Diversifying and Enhancing Livelihood Options in the Himalayan Region

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Linking ICIMOD’s Programme and its Impacts to the Millennium Development Goals

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<th>Millennium Development Goals (MDGs)</th>
<th>How ICIMOD programme initiatives undertaken by the ARID programme are contributing to achieving the MDGs</th>
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<td>GOAL 1 Eradicate extreme poverty and hunger</td>
<td>Programme initiatives address the needs of landless people and focus on labour intensive activities and high value products such as beekeeping and non-timber forest products (NTFPs). The Programme promotes technologies accessible to the mountain poor that help them save time, reduce the drudgery of work, and enhance their productivity, allowing them to diversify rural farm and non-farm incomes in order to enhance the well-being of their families. The Programme further links mountain people to markets through projects in energy entrepreneurship, honeybee production and pollination services, and other micro-enterprises based on mountain niche products like NTFPs and mountain tourism.</td>
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<tr>
<td>GOAL 2 Achieve universal primary education</td>
<td>The Programme’s thrust to enhance and diversify rural incomes and energy projects that reduce the hours and burden of collecting water allows parents to engage in other productive enterprise that help send their children to school.</td>
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<tr>
<td>GOAL 3 Promote gender equality and empower women</td>
<td>Gender concern is a crosscutting element in all programme initiatives. The Programme focus on capacity building of women through various training programmes and awareness raising activities contributes to reducing gender disparities at different levels. By supporting income-generating activities, the Programme also aims to empower women and men equally, both socially and economically</td>
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<tr>
<td>GOAL 4 Reduce child mortality</td>
<td>Improved access to clean energy and water through the programme’s energy projects has reduced indoor air pollution and waterborne diseases in the project areas. Projects have also increased resistance among children against infectious diseases through honey and traditional health care systems based on medicinal plants and NTFPs in remote mountain communities.</td>
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<tr>
<td>GOAL 5 Improve maternal health</td>
<td>Programme initiatives have reduced the health hazards women face from indoor air pollution and the burden and drudgery associated with carrying heavy loads (of fuelwood and water). Provision of traditional health care systems based on medicinal plants and honey has improved women’s health in project areas.</td>
</tr>
<tr>
<td>GOAL 6 Combat HIV/AIDS, malaria and other diseases</td>
<td>Awareness raising and social mobilisation activities are integral components of participatory action research in ICIMOD programmes. A special focus on the cultural aspect of mountain tourism and traditional health care systems has the potential to heal a number of diseases affecting mountain women and men and to raise awareness for disease prevention.</td>
</tr>
<tr>
<td>GOAL 7 Ensure environmental sustainability</td>
<td>Environmental sustainability is the touchstone and guiding principle for the design and implementation of any programme within ICIMOD. Environmentally-friendly renewable energy technologies are integrated into initiatives such as tourism and enterprise development. For example, planting ensures slope stability, retards soil erosion, promotes carbon sequestration and other environmental services; renewable technologies reduce air pollution and greenhouse gas emissions; bees pollinate and interact with plants and ensure gene flow; and community-based conservation of medicinal and aromatic plants and NTFPs in farming systems enhances overall ecosystem health and mitigates threats to biodiversity by improving soil structure, water infiltration, and crop productivity on rugged mountain slopes.</td>
</tr>
<tr>
<td>GOAL 8 Develop a global partnership for development</td>
<td>Partnerships with public and private sectors and NGOs in ICIMOD regional member countries to pilot, implement, and upscale good practices and make an impact at the policy level contribute to the goal of global partnership for development. The programme has engaged in partnerships with international agencies such as ENERGIA International, SNV, UNEP, and the University of Twente for networking and advocacy to mainstream its policy initiatives. It has engaged in other global and regional partnerships such as the rainwater partnership secretariat, the regional medicinal and aromatic plant networks through the Medicinal and Aromatic Plants Programme in Asia (MAPPA), and the global mountain partnerships focusing on sustainable agriculture and rural development and improving the quality and efficiency of mountain products and enterprises.</td>
</tr>
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</table>

* Agriculture and Rural Income Diversification (ARID) is one of ICIMOD’s integrated programmes to address mountain poverty and mountain development.

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Cover Photo: Women farmers cultivate vegetables commercially in Nepal, photo courtesy of CEAPRED

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Dear Friends of ICIMOD,

As this goes to press, we express our horror and sorrow over the powerful earthquake that has devastated countless lives in the western Himalayan region of Pakistan, India, and Afghanistan. ICIMOD shares the grief of our mountain neighbours and kin who suffer and will continue in the next few weeks and months to suffer immeasurable losses from this tremendous natural disaster. Our thoughts and prayers go with them.

This issue is devoted to enhancing livelihood options within the context of Himalayan vulnerability. We recognise, and have separate programmes that seek to address the physical vulnerability of our young and geo-physically active Himalayan region. In addition, we recognise that an integrated strategy for coping with physical hazards must also seek ways to improve livelihoods and generate economic growth through which increased security - physical, economic, and social - can be obtained.

The many poor peoples of the vast Himalayan region - and many living today in remote regions where the earthquake struck - have historically depended on a mix of subsistence agriculture, animal husbandry, and seasonal migrant labour for their livelihoods. These traditional systems are characterised by low productivity, diverse use of available natural resources (largely for home consumption), limited markets, and some aversion for innovation. The potential to generate wealth through commerce in unique mountain resources has largely been untapped by mountain residents and thus is undervalued in local and national economies.

However, an increasing body of evidence demonstrates that appropriate development and use of the unique resources of the mountains do provide viable bases for households to rise above poverty and subsistence. Non-timber forest products such as medicinal plants and herbs, essential oils, fibres and silks, natural dyes and organic products, off-season vegetables, bamboo and bamboo products, bees and bee products, and enterprise-based pollination services can provide the basis for increasing incomes and improving livelihoods. Likewise, mountain tourism, hydropower, and infrastructure can provide a source of income and employment for mountain communities.

The Agricultural and Rural Income Diversification (ARID) Programme at ICIMOD focuses on precisely these issues. Working in collaboration with other integrated programmes, ARID seeks to improve the economic conditions of mountain peoples through promotion of high value products and services, and linking them to reliable markets. ICIMOD’s programmes in these areas seek to find ways to complement nature-endowed opportunities with human-created ones through the development of enterprise, equitable trade links, and local capacity building. As with all ICIMOD programs, this process works with partners in the region to share experience and knowledge and identify innovations and emerging good practices and strategies that improve mountain people’s livelihood options. Partners, including national governments, non-government organisations, the private sector, and grassroots institutions in our eight member countries, are the real actors in translating and upscaling the results obtained - and the means by which we can hope to have an impact approaching the scale of the vast Himalayan region that we serve.

We present in this volume some highlights of ICIMOD and our partners’ work on livelihoods with a focus on ARID’s initiatives. Some heartening successes and many promising results are, we hope, on their way to having a real impact on mountain poverty.

However, as the recent earthquake has so tragically shown, Himalayan mountain peoples are vulnerable to natural forces that can destroy lives, economies, and infrastructure far quicker than these can be built. The hurdles confronting mountain peoples are formidable indeed. It is our overwhelming desire to find ways of improving mountain peoples’ security in the intertwined physical, economic, and social dimensions, that drives us as an organisation. ICIMOD is committed to take up this challenge, to work with member governments and partner institutions to improve the livelihoods of the mountain peoples of the region and the fragile environment that sustains them.

I would like to thank all the partner institutions that have contributed to this volume. Special thanks to Dr. Kamal Banskota, Programme Manager for ARID, who has served as thematic editor for this issue. Thanks also to Nira Gurung for putting the issue together, Punam Pradhan for design and layout, Joyce M. Mendez and A. Beatrice Murray for editing, and all the authors that contributed to this volume. We look forward to your feedback and suggestions on how to serve better the mountain peoples by contributing to securing their livelihoods and future.

Sincerely,

J. Gabriel Campbell, Ph.D.
New Opportunities for Mountain Economies

Kamal Banskota, ICIMOD, kbanskota@icimod.org

Mountain areas are much more vulnerable in the physical, economic, and social contexts than the plains because of constraints imposed by their inaccessibility, marginality, and fragile environment. These vulnerabilities need to be addressed for mountain development by tapping the opportunities offered by the other characteristics of mountains, namely mountain niches or comparative advantages and diversity, and the ability of mountain people to adapt.

