Power Grid and to also provide the Gangetic Plains with large volumes of regulated water for irrigation. Nepal's first concern is the unequal sharing of the river's water, which gives Nepal 8000 cusecs against 16000 cusecs for India. Even though the sharing of water is unequal, Nepal has to bear an equal share of the investment. Nepal is also concerned that the treaty stipulates that Nepal sell its excess share of electricity to India but is completely silent over the modalities for fixing the price for this electricity.

A new area of concern has emerged for Bangladesh over the last couple of years. This is in connection with the proposed Indian River Link Project. The main objective of the project is to divert large volumes of water from so-called water surplus areas to water-deficit areas

in India. The Ganges and the Brahmaputra River basins have been identified as marginally surplus and surplus areas, respectively. Bangladesh has formally voiced its concern to the Indian side.

Nepal, being strategically located with India as its lower riparian neighbour, is also worried about submersion of vast areas within its territory along the Indo-Nepal border in case big dams and reservoirs are built across the border as envisaged by the River Link Project. These are some of the unresolved issues creating uneasy relations among neighbours in South Asia and preventing development of the vast potentials of the rich water resources of the GBM river basins.

Legal aspects of transboundary water resource management

i)   The Helsinki Rules on the Uses of Water of International Rivers, adopted by the International Law Association in 1966, state that all basin states of an international river have the right to access equitable and reasonable shares of the water flow.

ii) According to the United Nations Laws on Human Environment about Hydrologic Regions, 'the net benefits of hydrologic regions common to more than one national jurisdiction are to be shared equitably by the nations' (UN 1972a).

iii) The UN Convention on the Law of the Non-Navigational Uses of International Water Courses is a framework convention that aims to ensure the use, development, conservation, management, and protection of international water courses.

iv) At the Stockholm Conference on the Human Environment in1972, one of the principles laid down by the conference was that 'Every state has a sovereign right to exploit their own resources pursuant to their own environmental policies and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction' (UN 1972b).

v)   The Economic Declaration adopted by the Fourth Conference of Heads of States or Governments of Non-Aligned Countries held in Algiers, 5-9 September 1973, states that 'environmental measures adopted by one state should not adversely affect the environment of other states or zones outside their jurisdiction' (UN 1973).

Two hundred river treaties, about half of them in Europe, have been negotiated by countries for the management of this shared resource. Bangladesh, Bhutan, China, India, and Nepal are co-basins states of the Ganges-Brahmaputra-Meghna river basins. There is no reason why the water and land of this basin cannot be developed on a cooperative basis to solve flooding and other water-related problems in this region.

The role of international organisations in river basins management

In the past, international funding agencies have generally declined to provide loans for the development of international river basins unless the countries concerned have signed a mutually acceptable agreement. Without external financial assistance, however, developing countries have often been unable to construct capital-intensive water development projects along international rivers.

Here lies the principal challenge of the water profession in the 21st century: how to develop and manage international river basins like GBM sustainably and efficiently, in full agreement and cooperation among countries sharing the basin to arrive at a 'win-win' situation for all the parties concerned. These and other associated issues are likely to make water management processes complex in the future. Hydropolitics, both internal and external, in the management of international river and lake basins and aquifers is, thus, likely to become an increasingly important global issue in the coming decades.

South Asian water policies on integrated river basin management

The National Water Policy of India 2002 states that appropriate river basin organisations should be established for the planned development and management of a river basin as a whole, or of sub-basins where necessary. Special multidisciplinary units should be set up to prepare comprehensive plans taking into account not only the needs of irrigation but also the need to harmonise various water uses. Similarly, the National Water Policy of Bangladesh, as approved in 1999, states that basin planning provides the most rational basis for the development of water resources that are under the influence of one or more major rivers. International river basins such as the Ganges, Brahmaputra, and Meghna basins present special problems. It may take considerable effort and time for Bangladesh to work out joint plans with other riparian countries sharing the GBM basins besides India. As a long-term measure, it is the policy of the Bangladesh government to undertake essential steps to realise basin-wide planning for the development of resources of the rivers entering its borders.

Conclusion

Cooperation among countries of the GBM river basin region is needed for the common benefit of each nation through a water-based development of the region, focusing on issues not only of national concern and priority but also of regional relevance and applicability.

To derive the full and multipurpose utility from the GBM basins, water storage dams need to be set up to control floods as well as to derive substantial benefits from the development of hydropower and irrigation facilities. Monsoon storage can augment dry season flow, improve navigation, and help maintain the ecological balance of the region as a whole. Integrated water resource management through a basin-wide approach can help solve problems associated with flooding in the region. An integrated water resource management plan will help ensure coordinated and harmonious development of various sectors in relation to the regional responsibilities of the basins. These include irrigation and drainage, hydropower generation, navigation, drought control, watershed management, industrial and domestic uses of water, and recreation and wild life conservation, among others. This type of planning can ultimately help the people of the GBM basins to live in a better environment.

There is an enabling environment for basin-wise integrated water resource management. Statesmen, bureaucrats, scientists, and planners of all nations should sit together and go ahead with integrated basin-wise development in the region for the sustainable and equitable use of available water resources.

The way forward

- Multilateral regional cooperation is needed to manage the conflicts and constraints hindering maximum use of available water resources in the region, and unity of mind and a relevant policy with a shared vision is needed as follows.

  "To achieve equitable and sustainable socioeconomic development for the people in the region without compromising the sustainability of the ecosystem through proper utilisation of water resources in the GBM basins."

  This is based on the principles of IWRM as defined by the Global Water Partnership.

- Operational mechanisms are needed for sharing meteorological, hydrological, economic, and environmental information among countries concerned. Considering the sensitivity associated with data and information sharing, this may not be an easy task; but it is essential in order to ensure long-term sustainable development of the region.
- Basin-wide master plans for GBM river basins should be developed.
- Formation of a Ganges River Basin Organisation (GRBO) with India, Nepal, and Bangladesh to ensure equitable and judicious sharing of the waters of the Ganges and an equitable share of its benefits upstream and downstream for all stakeholders by maintaining the three principles of IWRM – economy, equity, and environmental sustainability.
- International organisations or donor agencies should encourage the countries in basin-wide regional development in South Asia.

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Session II
Promoting Productive and Sustainable Community-based Management of Vulnerable Mountain Natural Resources

Issues, Options, Challenges and Opportunities in Promoting Community-based Natural Resource Management in the Hindu Kush-Himalayan Region

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Introduction

The Hindu Kush-Himalayan (HKH) region, extending over 3500 kilometres and home to about 150 million people, is a rich ecosystem dominated by forests, mountain ranges, biodiversity, and other natural resources. Many of these resources are critical for the wellbeing of close to a billion people living downstream because of the role they play in sustaining supplies of water, hydroelectricity, timber, mineral resources, and flood control related services. They are also areas of recreation for nature lovers. Increased population pressure and inappropriate use and management of these environmental and natural resources, however, have created severe pressure leading to a vicious cycle of degradation, poverty, and more degradation. It is generally believed that changing property regimes, from local users to distant and weak state machineries, has been one of the leading factors for degradation.

Land

The vast majority of people in the HKH region live in rural areas and depend largely on land for their sustenance; there is limited scope for other means of earning a living. Land is relatively scarce in HKH compared to other regions in Africa and Latin America, for example. Moreover, rapid population growth over the years has exerted serious pressure on the region's land resources.

This situation is getting worse in the HKH as steep slopes, high altitudes, and harsh environments render much of the land unsuitable for arable agriculture. Only 5% of the land is suitable for intensive arable agriculture. Severe scarcity necessitates the sustainable use and management of land resources.

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Land, which is the prime source of livelihoods in the region, is in a severe state of degradation. Forests are shrinking and agriculture is gradually expanding on to marginal and sloping lands. Accelerating land degradation through nutrient leaching and soil erosion is affecting crop yield. It is estimated that more than 300 million ha of land in the HKH region are degraded to a certain extent (Table 1).

Forests

Forests are crucial for the livelihoods of millions of people living in the HKH. About 100 million people are partially or wholly dependent on forest resources for their subsistence. In mountain areas, where erosion rapidly depletes the bare agricultural soils, forests are the main source of nutrients that maintain the productivity of the land.

Table 1: **The extent of land degradation in the Hindu Kush-Himalayas**	
Country	Extent of land degradation (in million ha)
Afghanistan (mountainous land)	39.8
Hilly areas of Bangladesh	1.0
Bhutan	1.6
China (Himalayan areas)	209.0
India (Himalayan areas)	17.3
Myanmar (Uplands)	17.6
Nepal	1.8
Pakistan (northern mountains)	20.0

Source: Bhatta 1990, in Partap and Watson 1994

Besides protecting the natural resource base for growing agricultural crops, forests provide important services by enhancing water supply, controlling erosion, and moderating micro and macro climates (Myers 1995). While experts argue that an ideal per capita forest area should be close to one ha, except for Bhutan countries of the region have much less than the desired level of forest resources. This has created an imbalance between population and natural resources. In Afghanistan, Bangladesh, China, and India, the figure is estimated to be only around 0.1 ha (Table 2).

Like land resources, forest resources are also dwindling in most parts of the region (Table 2). About half of India's forest land are in various degrees of degradation due to socioeconomic, policy, and institutional reasons (Chundawat and Gautam 1993).

Table 3: Forest resources in the HKH countries

Table 2: **Changes in forest cover in HKH countries**				
Country	Forest area (ha '000)			Annual change (%)	
	1980	1990	1995	1981-1990	1991-1995
Afghanistan	1,990	1,990	1,398	0.0	-5.9
Bangladesh	1,434	1,054	1,010	-2.6	-0.9
Bhutan	2,963	2,803	2,756	-0.5	-0.9
China	137,756	133,756	133,323	-0.3	-0.1
India	68,359	64,956	65,005	-0.5	0.0
Myanmar	33,098	29,088	27,151	-1.2	-2.3
Nepal	5,636	5,096	4,822	-1.0	-1.1
Pakistan	2,793	2,023	1,748	-2.8	-2.7

Source: Kaosa-ard and Rerkasem 2000

Table 3: **Forest resources in the HKH countries**		
Country	Forest area 1995	
	% of land	ha/cap.
Afghanistan	2.1	0.1
Bangladesh	7.8	-
Bhutan	58.6	1.7
China	14.3	0.1
India	21.9	0.1
Myanmar	41.3	0.6
Nepal	35.2	0.2
Pakistan	2.3	-

Source: Kaosa-ard and Rerkasem 2000

Rangelands

About 60% of the HKH region is classified as rangelands. These areas are home to many culturally diverse pastoral people. Large numbers of animals and people depend fully or partially on rangelands. They support a sizeable livestock population and wildlife which supply meat and milk products, game, recreation, and soil nutrients. They also provide critical watershed services, climatic functions, and preserve diverse biological and cultural resources. These resources are, however, under heavy stress because of degradation caused by overgrazing, unscientific or unsystematic management, and overexploitation and mismanagement. Large expanse of rangelands have lost their vegetative cover completely and some areas close to the subtropical zone have been converted into agricultural uses. In China, about two-third of rangelands are degraded. Rangeland degradation has accelerated loss of biological resources including flora and fauna, which has affected the lives of people dependent on pastoralism.

Water

The HKH region is the largest storehouse of fresh water in South Asia. The greater Himalayan mountains are the source of nine major river systems critical for the welfare of millions of people who live both upstream and downstream. Although once considered abundant, water

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is becoming an extremely scarce resource as demand has increased as users have multiplied and supply has become erratic. Water has become a source of contention between many countries in the region.

Biodiversity

The Eastern Himalayas which lies in the HKH region is one of the global biodiversity hotspots. Its geological, climatic, and altitudinal variations makes this Himalayan hotspot also the most diverse: it is home to about 10,000 plant species, 300 mammal species, 977 birds, 176 reptiles, 105 amphibians, and 269 freshwater fishes. Many of its rare flora and fauna are endemic, not found in other regions of the world. Many of these biodiversity resources, especially faunal and floral species, however, are either being lost or are endangered due to overexploitation and loss of habitat.

Management of the rare environmental and natural resources of the region is confronting new and complex issues and challenges. Most important among them are mounting pressure on limited natural resources, persistent poverty, increasing social and gender inequity and inequality, and deteriorating resource base and overall erosion of environmental quality. The population is growing steadily in all countries of the region, from about 1% in China to more than 3% in Afghanistan. This has forced people to either migrate to urban areas, or intensify the use of limited resources. Marginal lands are too often used for cultivation, undermining their ecological sustainability. Despite considerable expansion of more effective community-based natural resource management systems, degradation continues unabated. To make matters worse, urban environments are declining rapidly as unplanned townships and cities expand in an uncontrolled manner, putting further pressure on nearby forest and water resources. Accelerating economic development in the neighbouring plains and the impact of external forces have added new challenges to environmental managers of the region. Mountain peoples are known for their resiliency and adaptive capacities, but they face formidable hurdles, competing with outside forces, in effectively joining the mainstream of economic and social development taking place in Asia today.

Key Issues

Poverty

Poverty and inequality persist in a number of subregions and pockets despite notable economic growth in some countries of the region and certain pockets of the Himalayas. Poverty is widespread in all countries of the Himalayan region (Table 4). Per capita GDP ranges from US$ 167 in Afghanistan to US$ 1,100 in China (FAO 2005). According to a recent Millennium Development Goals Report, progress made by the South Asian region as a whole between 1990 and 2002, although impressive, is not uniform. Average overall incomes increased by approximately 21%, the number of people in extreme poverty declined by an estimated 130 million, and child mortality fell from 133 deaths per 1000 live births a year to 88. Life expectancy rose from 63 to nearly 65 years. Huge disparities prevail across regions and within countries. The report indicates poor progress in education, gender equality, sanitation, environmental degradation, and housing for the poor. "National data

often mask wide disparities between males and females" and South Asia is singled out for having the highest extent of disparities in women's life expectancy and infant mortality rates for girls. The report states, "country averages may disguise the fact that a number of areas within countries are significantly off track towards the Millennium Development Goals (MDG), while others are on track. Some countries, like Nepal and Afghanistan, are far behind the others mainly due to political and social conflict" (Banskota 2006). While data are not adequately disaggregated for mountain areas, China reports that the majority of its poverty is in the mountainous western provinces.

Table 4: **Percentage of population below the national poverty line in HKH countries**			
Country	Population (in million)	% of Population below the national poverty line	Population (in million) living in poverty
Afghanistan*	31.0	70	21.7
Bangladesh **	143.8	44	63.2
Bhutan**	0.753	36	0.27
China***	1321.8	12	158.6
India **	1 079.7	26	280.7
Myanmar	47.3	25****	11.8
Nepal **	24.8	38	9.42
Pakistan **	149.7	34	50.9
	2,798.85		596.59

Data Sources: * Human Development Report 2003:199, ** SAARC 2005:15, *** Ravallion and Chen 2007:8, **** The World Fact Book Central Intelligence Agency, USA

Challenges

Mountain-focused policies that protect and conserve the natural environment, sustainably manage resources, and improve the overall quality of life to meet future needs and create opportunities for multiple and beneficial uses of natural resources are as critical as ever. Significant progress has been made in several countries of the region towards sustainable management of land, forests, rangelands, and watersheds through adoption of effective community-based management systems. Developing policies and programmes that can provide incentives for good stewardship of natural resources faces numerous challenges. Some of these are as follows.

Unclear property rights

In the eastern Himalayas where community ownership of resources is common, the issue of tenure and customary rights of local people is not clear. In many parts of the region, forest and rangelands that were nationalised during the colonial period, or which had been centrally managed, are continuing under a state command-and-control type of management and ownership. Although, traditionally, local people have been using these resources to earn their livelihoods, prevailing laws and regulations make their customary use illegal. In some cases, only limited use rights are allowed by the government as special privileges, which in itself creates disincentives for sustainable management of natural resources. Insecure resource tenure not only encourages unsustainable resource use (the 'Tragedy of the Commons' syndrome), it also creates conflict between local people and government agencies. This

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indicates that colonial legacies are not only prevalent in policies and laws, they remain dominant in practice in the institutional norms and cultures which implement these policies and laws.

Lack of clear policies and legislation regarding participatory natural resources management

Although, in principle, most of the countries of the region have adopted the basic framework of participatory natural resource management, the initiative is not yet properly supported by necessary policies, Acts, programmes, and their implementation. For example, although India adopted a policy of Joint Forest Management (JFM) in 1988, which has seen widespread implementation, it has yet to be incorporated in the Forest Act to help facilitate JFM's adoption, formalisation, and integration into the normal operations and work planning procedures of the Forest Department. The rights and concessions, as well as benefit-sharing arrangements, also need to be institutionalised and put into a legal framework rather than kept under the banner of administrative decisions. Actual tenurial rights conferred by JFM remain extremely limited in comparison to more successful community forestry in other countries. The JFM programme has introduced a number of innovations in resource expansion which can be used by community forestry programmes in other countries. Similar situations prevail in Pakistan, Bangladesh, and Bhutan, although the policies are gradually changing.

Dominance of technocracy and bureaucracy

Sustainable natural resource management requires the participation of local people and involvement of community-based institutions and actors, traditional and grassroots organisations, and civil society in the policy-making process to establish a broad-based framework for resource management. In many countries of the region, formal mechanisms are yet to be developed to involve local communities and civil society in the decision-making processes (Ahmed and Mahmod 1998). The bureaucratic and/or technocratic approach still dominates the process, and social, traditional, and indigenous processes and practices are given a passive role.

Differing socioeconomic and political systems

Political and social contexts shape policy processes and outcomes in fundamental ways. Wide differences in social settings and governance systems, and disparities in economic standing in the Himalayan region make it difficult to develop a common regional strategy and options for policy change. In order to ensure success the policy reform process must take into account the history, context, political environment, and logical basis for the need for change.

Lack of thematic integration

Many of the problems concerning natural resources faced by the regional member countries (RMCs) have complex and multi-faceted causes (deforestation, construction of infrastructure, soil erosion, land degradation, climate change, among others) which require a broader framework and an integrated approach, and transdisciplinary[1] approaches. ICIMOD's

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[1] A transdiciplinary approach takes ideas, theories, concepts, and methods which exist above the separation of disciplines and apply them to transcend disciplinary boundaries.

programmes are contributing to poverty alleviation by developing integrated and innovative solutions that address: a) degradation of natural resources especially forests, rangelands, water, soils, and biodiversity; b) low productivity from agriculture by focusing on rural income diversification; c) improving community-based responses to natural disasters and climate change; d) reducing social and gender inequality and exclusion; d) improving knowledge packaging and targeted dissemination using advances in ICT; and e) forming strategic alliances and partnerships for policy advocacy and change.

Opportunities for influencing policy

Notwithstanding these bottlenecks and hurdles, there is a significant shift towards participatory planning and management of natural resources in the region. A major policy change currently underway in India, for example, is legislation in the form of a Land Rights bill now in Parliament which provides usufruct rights to local people. The Government of Pakistan has developed a Joint Forest Management-oriented policy, and the North Western Frontier Province is implementing an integrated natural resource management project. The Royal Government of Bhutan is developing a water policy and enacting laws for better managing water resources. Nepal recently developed a non-timber forest product policy for the sustainable use and management of NTFPs. The Government of Bangladesh also recently passed a Social Forestry Act which facilitates participatory forest management. Likewise, the State Government of Uttarakhand, India, is playing a pioneering role in revitalising the system of community forest management known as the 'Van Panchayat'. There are also moves to develop policies on environmental services, carbon trading, and climate change.

The successes of these approaches can be seen in Nepal, where policies have been formulated that devolve rights to local people and reorient the government forestry staff towards providing better technical services. Similar examples exist in rangeland co-management practices in China and in regional collaboration in other transboundary issues such as biodiversity conservation and flood control. Despite limited successes, a key challenge facing policy makers, development practitioners, and researchers in the region is how to scale up and develop policies that contribute in a significant way to alleviating poverty, reducing inequalities, and managing fragile mountain natural resources, thus contributing to realisation of the Millennium Development Goals. It is more complex to manage the natural resources sector than others because of the extremely intricate linkages between social and ecological systems.

The countries and states or provinces of the Himalayan region are continually looking for optimal policy options. ICIMOD's mission is to improve its response to this need to support the development of mountain specific policies that tackle mountain poverty and natural resource degradation problems. International organisations and the donor community are also supporting people-centred natural resource management perspectives taken up by ICIMOD. Civil society, community-based groups, and government line agencies in all the regional member countries have expressed keen interest in and support for participatory forest and marginal land management. There is an overall receptive policy environment that provides a valuable window of opportunity to meet the needs of policy makers and local

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stakeholders. By helping them to explore new policies, approaches, and options, as well as to understand the social and environmental consequences of alternative courses of action, ICIMOD, as a non-political regional institution with more than two decades of experience in mountain development, uses its unique position to help address the mountain region's growing problems through experiential learning and mutual sharing.

ICIMOD's experiences and learning

The experiences gained through ICIMOD's work in community-based forest and natural resource management offers useful insights, lessons for packaging good practices, and direction to formulate certain broad policy recommendations. The key policy recommendations are as follows.

- **Devolve power to local communities.** While the very nature of 'participatory forestry' calls for community involvement in the process of planning, implementation, and decision making, experiences gained through our work (Statz et al. 2007; Rasul and Karki 2007) show that real devolution of power to local people has yet to happen. It is, therefore, imperative that power and authority be devolved to local forest user communities to promote participatory forest management.

- **Develop and strengthen effective community-based institutions.** In promoting community-based natural resource management practices, development of effective community-level institutions, clear rules, and regulations, and strong linkages between national, district, and community institutions is needed in order to develop appropriate mechanisms for sharing benefits, resolving conflicts, and providing financial incentives. An effective user group federation such as The Federation of Community Forest Users Nepal (FECOFUN) can play an important role in promoting participatory forest management. It is, therefore, recommended that community-based institutions for promoting participatory forest management be developed and strengthened.

- **Take positive action for disadvantaged groups.** The needs of the poor, women, and disadvantaged groups, are not automatically reflected in the management and operational decisions of user groups; these marginalised groups have little voice and capacity to negotiate with the social and political elite. Clear policy guidelines need to be developed and put in place in order to achieve inclusion of disadvantaged sections of the society in participatory forest management. A policy bias for the disadvantaged sections of society, for example, allocating a percentage of community forestry area for the poor and the disadvantaged, are recommended to create more opportunities for these marginalised groups.

- **Promote protection to active management, advance from subsistence to commercial production.** Although participatory forest management provides support to livelihoods, its role in improving the quality of lives of its participants remains limited as subsistence production remains the focus of the programme. Experience from this study suggests that forest protection is not enought to improve the quality of rural life. It is necessary to enhance productivity and facilitate the advance from subsistence to commercial production of timber and non-timber forest products as well as to promote ecological services. It is necessary to improve silvicultural and resource management practices to increase productivity, and for this, we must improve the technological capacities of user

groups. Necessary policy and institutional support such as training, credit, marketing, and business development services, needs to be put in place to facilitate a gradual shift from subsistence to commercial production.

- **Provide policy and institutional support.** Experience shows that decentralisation and giving local people the responsibility to manage the forests is not enough. Local people need new knowledge, improved technical skills, up-to-date information, and enabling support to manage forests and related natural resources more efficiently. The supporting role of NGOs and government agencies is crucial, particularly in the formative stages. Poor people, women, and other marginalised groups face a myriad of constraints to exercising their forest access rights effectively. Policy and legal support and an institutional framework should be in place, with mechanisms in place for post-project backstopping. Many good forest management and rural enterprise development initiatives are frustrated because of a lack of enabling policies and institutional environment. Therefore, appropriate policies and institutional support need to be put in place.

- **Create new economic opportunities and market linkages.** Forestry is a livelihoods-related activity for the mountain poor. To sustain participation in forestry-related activities and facilitate the move from subsistence-based activities to commercial enterprise, new economic opportunities need to be identified and market linkages harnessed and developed. New and promising areas of activity based on local resources need to be identified and developed. Certification of organic products can also be pursued. The potential for carbon financing as an incentive and instrument for reducing poverty also needs be explored.

- **Develop an integrated approach.** The pursuit of forest management is consistent with sustainable development; it requires pursuing economic activities to improve the quality of life of mountain people without affecting the regenerative capacity of natural resources. Therefore, responsibility for forest management needs to go beyond forest departments. It is necessary to involve the relevant line agencies such as agriculture, livestock, soil, local government, and rural development, in promoting sustainable forest management. An integrated approach, therefore, should be used to promote holistic forest management.

- **Need for continued international support.** In countries of the Himalayan region participatory forestry is not only a means for better resource management and regenerating degraded forests, it is also an end goal in development activities and people's participation and empowerment are the main development goals of all the countries of the region. This is a daunting task. It is therefore important that international organisations, development agencies, and donor communities come together and continue to provide support to produce a synergistic effect on participatory forest management and strengthen the process.

- **Empower local forest user communities.** Special consideration needs to be given to empowering the poor, vulnerable, and socially excluded groups with new knowledge, information, skills, and technologies to manage forests effectively. The capacity of local organisations, government organisations, community-based organisations (CBOs), non-government organisations (NGOs), and service providers must be strengthened to equip them to address the challenges and harness the opportunities.

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- **Reorient state forest bureaucracies.** Finally, special attention should be given to re-orientating state forest bureaucracies away from traditional models that emphasise trees and production towards participatory forest management, placing special emphasis on local people dependent on forests and their livelihoods, and the overall socioeconomic development of communities living in forest areas.

Conclusion

Sustainable mountain development and management of natural resources require not only the active and sustained participation of local people dependent directly on those resources, but also improved tenure systems that allocate ownership in accordance with the rights and responsibilities of the users. The framework should pursue a people-centred and livelihoods-focused model in developing polices and strategies. Under this framework and in a setting of dynamic consultation, partners such as governments, NGOs, CBOs, and international organisations, should be consulted constantly to develop a partnership-based policy to inform and influence policy change. In order to address new, emerging issues, key players in the policy change process should constantly generate fresh knowledge and information and raise awareness to add value to the multiple stakeholder policy change process in sustainable natural resource management.

In conclusion, a policy development framework promoting community-based natural resource management is a long-term initiative. The process ICIMOD has adopted starts by raising critical research and development questions, setting up a participatory research and consultation framework, generating outputs fulfilling key indicators, assessing the adequacy and potential of the outputs to influence policy, and providing evidence to policy makers so that there is a good chance that a desired policy change will take place. The process is successful if the outcome of the change is tangible, traceable, and partners feel that the effort was worth it. The process is expected to go on as implementing one policy change cycle will generate a new generation of issues. A dynamic or iterative process has to be in place to address second generation issues as they emerge.

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Session III
Promoting Increased Regional and Local Conservation of Mountain Biological and Cultural Heritage

Lessons and Prospects for Increased Regional Cooperation in the Conservation of Biological Diversity and Cultural Heritage: An Overview of the Hindu Kush-Himalayas

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Introduction

The Hindu Kush-Himalayas is among the most fragile and biodiversity-rich areas in the world. It is home to millions of poor and marginalised communities who depend on biological resources for their subsistence. In recent years, there has been an unprecedented loss of biological resources due to land-use change, changes in regime, fragmentation of families, external market forces, globalisation, and others. The HKH region covers parts or all of Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan. Approximately 39% of the HKH region consists of pasture, 33% is covered under protected area networks, 21% is forest, and 5% is agricultural land. The entire region has an area of 4.3 million sq km that sustains about 150 million people and has an impact on the lives of three times as many people living downstream. In terms of natural resources, parts of the HKH region are among the world's ten mega-centres of biodiversity, endowed with a rich variety of gene pools, species, and ecosystems of global importance. The HKH region is important not only as a habitat for plant and animal species, a great number of which are rare and endemic, they are also home to many historical ethnic communities such as the Wakhis, Tibetans, Sherpas, Kirats, Bhutias, Lepchas, and many others, with diverse sociocultural values. A long history of human presence in this fragile ecosystem and the maintenance of its fragile environment are indicators of the compatibility and satisfaction of community needs through traditional practices with biodiversity conservation. Traditional natural resource management systems such as Sokshing in Bhutan (an indigenous practice that has evolved over many years whereby rural agricultural households and communities maintain patches of village forest for collection of leaf litter to produce farm manure); Dzumsa in Sikkim (an institutional arrangement for natural resource management by the Pipon village head); nomadism amongst the Wakhis, Ladhakis, and

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Tibetans; and Kipat systems amongst the Kiratis and Limbuwans (Kipat is land inherited from forefathers with rights), are some of the effective traditional conservation measures that address sustainability. This reveals that in the past, there were these methods of sustainable use of biological resources that met human needs.

The major challenge to people living in the HKH region is how to use these dwindling resources in a sustainable manner. Climate change has increased species extinction risks from 15-37% in specific regions (Thomas et al. 2004). Among the excellent community-based natural resource management practices evolved during the recent past are joint forest management (JFM) in India and community forestry (CF) and leasehold forestry (LF) in Nepal. These are strengthened by the promotion of rangeland co-management, enterprise-based community biodiversity conservation, and a participatory transboundary landscape approach to development and conservation. The notion that "conservation and management of natural resources are impossible without people's participation" is now becoming the guiding principle of community-based biodiversity management. Since the 1980s, decentralisation and devolution of authority for the management of natural resources are being seen in government efforts throughout the HKH region. Biodiversity conservation and management approaches also evolved from conservation of charismatic species (species that have popular appeal and are used to focus attention on conservation campaigns), to habitat and protected area management, buffer zone and community-based management, to landscape and ecosystem approaches. This paper highlights some of the lessons learned and prospects for regional cooperation on conservation of biological diversity and cultural heritage in the HKH region.

Mountain and biodiversity conventions

Six of the twenty plants that supply 80% of humanity's food, specifically, maize, potatoes, barley, sorghum, apples, and tomatoes, originate in the mountains. Seven others – wheat, rice, beans, oats, grapes, oranges, and rye – are now cultivated in mountain areas and have evolved into many different varieties (Fleury 1999). The Conference of the Parties (COP) to the Convention on Biological Diversity (CBD), during its seventh meeting held in February 2004 in Kuala Lumpur, adopted 'Mountain Biodiversity' as decision VII/27 of the CBD. The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), an open-ended inter-governmental scientific advisory body to the COP, at its eighth meeting, made mountain biodiversity the main theme and adopted the structure, elements, goals, and possible actions of the proposed programme of work on mountain biodiversity in which ICIMOD was involved. Thus, COP-7 took up mountain biodiversity as one of the priority issues for review and guidance and adopted the decision by 188 countries as parties. It invited the parties to adopt outcome-oriented targets for mountain biodiversity taking into account the strategic plan of the CBD, the Global Strategy for Plant Conservation, and The Plan of Implementation of the World Summit on Sustainable Development and the Millennium Development Goals. It also agreed that all should take into account the knowledge, innovations, and practices of indigenous and local communities and ensure their participation in conservation and sustainable use of mountain biological diversity, in accordance with Article 8(j) on in situ conservation and related provisions of the CBD. Further, it urged bilateral and multilateral

organisations and processes to provide financial assistance, training, and support, where applicable, to developing country parties and parties with economies in transition, to assist in the effective implementation of the programme of work.

There are many great transboundary mountain systems and cultures all over the world: the Alps, Andes, Carpathian, Caucasus, Central Asian Mountains, and the Hindu Kush-Himalayas are some examples. Transboundary mountains face greater challenges than others as they are often governed by different political systems. Cooperation among countries sharing these mountain systems is needed to facilitate the development of these mountain areas and to sustain the flow of goods and services among and from them. One such example of cooperation among countries sharing a transboundary mountain system is the Alpine Convention.

The Alpine Convention was agreed upon in 1989, signed in 1991, and came into force beginning 1995. All eight alpine countries and the European Union are signatories to the Alpine Convention. Experiences with the Alpine Convention are new and evolving. Some of the agreed areas of cooperation for immediate benefit are in the areas of nature and landscape protection, mountain forests, mountain farming, tourism, soil conservation, and energy and transport-related infrastructure. The lessons provided by the Alpine process have a global significance as the only example worldwide of a legally binding inter-governmental mountain agreement. Despite difficulties, it has evolved into a successful platform for regional exchange and negotiation as well as for sustainable development. Lessons from the Alpine process and experience were drawn for various mountain systems of the world during the International Year of the Mountains at Berchtesgaden, Germany, and these have come in the form of a declaration and recommendations. Recently in 2005, another sharing of processes was organised in Bolzano, Italy to adopt areas of cooperation for other mountain systems. ICIMOD is leading the sharing process for the HKH region.

Lessons and prospects for regional cooperation

Participatory forest management
The notion that conservation and management of natural resources are impossible without people's participation is now becoming a guiding principle in community-based natural resource management (CBNRM). Since the1980s, decentralisation and devolution of the authority to manage natural resources are being seen in government efforts throughout the HKH region. In 1992, The United Nations Conference on Environment and Development (UNCED) placed a premium on people's participation and promotion of a conceptual shift in both natural resource management and conservation. In response, participatory forest management approaches evolved. Experiments on such approaches began in the 1970s. Joint forest management in India (Poffenberger and Singh 1989; Campbell 1992; Saxena 1992; Sarin 1993; Saighal et al. 1996), community forestry and leasehold forestry in Nepal (Gilmour and Fisher 1991; Joshi 2000; Mikkola 2002), and community-based natural resource management in Bhutan are some often cited examples of effective management of natural resources and regeneration of degraded forests. In all of these examples, community-

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based natural resource management (CBNRM) was seen as an instrument that enhances conservation and sustainable natural resource use. Technologies and science for natural resource management are important, but sustainable harvesting processes and equitable distribution of benefits among the communities are more challenging and perhaps of greater importance (Sharma and Chettri 2003).

All these participatory forest management approaches are considered to be successes in many respects, especially in shared responsibility for management and profit sharing with local communities. Second generation problems, mostly relating to equity in access and benefit-sharing, have emerged in the application of these approaches. These issues need careful handling. In all three approaches, the planning and design did not specifically consider biodiversity assessment, therefore the impact on biodiversity is mostly a byproduct or consequence of forestry programmes involving the community. Biodiversity maintenance and enrichment are visible in these community-managed, forested mountain areas (Sharma and Chettri 2003).