Over the years, many mountain areas have been breaking away from some of these vulnerabilities and are finding new and secure livelihoods through generating new and diverse opportunities in sectors other than traditional agriculture and animal husbandry. The following section elaborates on some of those unique opportunities that are helping mountain people secure more sustainable livelihoods.

Opportunities do not come by chance. They are created and facilitated by human and natural capital, the biophysical conditions that characterise the mountain areas, their human resources, and institutions, and by an appropriate policy environment. Most mountain areas have not been able to adequately harness their unique resources to improve mountain livelihoods because of inadequate and unfavourable policies towards mountains. Harnessing mountain niches appropriately through better management of natural resources and application of technologies and new methods of production and exchange do generate employment and income opportunities in the mountains.

The lives of mountain people are intricately linked to their natural environment. Though there is evidence pointing in both directions, there is general consensus that the Himalayan natural resource environment is degrading in many areas. Downstream effects that include high sedimentation load, floods and landslides, are increasing in some areas. In addition, severe inaccessibility has resulted in the underpricing of mountain resources, products, and services and concomitant structural and operational inequalities.

The development process must also ensure that communities, especially disadvantaged groups, women, and geographically excluded areas are not left out of mainstream development. Inequalities present across regions and groups of people need to be narrowed. In many parts of the Himalayan region, local governments and communities are being empowered following the decentralisation, local governance, and social mobilisation paradigms. However, development policies must ensure that all segments of society, regardless of their status and geographic area, are able to voice their concerns and make strategic and informed choices.

Over the years, many mountain areas have been breaking away from some of these vulnerabilities and are finding new and secure livelihoods through generating new and diverse opportunities in sectors other than traditional agriculture and animal husbandry. The following section elaborates on some of those unique opportunities that are helping mountain people secure more sustainable livelihoods.

Emerging opportunities: transforming vulnerability to security

Economic opportunities arise when value is added to old activities or new products and services develop in the markets that enable people to generate employment and income in a sustainable way. Harnessing mountain resources for hydropower and tourism development and for the production of food and non-food products for urban centres, and conserving resources to generate valuable environmental services, among others, can create new employment and income opportunities in mountain areas.

Limited accessibility and the lack of infrastructure to overcome the barriers of terrain and altitude are significant constraints to generating opportunities in mountain areas. While this limits access to markets for many mountain products and resources and the ability to harness mountain niches, it also constrains delivery of development inputs and services to the communities. As a result, marketable surpluses and mountain niche resources have remained grossly underutilised and undervalued. Improved access (through roads, ropeways, bridges, and trails, among others) enhances accessibility and inclusion (as opposed to isolation); communication and mobility reduces transport costs. All of these besides directly benefiting mountain communities also open new opportunities in the mountain areas. But given the acute poverty in large parts of the region, constructing roads and other infrastructure alone is unlikely to generate these opportunities unless they are followed by complementary investments that enhance local production and harness mountain niches.

Besides roads, the gravity ropeway technology helps reduce mountain inaccessibility and has the potential to add value to existing roads. These are important, given that many settlements in the mountains are away from main roads. Gravity ropeways save considerable time in transport, labour, and drudgery, particularly in transporting bulky mountain products.

Technologies help improve livelihoods by raising productivity and product quality and diversity, and reducing the cost of raw materials and energy requirements.
and can lead to improved sales of mountain products and an increase in mountain incomes. Technologies can furthermore develop the capability within both farm and non-farm sectors and supporting institutions to respond to the changing needs of the markets, or to new opportunities as they arise. Technology thus plays a key role in generating opportunities.

Markets play a significant role in realising economic opportunities for the poor. Access to markets has enabled mountain communities to produce according to the comparative advantage of their regions. Markets influence diversification from traditional to market demand-led production.

Apart from conventional agricultural products, the rich biodiversity of the Himalayan region also opens scope for marketing niche products and services internationally. Also growing are markets for environmentally-friendly traded products. Organic eco-labelling and other forms of certification are market-based tools that enable consumers to differentiate products based on their social and environmental qualities. This market opportunity has been a driving force in promoting sustainable management practices in both forestry and agricultural products worldwide. A certification logo enables consumers to differentiate the products they buy based on the social and environmental impacts of their production, harvesting, and processing.

To reduce the pressure of increased market demand and the negative effects on the environment, certification can also result in the implementation of long term management plans, and internal control systems such as monitoring and record keeping, apart from enabling access to niche markets. Under the current system of illegal trade and adulteration of many mountain products, especially NTFPs, certification ensures that the 'chains of custody' for NTFPs comply with acceptable norms and standards. Since market pressure has led to many unsustainable and unethical practices, making the markets work for the poor is an essential strategy to make businesses more responsible to environmental and social concerns, notably concerns for generating livelihoods in poor rural mountain communities.

Certified organic products receive a premium price over non-certified products provided that markets for them exist. Mountain regions have an advantage in this sector as use of external chemical inputs has been minimal, which substantially reduces the conversion period required for certification. There is also a huge scope to transfer significant portions of the profits from products traded internationally to rural producers through fair trade mechanisms.

These concepts are creating opportunities for countries in the region to tap the emerging global market. Where these potentials are being tapped, mountain people
have been able to realise better incomes than from traditional agricultural practices.

Mountain areas are highly diverse in renewable natural resources and environmental services. This diversity is helping reduce internal competition in mountain areas and partially offsetting the physical vulnerability of the fragile mountain environment. The mountains' biodiversity provides important values to agriculture, medicine, food security, and industry, besides spiritual, cultural, aesthetic, and recreational values. The ecosystem services rendered by mountain biodiversity, such as pollination, nutrient cycling, soil maintenance, and climate regulation, are beginning to be appreciated. Where concerted efforts have been made, mountain niches are providing fresh opportunities for mountain people.

However, many of the ecosystem services that provide sink functions such as purification of air and water, detoxification and decomposition of wastes, regulation of climate, regeneration of soil fertility, and production and maintenance of biodiversity are only beginning to be appreciated. Because these benefits are not traded in the markets, they do not carry with them a price that can provide scarcity signals to society. The threats to these systems are increasing, especially in mountain areas. There is a need to start valuing these ecosystem services at the micro level where they are generated and incorporating them in decision-making.

**Markets play a significant role in realising economic opportunities for the poor. Access to markets has enabled mountain communities to produce according to their comparative advantage as mountain regions.**

Enabling environment

Mainstream development approaches, strategies, and policies often have little relevance in generating new opportunities in the mountain areas. A policy environment needs to be created that will mitigate mountain vulnerabilities, and harness mountain niches and diversity and human adaptation skills in order to generate and sustain opportunities in mountain areas.

Despite all the development rhetoric and significant development expenditures poured into it, mountain people, especially minority caste, and ethnic groups and women, continue to be marginalised. Government should play a primarily facilitative role. They can develop the opportunities available in the mountains by creating the conditions that will favour economic expansion in mountain areas. Highlighted in the next section are some of the critical elements of a policy environment that creates and sustains economic opportunities in mountain areas and confronts existing mountain vulnerabilities.

The central goal of mountain development should be to strengthen human resources through education, health, and productivity, and to overcome existing inequities and exclusionary processes that prevent women and men in mountain areas, especially socially excluded groups, from developing their full potential. This should begin with providing them with the means to voice their concerns and make strategic choices.

Promoting decentralised planning within agencies and governments and involving mountain communities are prerequisites for effective conservation and sustainable development in mountain regions. Ways and means have to be explored to overcome problems and difficulties in decentralisation arising from years of centralisation and little local participation, including internal power conflicts and bureaucratic hassle and policy and legal barriers.

Good governance is essential for generating and sustaining mountain niche opportunities. The current emphasis on relying to a greater extent on markets for development and poverty alleviation should not undermine the central role of government, especially in mountain areas, where the state should continue to invest in infrastructures and services and continue to evolve policies in favour of mountain areas. This is to ensure that markets function better and that risks and effects of market failures are minimised. Investments made by governments in the region to develop their mountain areas and promote the welfare of mountain peoples need to be seen as the price of environmental services rendered by mountains rather than as subsidies in the conventional sense.

Information and communication technology (ICT) offers new opportunities for accessing information on emerging technologies and markets in more effective ways. ICT enables mountain people to take advantage of the poverty reducing opportunities offered by new technologies and marketing. The potentials for using ICT to widen access are important and compensate for the constraints imposed by poor linkages. Ways and means need to be explored to utilise these opportunities on a wider scale to benefit mountain people.
Globalisation and Emerging Livelihood Issues in Mountain Areas

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This article has been prepared to help make mountain communities and policymakers aware of livelihood issues associated with globalisation as they have been emerging in several parts of the greater Himalayan area, and their possible implications on the mountain poor.