Rangeland co-management

Rangelands, pasture, and livestock support, directly or indirectly, the livelihoods of thousands of communities in the HKH region. Numerous ethnic groups including nomadic and semi-nomadic communities live in rich but fragile ecosystems and depend on pastureland and livestock for subsistence because of limited agricultural options in mountain areas. But acute water crisis, limited foraging ground, fodder crises, livestock disease, and livestock depredation on wildlife, however, are limiting livelihood options from rangelands. Sustainable use of resources is of paramount interest not only to sustaining the local communities but also to the conservation of rare flora and fauna, water, and carbon sequestration, and preserving both the cultural and natural landscapes. Such conditions depict the inexorable link between poverty and environmental degradation, each reinforcing the other. Thus, strengthening the ecological coherence and resilience of this farming system through co-management operations is necessary in both conservation and sustainable use of resources. ICIMOD's rangeland programme started in 1996, focusing on the following objectives: a) improved community-based rangeland management practices that balance grazing and other economic activities with biodiversity conservation introduced in at least six sites in six regional member countries; b) improved policy framework for sustainable use and management of rangeland ecosystems, pastures, and livestock resources; and c) enhanced capacity of six lead partner institutions in participatory planning of rangeland, pastoral, and livestock development programmes (Zhaoli 2004). In the past four decades, rangeland science has shifted focus from livestock management to rangeland ecology and later to rangeland co-management mainly through ICIMOD's research and advocacy role (Sharma et al. 2006)

Reassessing shifting cultivation

Shifting cultivation is the most widely practised farming system in the sub-tropical and tropical zones of the Eastern Himalayan region. In the whole of South Asia, an estimated 10 million hectares of land are under shifting cultivation. Across Asia, generally, more than 400 million

people, most of them indigenous, are dependent on tropical forests and a majority of them practise shifting cultivation. This makes it the dominant land-use system throughout much of Northeast India, the Chittagong Hill Tracts of Bangladesh, Eastern Bhutan, Myanmar, Lao PDR, Cambodia, Northern Thailand, Vietnam, and some parts of China. Yet, in many of these places, property rights' regimes have made shifting cultivators 'illegal squatters' on land that has been cultivated by their ancestors for countless generations. There has been no concerted effort to address this dichotomy in the Eastern Himalayan region as a whole, despite individual country initiatives. ICIMOD is playing a vital role in carefully documenting and validating practices to debunk the common stereotype of shifting cultivators as engaging in wanton destruction of forest ecosystems – and, more accurately, to portray them as forest planters and managers. Through the combined efforts of farmers and policy makers, a transition process is now visible (Kerkhoff and Sharma 2005).

Biodiversity linked enterprises

Biodiversity management by the people becomes more evident when it has a utility value and communities benefit from it. The utility could be subsistence; for instance, non-timber forest products form part of the food security strategy for many indigenous people in the HKH region; or it could enterprise development that provides opportunities for generating income for poor rural households. The HKH region has demonstrated examples of enterprise development involving communities where biodiversity has been used or is a component, but these examples seem more like 'islands of success' and are yet to be upscaled. There are great potentials for enterprise development in NTFPs and medicinal and aromatic plants (MAPs); however, the forward linkages have not been properly studied. The general problems with most of these NTFPs and medicinal plants are their unsustainable harvesting and the lack of management of these resources in both government and community-managed forests and pasture areas. Only a few species are being cultivated on a small-scale in private areas.

Some successful examples of biodiversity-linked enterprise development involving communities are oak-silk in Garhwal (India); 'jatamansi' (Nardostachys jatamansi) in Humla (Nepal); traditional local paper from 'lokta' (Daphne spp), 'argeli' (Edgeworthia gardeneri) in Nepal; and eco-tourism in Sikkim (India) and the Annapurna Conservation Area in Nepal (Sharma et al. 2006).

Private sector partnership in the NTFP sector

Natural resources such as non-timber forest products, especially medicinal and aromatic plants, have a great potential to increase cash economies and markets within and among countries of the HKH region. Efforts to research and develop this sector often neglect the sector's key business players; yet taking value chain into consideration, these sectors are important. Furthermore, they have often been limited to the national level, whereas the MAP trade, both legal and illegal, is typically a regional affair. The ICIMOD/IFAD collaboration with Dabur is an attempt to involve the corporate sector in research and development on MAP-based enterprises for poverty alleviation in the mountain areas of western Nepal (Anil and Kerkhoff 2004; Sharma et al. 2004).

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Conservation on a landscape scale

ICIMOD has identified five potential transboundary landscapes for cooperation and management in the HKH region. These are: (a) the Pamir Landscape, covering parts of Afghanistan, China, Pakistan and Tajikstan; (b) Kailash Landscape, covering parts of India, Nepal, and China; (c) Everest Landscape, covering parts of Tibet Autonomous Region, China, and Nepal; (d) Kangchenjunga Landscape, covering parts of Bhutan, China, India, and Nepal; and (e) Kawagebo-Namdapha-Hkakaborazi Landscape, covering parts of China, India, and Myanmar (Chettri and Sharma 2005). Most protected areas in the HKH region are scattered as conservation 'islands', many of them are transboundary in nature. Connectivity amongst these protected 'islands', and regional understanding and cooperation among two or more countries were necessary for effective transboundary biodiversity management (Sharma and Chettri 2005).

The Kangchenjunga region has experienced conservation interventions ranging from species' preservation, to landscape-level conservation with a pre-set criteria (see Sharma and Chettri 2005; Chettri and Shakya, this proceedings), and developed a policy framework with the following recommendations, strategies, and actions (also see Sharma et al. 2007).

Scientific and technical cooperation

Research into biodiversity and gathering technical and scientific data form the basis for developing biodiversity conservation programmes. There is abundant research and scientific and technical data available on various aspects related to the Kangchenjunga region, but we need to improve cooperation for collaboration, data-sharing, and capacity-building amongst countries constituting the landscape. Some strategies and actions to improve scientific and technical cooperation are as follows.

a. Based on analysis of information gaps, prioritise and conduct standard long-term research on issues relating to the Kangchenjunga landscape.
b. Initiate mechanisms and develop collaborative research and scientific programmes of mutual interest among three countries in the landscape.
c. Facilitate creation of a working group with representatives from each of the three countries in the landscape to identify research priorities and to optimise efficient use of research results by protected area managers, policy makers, and local stakeholders.
d. Foster documentation and exchange of research, scientific, and technical data, as well as good practices and indigenous and traditional technologies relating to sustainable development and sustainable use of natural resources.
e. Develop capacity and enhance opportunities for community-based biodiversity research and monitoring.

Information exchange and sharing

Exchange and sharing of information can lead to developing common approaches that address common issues. Information exchange and sharing also fosters regional teamwork. Standardised approaches to transboundary conservation of biodiversity can be developed and informed policy decisions made at the landscape level. Suggested strategies and actions for information exchange and sharing are given below.

a. Increase promotion and exchange of traditional and indigenous knowledge and best practices as well a actual and potential contribution of such knowledge for the conservation and sustainable use of biological resources.
b. Facilitate information exchange and sharing on issues related to access, benefits, and markets.
c. Promote educational and capacity-building systems in line with target groups and conditions within the landscape.
d. Emphasise capacity building of women for conservation and dissemination of traditional knowledge through information exchange and sharing.
e. Explore the efficacy of a variety of media or platforms for information exchange and sharing, including but not limited to inventories and databases, web resources, audio-visual materials, regional newsletters, national reports and printed materials, information hubs and nature interpretation centres, institutional channels, and meetings and conferences.
f. Explore the suitability of a clearing house mechanism for dissemination of documents, best practices, and appropriate technologies, and innovative approaches for biodiversity conservation.

Regional guidelines and soft legal instruments

Regional voluntary guidelines and soft legal instruments are essential in order to address transboundary issues within the framework of existing laws of countries constituting the Kangchenjunga Landscape. Some strategies and actions relevant to regional guidelines and soft legal instruments are as follows.
a. Promote the creation of voluntary regional guidelines that identify and acknowledge ecological regions and corridors of biological significance as heritage sites, peace parks, and so on, irrespective of national boundaries.
b. Develop mechanisms – check posts, training of personnel, intelligence gathering, and information exchange – for regular joint monitoring of biodiversity and related issues within the landscape.
c. Facilitate development of uniform strategies and approaches for the conservation of endemic species in the landscape.
d. Develop guidelines for joint research and mechanisms for effective and mutual use of capacities and resources available in the region.
e. Harmonise guidelines for social and environmental impact assessments of development projects that will impact the fragile ecosystem of the Kangchenjunga landscape.
f. Develop guidelines for capacity building of communities on transboundary issues that include knowledge exchange and information sharing, cooperation, technology transfer, and awareness generation among stakeholders.
g. Develop guidelines for creating a common multi-stakeholder platform that will review these guidelines and their implementation at various levels including national, institutional research, state government, organisational, and community levels.
h. Develop guidelines for providing incentives for tree tenure, cultivation of non-timber forest products, ex situ conservation, diversification of livelihood options, and for providing awards for intelligence reporting and conservation actions.

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Criteria for successful community-based biodiversity conservation

Community-based biodiversity management (CBBC) in the context of the HKH region is complex, resulting as it does from diverse cultures, ecological variations, differences in climatic regimes, and difficult terrain. Future actions should focus on a) policies and laws; b) institution, management, and processes; c) community participation and equity; and d) ecological sustainability for effective community-based biodiversity conservation (see Sharma et al. 2006).

Conclusion

The HKH region offers a wide array of natural products derived from its rich resources for the evolving market. There are unprecedented opportunities to convert this richness for ensuring conservation of biodiversity and sustainable development. Conservation does not mean non-use but wise use of biological resources, and contributes to sustainable development. Applying effective management principles and achieving the objectives, however, will only be feasible if a way can be found to translate these broad frameworks into appropriate actions on the ground. Therefore, global conservation initiatives should work more towards population control and poverty alleviation, applying co-management practices to natural resources to make conservation effective and realistic. Sharing and learning from both mountain and biodiversity convention processes will enhance regional and international cooperation in biodiversity conservation and management.

Promoting community-based biodiversity conservation and concomitantly, sustainable economic development, are the greatest challenges of our time. The ways to achieve these two goals are becoming the focus of increasing attention, particularly within the conservation and development communities. Formal conservation in most countries has, for the last century, been treated as the domain of centralised government agencies. Predominantly, the focus has been on protecting natural resources from the people. More recently, there is increasing recognition of the value that local communities can bring to the process of conserving natural resources. This paradigm shift has seen the development and application of management models that are designed to integrate conservation and sustainable use.

Most of the initiatives were participatory in nature, with long-term institutional and legal support. They reveal that biodiversity management by the people becomes more effective and recognisable when it has a 'utility value', harnessed either for subsistence livelihoods through the consumptive use of resources, or for enterprise development and that communities benefit from it. The examples represent 'islands' of success on effective management of biodiversity, however, and efforts to replicate and upscale them are yet being taken. Thus, CBBC should be people-centred, livelihood-focused, enriching of biodiversity, and based on long-term vision and principles of providing equitable access, a fair share of benefits to local people, and conservation through sustainable use.

People's participation in natural resource management, conservation, and development based on economic incentives and an integrated landscape approach show promise for effective community-based biodiversity conservation. The emerging second generation problems in

participatory management should help focus future strategies. Some second generation issues that need to be addressed include: (a) the extent of communities' rights to economic benefits especially in mountain areas, (b) assignment of forest areas to communities, (c) developing systems for conflict resolution, (d) dealing with different administrative and forest boundaries, (e) increasing women's participation, (f) inclusion and full participation of traditional users and equitable distribution of benefits, and (g) social equity of unequal power relations between the rich and the poor, high and low castes, women and men.

The recently developed policy framework for regional collaboration on transboundary biodiversity management, and scientific and technological cooperation, information exchange and sharing, and guidelines and soft legal instruments have been developed for the southern half of the Kangchenjunga complex for Bhutan, India, and Nepal. They could be used to showcase how cooperation can be achieved for biodiversity conservation in the HKH region.

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Promoting Improved and Diversified Incomes for Vulnerable Rural and Marginalised Mountain Peoples

Enhancing Economic Opportunities for the Mountain Poor

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Introduction

This paper discusses options developed through ICIMOD's agriculture, rural and income diversification projects designed to enhance incomes for the poor and the marginalised in mountain areas that are environmentally friendly. The paper begins with a brief discussion on the mountain condition, characterised by absence of or limited extent of conditions historically associated with enhanced economic performance the world over. The options indicated for the poor help in adaptation to constraining situations created by the absence of these conditions which are required for satisfactory economic performance.

The problems

The elimination of poverty and inequity, promotion of ecological or environmental sustainability, and the achievement of increasing and more durable levels of economic growth and prosperity are subjects currently dominating policy discourse and development interventions at different levels all over the world.

Mountain areas stand quite apart from other ecosystems or from mainstream, socioeconomic systems in the plains in terms of the imperatives of the three thrust contexts mentioned above. The crucial factor responsible for this difference is the missing mountain perspective; that is, understanding and incorporating the imperatives of mountain specificities such as fragility, diversity, marginality, and inaccessibility in designing for and implementing development interventions in mountain areas. The mountain specificities and their implications for development interventions in mountain areas have been well elaborated by Jodha et al. (1992) and Jodha (2005) and will not be discussed here.

The lack of integration of or adaptation to the mountain specificities in policy and planning for the development of mountain areas is partly to be blamed for the slow pace of economic development in these areas. The development models that have evolved over time have primarily focused on the plains. Their application to mountain areas has ignored the specific conditions and imperatives of the mountain condition. The missing mountain perspective has,

in a variety of ways, obstructed the effective application of development models designed and applied by developing countries during the last five decades. This could be elaborated upon with reference to the following central prerequisites historically associated with enhanced economic performance in many different countries and their general absence or limited presence in most parts of the mountains. These often interlinked perquisites or conditions relate to both (a) production processes, and (b) post-production activities.

Conditions relating to production processes

- Intensified use of resources which, historically, facilitated and favoured achievement of increased economic performance in most countries of the world; in mountain areas intensified use of resources was prevented by limited accessibility, fragility, marginality and, to some extent, diversity and subsistence-oriented traditional adaptations (Table 1 and Jodha 2005).
- Specialisation generated by incentives to earn big profits and associated economies of scale which, historically, has helped to enhance economic performance elsewhere were obstructed in mountain areas by limited accessibility, fragility, marginality, and diversity and as well as more broadly (rather than purely economically) focused human adaptations developed by mountain communities.
- High productivity and generation of tradeable surplus necessary for increased exchange and investment necessary for high economic performance, were obstructed by the same limited accessibility, fragility, marginality, and traditional human adaptation practices in mountain areas.

Conditions relating to post-production processes

- Infrastructure for both value addition and market links essential for enhanced economic performance that also facilitates intensified resource use was obstructed by limited accessibility, fragility, marginality, and specific human adaptation measures.
- Equitable external links to ensure favourable terms of trade and harnessing of niche opportunities to enhance economic performance were also obstructed in mountain areas by inaccessibility, fragility, marginality and diversity, and so on.
- Finally, human capacities and responses capable of identifying and capturing external income-generating opportunities were also blocked by the same conditions of limited accessibility (which isolates mountain areas and require costly logistics to overcome), physical and social marginalities, unconnected diversities, and generally localised subsistence systems in mountain areas.
- Policy makers and planners are not unaware of these constraining features in mountain areas, but mountain people's adequate and integrated treatment or effective adaptation to these conditions make these conditions unclear for policy makers and thus, addressing them continues to be a major gap in mountain development strategies.
- On the other hand, the potential opportunities and comparative advantages of mountain areas for niche resources and the dimensions of mountain diversity are important features that converge with the conditions that have been observed to promote income and prosperity and are part of the growth processes observed all over the world. But harnessing these potentials has once again been obstructed by poor accessibility, fragility, marginality, and

low levels of human skills in mountain areas. Furthermore, wherever these opportunities have been harnessed has been brought about by mainstream external systems, largely for their own benefit. The exploitation of hydropower potential, minerals, timber, and NTFPs are prime examples where, because of the socioeconomic and political marginality of mountain areas, unequal terms of trade and unequal highland-lowland links have been forged and mountain communities have received very little benefit in terms of growth and prosperity. Valleys that are somewhat accessible are an exception, and the conditions limiting economic performance are not very strong or absent.

Conditions relating to environmental sustainability

The paragraphs above relating to 'disconnects' between mountain specificities and conditions historically associated with high economic performance also indirectly apply to the question of environmental sustainability.

Table 1: Preconditions associated with high economic performance (gains) and their 'disconnects' with the imperatives of mountain specificities						
	Conditions and processes conducive to high economic performance					
	Relating to production processes			Relating to post production processes		
Mountain features (mountain specificities)	Resource use intensification	Specialisation and economies of scale	Tradeable surplus generation	Infrastructure, access to markets	Equitable external links	Human response capacities
Limited accessibility: high costs of mobility, low dependability of external support or supplies	(-)[b]	(-)	(-)	(-)	(-)	(-)
Fragility: vulnerability to degradation with increased land-use intensity	(-)	(-)	(-)	(-)	(-)	(-)
Marginality: limited and low earning opportunities, resource scarcities and uncertainties, cut off from the 'mainstream' economy, social vulnerability	(-)	(-)	(-)	(-)	(-)	(-)
Diversity: temporally and spatially highly diversified products/land-use patterns	(+)[b]	(-)	(+)	(-)	(-)	(-)
Niches: potential for numerous, unique products/land uses	(+)	(+)	(+)	(-)	(-)	(-)
Human adaptation mechanisms: traditional sustainable resource management, diversification, recycling, adjusting demands to changing supply situation	(-)	(-)	(-)	(-)	(-)	(-)
Source: Table adapted from Jodha (2005) Notes: 1. (-) and (+) indicate 'extremely limited' and 'relatively high degree of convergence' between mountain specificities and conditions historically associated with economic performance in many countries. The situation may differ between more accessible (commercialised) and poorly accessible areas, as illustrated by the contrasting situation of different mountain areas in China, India, and Nepal (Jodha 2002). A closer look at the situation in better off or developed pockets in mountain areas shows that wherever, consciously or unconsciously, development efforts were directed to enhance the degree of convergence between conditions historically associated with growth and prosperity and the imperatives of mountain specificities (for example, in Himachal Pradesh, India; Ninang county, China; and Ilam district ,Nepal, to cite a few), the areas and communities benefited from development interventions.						

Due to steep slopes and biophysical fragility, mountain landscapes are extremely vulnerable to degradation and depletion even from minor disturbances. Traditional communities have learned, through trial and error, to manage these landscapes by restricting their use or choosing low intensity practices through a range of folk agronomic and folk engineering practices. These helped to balance production and conservation concerns at low population levels and with subsistence-oriented populations, but were not able to satisfy conditions associated with enhanced economic performance (Jodha 1998). The extension of 'mainstream approaches that need intensified resource use through both modern agricultural practices and overexploitation of natural resources for economic gains has triggered a process of natural resource degradation. Ignoring the imperatives of fragility, marginality, diversity, and the sensitivities of niche resources as well as the delicate links between them (e.g., improving accessibility with little concern for fragility) has exacerbated the environmental vulnerability of mountain areas.

To the above, one may add the major side effect of close integration of mountain areas into mainstream economies that are demand-driven and extractive of resources. This has encouraged rapid socioeconomic differentiation in mountain areas, leading to disintegration of the collective stakes of mountain communities in natural resource management and an increase in poverty and inequity. Consequently, the mountain poor are faced with mutually reinforcing environmental and economic vulnerabilities (Jodha 2005). This issue is intimately linked to the concern of the present discourse at global levels for addressing issues of poverty and inequity without damaging the environment.

Visible shifts and persistent gaps

The preceding brief account of the objective circumstances in mountain areas and the fact that they are ignored or little understood, and the failure to incorporate them in development interventions, provides a general picture of the conditions in the HKH region. At the same time, the region has many scattered success stories of economic development (Jodha et al. 1992). The process of change has picked up following lessons from these success stories, enhanced by concerns and advocacy for mountain areas and people at global to local levels, and by the visible shift in the perspective of donors, advocacy groups, NGOs, and local communities in recent years. Particularly during the post-Rio (Summit on Sustainable Development) period, increasing attention has been given to mountain areas. The increased concern for environmental sustainability has also helped to secure greater attention to sustainable mountain development.

To complement the above shift in perspective, regional member countries (RMCs) have built up a substantial infrastructure in terms of professional manpower, research and development facilities, support systems, and investment allocation for mountain areas to promote economic development. The major gap in development efforts and processes, however, is the persistent limited attention to mountain specificities and their imperatives, hence reducing the impacts of development interventions. Should they continue to be ignored, it could lead to extremely negative side effects for the environment and the socioeconomic situation (Jodha 2005). Another gap is the continual lack of attention and concern for poor and marginalised

groups in mountain areas. This is an important concern for those formulating sound mountain development strategies.

Placing ICIMOD's concerns in context

In a paper dealing with ICIMOD's or ARID's work on economic options for poor and marginalised groups in mountain areas, the purpose of the above discussion on a general framework based on a mountain perspective is to identify and address the constraints and opportunities as contexts for ICIMOD's vision and action. In other words, the issues highlighted above, including the missing or limited presence of conditions historically associated with enhanced economic performance in mountain areas as summarised in Table 1, constitute the fundamental contexts for ICIMOD's input in facilitating integrated mountain development to address the concerns of poverty, equity, and environmental sustainability. While reflecting on the potential contributions of ICIMOD in the HKH region, it should be stated that in terms of both human and other resources, ICIMOD is too small an organisation to play a comprehensive and direct role in the development process. Besides, the organisation's mandate does not encourage ICIMOD to devote resources and capacities to tasks for which RMCs have resources and comparative advantages. At the same time, however, ICIMOD has its own comparative advantages indirectly contributing to mountain development as discussed below.

ICIMOD niche 1: knowledge-based input

The more appropriate way to recognise and harness ICIMOD's role in facilitating mountain development is to look for niches and activities for which it has a comparative advantage and to which the RMCs have not been able to give enough attention, indicating the approaches and steps to sensitise development interventions to mountain specificities and promoting increased attention to issues and people that have been bypassed or perceived as marginal.

The niche or opportunities for ICIMOD have an important structural dimension. ICIMOD, being a non-political, inter-governmental, autonomous regional centre with ownership and partnership of the member countries, has a unique opportunity to learn and disseminate knowledge based on inter-country experiences. This implies collaborative learning and sharing of best practices and appropriate options for development interventions. ICIMOD's comparative advantage or niche while working with partners in the RMCs lies in being able to identify and advocate for development options rather than direct participation in development activities. In the particular context of the policy programme process, this implies (i) identification of and advocacy for choices based on information and analysis, and (ii) generation and evolution as well as testing and dissemination of options that fit into the overall goals of governments in mountain areas for overall development as well as for development approaches for the poor.

ICIMOD niche 2: focus on 'the bypassed'

Despite identification, acceptance, and implementation of development options, mainstream development processes in mountain areas – because of various institutional handicaps and

capacity-related reasons – tend to bypass a vast number of poor and marginalised people. This is both due to the limited ability of mainstream processes to understand and address the reality of these groups on the one hand, and the limited capacities of the latter to participate in and capture the opportunities associated with mainstream development processes. These bypassed groups constitute an important constituency which needs improved understanding and increased involvement in the development process. ICIMOD places strong emphasis on promoting income-generating options for these groups. By the very nature of the context of the problem, such options have to be low-cost, centred on local resources, manageable locally, and replicable on a wider scale, in order to match the objective realities of the poor, marginalised, and vulnerable groups (such as women, tribals, and groups with limited physical linkages in rural areas). To sustain these options productively, local resource management and conservation are equally important. Given ICIMOD's resources and its special focus on the problems of the poor and the marginalised, promoting the options mentioned above is another niche for ICIMOD.

The Focus of ARID

ICIMOD's Agriculture and Rural Income Diversification (ARID) Programme focused specifically on this second niche area. The programme relates to the situation and options for poor and marginalised groups. Such options may look marginal to mainstream systems, but they constitute mainstream options for the poor and the marginalised. The activities of ARID in association with other action initiatives at ICIMOD largely focused on demarginalising the poor and marginalised groups by enhancing high payoff options and demonstrating and helping convert the 'small options' for the marginalised into mainstream interventions, thus making these options an integrated part of mainstream development efforts.

The remainder of this paper will illustrate these points with practical examples based on the work of ARID over the last four years and on lessons learned from ICIMOD's previous work and that of partner institutions.

It is useful to indicate the manner in which the attributes of these options fit into the 'constraints and opportunities' framework (Table 1) discussed above. The following are some indicative inferences based on projects on (i) Himalayan honeybees, and (ii) women, water, and energy.

(a) Adaptations or responses to inaccessibility: honey and honeybee enterprises involve high-value, low-weight or low-volume products whose mobility is less affected by inaccessibility. In the context of organic products, marketing constraints for these products are also relaxed.

(b) Honeybees as a local resource as well as energy options based on local resources (such as water harvesting) are also less sensitive to inaccessibility.

(c) The convergence between economic and environmental gains of these options also helps to harness niche products and diversity and contributes to reducing social marginalisation.

(d) Furthermore, their links with indigenous practices, group action, and so on, takes care of concerns related to human skills.

(e) Finally, the economic gains involved are not hampered by the need for resource intensification, scale factors, and inequities of highland-lowland linkages.

Practical examples of impacts of ARID's work

In the following discussion we illustrate the experience and impacts of mainly two projects: (1) Himalayan honeybees (2) women, energy, and water. Here we indicate their attributes and impacts on poverty and policy programme processes. In particular, we indicate what contributes to the effectiveness of such options. The two examples discussed below may look marginal compared to mainstream systems, but they constitute 'mainstream options' for the marginalised and poor groups bypassed by mainstream development interventions.

Himalayan honeybee programme

Sustained donor support for the Himalayan honeybee project (Apis cerana, the indigenous honeybees of the Himalayas and a niche product) has helped us to arrive at a good understanding of bee-plant-community relationships from the environmental and livelihood perspectives. After almost two decades of work, ICIMOD has developed a honeybee technology that has distinct pro-poor attributes. ICIMOD's programme on the Himalayan honeybee is the largest of its kind the world.

Beekeeping is not a new activity in the Himalayas and, hence, improvement of the indigenous practice or technology is understood and accepted by local people, more so as most of the work is done on farms. Raising bees does not require land, hence, the technology is suitable for marginal farmers as well as the landless poor. It does not have any negative impacts on the environment and the pollination services provided by honeybees generate both a tangible and intangible environment and economic benefits. The technology is women-friendly and helps women earn additional income. Furthermore, beekeeping is not confined to one product only and has multiple products aside from honey. Honeybee enterprises are versatile and can produce multiple products: multiplication of colonies provide pollination services; queen rearing is an enterprise in itself; cosmetics can be developed from wax, and so on. All of these provide new sources of income in rural areas. These factors, therefore, contribute to the wide acceptance of the technology. Efforts are now underway to upscale the project in Afghanistan, Bangladesh, Bhutan, India, and Nepal through partners with large rural development networks.

Examples of poverty reduction are given below.
* Studies carried out in Jumla, Nepal, show that beekeepers are earning an average of Rs 4,152 (US$ 85) per year from their backyard bee farms.
* A beekeeper in Kaski, Nepal, has been able to earn Rs 55,000 (US$ 775) in a year from selling bee colonies and queens.
* In Jumla, one beekeeper was able to sell honey worth Rs 40,000 (US$ 563) in an year.

Thirty-two percent of arable land in the apple growing state of Himachal Pradesh are growing horticultural crops. Apples are the main cash crop in Himachal, accounting for 42%

(78,000 ha) of the total area under fruit cultivation and about 90% (277,000 mt) of the total fruit production. To many of the nearly 150,000 apple growers in Himachal Pradesh, apple growing contributes 60-80% of their total household income. The Himachal apple industry is estimated to be worth about US $1.7 billion per year, with about US $150-170 million being contributed directly and about US $1.5 billion being contributed indirectly by providing jobs to thousands of people not only in Himachal but also in Asia's biggest fruit market in Delhi during the six-month apple-selling season.

ICIMOD studies reveal a drop in productivity in orchards all over Himachal State. In the early '90s farmers estimated a 50% decline in productivity, and the decline continued despite no decline in inputs. It was finally understood that the decline was the result of inadequate pollination.

This has led to the growth of a new vocation, namely, the use of honeybees for pollination. Beekeepers charge Rs 500 as security and another Rs 300 as pollination fees for one colony of honeybees each flowering season. The security money must be paid in advance and is refunded only if the colonies are returned intact. Farmers also sell the honey. Currently, demand for pollination services is increasing and supply has been unable to catch up with the demand.

ICIMOD's work on honeybees is now also gradually influencing policy as follows.
- In Himachal Pradesh, provision of subsidies has been introduced for renting honeybee colonies to farmers for apple pollination under a Government of India policy.
- Pakistan has also formulated a policy to subsidise beekeeping through low interest loans, training support, and provision of carpentry equipment.
- In Nepal, after the incorporation of beekeeping in the 10th Five year Plan, the government made provisions for demand-based training to farmers and is giving a 25% subsidy on beekeeping equipment and, in particular, on the purchase of beehives. It is also supporting the beekeeping resource centres established in various districts.

Women, water and energy project
A great many women across the Hindu Kush-Himalayas spend a considerable amount of time and energy daily carrying firewood and water to meet the needs of family members, agricultural activities and livestock raising. Many girl children are unable to attend school regularly just to fulfil these needs. Meeting the water and energy priorities of their households supersedes other priorities and, unless interventions that relieve women from this obligation are forthcoming, their participation in poverty reduction is unlikely to materialise. The feeling of drudgery is common among women who carry out these services.

If time budgets from water and energy activities can be reduced and harnessed into income-generating options, there is considerable scope to reduce poverty in a holistic sense in the rural areas of the HKH. The interventions designed should address practical, productive, and strategic needs. Practical needs relate to improved access to water and energy technologies that reduce drudgery, improve health, and save time. Productive needs are fulfilled when

women are able to use the time saved for generating income. Strategic needs are fulfilled by building women's capacity to organise themselves in ways that enable them to raise their voices and make their own choices.

Examples of poverty reduction have emerged in the form of various impacts after two years of project intervention at sites in Nepal, India, and Bhutan. In Bhutan, for example, women selected two options, one from each site. In Phobjikha Valley, women had to rely on firewood, as cooking gas was always available. Gas cylinders had to be transported by motor and the journey took half a day. The women decided to organise themselves and, after obtaining the necessary permission, were able to open a gas depot that can handle about 340 gas cylinders. The depot is managed by the women and the small profit they make from selling gas in cylinders provides a revolving fund for loans to women in the group. The time taken to gather firewood has decreased as demand for firewood decreased and, hence, drudgery has decreased as well. This intervention has empowered women living in the remote areas of the project economically.

In one project site in Bajeena, Uttaranchal, India, women found an innovative way of recharging traditional water sources on mountain slopes. Because of the acute shortage of water in this area, women have spent the better part of the day every day collecting water. To overcome this problem, the women constructed 14 micro reservoirs spread spatially along the slopes to trap and stored rain water, which were then percolated in the soil, recharging the traditional spring. The women also planted multipurpose saplings to ensure slope stability, generate income, and ensure a steady supply of firewood and fodder. Grazing has been controlled in the area through social fencing. Supply of water has more than doubled since establishment of the reservoirs, reducing the time women spent collecting water. The time saved is being spent in income-generating activities funded by loans from the revolving fund the women themselves established. This success is being replicated by other communities in the area without help from ICIMOD.

In another site in Solan, rainwater harvesting linked with the introduction of improved cooking stoves has enabled women to gain multiple benefits in terms of saved time, reduced drudgery, availability of hot water, and improved health for the women and their families. The time saved has been used in income-generating activities. Two years after implementation of the project, the women from Solan are helping women in other villages to form groups and carry out similar activities.

In Nepal, the women have been able to establish a technology demonstration village which has allowed non-project beneficiaries to observe these technologies which have been used to reduce the time required for water and energy services and which has generated income from time saved. The technology demonstration village (TVD) has played an important role in spreading these technologies to many villages and has been instrumental in generating multiple benefits for women outside of the project area. Having seen the success of the project, the district development committee of Dhankuta is replicating the project in their programme areas. Women from other villages are exerting pressure to replicate the project in their own villages.

The project in Nepal has been selected as an example of a good practice by the Wuppertal Institute for Climate, Environment, and Energy (www.wisions.net) based on the a set of criteria (a. using a participatory process; b. simple, proven and cost-effective technologies; c. multiple benefits generated; and d. sustainability and replicability of the project) along with that it is a promising approach to address multiple needs – practical, productive and strategic.

This project is also gradually influencing policy at different levels.
- In Dhankuta district, the district development committee has set aside an annual budget for the replication of this programme.
- At the national level, the programme has been recognised by the Government of Nepal and upscaling is being considered.

Based on the work carried out, a tentative list of the attributes of good practice can be identified. A good practice would most likely be characterised by a large number of attributes which are not constant and can vary from project to project and change over time and space. A good practice also needs to ensure environmental, economic, and social sustainability. A tentative list of good practice attributes is provided in Table 2 and matched with the projects discussed above.

Table 2: Attributes of good practices or options

Easy accessibility
- Low cost, simple, and proven technologies
- Resource base (niche) present but not adequately harnessed
- Relevance in the lives of large numbers of rural people

Use of the participatory approach
- Active participation of local people, especially women and socially excluded groups
- Capacity building of local people to operate, manage, and repair technologies or practices

Economic gains and equity
- Productivity enhancing (less labour-intensive and time consuming, especially of women's time and labour)
- Low or no risk activities that blend with traditional activities
- Local promoters of technologies
- Benefit-sharing
- Drudgery-reducing and income-enhancing technologies, especially for women
- Short gestation period

Environmentally friendly
- Environmentally friendly activities and technologies
- Environmental conservation services
- Clean and efficient technology developed, not entirely exotic

Replicability
- Builds on indigenous knowledge with new innovations
- Promotes socially and culturally acceptable technologies and options
- Selects partners with large rural development network
- Selects strategic national and local partners
- Anchors the project in a national programme and works with governments from the beginning

Sustainability
- Institutional capacity: local group is organised to run a business or programme and resolve conflicts
- Financial: local groups are able to mobilise, invest, and access resources internally and externally
- Environment: local groups are capable of conserving the local resource base

Conclusion

Demarginalising poor and marginalised groups through enhancing high payoff options and demonstrating and helping convert the 'small options' into mainstream interventions is a slow process; most successful options and technologies available in the market are generally not suitable for the poor. This is partly due to the obstructions imposed by mountain specificities and partly because of the limited capacities and resource endowments of the poor. Options that appear to work for the poor need to be carefully designed to address the multiple dimensions of poverty and not only those related to income generation. Options that have been successful in the plains need to be first adapted to mountain conditions. In this context, we need to keep in mind some useful lessons in the context of poverty alleviation in mountain areas as listed below.