Livelihood systems represent a complex set of diversified and interlinked activities rooted in a community’s biophysical resources base and their usage systems, their technological and trade possibilities, and the institutional arrangements which determine people’s access to these resources. In mountain areas, livelihood options are often linked to a range of economic activities, products, and productivity (for example diversified cropping, and farming and forestry links), the natural assets of mountains (such as their diverse landscape, extent, and productivity), as well as economic and human assets including physical assets (such as terraced land, and water harvesting systems). They are linked as well to social or institutional capital including collective arrangements such as common property resources and other support systems, collective risk-sharing arrangements and public transfers, and secondary and tertiary level activities such as processing and marketing. Today, these practices and arrangements that have served to secure some form of livelihood for mountain peoples are undergoing transition and change as a result of globalisation.

The globalisation process

Simply put, globalisation implies primacy to and adoption of market-friendly economic policies and programmes as dictated by the pressures and incentives generated by global economic forces and their legal and institutional instruments (including the WTO). The changes are according primacy to global perspectives and external concerns while trying to deal with local problems, in the process relegating local concerns, perceptions, and practices to the primacy of global goals. The mechanisms through which these are happening include commodity trade and associated resource use as well as production patterns, restructuring of property rights and access to resources, dismantling of existing regulatory provisions and their enforcement measures, curtailment of welfare and promotional support to the needy, promotion of market-preferred technologies and support systems through a range of investment, tax, and price incentives.

Unlike the gradual process of integration of world economies through trade, investment, and migration in the past, present day globalisation is not only happening rapidly, it also departs radically from past trade practices. Because of its goals and governance systems in particular, and their driving forces, operational norms, and associated compulsions and incentives, globalisation is forecast by economic observers to have markedly different consequences for strong and weak participants. Mountain areas and their communities represent the weaker participants in an uneven global playing field, where they are nevertheless being integrated into the global system regardless of their capacity or preparation, and under terms that have been determined without their involvement or consultation.

Implications for livelihood options

Viewed through emerging scenarios, the process of globalisation has tended to create circumstances over which mountain communities have little control or say. The process is happening fast and so overpoweringly that the affected communities have neither sufficient lead-time nor the required capacities to adapt to the changes taking place. As a final result globalisation may accentuate the exclusion of local communities from new opportunities and may marginalise the well-adapted production and consumption options and practices which in the past have helped maintain environmental sustainability and secure some form of livelihood in mountain areas. The dynamics of the process and their causes and consequences are outlined below.

(i) Visible incompatibilities emerging between the driving forces of globalisation and the imperatives and specificities of the mountain environment. Examples of these incompatibilities include market-driven intensification in resource use, which completely goes against the imperatives of protecting the fragility of the mountain environment; intense resource extraction and highly specialised production; and even international division of labour in production that counters environmentally-friendly and risk-reducing diversification of resource use and cropping systems being suggested for mountain development.

(ii) Probability of globalisation accentuating the negative impacts of past interventions. Examples include pushing environmentally and socioeconomically inappropriate and damaging interventions, and completely bypassing the imperatives of the mountain perspective, thus increasing rather than
addressing environmental and socioeconomic vulnerabilities.

(iii) Erosion of practices and provisions (including welfare programmes) that provide resilience and protection to mountain peoples (such as diversified, interlinked, land-based activities that help promote both livelihood and environmental security) from ‘systemic disintegration’ of farming systems, where selected enterprises are picked up by the markets with a backlash and without mitigation efforts on displaced sectors;

(iv) Loss of niches and access to opportunities due to external demand-driven overextraction of niche resources and products, ignoring the negative side effects;

(v) Conflict between market-led values and attitudes and traditional collective or communal concerns and stakes, marginalising the important source of collective risk-sharing and resilience in rural poor sectors;

(vi) Little attention to indicative approaches or possible ways to influence and adapt to the globalisation process in mountain areas, especially through public policy and programmes.

Emerging scenarios

Juxtaposed against mechanisms and processes of trade liberalisation as a result of globalisation, key livelihood options in the mountain areas have reflected the following emerging trends, as shown by the results of a micro-level exploratory study by ICIMOD covering selected mountain areas in India, Nepal, China, and Pakistan.

Agricultural systems

(i) Agriculture remains the primary source of income flows in mountain areas. Diversification and interlinkages provide safety nets against vulnerabilities and risks for mountain communities. The globalisation processes that favour intense and indiscriminate extraction and use of selective resources have reduced the extent of diversification in most of the HKH region. The focus on externally marketable profitable products has pushed staple crops to higher, fragile, less productive slopes, for example, contributing to seasonal food scarcity in mountain areas.

(ii) The gains from high value export crops such as horticultural and herbal products, flowers and special seeds, have not been fully accessible to producers, given their limited involvement and capacity to become involved in the global marketing system.

(iii) Moreover, trade liberalisation policies, such as the WTO norms dictated by globalisation, have exposed high pay-off products to global competition without sufficient preparation and local capacity building. The same applies to locally produced and consumed crops.

Assets and support systems

(i) Private lands, community lands, forests, rangelands, local water bodies, tourist spots, and others, as major physical assets that have traditionally helped sustain mountain communities are increasingly becoming inaccessible to even the local communities, following policy reforms that have disregarded them. Large extents of these assets have been given instead to large private concessionaire companies including in India, China, and Pakistan.

(ii) Commerce-driven changes have led to disintegration of collective stakes in natural and social assets, further marginalising vulnerable mountain communities.

(iii) Finally, state-run support systems helping mountain communities through relief and development subsidies have weakened, if not completely disappeared. The marginalisation of state and communities vis-à-vis market forces has further eroded the traditional livelihood systems in mountain areas.

Adaptation approaches

On the other hand, the globalisation process affecting the livelihood systems in mountain areas also carries with it new opportunities and the potential to evolve safety nets and measures to cope and adapt or counter their negative impacts. Despite widespread criticism against economic globalisation, the process is acknowl-

Improved trade in mountain organic products, environmental services, tourism, and ancillary services as part of the global supplier chain promises new opportunities for the mountain poor. But a key constraint is lack of knowledge in mountain areas about these opportunities.

A key constraint to realising these new potentials, however, is the lack of knowledge about these opportunities as well as the limited prevailing capacities and skills to harness them. Mountain development planners, governments, and concerned stakeholders could focus on iden-
opportunities for income through biodiversity conservation

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Endowed with a rich variety of gene pools, species, and ecosystems of global importance, the Himalayan region is among the world’s ten ‘mega-centres of biodiversity’ and forms one of 34 global ‘biodiversity hotspots’. But the region’s high population is impinging on the natural resources base, leading to its degradation.

The Himalayan region presents a paradox. While it is one of the richest regions in the world in terms of biodiversity resources, it is also home to some of the world’s poorest peoples. The livelihoods of these people depend heavily on the natural resources, and changes affecting natural resources can affect them severely, and contribute to the widening of income inequities between the wealthy and the poor. These changes include ambiguous tenure and property rights regimes, including loss of access to and control over common property resources; demographic changes including both refugee migration across borders and internally displaced persons; and the illegal trade in biodiversity products.

Integrated use of biodiversity by mountain households provides food, water, fibre, medicines, energy, housing, and cash-generating products upon which the survival of mountain peoples depend. The values of biodiversity can be both ‘use’ and ‘non-use’. In the past, conservation focused mainly on non-use and existence values. However in recent years, biodiversity has more often been seen as a source of sustainable income that has the potential to reduce poverty. Besides the current values of utility, function, and recreation, future values of biodiversity such as ecological services are now considered equally important. Biodiversity provides ecological services in many forms: soil, water, and nutrient conservation in watershed protection; abatement and filtration of water and air pollutants; flood control; positive impacts on climate change; carbon sequestration; and so on.

Therefore, in linking biodiversity conservation with income generation both direct use values (products for income generation) and indirect use values (services from conservation) need to be considered.

Biodiversity conservation is of more interest to people when it has a utility value and communities are able to benefit from it. This utility value could be subsistence, for example, forest products form the food security strategy for many indigenous peoples in the region; or income generation opportunities for poor rural households. Several examples of income generation using biodiversity products by communities which have worked as an incentive for conservation, are evident in...
the region. However, these examples resemble 'islands' of success and have yet to be scaled up. In the following sections, we give examples of areas where we have found linking conservation with income generation to be successful. They are: (1) nature valuation for accrued benefits, (2) ecotourism and biodiversity conservation, (3) niche products from shifting cultivation, and (4) forest-based non-timber products.