- Identify the right entry point to ensure active participation and empowerment.
- Identify and promote technologies that have distinct pro-poor, pro-women, and pro-environment attributes.
- Building the capacities of the poor in doing things the right way is more important than the provision of technologies.
- Help the poor organise themselves.
- Address the problems of the poor on a community basis by providing access to information, credit, markets, and complementary support.
- Avoid activities that require heavy external inputs and opt for the use of locally available resources.
- Anchor good practice pilot projects on existing national programmes to influence policy and ownership.
- Select strategic partners and institutions at different levels to scale up good practices.
- Long-term programme funding commitments are essential to generate and sustain impacts.

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Session V

Promoting Decreased Physical Vulnerability within Watersheds and Regional River Basins

Emerging Options in Watershed Management: Lessons Learned in PARDYP

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Introduction

Farmers in the middle mountain watersheds of the Hindu Kush-Himalayan (HKH) region are generally smallholders with typically less than one hectare of cropping land per household. The majority of them do not have proper access to irrigation and rely on rainfall, which is distinctly seasonal. In the irrigated valley bottoms, agriculture is becoming intensified and commercialised. In places along the roads, traditional rainfed farming is also gradually shifting towards the cultivation of seasonal cash crops, but by and large it is still oriented towards subsistence, labour intensive, and nonprofitable. Studies in the ICIMOD-coordinated 'People and Resource Dynamics in Mountain Watersheds of the Hindu Kush-Himalayas' Project (PARDYP: Box 1, Figure 1) show that more than 50% of the farmers surveyed in the PARDYP-India watersheds did not consider agriculture sufficiently profitable, which in effect was putting many young farmers off their fields (PARDYP Livelihood Survey 2005).

Transformation of subsistence mountain agriculture into an enterprise that is ecologically beneficial and economically attractive to support the livelihoods of upland farmers has been an uphill task. Action research in PARDYP showed that it is possible to bring about such transformation if a) farmers' capacities and skills to address the core issues of water management, soil fertility management, and degraded land management are improved; b) market linkages are addressed; and c) dissemination of knowledge is improved. But before embarking on such initiatives it is equally important that the environmental and socioeconomic context in which farmers live are properly understood. This paper presents some of the main PARDYP findings and results including popular on-farm options which have caught the imagination of farmers and extension workers within and outside the PARDYP watersheds (Figure 1).
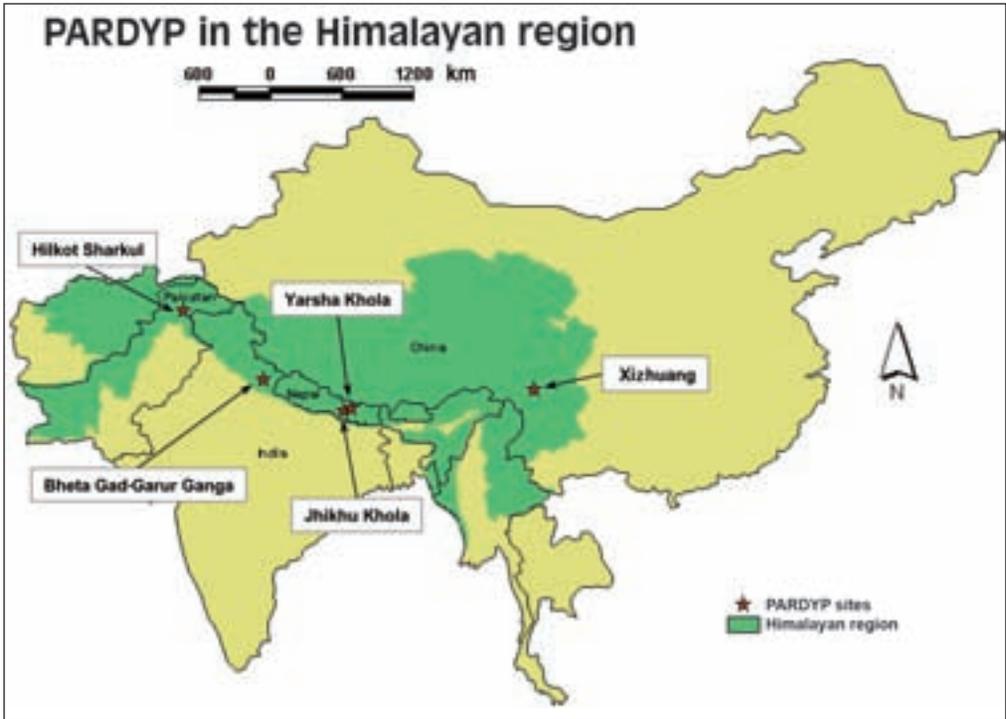
Figure 1: Location of PARDYP watersheds

Key findings and results

Water quantity and quality

PARDYP collected data and information on hydrology and meteorology of its study areas for about nine years. The resulting data sets provide a long-term baseline against which the impact of changes in land use and land management on water quality and quantity can be measured. In addition, PARDYP has drawn together data from the watersheds to analyse parameters such as soil erosion, rainfall intensity, high and low flows, and water quality.

> Box 1: **PARDYP worked with research institutions and local communities in the following fields.**
> - Research in hydrology and meteorology
> - Soil erosion and fertility studies
> - Participatory conservation activities
> - Agronomic and horticultural initiatives
> - Socioeconomic and access studies
>
> PARDYP was funded by the Swiss Agency for Development and Cooperation (SDC), International Development Research Centre (IDRC), and ICIMOD.

quality. All these have been described in detail in various PARDYP publications. The key ones are Merz (2004), Merz et al. (2005), and Dangol et al. (2005). The main messages that emerge out of the analysis are as follows.

- Adequate water is available in the middle catchments to meet human and livestock needs provided water resources are properly and adequately managed. For example, the intensively cultivated Jhikhu Khola watershed in Nepal receives a total annual precipitation of about 1295 mm. Of this, 869 mm is lost through 'beneficial for the crop' evapotranspiration and 411 mm flows out of the watershed as runoff, mostly during the monsoon season (Merz 2005).

- Well-managed farm land has very low soil erosion rates (less than 5 t/ha) and thus does not warrant major efforts towards soil conservation per se. Methods that lead to better land husbandry and result in savings and income for farmers are needed.
- Drainage, road networks, severely degraded areas, and steep sloping agricultural lands are major sources of sediment and need effective sediment control measures.
- Spring and river sources in PARDYP watersheds suffer from problems with drinking water quality. Water quality studies in PARDYP found faecal coliform contamination in most spring sources in all watersheds far above the World Health Organisation (WHO) limits.
- An important problem that PARDYP has identified is the amount of nutrients leaching from soils in farmers' fields. This seems to be significant and can have a big impact on farmers' costs and groundwater quality. Studies in PARDYP Nepal show that the average leachate of nitrate, phosphate, and potassium is equivalent to the loss of 683 kg/ha of urea, 17 kg/ha of diammonium phosphate (DAP), and 846 kg/ha of murate of potash from rainfed agricultural land.

Table 1: The PARDYP watersheds and their characteristics					
Physiography	Xi Zhuang (China)	Bheta Gad Garur Ganga (India)	Jhikhu Khola (Nepal)	Yarsha Khola (Nepal)	Hilkot-Sharkul (Pakistan)
Total area (ha)	3,456	8,481	11,141	5,338	5,230
Elevation Range (m)	1,700-3,075	1,090-2,520	800-2,200	1,000-3,030	1,448-2,911
Climate	Wet and dry seasonal variation	Sharp wet and dry seasonal variation	Humid sub-tropical to warm temperature	Humid sub-tropical to warm temperature	Humid sub-tropical to cool temperatures
Dominant geology	Limestone and sandstone	Schists and gneiss	Mica schist and limestone	Gneiss and slate+graphitc schist	Micaceous schist, slates,
Total population	4,016 (1997)	14,524 (1998)	48,728 (1996)	20,620 (1996)	11,322 (1998)
Population density (people/sq.km)	116 (128 in 2002)	171	437 (587 in 2001)	386	243
Family size	4	7	6	5	8
Dominant ethnicity	Han, Chinese	Brahmin, Rajputs, Scheduled castes	Brahmin, Chettri, Tamang, Danuwar	Brahmin, Chettri, Tamang	Gujar, Swati, Syeds
Major cash crops	Tea tobacco fruits	Winter vegetables fruits tea, fodder	Potatoes tomatoes rice, fruits vegetables	Seed potatoes some fruits	Fruits fodder
Main staple crops	Maize wheat beans potatoes rice	Mixed cereal grains rice wheat	Rice maize wheat potatoes millet	Maize rice millet potatoes wheat	Wheat maize rice

Water management

For improved water management PARDYP recommends the following measures.

- Protecting spring sources, promoting local management rules by strengthening groups, and planting species (e.g., vetiver) to filter overland flow (Figure 2)
- Treating water at the household level through solar disinfection (SODIS) methods using discarded plastic water bottles and treating with chlorine where contamination remains
- Installing mud-lined or plastic-lined ponds to harvest rainwater and perennial water sources
- Installing 500-1000 litre tanks to harvest rainwater from roofs for domestic supplies throughout and following monsoon
- Installing simple, locally available, cheap drip irrigation sets (with or without plastic mulches) to cut the amount of water needed to grow some crops by up to 60%.
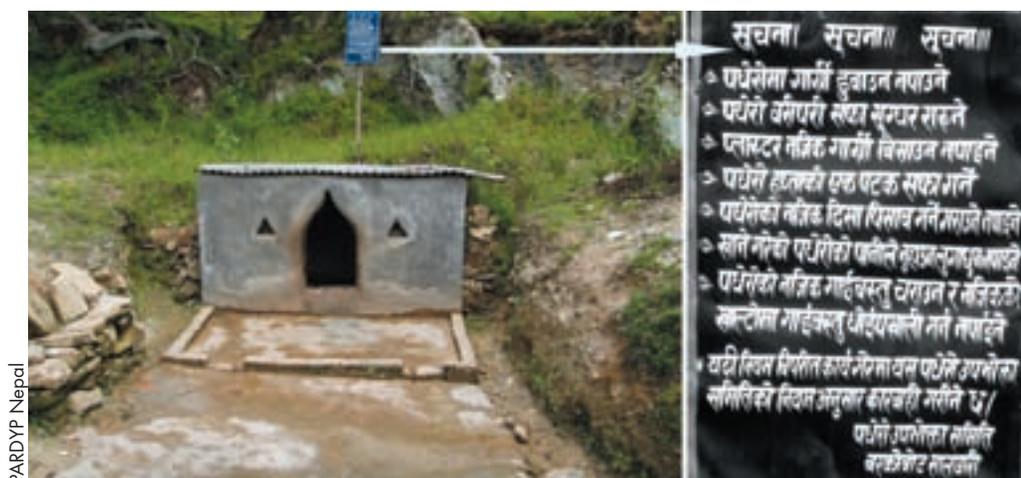
Figure 2: **Community-based rehabilitation with rules for proper management of Dhotra springs in Nepal has led to increased drinking water security for spring users**

On-farm and common property research

Through participatory action research, PARDYP has identified sustainable farming practices that reduce environmental impacts and increase farmers' incomes and livelihoods without increasing women's workloads. PARDYP's research found the following options promising for farmers in the HKH region.

Incorporating legumes in farming

Legumes are plants that fix nitrogen in the soil naturally. In Pakistan, maize with intercropped legumes yielded between Pakistani rupees (PR) 2,100 and 9,600/ha of increased income from better production. Peas, a legume crop, when grown with onions, also yields significant increases in income (Table 2).

Table 2: Comparison of onion and pea yields when grown alone and intercropped			
Treatments	Yield (kg/12m²)	Yield (t/ha)	Income (PR/ha)
Onions alone	15 (onions)	12,500	100,000
Peas alone	7 (peas)	5,833	145,825
Onions+peas	13 (onions) + 5 (peas)	10,800 (onions) + 4166 (peas)	86,400 (onions) + 104,150 (peas)
Source: PARDYP Pakistan (1 USD=approx. 58 Pakistani Rupees)			

Improved rainfed hill terrace *(local name in Nepal, 'Gara-kanla sudhar')*

This technology is a combination of mechanical and vegetative measures. Sloping land is converted into level terraces and hedgerow species are planted along the margins (Figure 3). The species popular in Nepal are Napier *(Pennisetum purpureum)*, molasses *(Melinis minutiflora),* stylo *(Stylosanthes guianensis),* sun hemp *(Crotalaria juncea),* tephrosia *(Tephrosia candida),* and flemingia *(Flemingia macrophylla).*

The key benefits of the technology are as follows.

- Less soil erosion, rill erosion, and nutrient leaching compared to sloping agricultural land
- Increase in soil water retention because of reduced slope
- Increase in crop production and fodder and grass availability, thus reducing women's workloads

Figure 3: **Grasses planted during improvement of rainfed hill terrace**

Improved variety of seeds

Hill research institutes in the Himalayas mandated to improve mountain agriculture have produced several improved varieties of crops, most of which have not been tested under real conditions. PARDYP tested a few improved varieties of wheat, peas, maize, and rice with farmers and provided an alternative livelihood option. Many of the farmer participants adopted the tested varieties for increased production (Table 3).

Table 3: Some high-yielding varieties introduced in PARDYP watersheds				
Country	Improved crops	Variety	% Change in yield over local variety	Maturation day
India	Wheat	VL-738	+92-100%	175-180
		VL-616,	+120-125%	210-220
	Peas	Azad-p1	+40 - 60%	115-120
Nepal	Maize	Bio-seed	+100 - 150%	105-110
	Paddy	Pant-10	+80-90%	120-125
Pakistan	Wheat	Suleman-96	+90-110%	191-198
		Inqilab-91	+100-140%	187-192
	Paddy	JP-5	+100-110%	140-150
		Swat-I	+80-90%	118-130

Figure 4: **Conservation pond integrated with farming**

Fish farming

Another success story in PARDYP has been with fish ponds (Figure 4).

In the PARDYP India watershed, a water-harvesting pond fed by perennial water sources for irrigating vegetables has been developed and spontaneously adopted by many farmers. There are 70 fishponds in this watershed which raise three varieties of carp: grass carp, common carp, and silver carp (Table 4). In 2005, farmers sold fish worth Indian rupees (IRs) 144,500 and earned good profits.

Table 4: Characteristics of different fish varieties introduced by PARDYP India			
Items	Common carp	Silver carp	Grass carp
Habitat	Bottom feeder	Surface feeder	Column feeder
Habit	Omnivorous	Planktophagous	Herbivorous
Maturity time	One year	2-3 years	2-3 years
Growth/year (gm)	600-750	750-1000	1000-1500
Source:PARDYP India			

Biofertilisers

Trials in India, Pakistan, Nepal, and China have shown that the application of certain micro-organisms has consistently increased yields by about 20% (Table 5).

Table 5: Effect of Azotobacter chroococcum strains on different crop varieties, local and improved		
Crop (variety)	Strain	Yield increase
Wheat (Local; VL-616; VL-738)	W_5	11–18%
Madua (Local; Vl-149)	A_{41}	38-43%
Maize (Local, popcorn)	M_4	21-28%
Tomato, capsicum, aubergine, pumpkin	W_5	16-27%
Source:PARDYP India		

Drip irrigation

In areas where water is scarce, the use of locally available and inexpensive drip irrigation systems enables farmers to grow off-season vegetable crops (Figure 5). Trials in PARDYP-Nepal showed that bitter gourd grown in clay soil (area ~ 150 m2) required 9,800 litres; loam and sandy loam soil required 60% and 80% more water, respectively than clay soil. About 80- 95% of the water was applied from mid-February to May, and the rest (5-20%) was applied occasionally during the dry spells from June to early July in all soil types. Drips saved about 60% of water compared to bucket irrigation without reducing yield in all soil types. Bitter gourd planted on the same day in the same location in (~ 80 m2) in drip and bucket irrigated plots gave the following results.

a) The first harvest came 22 days earlier in the drip plot.
b) Early production yielded better prices and bitter gourd was sold at a higher price.
c) Extra production from the drip plot was 38 kg (equivalent ~NRs 1,000).

Drip irrigation saves about 60% of water compared to bucket irrigation without reducing yields in all soil types. It also helps the crop to mature earlier. In the case of bitter gourd, it was harvested three weeks earlier than the same crops in a plot under bucket irrigation. This helps farmers to sell the product for higher prices. A survey result showed that drip technology saves 50% of the labour force compared to the conventional method using bucket irrigation. Considering efficiency, about 100 farmers in the watershed have adopted drip irrigation for cash crop cultivation.

PARDYP Nepal

Figure 5: **Drip irrigation system**

Improved composting

Vermicomposting (Table 6) was found to be a good option. In the PARDYP-China watershed, vermicompost was tested on tea and maize crops and a 5.7% yield increase for maize and 15.6% for tea crop were reported (Bisht et al. 2005).

Significant improvements in the quality (10%) and rates of composting (40% faster) by covering compost heaps with black plastic sheets have been demonstrated in Nepal, and this method is proving to be popular.

Table 6: Cost-benefit analysis of cultivating tomato and capsicum using vermi-compost and under traditional farmyard manure (FYM) in Rs (Area=0.1 hectare)				
Input sectors	Vermicompost		Traditional FYM	
	Tomato	Capsicum	Tomatoes	Capsicum
Seedling costs	444	444	444	444
Vermicompost costs	888	888	532	532
Field preparation	300	300	300	300
Labour costs: irrigation	1,485	1,485	1,485	1,485
Labour costs: weeding	450	540	630	720
Total input	3,567	3,657	3,391.80	3,481.80
Output	18,648	19,536	11,490	11,988
Gross profit	15,081	15,879	7,833	8,507
Values are in Indian rupees: 1 USD = Rs (Indian) 43 Source: PARDYP India				

System of rice intensification

Rice farmers can increase their yields by up to 50% by adopting aspects of a system of rice intensification (SRI). This encouraging result has doubled the number of SRI tillers over traditional practices in farmers' trials in the Pakistan and Nepal watersheds (Table 7).

Table 7: Comparative performance of varieties of rice using the traditional method (TM) and a system of rice intensification (SRI) in the PARDYP Nepal watershed								
Location	Year	Variety	Grain yield (t/ha, fresh weight)			Straw yield (t/ha, dry weight)		
			TM	SRI	% increase	SRI	TM	% increase
SCDC	2002	Makwanpur 1	8.25	10	21	13.7	13.7	0
SCDC	2003	Makwanpur 1	7.9	10.1	28	9.7	10.8	11
SCDC	2004	Makwanpur 1	7	8.6	23	9	11.8	31
Farmer's field	2003	Makwanpur 1	8	10.5	31	9.1	12.8	41
Farmer's field	2004	Parwanipur	5.5	8	45	5.5	8.5	55
Farmer's field	2004	Japanese mansuli	3	5	67	7.5	7	-7
SCDC:Spice Crop Development Centre (SCDC) in Panchkhal, Jhikhu Khola, Nepal Source: PARDYP Nepal								

Off-season vegetables

PARDYP has been helping farmers in the commercial production of off-season vegetables. In India particularly, off-season vegetable production using simple polyhouse technology (Figure 6) has become one of the most popular activities.

Figure 6: **A simple polyhouse technology has transformed the life of a poor farmer, Girish Tewari, in the PARDYP India watershed. He now earns about Indian rupees 30,000/0.1 hectare each year by selling seedlings and vegetables**

Rehabilitation of common property resources

Degradation of common property resources in the Himalayas increases the economic, social, and environmental vulnerability of small farmers and poor households. Therefore, it is important for societies and especially vulnerable mountain communities to ensure sustainable management of the mountain commons. PARDYP research focused on understanding the processes of natural resource degradation in the middle mountains of the Himalayas. Initial baseline surveys of the watersheds helped PARDYP to understand the major socioeconomic and biophysical constraints to sustainable crop production and improved livelihoods. This understanding provided the opening to explore sustainable use of natural resources including common property resources (CPRs). PARDYP examples include rehabilitation of degraded community forests in Nepal, and degraded village common lands developed into fodder banks in India. PARDYP also assisted local communities in developing water management options because water scarcity in the dry season was becoming another problem in the middle mountains as increasing demands are exceeding the supply. In all cases, understanding the people dimension was of far greater importance than the technical solutions. It was realised that if communities were aware of the possibilities and given the confidence to develop their ideas, they could improve and manage resources effectively.

Based on these findings and building on existing knowledge, PARDYP has developed technological and approach options for rehabilitating degraded lands. The lessons learned are summarised and presented in this section.

Measures for gully plugging

Gully stabilisation has been an important strategy for rehabilitating badly degraded land in all of PARDYP's watershed sites. PARDYP and its predecessor projects have found that Agave americana, *Dendrocalamus strictus/hamiltonii, Thysanolaena maxima, Pennisetum purpureum,* and *Vitex negundo* are promising bio-engineering species for gully plugging. On more shady and less compacted soils, the establishment of nitrogen-fixing trees such as Alnus nepalensis, in combination with any of the above-mentioned species, shades surrounding areas, reduces moisture loss, and encourages natural regeneration. Where vegetative measures alone are not enough to stem degradation i) checkdams made from soil-filled bags or stones should be built and planted on; (ii) planting trees on the sides of small gullies helps conserve moisture and facilitates grass growth; and iii) digging diversion drains stabilised by planting hedgerow species on their sides can reduce the amount of topsoil washed into gullies; this also means runoff water can be harvested (for example, by building earth-filled dams near the outlet of these drains and in other places).

Vegetative measures for degraded slopes

The following measures have proved successful for rehabilitating degraded slopes.
* Establishing contour lines of hedgerow species, preferably nitrogen-fixing species (Box 2) on exposed and bare sloping areas
* Planting a mix of some tree and shrub species listed in Box 2 alternately at one metre intervals throughout degraded areas

Box 3 enumerates some species recommended for planting on slopes.

Box 2: Recommended species for planting on contour lines	Box 3: Recommended species for planting on slopes
Flemingia macrophylla, Desmodium intortum, Tephrosia candida, Leucaena diversifolia, Crotolaria juncea, Indigofera species, Stylosanthes hamata, Melinis minutiflora, Vetiveria zizanoides, Sorghum alum, Pennisetum orientale, Thysanolaena maxima, Medicago sativa, Amorpha fructicosa, Pennisetum purpureum (NB 21), *Cajanus cajan, Agave americana, Cotoneaster spp, Ficus tikoua, Mucella laciocarpa, Pueraria lobata, Vitex negundo,* and *Sorghum alum.*	*Cassia siamea, Diospyros kaki, Phyllanthus emblica, Punica granatum, Zanthoxyllum bungeanum, Betula alnoides, Camptotheca acuminata, Melia azedarach, Schima wallichii, Toona ciliata, Toona sinensis, Trachycarpus fortunei, Trema orientalis, Acacia richii, Albizia mollis, Atylosia scarabaeoides, Bauhinia variegata, Bauhinia faberi, Caesalpinia decapetala, Albizia lebbeck, Robinia pseudoacacia,* and *Ailanthus alticima.* (*Dalbergia sissoo* often suffers from die-back problem at maturity in Nepal and is no longer considered suitable for large-scale planting.)

Encouraging the natural regeneration of vegetation on degraded sites

Planting tree species at intervals of at least one metre to avoid too much competition between plants for water and nutrients is a good method for degraded sites. It is better to plant at least one-year old saplings grown inside nursery bags. In PARDYP-India planting in 0.5 cubic metre pits and adding farmyard manure or humus-rich forest soil is recommended.

Another method is to make contour ditches or eyebrow 'terraces' or pits to help harvest surface runoff conserve soil and increase the infiltration potential of land. Materials planted along the bunds of these terraces have a better chance of survival and good growth rates are achieved as they exploit water from the pits. Eventually the pits become filled with eroded soil.

PARDYP experience shows that some of the following factors govern the sustainable development of common resources.
- Community empowerment - Sustainability of rehabilitation work depends on the extent to which local people have been empowered, both socially and technically.
- Organising village campaigns to raise awareness about the benefits of common property resources and explaining the complementarity between CPRs and private resources; applying people-led research and development approaches; motivating village leadership and institutions; reviving traditional institutions; and incorporating traditional knowledge and experiences are some ways in which communities can be better educated and empowered. Marginalised groups and women must be actively involved.
- CPR - private property resource (PPR) complementarity: Farmers in the PARDYP watersheds participated in the conservation and protection of CPRs because of the CPRs' contribution to private resource-based improved options. Providing poor farmers with alternative options that raise the productivity of private property resources is important.

Conclusions

PARDYP's research findings have found the following.
1. There are many good options for farmers and farmers need to be made aware of them. Working with farmers to develop ideas can be rewarding and can lead to good results.
2. New and unexpected problems keep arising in farmers' fields (e.g., nutrient deficiencies resulting from more intensive cropping) and watershed management programmes should be prepared to make adaptations accordingly.
3. In the PARDYP watersheds, which represent about 11% of middle mountain watersheds in the HKH, the important hydrological issue is the low flows in water courses during the dry season. How to improve water management, rather than floods, and how to reduce peak flows are the new challenges.
4. Rates of soil erosion and runoff from agricultural lands are much lower than originally thought and farmers upstream cannot be blamed for floods downstream.

The on-farm options presented in this paper are promising for mountain farmers. PARDYP's extensive research on hydrometeorology gives insights into the water dynamics in middle mountain watersheds where water scarcity and poor water quality are becoming serious problems. Researchers, development workers, and decision makers who are trying to build sound programmes and policies for improved livelihoods of the Himalayan people and for markets for watershed protection services can certainly benefit from the knowledge generated by PARDYP.

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Promoting Greater Voice and Influence, Dignity, Security, and Social Equality for All Mountain People

Greater Voice for All Mountain People in the Himalayas

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People living in mountainous areas often live in remote places on the fringes of states, with weak infrastructure and limited access to means of communication. Their fair share of political and social representation is not always ensured, and they are not entitled to influence the power relations controlling their livelihood options. The inequalities of opportunities are manifold: mainstream societal norms and institutions which discriminate against ethnic groups, gender, and age. In other words, physical and social marginalisation has kept the voices of mountain people from being heard adequately.

In the ICIMOD context, ensuring 'greater voice' means enhancing the capacities of individuals to influence the decisions that shape their lives. This relates closely to the concept of equity, of fair treatment for all individuals. In general we can relate these issues to the well-known concepts of empowerment, participation, and social inclusion leading to more equity in a society. Focusing on the 'rights-based approach', which makes an intrinsic link between the right to development and human rights, governments and development agencies have, over the last two decades, turned their attention increasingly to issues of equity.

Structural economic and political inequalities are embedded in social and cultural institutions, however. Unfortunately, these cultural and societal structures tend to be readily reproduced. Girls and women have had limited options for individual development (education, health, power, and assets) for generations, so why should it change now?

Equity is a normative concept which means different things to different people, nevertheless it is at the core of development theory and practice. All societies have abundant normative rules, like ideals about social justice and support for a more equitable society. In addition, economists argue that equity matters instrumentally also because it generates more efficiency and sustainable development (World Bank 2006).

A basic argument for the promotion of more equitable societies is that they perform better on economic, societal, and sustainable scales. Promoting equity, however, creates costs that

return only in the long run, and, therefore, it is difficult to see that this is the key element in all possible development strategy.

Inefficiency in a society is also created by inequality in access to facilities that enable income generation. Unequal access to political rights also leads to hindrances to economic development. Excessive inequity and weak institutions could finally generate serious disorder in society such as crime and violence, or even political instability and conflict.

New and innovative forms of governance are required to address the complexities and uncertainties associated with rapid institutional, economic, and cultural change related to globalisation processes. Understanding local knowledge and practices can help to identify which are important and can be promoted at various levels. Building upon local knowledge and practices – that is, capitalising on local strengths whenever relevant – can decrease dependencies on external aid. The main obstacle societies in the region need to overcome, however, is the gap between policy and practice.

Throughout the Himalayan region there is a move towards more democratic governance systems. More and more people see themselves and act as citizens of democratic states than as subjects of an authoritarian government, having no say in development issues. Very often in the development debate, 'reduction of poverty', although the main aim of development, is reduced to economic growth and wealth accumulation. The relevance of equitable distribution of growth, welfare, and income is often overlooked.

Policies supporting equitable societies must cover all members of the society. Poverty reduction policies that are only oriented towards the poor and not the rest of the population are prone to fail. We should not follow the illusion that it is possible to come to more equitable societies without raising a fair share of the contribution from people who can afford it and reducing the influence of elite groups in state organisations. Creating more inclusive societies is not a one-time achievement; it is a long-term and dynamic process. It needs a permanent bargaining mechanism on the fair contribution of responsibilities, resources, and power.

We have to ask ourselves how ICIMOD and its partners can contribute to raising the voices of mountain people. Why do societies often forget the most vulnerable people in disasters? Who benefits from the abundant biological and genetic resources of the mountains? Why are indigenous peoples excluded? Why do we prefer external knowledge before hearing the people? The answer to these questions often is that if marginalised groups use their rights and organise themselves, they raise their voices in an organised way and increase their chances of being heard.

The linguist, Mark Turin, shows impressively how diverse the 'voices' of mountain people are. Considering only language diversity, several hundred languages are spoken in the Himalayan region, of which over 400 are spoken by minorities of less than 100,000 people. With examples from Nepal and Sikkim, he shows also how complex language policies are and how a fair approach could look like (Turin 2007).

The relevance of the category 'indigenous peoples' in the Himalayan region and beyond has come to a centre stage in a time marked by ethnic strife and conflict in many parts of the world. Indigenous groups are still under threat by political and economic marginalisation, cultural stigmatisation, and their lack of rights and persistent poverty. Some indigenous peoples criticise national and international development programmes because they often demonstrate little sensitivity to cultural difference and special resources of indigenous peoples. With the 'Decade of Indigenous Peoples', however, as well as the implementation of an international convention and the creation of representation at the UN level, the voices of indigenous peoples are now being heard. They are explicitly mentioned in the Convention on Biological Diversity (CBD) and its access and benefit-sharing mechanisms. ICIMOD has introduced activities to support the implementation of an access and benefit sharing (ABS) regime in the Himalayan region with a strong focus on equitable benefit sharing for all mountain people (Oli et al. 2007)

The CBD recognises the state's sovereignty over genetic resources. This does not touch on ownership rights for biological and genetic resources for local people, however, or their right to benefit from the use of these resources as determined by national laws.

ICIMOD and its partners raise awareness at citizens' level by developing and disseminating materials that raise awareness on the processes and potential benefits of an ABS regime. Media-related awareness programmes covering both print and electronic media are in place. In many cases the efforts are pioneering, as the concept of an ABS regime is new.

Since the 1980s, the importance of accounting for and integrating local knowledge into poverty reduction projects gained recognition among academia, international development agencies, NGOs, and policy-makers. Interestingly, local knowledge and practices have barely been explored in the field of disaster preparedness. Accounting for them can support national and international organisations to improve their plans for disaster and implement disaster preparedness plans. Work by Dekens (2007) on this aspect of disaster preparedness gives good examples of how accounting for local knowledge and practices can contribute to building mutual trust, acceptability, common understanding, and a sense of community ownership and self-confidence. What she proposes is a framework that contributes towards increased sensitivity to and an improved understanding of local knowledge on disaster preparedness.

Closely linked to this theme is work by Mehta (2007) stressing the inclusion of gender considerations in disaster preparedness. In nearly all kinds of disaster, it has been observed, females suffer higher mortality rates than men, and despite women's roles as 'first responders' in disasters, they tend to be excluded from participating in policy and decision making in reconstruction efforts. The experience of disasters in the region over the past decades illustrates how physiological vulnerabilities, sociocultural and economic marginalisation, and gender stereotypes can make all the difference in whether an individual manages to survive a disaster or not and, having survived, the extent of access he or she has to aid and rehabilitation afterwards.

Apart from physiological and biological factors accounting for gender-differentiated mortality rates, in much of the Himalayan region women and men have different kinds of 'cultural permission'. Evidence from the Pakistan earthquake suggests there was a higher female mortality rate in areas where 'purdah' prevailed. Socialisation processes are also implicated in inculcating in girls and women a 'learned powerlessness'. In some tsunami-affected regions the disproportionate number of female deaths is attributed to the fact that girls and women were less likely to know how to swim.

Gender matters in disaster risk reduction for both women and men. Here, equity pays again: more equitable responses to people in crises helps to ensure that human and material resources are used more efficiently. ICIMOD, through its disaster preparedness project, is ideally situated to initiate dialogues on gender and disaster with practitioners in the region at the policy, development, and field levels. ICIMOD could facilitate documentation and dissemination of lessons learned and best practices emerging from disaster from across the region. The real challenge, however, is for national governments and the development community to find the political will and capacity to develop and put gender-sensitive methodologies into practice.

To raise the voice of marginalised people, ICIMOD has several activities that could be placed under the umbrella of advocacy (Subedi and Kollmair, 2007). The support of civil society in mountain areas is one of the most effective ways to enhance democratisation and good governance. A key focus of civil society is to empower its constituency by undertaking lawful, people-oriented advocacy to safeguard people's rights.

Advocacy is a relatively new concept in the development arena. As part of the rights-based approach it functions as a tool to protect individual and group rights that have been denied by other actors. The rights-based approach argues that the absence of a process of realising fundamental human rights and freedoms calls for advocacy to attain them in a respectful manner.

Advocacy can serve as a tool to achieve changes in a constructive, constitutional, and peaceful manner. Confrontation should be avoided and used only as a last option. Past lessons indicate that NGOs and community-based organisations and their networks in mountain areas are able to advocate well by bringing issues into the sphere of public debate to exert influence on local, national, and regional policies. Within this changed context, civil society organisations can play important roles negotiating between the state and market mechanisms in order to hold both accountable to the people they are supposed to serve.