**Nature valuation for accrued benefits**

Environmental services provided by nature are recognised and appreciated globally. In general there is a growing concern for establishing mechanisms of payment to local communities or governments in appreciation of environmental services. There is a need to develop valuation methodologies, especially for natural systems, that would bring increasing benefits to service providers. Payment of environmental services is expected to enhance conservation of natural systems, which is the dream of many communities and governments in the Himalayan region. Although assigning monetary or numeric value to natural ecosystems is difficult, such valuation draws attention to their importance and helps prioritise conservation needs. A modest effort to assign values to natural systems in the Kangchenjunga National Park and the Khecheopalri Sacred Lake in Sikkim of India has shown both the national park and the lake to provide high recreational and sacredness values. This can be attributed to the conservation of the sites for both biodiversity and pilgrimage. The application of contingent valuation method was found promising in the case of national park valuation; this method did not however count the non-monetary contributions, which were the contributions of the communities. Contingent valuation is seen as a useful tool for decision-makers in developing countries making decisions on investment and policy that consider biodiversity hotspots and protected areas. More valuation studies and payment arrangements need to be worked out for the benefits to accrue to the local communities in the region.

**Ecotourism and biodiversity conservation**

Ecotourism places importance on the natural resources themselves, attaching to them aesthetic and conserva-

Mountain medicinal roots and crops

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The beekeeping industry produces honey, wax, and other bee products – the fruits of beekeeping – that have a number of medicinal applications. Their use in medicine, called ‘apitherapy’, has been practiced for centuries in many parts of the world. This practice is receiving renewed and increasing attention from scientists.

### Traditional Medicines Gain Scientific Recognition

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The beekeeping industry produces honey, wax, and other bee products - the fruits of beekeeping - that have a number of medicinal applications. Their use in medicine, called 'apitherapy', has been practiced for centuries in many parts of the world. This practice is receiving renewed and increasing attention from scientists.

Bee products, being easy to harvest from beehives, are inexpensive. Honey, pollen, and beeswax are readily available to any beekeeper or honey collector. Modest training will suffice to enable people to harvest and process bee products like royal jelly, propolis, and bee venom. These products are safe and organic.

**Honey** is rich in carbohydrates and contains numerous trace elements, vitamins, minerals, amino acids, and enzymes. In the Himalayan region, honey has been used as a medicine for over a thousand years by rural people, and in recent years by ayurvedic companies as the chief ingredient in tonics, vitamins, and herbal medicines. Recently, a team of researchers from New Zealand proved that honey has antibiotic (antiviral, antibacterial and anti-fungal) qualities. Studies have also indicated honey as an effective treatment for ulcers, bad sores, and other surface infections resulting from burns and wounds. Honey increases appetite, helps control gastritis and offers relief from allergies, while conserving the resources are oak-silk in Garhwal, India; jatamansi (Nardostachys jatamansi) in Humla, Nepal; the high value caterpillar plant ‘yarcha gunbu’ (Cordyceps sinensis) and Matsutake mushroom (Tricholoma matsutake) in Bhutan; and traditional local paper made from lokta (Daphne spp) and rope from argeli (Edgeworthia gardneri) in Nepal and India. Sustainable harvesting of oak leaf for silk enhanced the regeneration of oak forests in Garhwal. In the case of Nepal, an enterprise growing jatamansi in Humla organized through user groups enhanced the restoration and conservation of forests and increased incomes in the area that, in turn, generated an interest in conservation. Policy intervention for pilot testing by opening up collection of Cordyceps in some areas of Bhutan provided economic benefits legally to the local communities, generating interest amongst them for sustainable harvesting and conservation of its habitat. There are sporadic examples of cultivation of medicinal plants by individuals and communities in their private and community lands. *Swertia chirata* in Eastern Nepal is one example where communities have developed indigenous technologies for regeneration and harvesting. These examples clearly show the success of enterprise development supported by established market linkages, local institutional mechanisms, and public policy.
stress, and infertility. Royal jelly promotes weight gain for convalescence and fatigue, growth problems, aging, minerals and is a hormone source which can be used for larvae and the queen, is rich in protein, vitamins and hypopharyngeal glands of worker bees to feed young.

Royal jelly marketing systems for pollen and beebread.

exceptions in that they have organised collection and in place for these products. China and Myanmar are without organised markets and collection systems being people consume honeycomb together with beebread and traditional Chinese medicine and very recently, has been gaining popularity in other Himalayan countries.

Apitherapy has enormous applications. Over 500 diseases and health conditions can be prevented or treated with bee products, although these are not widely known.

Pollen contains multiple vitamins (A, B1, B2, B6, C, E and H), amino acids, and minerals such as calcium, iron, potassium, phosphorus, and sodium. Bee-bread – pollen collected by bees and packed into the cells of a comb after mixing with nectar – is effective in treating intestinal disorders such as constipation. It also helps reduce hair loss, strengthens brittle nails, and is ideal for treating prostate problems. In the Himalayan region people consume honeycomb together with bee bread without organised markets and collection systems being in place for these products. China and Myanmar are exceptions in that they have organised collection and marketing systems for pollen and beebread.

Royal jelly, also known as 'bee milk', produced by the hypopharyngeal glands of worker bees to feed young larvae and the queen, is rich in protein, vitamins and minerals and is a hormone source which can be used for convalescence and fatigue, growth problems, aging, stress, and infertility. Royal jelly promotes weight gain and growth and may be mixed into milk as a food supplement for growing children, pregnant and lactating mothers, and people with malnourishment problems. China is taking the world lead in the production and marketing of royal jelly. However, beekeepers in other Himalayan countries are not yet benefiting from this product although they have a basic understanding of the importance of royal jelly and few consume queen cells and larvae.

Propolis is a vegetable mastic (a pasty substance used as adhesive or filler) made by honeybees, mainly Apis mellifera, A. florea, and stingless bees, from resins collected on the bark and buds of certain trees and balsamic plants. It is known to have a spectrum of important antibiotic properties covering a wide range of bacterial groups. Its remarkable healing properties are attributed to its stimulating effect on tissue growth. Propolis is also used in agriculture to fight plant viruses in crops such as tobacco and cucumber. However, in the Himalayan region this product is fairly new and mainly harvested by commercial Apis mellifera beekeepers.

Bee venom in the form of bee stings (bee acupuncture therapy) has many therapeutic applications, particularly for arthritis, rheumatism, chronic pain, and multiple sclerosis. Directing sting on the point and area of pain or on associated acupressure points has been known to bring remarkable results. Bee acupuncture therapy is an important part of traditional Chinese medicine and very recently, has been gaining popularity in other Himalayan countries.

There are over 500 diseases and health conditions that can be prevented or treated with bee products. The use of bee venom therapy, royal jelly, and other bee products is common in China but bee products other than honey and beeswax are not yet widely used in medicine in other countries. In Nepal where health services are severely limited, apitherapy is finding enormous application. To further familiarise communities with the apitherapy practice there is a need to incorporate this component in beekeeping training curricula and to popularise the information through the media. It is also necessary to persuade medical professionals and nutritional scientists about the medicinal value and health promoting effects of bee products. Furthermore, placing the system of apitherapy in action at the village level is expected to generate enormous livelihood opportunities for the mountain poor, not to mention health and medical benefits that are within their reach.

For further information, please visit www.apitherapy.com, www.icimod.org/ihbees.
Bringing organic honey of indigenous bee origin to the European market

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A European Council directive issued in 2001 (2001/110/EC) defines honey as “the natural sweet substance produced by Apis mellifera bees from the nectar of plants or from secretions of living parts of plants, or excretions of plant-sucking insects on the living parts of plants which the bees collect, transform by combining with specific substances of their own, deposit, dehydrate, store and leave in honeycombs to ripen and mature.” Such a simple and straightforward directive has far reaching implications.

It limits the import of honey to the European markets to Apis mellifera honey alone, and prohibits entry of honey produced by other honeybee species. This article discusses the implications of this definition on the honey trade, bee biodiversity, pollination services, and the livelihoods of poor beekeepers in the Himalayan region. We hope that through this discussion, European policy makers will pay attention and understand the crux of the issue and will revisit their definition and open European markets to the poorest of the poor in the Himalaya and other areas who market honey and bee products from other bee species.

Honeybee diversity in Asia

Asia is blessed with at least nine honeybee species of which four are major honey producers in addition to being providers of ecological services and contributing to the continued biodiversity of the environment. The species producing enormous quantities of honey include the Asian hive bee, Apis cerana; the giant honeybee, Apis dorsata; the Himalayan cliff bee, Apis laboriosa; and the dwarf honeybee, Apis florea. Of these four species, the Asian hive bee, Apis cerana is the only domesticated and manageable species, and is present all over Asia. The mountainous regions of Yunnan and Sichuan Provinces in China have more than 900,000 colonies of this species (Tan Ken 2003). In countries like Afghanistan, Bangladesh, Bhutan, Nepal, India, and Pakistan substantial numbers of subsistence farmers derive part of their income from the production and sale of honey. In India alone, according to one estimate, the Apis dorsata species produces more than 22,000 metric tons of honey - double the amount produced by all manageable hive bees (Pal and Wakhle 2000). Depriving European consumers of naturally produced organic honey under the de facto European definition is unfair neither to the consumers nor to the producers of quality honey produced by other species.

Implications on fairness of trade

Fair trade requires producers, regulators, and consumers to be fair to all and provide equal opportunities for competition, leading to quality goods and their fair price. Prohibiting the flow of organic honey from other species through the existing definition automatically restricts competition and deprives consumers of the benefit of forest honey produced by wild honeybee species in diverse nesting habitats. The definition set by the European Council thus adversely affects poor beekeepers as well as value-seeking consumers of honey. The restriction also discourages the whole honey collection in nesting habitats tradition which is an important incentive for conserving local and wild honeybee species and the immeasurable pollination services they provide to the environment, besides being a livelihood scheme for the poor. Allowing honey imports from countries producing wild honey will make an additional 30,000 metric tons of honey available to consumers from the Indian subcontinent, Myanmar, and China, resulting in better prices and fair competition. This will in turn reinforce conservation...
efforts and lead to better pollination services for local flora and agricultural crops.

Implications for biodiversity and consumer rights
Evidence of the intricate relationship between plants and bees has been established since time immemorial and further strengthened over time. Pollination provided by bees accounts for the diversity of flora in areas surrounding the nesting habitats of indigenous bee species. Inclusion of the human factor into this historical relationship has provided added benefits to local flora and crops and has contributed to providing people livelihoods through honey and other bee products. Honey produced by domesticated and wild bee species is an important contributor to people's livelihoods, besides adding value to the quality of honey provided to the supply chain of bakeries, food processing, cosmetic, and health industries. Export of quality honey produced by local bee species to the European and other markets will trigger and sustain efforts contributing to biodiversity conservation in mountain areas. An example is honey produced by Apis laboriosa, a high mountain bee species found in Nepal and many other countries of South Asia. On the one side this bee species services the high mountain flora in the form of pollination and produces quality honey with elevated enzyme activity. Honey produced by Apis dorsata and Apis florea also possesses a significantly higher enzyme content, providing it with the antibiotic content which is a trademark of high quality honey. However, the EU definition of honey denies the European honey consumers this quality honey by limiting their supply to only Apis mellifera honey from managed farms. Honey produced in managed farms is not comparable to honey produced in the natural setting. Elevated moisture levels in the honey produced by bee species like Apis dorsata, Apis laboriosa, and Apis florea should also not be a reason to prohibit their sale in the international markets.

Our aspirations
Based on these arguments and ICIMOD's discussions with poor honey collectors and producers, it is time to revisit the definition of honey in the European market and provide support to all concerned stakeholders in the honey trade. The moisture content of honey, also defined in the directive, varies from region to region and species to species depending upon climate, nest building habits, and origin of the nectar. Setting a single standard for honey products without considering these realities is therefore unrealistic and inappropriate. Honey is a living product with a diversity of content and enzyme activity and cannot be regarded as a homogenous product in constitution and origin. It is time that the European Council revisited and broadened its definition to open the markets to the aspirations of producers, collectors, and consumers of different types of honey from all over the world.
A New and More Rewarding Vocation for Beekeepers in Himachal Pradesh, India

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Mountain communities across the Himalayan region have been keeping the indigenous honeybee, *Apis cerana* in traditional fixed comb log, wall, pitcher, or box hives for centuries. The honey is used as a food sweetener, as a medicine to cure various kinds of diseases and infections, and for religious purposes, and is also bartered or sold. But many mountain communities are unaware of the role bees play in enhancing agricultural productivity through the pollination services they provide.

The few of who are aware consider pollination services merely as a byproduct of beekeeping. Even today, most development efforts in beekeeping have focused on promoting it to increase farmers' income, mainly through increasing the production and quality of honey and other bee products, including value added products from beeswax. Managed crop pollination using honeybees, though a hundred-year-old practice in developed countries like the US, Canada, and Japan, started only in the late 1990s in Himachal Pradesh in northwestern India, when farmers started facing pollination-related productivity problems in several pocket areas of the region. Farmers in Himachal Pradesh started using honeybees to pollinate apples after their crop yields started declining steadily despite all agronomic inputs.

In Himachal Pradesh – also called the 'Fruit State' or 'Apple State' of India – 32% (196,000 ha) of arable land is under horticultural crops and 312,000 tonnes of fruit are produced annually. 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 t) of total fruit production. Today, apple growing contributes 60-80% of the total household income in many villages. There are about 150,000 apple growers in Himachal. At present, apples contribute an estimated US $1.7 billion per year to the state economy, with about US$150-170 million being contributed directly and the remainder indirectly through 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.

The sale of apples has brought cash to mountain households, which in turn has raised the standards of living of the farmers and hundreds of others that depend on the trade. The apple economy of Himachal Pradesh extends beyond these mountains into the plains, spilling over even into neighbouring countries (Box 1, next page). The orchards employ tens of thousands of labourers and provide business to producers of packing materials, truck operators, contractors, wholesalers, and retailers. Income from apple growing has seeped into every strata of society, enough to make the apple growing areas of Himachal prosperous.

Studies carried out by ICIMOD, focusing on investigating productivity problems in apple crops and farmers' management practices in Himachal Pradesh, have noted sharp drops in productivity in orchards all over...
the state, which threatens the entire apple economy. In the early ‘90s farmers estimated about a 50% decline in apple productivity and noted that it continued to decline despite all agronomic inputs. The low production was not caused by low inputs or lack of know-how alone, but actually by disturbances in the pollination processes – a reason unknown to many of the growers and even agricultural extension workers.

Evidently, a larger problem faces apple growers. Apple production appears to be declining because of inadequate pollination. Pollination is an ecological process based on mutual interaction or relationships between plants and insects. Pollination can be managed by using friendly insects which, in their search for food, provide this vital service to plants. Insects such as honeybees, bumble bees, wild bees, and flies pollinate flowers while flying from plant to plant in search of food. But pollination is not happening as frequently as it used to. Today, fewer insects hover in orchards and their surroundings. Their habitats have become smaller and insects have lost many of their places for nesting, hibernation and forage. Excessive use of insecticides has also taken its toll.

More pesticides reached the fields after large tracts of forests were turned into orchards. This has led to the disappearance of many pollinating insects like wild bees, butterflies, and moths that roamed these orchards until some years ago. The other culprit for drop in apple yield is increased use of cross-pollinated or self-incompatible varieties. Apple bees require pollinators to transfer pollen from other compatible varieties to bear fruit. Most orchards in Himachal today do not have the appropriate number of polliniser trees (Box 2).

But the apple growers of Himachal are not giving up. They have begun exploring solutions and are already testing some of these in the field. They approached the state’s horticulture department and agricultural and horticultural universities for expert advice, and have begun using honeybees to pollinate their apple trees following their advice.

Apple farmers in Himachal Pradesh are experimenting with both the Himalayan honeybee, Apis cerana, and the European species, Apis mellifera. The farmers say the Himalayan species is better at pollinating during adverse weather conditions, when the European bees stop flying (Box 3). However, Apis mellifera remains, the main bee species made available by government institutions and private beekeepers to farmers for apple pollination in movable frame hives, because there are not enough colonies of Apis cerana in such hives.

The use of honeybees for pollination in Himachal Pradesh has led to the growth of a new vocation (Box 4). Beekeepers charge Rs 500 as security and another Rs 300 as pollination fee for one colony of honeybees during each flowering season. The fees have to be paid in advance. The security money is refunded only if the colonies are returned intact. The state’s Horticulture Department helps orchard growers...
When apple plantations started in the sixties, pollination was not a problem. The pollination problem started in the last few years. The Department of Horticulture and the Horticultural University helped us in solving our apple farming problems. Its scientists advised us to keep honeybees for pollination.