One case study shows how the lives of indigenous communities dependent on natural resources in Southern Nepal have been affected by biodiversity conservation efforts. The marginalised groups of 'Bote-Majhis' and 'Musahars' in these communities have never been at the centre of the conservation discourse, nor have they had adequate voice in the global environmental movements that have affected their lives; and their struggles and sufferings have not found adequate space in research, mainstream media, or popular discourse.

Despite so-called 'democratisation' in Nepal, the national park authorities simultaneously confiscated boats and fishing nets in several villages in 1993. One of the community leaders remembers:

> "The incident shook our inner selves. A ringing in our ears nagged: Why are we silent? If our forefathers have grown up in this land, river, and forest, why can't we exercise our rights over these resources?"

By organising themselves and raising their voices together they could achieve improvements in the conditions of their livelihoods.

The struggle of indigenous peoples like the 'Bote-Majhis' and 'Musahars' has exerted its influence on the contemporary debate about democratisation and in rethinking the policies governing protected areas and wildlife conservation in Nepal and elsewhere. Their experiences as part of a movement for life and dignity illustrate how the spontaneous resistance of marginalised communities, when it takes the shape of a non-violent movement, could engage powerful conservation agencies and influence democratic practices and state policy.

An ICIMOD-supported initiative which tries to influence the voice of the citizens at the policy level is described by Dhakal. The 'Right-to-Information' (RTI) legislations have a comparably short history in the Himalayan region, even if the concept is well-known elsewhere. It ensures the citizens' right to information about all state activities. RTI has both governance as well as rights' perspectives. It helps improve the functioning of governance systems, holds service providers accountable for their actions, and creates a participatory and transparent environment in which people can contribute to policy formulation and establishing the rule of law. Correct information at the right time reduces the chances of misusing resources and controls corruption. It also gives people a legal right to demand entitlements and monitor the use or misuse of funds meant for the public good.

India is considered the regional pioneer in implementing the RTI law. The Indian RTI movement, originating from Rajasthan is well known and has attracted stakeholders in many countries. The demand for an RTI law has taken the form of a mass movement at the grassroots' level in India and has a strong advocacy component. Through the advocacy of ICIMOD-supported groups, an RTI law will most likely be promulgated and implemented in Nepal in the near future to achieve inclusive democracy for its citizens. Broad sections of the society, however, must be made aware of this legislation and strong enforcement will be needed for the law's effective use.

All voices should be heard, and societies must make the decision concerning how to include all the different voices in their governance system. Finally, it is important to understand that equity matters – always and everywhere!

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Session VII
Policy Processes and Challenges

Policy-making Process in Bangladesh: Past Experiences and Present Trends

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Introduction

Public policy making is not a routine administrative function of the government; rather it is an interactive process induced by sociopolitical and other environmental factors. The policy process is also interdependent with policy context and content. Because of contextual variation, public policies of developed countries differ from those of developing countries. Public policies in developing countries are influenced by an unstable sociopolitical environment and face various problems and challenges. This paper examines the policy-making process of a developing country, namely, Bangladesh, focusing on its education policy as an attempt to determine the strengths and weaknesses involved in the process. Education, as one of the pillars of human development, deserves urgent attention in Bangladesh where adult literacy is only 62%. This is far from the MDG targeted achievement of 'Education for All' by the year 2015. Hence, it is imperative to analyse the dynamics of the policy-making process to visualise an effective process in the sector.

The method of content analysis has been adopted taking into account the findings of various studies and articles on policy-making. The paper analyses the theoretical perspective of the policy-making process in the beginning to form a backdrop, then concentrates on recommendations of education commissions and committees formed since the British period and identifies the influence of various actors and factors before arriving at concluding remarks.

Public policy as a concept

Policy reflects future goals and aspirations, with guidelines for carrying out those goals. Dye (1981) in a simple definition states:

> "Public policy is whatever governments choose to do or not to do."

Here, not only government action but also government inaction has been focused upon contending that government inaction can have just as great an impact on society as government action. Both action and inaction are organised through public policies. Hogwood and Gunn

(1984) have given a detailed definition of a policy through identifying various dimensions of the term. They define policy:

> "as a label for a field of activity initiated by the government or a legitimate authority; as an expression of a general purpose or desired state of affairs; as specific decisions of government; as a particular set of activities having authorisation, parliamentary approval, or statutory endorsement; as a programme involving particular packages of legislation and organisation efforts."

This definition identifies the legitimacy of a policy pointing out that a policy must be formulated by the government or any legitimate authority having due authority. Anderson (1975), identifying the focus of public policy as society and the locus as government states: "When a government takes a decision or chooses a course of action in order to solve a social problem and adopts a specific strategy for its planning and implementation, it is known as public policy".

Public policies may deal with a wide variety of substantive areas: education, health, welfare, defence, energy, environment, security, communication, taxation, rural and urban development, poverty reduction, housing, rehabilitation, and so on. They may range from the vital to the trivial, from the allocation of millions of taka (the Bangladeshi currency) to an environmental protection project, to the designation of an official emblem. A policy's strengths and weaknesses, apart from content analysis, may be determined by examining the policy-making process which eventually influences context and output.

Policy-making process: a theoretical perspective

Policy-making is not a single shot activity but involves a complex and wide system with a variety of interests and actors. Anderson (1975) opines:

> "Policy making involves political activities that involve authoritative decisions on behalf of a community, creating rights and concomitant duties, establishing standards of equity to govern the distribution of resources and the allocation of public services."

The effectiveness of policy-making is determined by how efficiently government involves various interests, accommodates them by creating a right balance, and achieves, with this common effort, a favourable collective purpose. The process can best be explained in terms of models.

The system model

The policy-making process is conceived as a systemic model by Easton (1965) presented in simplified form in this is diagram in Figure 1.

Through a step-by-step process, the model shows at a glance how inputs originate and create demand and support to the political system where the authorities are induced to play their legitimate role in making policies as outputs to address a particular problem. The feedback
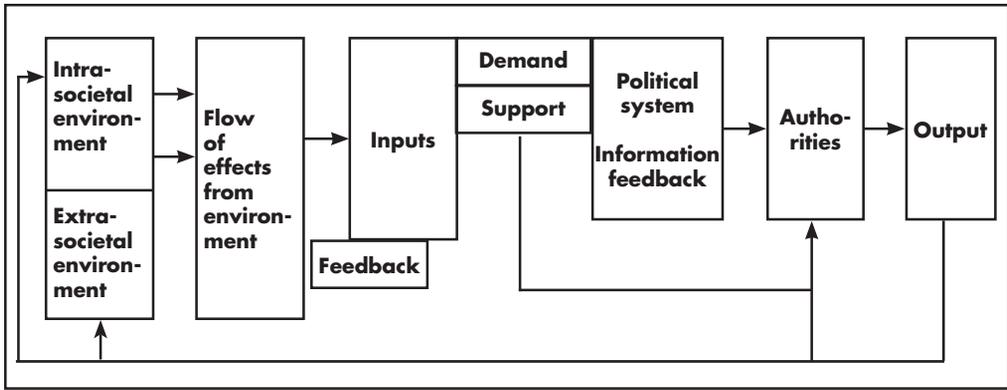
Figure 1: **System model of policy-making**

from output reaches the intra-societal and extra-societal environment to create further moves for modification or revision of the policy, which in the form of a cycle continues making the whole system ever-rotating and living. The model is too simple and fails to portray the complexities of decision making within the political system, which Easton referred to as the 'black box' that involves government, parliament, ministers and bureaucrats, and a degree of their power and influence.

The process model

The process model of policy-making identifies a variety of activities which occur within the political system including identifying policy issues, agenda setting, making a policy framework, and making policy legitimate.

Identifying policy issues: public opinion

Key (1967) in his book, Public Opinion and American Democracy writes:

> "Government attempts to mould public opinion toward support of the programmes and policies it espouses. Given that endeavour, perfect congruence between public policy and public opinion could be government of public opinion rather than govern by public opinion".

There is very little direct evidence in the existing research literature to support the notion that public opinion has an independent influence over public policy; instead public policy shapes public opinion (Dye 1981). The public does not have opinions on many major policy questions; public opinion is unstable, and decision makers can easily misinterpret as well as manipulate public opinion.

Identifying policy issues: elite opinion

Persons referred to variously as the political elite, political activists, the leadership echelons, or the 'influential' have preferences more likely to be in accord with public policy than mass preferences. This finding is well supported in research literature (Key 1967). Policies are not determined by elite preferences, government officials act rationally in response to events and conditions and the well-educated and the informed elite understand the actions of government

better than the masses. But the elite cannot operate independently of environmental resources and maintain consistence over their demands for long.

Agenda setting

Agenda setting means deciding what will be decided and is a crucial stage in the policy process. Policy issues do not just happen; creating an issue, dramatising it, calling attention to it, and pressuring government to do something about it, are important political tactics employed by influential individuals, organised interest groups, policy planning organisations, and the mass media. These are the tactics of agenda-setting. On the other hand, avoidance of decision making, preventing certain conditions in society from becoming policy issues, is also an important political tactic. It occurs when influential individuals or groups operate to prevent the emergence of challenges to the dominant values or interests in society.

Mass media

The mass media, particularly television networks, play a major role in agenda-setting. By deciding what will be 'news', the media sets the agenda for political discussion which helps generate ideas in the policy-making process. Systematic research has shown that issues that receive greatest attention in the media are more likely to be viewed by voters as important (Dye 1981).

Policy planning organisations

A great deal of policy formulation is carried out by organisations remaining outside the government process. These organisations bring together, in round table forums, the leadership of corporate and financial institutions, leading intellectuals, and influential figures in the government to examine policy options. The Bangladesh Institute of Development Studies (BIDS) is one such organisation acting as an autonomous research institute which explores policy alternatives, advises government, and develops policy consensus in socioeconomic development.

Framing policy

The activities of 'the proximate policy makers' – ministries, bureaucrats, and agency officials – have traditionally been the central focus of the policy planning process. They perform the policy framing phase, which is concerned with official processing in coordinating policy options emerging from different sources. In addition, the phase is concerned with details of implementation, what agencies get control of the programme, and how much money will be spent. The decisions of the proximate policy makers tend to centre on the means rather than the end of the public policy.

Legitimising policy

The final phase of the policy-making process is to obtain formal recognition of the designated authority in the country. Depending on the system, it may be placed before Parliament for debate, or in the cabinet for discussion. In a democratic setting, party influence is a dominant factor in legitimising a policy. Conflict between parties occurs most frequently during parliamentary debates on determining strategies for social welfare issues because

each one tries to stick to a strategy commensurate with its own manifesto. It requires a lot of balancing and moderation before a final policy output can be obtained.

To get a comprehensive idea about the dynamics of the policy-making process, it is important to analyse interactions among groups involved in the process arena or policy network. Rhodes (1988) argues that policy networks vary from one policy to the other, depending on certain factors like constellation of interests and distribution of resources. Therefore, to understand clearly the process of policy-making in a country, a particular policy needs to be carefully examined. The present study is focused on education policy in Bangladesh.

Educational policy in Bangladesh

Education system: an overview

The Constitution of Bangladesh enjoins upon the government the obligation to ensure literacy for all citizens within the shortest possible time and mandates the state to adopt effective measures for the purpose of establishing a uniform, mass-oriented, and universal system of education and to extend free and compulsory education to all children, removing illiteracy within such a period as may be determined by law.

Bangladesh is a signatory to the declaration at the World Conference on Education for All (EFA) held in March 1990 in Thailand. The government reiterated its commitments to the World Education Forum (Dakar 2000) towards achievement of the EFA goals for every citizen by the year 2015 (GOB 2004). EFA is also a target to be achieved by the Poverty Reduction Strategy (PRS) formulated by the government as a key policy framework for implementation in all sectors including education.

Pursuant to its constitutional obligations and international commitments, the government took active measures to improve the education system. These include: (i) enactment of the Compulsory Primary Education Act, 1990; (ii) creation of a separate Ministry of Primary and Mass Education in 2003; (iii) formulation of a National Plan of Action (NPA) for EFA in 2003; and (iv) constitution of Education Commissions. In all the Five-Year Plans (FYP) there were overall directions and guidelines for developing the education sector. Major educational objectives highlighted in the FYP documents are as follows.
- Providing values-based education
- Emphasising job-oriented and needs-based education
- Modernising the curriculum
- Ensuring efficient management at all levels
- Ensuring teacher effectiveness at all levels
- Revitalising technical and vocational education
- Ensuring gender parity at all levels

The educational system in Bangladesh has three major stages: primary, secondary, and higher education. Primary education consists of a five-year cycle while secondary education and higher education are of seven and five year cycles, respectively. Primary education is

provided through two major institutional arrangements: general and 'madrasha' streams, while secondary education has three major streams: general, technical-vocational, and madrasha. Higher education has three streams: general, madrasha, and technology. Madrashas have similar core courses to general streams but place additional emphasis on religious studies.

In 2000, the government formulated an education policy providing guidelines and directions for different stages and streams. But in 2002, an expert committee found inadequacies on detailed examination of the policy; its implementation was postponed and an Education Commission was formed. The Commission submitted a report in 2003 with recommendations which are now being processed for adoption.

Educational planning process

The planning process in Bangladesh, Rahman (1986) points out, follows the conventional macro model with an approach designed to fix aggregate targets for growth, fix sectoral and sub-sectoral targets, and finally, draw up projects to realise these macro-micro targets. Five-Year Plans prepared by the Planning Commission (PC) and approved by the National Economic Council (NEC), with the Prime Minister as its head, are implemented or processed through annual development programmes (ADP). The planning process involving various stages of a Five-Year Plan (FYP) is shown in Figure 2. FYPs cover all sectors including education, giving overall guidelines and general directions for formulating policies and development programmes and projects (Islam 1993).
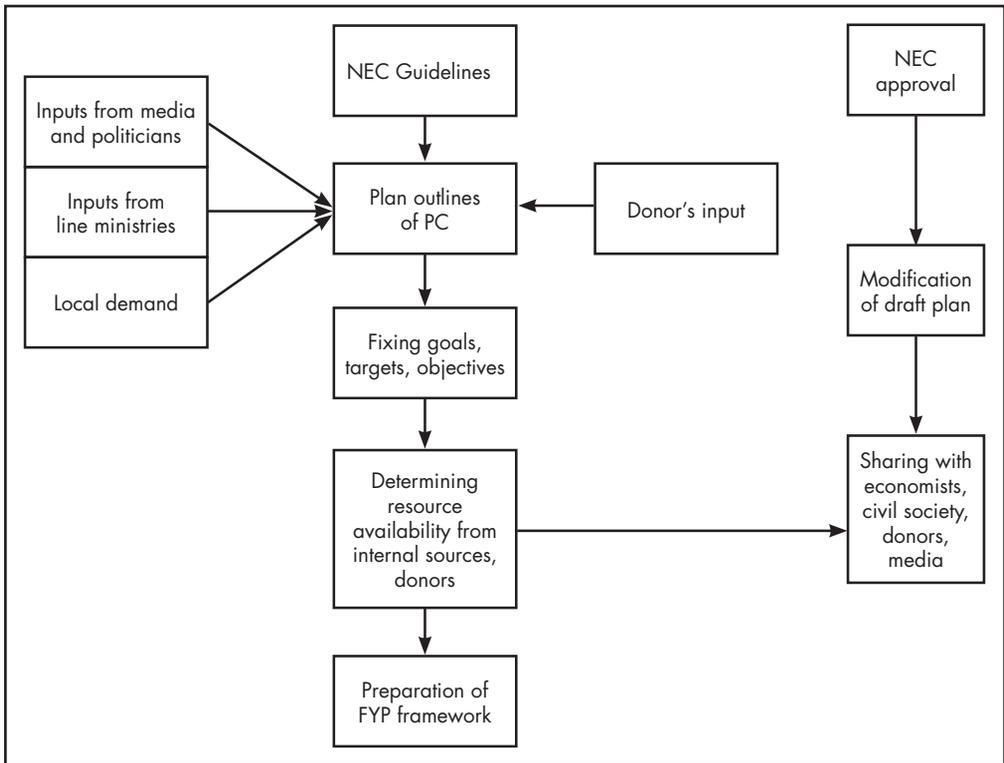
Figure 2: The planning crocess involving stages in the Five-Year Plan

The Government of Bangladesh (GoB) approved the Poverty Reduction Strategy 2005, outlining a comprehensive medium-term strategy for socioeconomic development. The matrices attached with the PRS document assign key targets and strategic goals for all sectors including education. Policy makers, according to government instructions, are required to follow the prescriptions of the Poverty Reduction Strategy (PRS) to draw up sectoral policy frameworks in order to attain targets within the time frame indicated in PRS matrices. The PRS has become a principal guiding force in sectoral policy planning.

The educational policy-making process

Rule 4 of the Rules of Business (ROB) 1986, Government of Bangladesh, clearly oblige the line ministry to make policies relevant to its allocated jurisdiction (GoB 2004). The process starts with identification of policy problems, ideas, or issues that are placed on the policy agenda of the government. Ideas originate from local demand, plan documents, and influence of interest groups and donors.