We tried to keep both the Himalayan honeybee, Apis cerana, and the European species, Apis mellifera. We have seen that when the weather is good or warm, Apis mellifera works well but during bad weather, when it is cold or cloudy, Apis mellifera do not work in the orchards in these mountain areas while Apis cerana works well even during bad weather. Therefore, I now keep only Apis cerana bees.

I keep 20-25 colonies. They are sufficient for pollinating my orchard. I do not rent out bees but if someone needs my help I give them two to three colonies. I also teach those who want to learn beekeeping. We keep honeybees only for apple pollination, not for honey.

Some farmers keep their own bee colonies for pollination. This has created a heavy demand for honeybees for pollination, and there are not enough bee colonies to meet the demand. Therefore, tremendous scope has been created for beekeeping entrepreneurship for pollination in the apple growing areas of Himachal Pradesh. The state government has encouraged farmers to keep honeybee colonies for honey production and pollination and has even created a special section, The Beekeeping Development Office (BKDO) under the Department of Horticulture for this purpose. This office also supports sale of Apis mellifera colonies at subsidised rates. Use of beekeeping for pollination of cash crops greatly benefits not only the farmers but the beekeepers as well. They receive money for pollination services and at the same time harvest honey. Farmers' incomes have increased by boosting crop productivity through bee pollination services.

Himachal Pradesh is, so far, the only state in the whole of the Himalayan region where honeybee colonies are used to pollinate apples. It is also the only state in the region where an organised system of hiring and renting honeybee colonies for apple pollination exists. The government is promoting private entrepreneurship for bee pollination and arranges training programmes and demonstrations for apple farmers on honeybee pollination. As a result, pollination entrepreneurs – beekeepers who rent honeybee colonies for crop pollination – have mushroomed in the state.

This case study reveals the importance of beekeeping for both farmers and beekeepers. Apple is not the only crop that requires bee pollination. Several other fruits as well as vegetable and vegetable seed crops also benefit from pollination provided by honeybees. Yet, beekeeping for crop pollination is a relatively new effort in the region. To date, only a few institutions in the region have explicit mandates and manpower capabilities to support or encourage bee pollination. Most government institutions and non-government organisations have focused on the honey production aspects and promote beekeeping as a cottage industry, with the potential to increase family income mainly through honey sales. There are only isolated examples like Himachal Pradesh where the government has exerted special efforts to strengthen research and extension and promote beekeeping specifically for crop pollination. Governments in other countries in the region need similar initiatives so that both their beekeepers and their farmers can gain greater benefits from beekeeping.

This article is based on a study conducted in 2000.
The findings of the Nepal living standard survey (NLSS) in 2003/2004 indicate that Nepal's poverty headcount declined from 42% to 31% in the years 1995/1996. Urban poverty has declined more than rural poverty. Despite the overall decline in rural poverty, the level of inequality has widened, with the incidence of poverty becoming greater among lower caste people and ethnic minorities in rural areas. Poverty among these groups has worsened because they possess meagre assets to earn income and are not well organised to access resources for their own development. Most of the services and inputs provided by different agencies do not reach these people. They are neither in a position to defend their interests nor are they able to gain benefits from external interventions.

However, a large number of the poor whose incomes have increased are beginning to rely on other income sources besides land and agriculture. Many households are beginning to look for new opportunities to diversify sources of income. One of these new sources of livelihood is beekeeping. ICIMOD has conducted on farm action research on Apis cerana honeybees for over a decade and has concluded that bees can be a source of income to mountain households that have limited options and opportunities outside of agriculture. This is based on field studies carried out in three places in Nepal namely, Jumla, Kaski, and Dadeldhura districts.

ICIMOD is working with partner organisations, Alital Multipurpose cooperative in Dadeldhura, Surya Social Service Society in Jumla, and Annapurna Beekeeping and Environment Promotion Centre in Kaski, to provide support to beekeepers. The participating farmers are poor and have limited options and opportunities to earn cash incomes, especially those who are keeping Apis cerana bees. Since income from agriculture is low, these farmers also work in off-farm activities to supplement their incomes. To some households, remittances are an important income source.

Training activities have been organised by the project and partners to strengthen the capacities of the project beneficiaries in beekeeping. Training courses were provided on bee management in general, and value addition and diversification of bee products in particular, targeting both men and women beekeepers. Similarly, a number of different training activities were implemented to facilitate the process of diversifying and enhancing the cash income options of mountain households.
Diversified beekeeping

After the project provided facilitative support, beekeepers at the three project sites acquired different interests and skills and adopted different technologies. Beekeepers at the Kaski site adopted frame hive technology, whereas those in Jumla have been more successful with swarm catching and transferring bees into log or top bar hives. Jumla beekeepers are succeeding in value added bee products such as candle and beeswax skin creams. Similarly, beekeepers from Dadeldhura are succeeding in transferring bee colonies from traditional hives to frame hives and in earning cash income from selling Apis cerana honey.

Farmers at the project sites are gradually realising the economic importance of Apis cerana. Beekeepers from Kaski have become more successful in selling bee colonies, queens, and frame hives. A successful beekeeper in Kaski has been able to earn NRs. 55,000 (US$775) in a year from selling bee colonies and queens. In Dadeldhura, farmers are earning cash income by selling honey and beeswax. The demand for Apis cerana honey is increasing in Dadeldhura because of its unique flavour, pleasant taste, and organic nature. One beekeeper was able to sell NRs. 40,000 (US$563) worth of honey in one season with very little cash investment. Beekeepers in Jumla have been successful in making candles and skin creams from Apis cerana beeswax for their own use and generating cash income by selling in both the local and Kathmandu markets. Among the beekeepers in Altal, Dadeldhura, average income from Apis cerana beekeeping was approximately NRs 4,152 (US$58), more than one-third of the total annual cash income from farm activities. The impact on honey yield was more visible in Dadeldhura than at other project sites, whereas in Kaski, households were increasing the colony numbers for sale. Some results on increase in bee colonies, honey yield, and income from beekeeping before and after the project, based on a survey carried out at the project sites are provided in the Table.

While the choice of beekeeping technologies varies across geographical areas because of differences in the biophysical and socioeconomic conditions of beekeepers, ICIMOD’s experience suggests that beekeeping can be a useful additional source of income for poor farmers. Since the beekeeping technologies and practices are low cost, poor farmers can afford them. Beekeeping does not require much time and is an ideal income generating activity for women. The project successes can be scaled up to other parts of the Himalayan region where Apis cerana bees are abundant.

### Table: Cash income from selling honey and bee colonies at project sites in Nepal (before and after training)

<table>
<thead>
<tr>
<th>Description</th>
<th>Kaski Before</th>
<th>Kaski After</th>
<th>Jumla Before</th>
<th>Jumla After</th>
<th>Dadeldhura Before</th>
<th>Dadeldhura After</th>
<th>Total Before</th>
<th>Total After</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of bee colonies/hh</td>
<td>2.8</td>
<td>6.8</td>
<td>4.8</td>
<td>6.6</td>
<td>3.9</td>
<td>6.9</td>
<td>4.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Average honey yield kg/hh</td>
<td>6.8</td>
<td>10.2</td>
<td>12.4</td>
<td>22.4</td>
<td>19.6</td>
<td>51.6</td>
<td>15.1</td>
<td>34.6</td>
</tr>
<tr>
<td>Income from beekeeping NRs/hh/year</td>
<td>816</td>
<td>1224</td>
<td>1488</td>
<td>2688</td>
<td>2352</td>
<td>6192</td>
<td>1812</td>
<td>4152</td>
</tr>
</tbody>
</table>

NRs = Nepali rupees, the approximate rate of exchange in 2005 was US$ 1 = NRs 71

hh = household

Moving to International Markets that Care for Sustainability

Bhishma P. Subedi, Executive Director, ANSAB, BhishmaSubedi@ansab.org

Providing medicinal plants and non-timber forest products as ingredients for the international herbal and health care industry often destroys forests and forest communities in remote regions of the world. In small villages of the Nepal Himalaya for example, medicinal herb traders encourage the poorest of the poor living in the forests to harvest as many medicinal plants as they can, then pay them the lowest prices, and abandon the community when the plant supplies are exhausted.

These herbs then end up as herbal medicines that western consumers buy from pharmacies or health shops at often exorbitant prices. The result is that the poor become poorer and end up destroying their only source of livelihood – the biodiversity-rich forests.

The Nepali Non-timber Forest Product Promotion Alliance, a unique alliance of corporations, government, and non-profit organisations, was formed with the goal of combating the crisis of biodiversity loss in Nepal and preserving sustainable rural life by establish-
ing responsible business practices and educating business users. This alliance includes representatives from the government; non-government organisations (NGOs); private companies active in the herbal products industry including Aveda; Rainforest Alliance, a Forest Stewardship Council (FSC) forest certification organisation; community forestry user groups represented by the Federation of Community Forestry Users Nepal (FECOFUN); and donors, including the United States Agency for International Development (USAID), Ford Foundation, and the Netherlands Development Organisation (SNV). This is the first time that industry, government, NGOs, communities, and forest certifiers are combining expertise to make commercial trade of non-timber forest products in Nepal sustainable.

The Asia Network for Sustainable Agriculture and Bio resources (ANSAB) coordinated the alliance and took a lead role in developing methodologies for the sustainable collection of medicinal herbs and other non-timber forest products (NTFPs) from forests and to enhance their marketing. Forest certification was realised as essential in achieving the goal of conserving medicinal plants and NTFPs as well as in raising the living standards of the people. Amongst many options for forest certification, ANSAB in coordination with the alliance chose the most practical option, the Forest Stewardship Council (FSC) certification. FSC supports environmentally appropriate, socially beneficial, and economically viable management of the world’s forests and promotes responsible forest management. It also promotes responsible forest management by evaluating and accrediting certifiers, encouraging the development of national and regional forest management standards, and providing public education and information about independent third party certification as a tool for ensuring that the world’s forests are protected for future generations. So far, FSC has certified over 50 million hectares of forest in 76 countries around the world.

The FSC certification initiative in Nepal undertook extensive efforts, from capacity building of relevant stakeholders, to complying with different requirements per FSC guidelines. After the necessary criteria were fulfilled, Rainforest Alliance/Smart Wood awarded the FSC certification to FECOFUN, provided that its members supply medicinal plants and NTFP ingredients to the international herbal and medicinal products industry. The certified medicinal plants and NTFP ingredients include jhyau (Parmelia sp.), majitho (Rubia manjith), pakhanved (Berginia ciliata), dry chiraito (Swtoria chirayita), satuwa (Paris polyphylla), padamchal (Rheum australe), bhutkesh (Selinum candollii), guchchhi chyau (Morchela sp.), sugandhwal (Valeriana jatamansi), kutki (Picrorhiza scrophulariiflora), jatamansi (Nardostachys grandiflora), atis (Aconitum heterophyllum), dry lokta bark (Daphne spp.), argeli whiteskin (Edgeworthia gardnerii), machhino leaves (Gaultheria fragrantissima), and dry allo fiber (Girardinia diversifolia).
Nepal is the first country in Asia and the fifth in the world to obtain FSC certification for these medicinal plants and non-timber forest products. The certification is also the first in the world for handmade paper.

Making the certification process a success in Nepal has been a challenging task for ANSAB and the alliance. Since certification is a new subject, it took great effort to bring awareness among relevant stakeholders. Community forest user groups (CFUGs) were strengthened and assessed. Eventually 11 CFUGs in Bajhang and Dolakha districts were brought to the pool of certification, which covered 10,500 ha of forest land and 2,754 households. Certification is part of a larger effort of the alliance to combat destruction of forest and forest communities.

Efforts of the alliance to promote responsible buying practices among industry in the West through industrial symposiums sponsored by Aveda have attracted buyers who are ready to partner with the alliance and buy FSC-certified products from Nepal. The pilot phase objectives were achieved despite civil strife in many areas in Nepal and have generated significant cash benefits to CFUG members, as well as improved the governance of FECOFUN and targeted CFUGs. In the programme's second year, the alliance's activities contributed to sales of 602,865 kg of raw and processed NTFPs with a value of Rs. 35,130,254 (about US$ 500,000). Alliance activities have generated 1,209 direct NTFP processing and marketing jobs and benefited 5,334 households. Industry coaching has resulted in the development of a wide range of products including pain relief oil, personal care products, herbal teas, and handmade paper in 14 enterprises. A total of 11,209 grassroots participants received technical assistance on sustainable forest management that will allow other groups to join the FECOFUN FSC certification.

The alliance enjoyed achievements that exceeded members' expectations from the positive working model developed for community forestry governance, FECOFUN's services to its CFUG members, and improved relations with the government. Before the formation of the alliance, FECOFUN did not offer services or promote enterprise development activities among its CFUG members. Neither did it have a uniform protocol for advising CFUGs on developing its operational plans and constitutions. The training from ANSAB and the FSC certification process provided a uniform protocol for advising CFUGs. FECOFUN has also noted a dramatic improvement in its relationship with the government, and they now feel more respected and able to represent the CFUG's interests.

There are over 13,000 forest user groups composed of people living in or near forests across Nepal. They include almost a third of Nepal's population and cover 25% of the country's biodiversity-rich forests. For most of these communities, medicinal plants and NTFP trade are the only means of livelihood besides subsistence agriculture. Nepal receiving this certification is groundbreaking and hopes to be a model for the rest of the world.

Successes and Issues in the Himalayan Region

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Non-timber forest products (NTFPs) are attracting increasing attention from both development planners and environmentalists in the Himalayan region because of their multiple functions and potential contributions to improving the livelihoods of rural communities. NTFP protection, regeneration, and harnessing through development of community-based enterprises can help promote sustainable resource use and conservation of mountain biodiversity while enhancing the livelihoods of marginalised mountain communities.

However, the NTFP subsector in the region is plagued by a host of issues that constrain mountain communities from adequately benefiting from its resource endowments. Mountain peoples' acute poverty, lack of clearly defined property rights and access, and lack of capacities and access to information are leading to large-scale extraction of NTFP resources for short-term benefits. While increasing market demand led extraction of mountain NTFPs are threatening many species to extinction, poor communities are being exploited by traders and middlemen who dominate the secretive, unorganised, but well-networked NTFP trade. Also, as most high-value upland NTFPs are exported in raw or unprocessed form and in inconsistent quality, communities do not gain through value addition and receive only a meagre share of the value of the final products. Despite the large growth of the NTFP subsector, NTFP policies focused on enhancing livelihoods of mountain communities.
communities are not adequately developed in the region.

These problems notwithstanding, a number of community-based initiatives have been implemented in the greater Himalayan area. A commonly held belief is that if people can benefit financially from enterprises that depend on nearby forests, reefs, and other natural habitats, they will take action to conserve and sustainably use these resources. The Biodiversity Conservation Network (BCN) brought together conservation and development organisations and local communities to systematically test this hypothesis across 39 conservation project sites in Asia and the Pacific. In 1995 in the Nepal Himalaya, BCN supported a community-managed Jatamansi essential oil processing enterprise, Humla Oil Pvt Limited, in Humla in remote western Nepal. Local communities and their institutions carry out processing, management, and marketing of the enterprise with support from the Asia Network for Sustainable Agriculture and Biodiversity (ANSAB) and its partners. Collectors of natural products were trained to harvest the resources in a sustainable manner and ANSAB worked with local communities to develop and implement a basic resources monitoring system. A detailed study on the enterprise showed that poor collectors boosted their annual income from collecting and selling natural products by 175% during the period 1995-1998, (www.enterpriseworksworldwide.org).

Yet another good practice in Bajhanj, Nepal, relates to the Kailash Forest User Group (KFUG). KFUG formed a company called Malika Handmade Paper Pvt Ltd. (MHPPL) supported by ANSAB in 1999 to produce hand made paper using lokta (Daphne spp), a shrub whose bark contains fibre that can be used for making paper. Forest user group members conserve lokta in the natural habitat and harvest it sustainably for resource conservation, as well as conducting research on regeneration methods for on-site and off-site conservation. Proper records are maintained and periodic meetings are organised to review progress, develop strategies, and obtain feedback. There are three management committees: a micro-enterprise management committee, an executive committee, and an audit committee, all comprising members from local communities. The enterprise manager is overall in charge of production, factory management, and inventory and dispatch of the produce. The annual turnover of the factory is NRs 294,000 (US$ 4200) and profits during 2003 were NRs 105,000 (US$ 1500).

The community-based forest enterprises on tasar silk by Appropriate Technology India (ATI) in the Garhwal Himalaya is another example of a successful incentive-based conservation approach to improving the livelihoods of mountain communities. Oak forests are managed through ‘van panchayats’ or people’s forest councils. In 2004, around 750 men and women members of Chamoli Tassar Private Ltd (CTPL) established by ATI earned modest incomes of US$ 400 per annum from cocoon rearing, spinning, and silk yarn reeling and weaving.