The Ministry accomplishes a policy framework after obtaining the opinions of relevant ministries, agencies, and specialised bodies. Most of the issues are referred to the ministries of Finance and Law for comments. The Finance Ministry gives clearance related to verifying the projected expenditure involved, whereas the Law Ministry examines the proposed policy agenda to determine whether or not it contradicts the existing legal system. If the proposal involves recruitment of new manpower, the matter is examined by the Establishment Ministry. An inter-ministerial meeting, which is a forum for building consensus on available options, is normally convened to open the floor for discussion. The selected policy agenda is then forwarded to the Cabinet which, under the chairmanship of the Prime Minister, makes the decision to approve, reject, or modify the proposal. Unless enactment on a special issue is concerned, the matter is not referred to Parliament.

The policy-making process applicable to all sectors, including education, is shown in Figure 3.

Initiatives in policy making through educational reform

Educational reform has always been considered as an obligation by all governments, even during the British period (1757-1947). The initiative started with the Hunter Commission in 1882 which emphasised spending on primary education, management of educational institutions under national education management, and the need to support non-government education institutes (GoB/NAEM 2005). William Adam's Report in 1935 pointed out some key areas for improving the educational system. These include motivating villagers to donate land for schools, composing textbooks in local languages, and arranging for training of teachers. Recommendations were mainly 'supply-push' efforts having little scope for stakeholders' participation (GoB/NAEM 2005).

In 1949, during the Pakistani period (1947-1971), the first committee called 'The East Bengal Educational System Reconstruction Committee' headed by an eminent editor and educationist, Maulana Akram Khan, was constituted. After consultation with relevant stakeholders and analysing ground realities, this Committee submitted a report (GoB/ NAEM
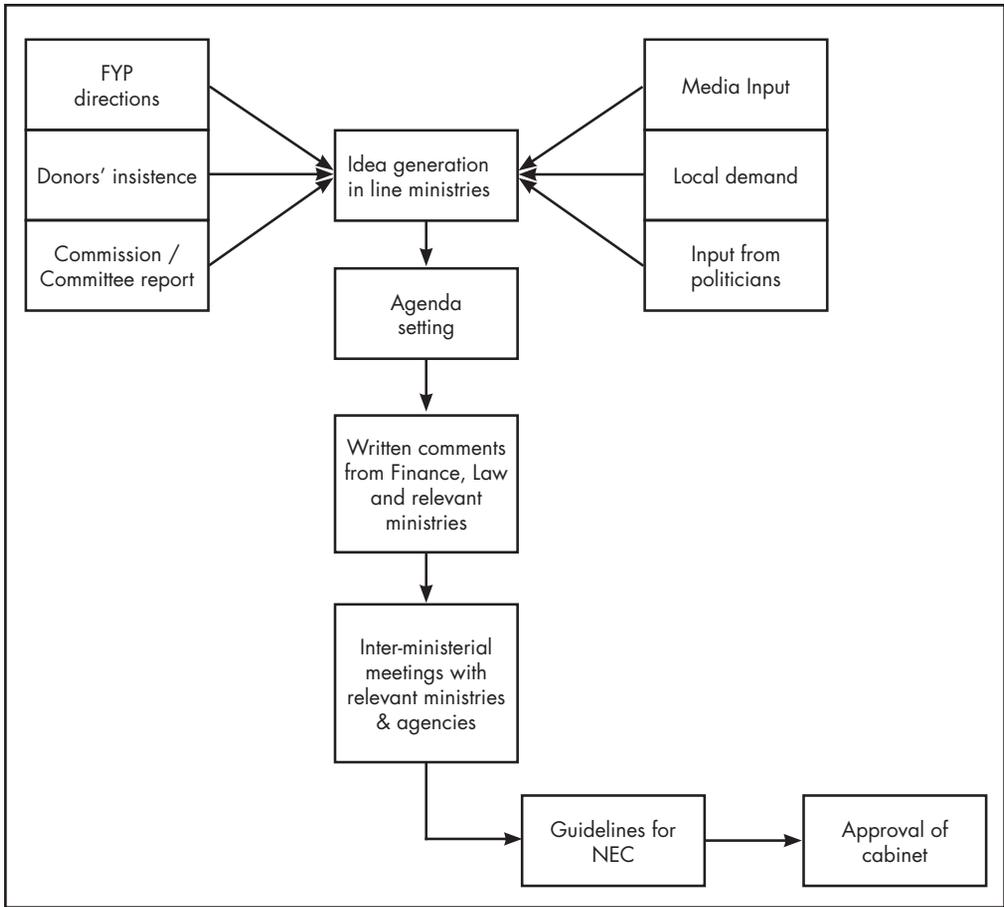
Figure 3: Policy-making process

2005) recommending mainly the following.

- Primary schooling to start at 6-7 years of age, and secondary education between 11-17 years old
- Education in madrashas should include English, the vernacular, and mathematics, with standards similar to those of English highschools.

Establishment of a system of universal, compulsory, and free education for all boys and girls between the ages of 6 and 14 was recommended by the Education Reform Commission of Ataur Rahman Khan in 1957, a commission constituted by the government following a countrywide language movement demanding Bengali as the national language. Without taking steps for implementation, the government kept on constituting commissions until three more had been established up to 1971. The National Education Commission of 1958 (the Sharif Commission) recommended the introduction of vocational and agricultural education. The Justice Hamoodur Rahman Commission, formed in 1964, advocated the abolition of kindergarten and English-medium schools to bring about uniformity in the education system and recommended compulsory schools up to Grade Eight. The last commission during the Pakistani period, the Nur Khan Commission, in 1969 suggested that madrashas should be

fully integrated into the educational system, establishing equivalence with the general stream (GoB/NAEM 2005).

The reform measures during the Pakistani period were consultative in nature, focusing more on policy frameworks rather than on implementation of policy recommendations. The government resorted to diluting the intense demand for improvement in the educational system by concentrating more on means rather than ends.

After independence, motivated by its constitutional obligations, the government formed a National Education Commission in 1974 (Qudrat-e-Khuda Commission). This commission recommended a compulsory education system initially up to grade five, and at a later stage up to grade eight; a recruitment system with a preference for female teachers at primary levels; and a curriculum emphasising need-based practical education. The commission prepared its report after consultation with educationists, professionals, guardians, teachers, politicians, and after thorough examination of existing realities and potentials (GoB 2003).

The Advisory Committee formed in 1979, headed by Kazi Jafar, a minister, recommended handing over the responsibility for primary education to the Union Parishad (UP), the lowest tier of local government. A union committee was suggested to supervise all schools, while each school was to have an individual managing committee (MC). The development and maintenance of schools were to be carried out with funds collected locally from guardians. The teaching community was reluctant to be placed under UP control, for which reason the local government management system could not be established (GoB 2003).

In 1986, another National Education Commission (Professor Mafiz Commission) was formed, which suggested a primary education system with eight years of schooling along with major recommendations for a pre-primary education system and mid-day meals for students. The proposal for an enhanced primary cycle up to Grade VIII was reiterated in the National Education Policy 2000. In reality, almost all rural primary schools are three-roomed structures incapable of accommodating eight classes without major infrastructural development requiring huge investments and consequential stress on the government exchequer. This rationale led the National Education Commission 2003 to stick to the existing five-year primary cycle without subscribing to its enhancement as proposed by some earlier commissions (GoB 2003).

Apart from the issue of duration, some salient features of the National Education Policy 2000 were arranging five-roomed school structures, maintaining a teacher:student ratio of 1:35, uniform primary teaching in all schools, establishing a separate Public Service Commission for teacher recruitment, arranging pre-primary education for children aged five plus years old, and emphasising training for teachers. The National Education Policy 2000 was based on the recommendations of a 54-member education committee under the chairmanship of Professor Shamsul Hoque. The draft policy, before its placement in the cabinet meeting, was discussed in a number of meetings, seminars, and workshops attended by educationists, politicians, and education administrators. As desired by the cabinet, the matter was raised

in Parliament for discussion and, later, adopted as a policy. In the phases of setting the agenda and framing the policy, the committee did not take adequate steps to ensure the critical examination of guardians, members of the community, and other interest groups. The present government, on 10 October, 2001, decided to re-examine the policy provisions and formed a 52-member specialist committee under the chairmanship of Dr. M.A. Bari, former Chairman of the University Grants' Commission (GoB 2003).

According to the recommendations of the special committee, the cabinet postponed implementation of the Education Policy 2000 and formed an Education Commission under the chairmanship of Dr. Maniruzzaman Mia, former Vice Chancellor of Dhaka University. It has two secretaries to the government, nine vice chancellors, principals, professors, heads of schools and madrashas, relevant officials, and representatives of teacher associations. The committee established 12 sub-committees to examine 12 different areas of the system. The commission held meetings with persons interested in education; teachers in primary, secondary, and madrasha schools; primary education officers; principals and vice principals of colleges; and professionals from various disciplines including agriculture, engineering, and medicine. The commission held 15 meetings in addition to a series of meetings of the sub-committees. A sample survey was also conducted covering educational institutions to help analyse ground realities and genuine demands and requirements for systemic improvement. The commission submitted its report with recommendations on three categories: general education, professional education, and special education (GoB 2003).

A 13-member implementation committee under the chairmanship of the Additional Secretary, Ministry of Education, was set up, and it finalised recommendations to be placed before the cabinet. The future course of transforming the set recommendations into a policy depends on the cabinet decision. In the process of formulating recommendations, the commission undertook active consultation and secured the participation of important stakeholders.

Key actors in the policy process in Bangladesh

Donors

In the country's development initiatives, donors are influential actors in promoting programmes and projects. In 1975-76, project aid in the education sector of the annual development programme allocation accounted for 14%, rising to 53% in 1990-91, and 29% in 2003-04 (GoB/ERD 2005). Donors' preference as an influencing factor started to emerge in 1950 with collaborative programmes; this influence has continued to this day. The education sector has more than 20 development partners among which Asian Development Bank (ADB), World Bank, the Norwegian Agency for Development Cooperation (NORAD), Japan, and the Canadian International Development Agency (CIDA) are major partners. Recent declining trends in project aid has caused stress on resources. For example, the mid-day meal for primary students is important not only from a nutritional point of view but also for increasing contact hours and attendance. The Economic Relations Division sought development partjers to participate in these initiatives despite their reluctance. This appears contradictory to the development partners' claims to have pro-poor targets. Initially, in the stipend programme

of secondary-level girl students, development partners were reluctant to participate fearing widespread misuse of the fund. But with positive initial results out of limited initiatives, donor commitments started to pour in and have continued until today, making the Female Secondary School Stipend Programme one of the most successful programmes in the country.

Bureaucrats

The Rules of Business (ROB) of the ministries accord considerable power to the Secretary as the administrative head and the principal accounting officer advising the Minister on policy priorities (ROB 4). The Secretary is the custodian of information influencing policy prescriptions and is responsible for processing promotions and transferring key functionaries as well as budgetary control of yearly allocations. In the selection of programmes and projects, proposals are prepared by a ministry-level committee headed by the Secretary. Once these are approved by the Executive Committee of the National Economic Council, bureaucrats have a substantive role in monitoring and evaluation.

During the British and Pakistani periods, bureaucrats played the apex role in agenda-setting, framing policy, policy revision, and the implementation process. After independence, however, with the democratic setting gaining ground, bureaucrats started assuming advisory roles to the political leadership. Because of their practical experience in implementation and professional prudence, they are well positioned to propose alternative frameworks in terms of feasibility and practicability of policy proposals. The political leadership benefits from their knowledge and expertise on legal and procedural systems.

Politicians

Major political parties have a support base among the people and have commitments through their election manifestos to facilitate 'Education for All'. They opt for targeting mass-oriented, uniform, and needs-based education, but differ in their strategies to attain it. They generate policy ideas through their election pledges and, when they come to power, try to incorporate the policy ideas in the sectoral plans.

The Parliamentary Standing Committee (PSC), constituted of members of Parliament (MP) from the party in power and the opposition, is a mechanism for participating in the policy process, particularly in ideas generation and the policy framing phase. The committee pre-empts the making or revising of policy. Normally, it sits once a month to discuss issues of public interest in the sector in which the minister concerned, as a member of the committee, puts forward the rationale for the ministry's actions. The chairman, who is not a minister, and the other members examine the steps taken and recommend further action or modifications. The committee is authorised to investigate gross violations adversely affecting the public interest.

Professional groups

Teachers form professional groups in alignment with political parties. Because of their vast numbers and linkages with the grassroots, they are influential in the policy-making process. Although they do not play an effective role in ideas generation, they influence the political leadership and bureaucracy in setting agendas and framing policy. They are very conscious

of their group interests. Any policy that might go against their interests in private coaching, consultancy, part-time teaching, and salary and other benefits, leads them to exert group pressure to oppose it.

Community

During the British period, benevolent community leaders used to play the role of financiers and organisers of educational institutions, looking after management and well being: but these were scattered initiatives. Now, community leaders and guardians are involved in management functions as chairpersons or members of managing committees (MC) or joint parent-teacher committees (JPTC). These MCs and JPTCs, being institution-based, can hardly transform their voices into forceful central demands to induce policy processes. The media provide channels where they can ventilate their views. They can approach politicians to convey their grievances and transform their ideas into policies. In the PRS, community participation has been brought to centre stage, and this is best organised with the involvement of community leaders in seminars and workshops at the policy formulation stage.

NGOs

NGOs are non-profit private bodies working throughout the country with an agenda normally involving education as a service to the poor and disadvantaged segments of society. They are well informed about local problems and challenges because of their practical experience. The Bangladesh Rural Advancement Committee (BRAC), a large NGO with a countrywide network, has undertaken innovative teaching-learning mechanisms through one-teacher community schools that have been found to be effective for students of underserved areas. In 1972-73, the proportion of foreign aid to Bangladesh disbursed through NGOs was 1% only, whereas in 2003-04 it rose to 31% (GoB/ERD 2005). Because of their financial strength and expertise they have considerable influence among policy makers, particularly in the ideas generation phase. Donors also put pressure on government to use the experience and services of NGOs and to recognise them as partners.

Private sector

The Government of Bangladesh encourages private participation in the higher and pre-primary stages. The government has also taken steps to modify the legal framework in order to establish a uniform curriculum and administrative norms in kindergartens as well as pre-primary and primary-level schools. The Private University Act is also being modified to ensure a standard quality of university education. But the recent influx of private entrepreneurs establishing house-based private universities without taking care of the necessary infrastructure or proper academic environment has caused anxiety. Most of them are rich people having linkages with powerful people in the administrative hierarchy. Because of their linkages, they can apply ample pressure to the policy planning process.

Conclusion

The policy-making process in Bangladesh, with reference to education policy, has been examined and analysed over a period of time. The frequency with which commissions and committees are formed for policy recommendations has increased recently compared to the

past. While during British time it took more than 50 years to form a new commission, the same gap came down to five years both during the Pakistani period and after independence. This means there has been very little time to implement policy prescriptions.

The policy-making process was a supply-push rather than a demand-pull exercise during the British and Pakistani (Rahman 1986) time, allowing little scope to accommodate the ideas and experiences of stakeholders. Recent endeavours, particularly the latest commission in 2003, came up with recommendations after taking into consideration the views and opinions of stakeholders including experts, teachers, guardians, professionals, politicians, and members of the community. Recommendations were made by the commission on an incremental basis taking into consideration institutional capacities at all levels.
Donors played a vital role in the policy-making process during the 1990s. The recent trend, however, is one of gradual decay of their influence with declining availability of donor assistance. Donors, at present, insist on more NGO participation in the policy-making process and channel increasing share of foreign funds to them. Policy makers are now more motivated by the PRS, which provides policy prescriptions to attain objectives and goals in sectoral policy matrices.

In the present democratic setting, the views and directions of political leadership are gaining prominence in all phases of the policy-making process. Bureaucratic dominance is now a factor of the past and has subsided considerably, establishing political leadership as a major guiding force in formulating policy prescriptions. Ideas generated by stakeholders, including the media, are considered with due importance, examined, and framed with the help of bureaucratic inputs before being approved by the relevant democratic authority. This policy-making trend is likely to be consolidated with the gradual maturing of the democratic system, paving the way for more pro-people policies in all socioeconomic sectors of the country.

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Policy – a process by which governments translate their vision into programmes and activities to deliver outcomes – is always a strategic point for action, for bringing about desired reforms in the ways development interventions are carried out to achieve socioeconomic transformation. In the context of the Hindu Kush-Himalayan region, this compendium of policy papers on a wide variety of mountain issues and themes offer a framework and a lens with which to review policy. The papers help us understand the regional experiences and differences, and contextualise issues from the mountain perspective. Policy making and implementation in the region have been carried out based on multi-stakeholder consultations, with specific pro-mountain development outcome as the objectives. Some of the policy experiences cited have led to the sustainable development of key sectors such as mountain agriculture and natural resources management. The book discusses policy options available to carry out programmes in sustainable conservation and management of natural resources, production and marketing of mountain niche products, and harnessing of ecosystem services produced and maintained by mountain farmers through innovative mechanisms of payment for environmental services. Issues of inequity and poor access to mountain resources by mountain farmers are also discussed, and solutions by way of participatory and community-based natural resources management offered. The recommendations found in the book, the result of the workshop, are points for governments, policy makers, and development practitioners working with mountain communities to ponder and consider.