In Uttaranchal, India, the High Altitude Plant Physiology Research Centre’s efforts to promote the cultivation of Picrorhiza kurrooa (‘Kutki’), a high value medicinal plant, differ significantly from similar attempts by other agencies. Farmers are given not only technical but comprehensive support, including assistance in marketing. Taking a farming system’s approach, the Centre provides planting material and training to farmers. More important, they have arranged a buying contract with a commercial company that commits to purchase the complete production of kutki at a guaranteed minimum price. This has been made possible through a tripartite agreement between the farmers, the company, and the Centre.

Another example of setting up appropriate marketing mechanisms comes from Uttaranchal, in India, where Jari-buti herb ‘mandis’, or market yards, have been set up at all divisional headquarters. The market yards have provided harvesters a fair price for their product and revenues going to farmers
have gone up from 20-50% of the final product cost, to 65%. This has also helped in linking the unorganised and illegal NTFP trade in India to the mainstream economy.

Recently, national governments have been toying with the idea of market-based interventions for diversifying livelihood options for NTFPs and providing fair prices. In May 2004, the Royal Government of Bhutan (RGOB) delisted Cordyceps sinensis (commonly called, yarcha gunbu), a high value medicinal plant, from Schedule 1 of the banned species list. A committee was formed with Agriculture Marketing Services (AMS) as lead agency to market cordyceps and a basic minimum price was set of Nu 37,500 (US$ 830) per kg. Competition among buyers brought the rates to Nu 87,000/kg (US$ 1,930) in 2004. Communities and the participating departments of the RGOB have set certain laws and regulations for harvesting, selling, and monitoring the process, and collectors in northern Bhutan earned handsomely from cordyceps in 2004 with an estimated sale of 300-400 kg.

These examples from the region, although not exhaustive, illustrate the inherent possibilities of NTFPs to provide livelihoods while sustainably addressing conservation imperatives through community-based enterprises with support marketing schemes. The successes have been achieved through a blend of innovations in conservation; institutional, technological, and market support; and community development, and underscore the importance of a holistic approach to the sector. They highlight the potential of decentralised resource management programmes initiated in many ICIMOD regional member countries to improve livelihoods by moving forward from subsistence to value added resource management. They also provide models of moving up the product value chain through local level processing to retaining maximum benefits at the local level. Though very little research has been carried out to ascertain the conservation aspect of natural products-based community enterprises, the outcomes of initiatives in this area so far have indicated that strong local institutions and enabling policies can provide long-term benefits and promote wise use of natural resources.

Successful community-based enterprises are facing second-generation problems in sustaining these initiatives, however. The Mountain Products Project (MPP) Phase II implemented by ICIMOD in Bhutan, India, and Nepal has examined successful enterprises based on a set of criteria to identify constraints in the product supply chain, and to develop training programmes to address the constraints to improving the quality and efficiency of the enterprises. Discussions with stakeholders associated with the development and promotion of community-based enterprises and field observations reveal problems related to markets, product development, and improving productivity, as well as problems in participatory planning, community mobilisation, biodiversity conservation, monitoring systems and standards, and quality control. A major observation is that monitoring enterprises on natural products is a weak link in the region. A strong and participatory monitoring system is essential to sustain resource conservation, develop management plans, track and manage changes, measure performance, make strategic decisions, and overall, develop adaptive enterprises.

Despite the challenges, community-based small-scale enterprises have demonstrated the potential to create economic opportunities mobilising human and natural resources. There is a need, however, to adjust policies governing NTFPs and associated sectors to create an environment conducive to their development and to link them with mainstream markets and the private sector. Although national policies and planning for biodiversity management takes place at the country level, biodiversity and ecological processes are not confined to national boundaries. A regional approach to tackling issues associated with conservation and marketing through, among others, increased communication and networking is essential. It is important to develop the capacities of stakeholders to enhance conservation and economic development goals. Access to information and markets is yet another area which inhibits the development of enterprises in mountain areas.

Finally, in the context of improving livelihoods and enhancing the economic security of mountain communities, NTFPs provide a unique window of opportunity whose potential has yet to be realised on a regional basis. Upscaling and replication of successful interventions from the region can strengthen the member countries’ national strategies for achieving the Millennium Development Goals and can contribute to improving the livelihoods of poor mountain communities where few alternative opportunities exist.

A commonly held belief is that if people can benefit financially from enterprises that depend on nearby forests, reefs, and other natural habitats, they will take action to conserve and sustainably use these resources.
Social Responsibility in the Growing Handmade Paper Industry of Nepal

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The handmade paper industry in Nepal has been expanding rapidly since the early 1980s. In recent years growth has been about 15% a year and in 2003/2004 the export of handmade paper products was US$ 4.25 million. About 70% of the paper is made from lokta and 30% from recycled cotton and other natural fibres. In Nepal the handmade paper industry declined in the 1960s as a result of cheap imports of paper from abroad. The revival of the industry began in the 1970s, as tourists started to buy handmade paper products and an export market started to open up.

The rejuvenation of the industry was helped by a collaborative project which involved the Small Farmer Development Programme (SFDP) of the Nepal Agricultural Development Bank, and a UNICEF-supported project for community development through the production of handmade paper. One of the major components of the programme was a regular guaranteed purchasing order from UNICEF for handmade cards. While the factory established under the project continues to make and export handmade paper products mainly to UNICEF, this is now less than 10% of all exports.

Handmade paper is a classic non-timber forest product made from the processed bark of the forest shrub called lokta (Daphne bholua and D. papyracea). Lokta grows between 1600m and 4000m in Nepal’s forests. There is enough evidence that the management of lokta resources is on the whole sustainable. There are several reasons for this: some of it is due to the management practices of Nepal official forest user groups, some because of the active promotion of conservation measures by the major manufacturers of handmade products, and also because of government forestry regulations. Even when over-harvested, it only takes eight years to regrow lokta from coppicing or from seed, and there are many untapped lokta reserves in the mountains.

The handmade paper industry is highly labour intensive, and much of the work provides part of the livelihoods for rural and urban women. Work groups tend to form on a neighbourhood basis for cutting lokta, porterage (or the cost of transport), stove installation, and papermaking. Besides the project in the early 1980s, there has been very little government and donor support for the industry. Rather there has been a wide range of small interventions from government agencies, NGOs, and some donors. Most of this has been outside of the scope of the earlier project. What small support there was has been well directed, partly because it was given in response to local needs. For example, a range of small-scale training courses from the Department of Small and Cottage Industries, some very timely advice from the government Trade Promotion Centre, and selective inputs
The sustained development of the industry has come about due to the social entrepreneurial skills in the private sector. This has come in two ways. First, entrepreneurs are continuously developing international markets for handmade paper products. Second, the industry is dominated by businesses and groups that have commitments to a wide range of socially responsible practices that include following fair trade and socially responsible corporate codes of conduct, accreditation by the International Forest Stewardship Council, inspections by international business accreditation schemes such as ISO, keeping within government labour laws, and commitments to community development.

The industry’s business organisation, the Nepal Handmade Paper Association, places social responsibility in the workplace as a high priority in its work, in addition to addressing marketing, training, resource, legal, and other normal concerns of trade business organisations.

From the perspective of good policy and development practice, what can we learn from this case study of a rapidly growing industry that appears to be sustainable from natural resources, economic, and poverty reduction perspectives?

- First is the central and long-term role of a wide and diverse range of Nepali social entrepreneurs in the industry.
- Second, the positive contributions of a range of government policies and programmes that have helped facilitate and support the growth of the industry, and its sustainable features and social responsibility. Since the rejuvenation project of the earlier 1980s, there have been no major subsidises, large development projects, or unsustainable government or donor inputs. But there has been some very selective small-scale support for key issues as they arose.
- Third, the earlier project, while helping to rejuvenate the industry 20 years ago, was soon overtaken by a wide range of innovative activities in the private sector, especially as regards developing international markets, and a wide range of viable and ever changing socially responsible institutional innovations. There was no scaling up of the original project.
- Fourth, networking and information exchange played a key role. The Nepal Handmade Paper Association acts as an important support and networking organisation for the industry and helps it to maintain a socially responsible culture. Other networking organisations such as the Federation of Community Forest Users (FECOFUN) and ANSAB have also been contributing to the outcomes we see today.
- Finally, the importance for development actors, to search out and understand positive conditions that are already underway in the economy, and then design with members of the industry development interventions to support these innovations.

**Sound management practices of forest user groups, conservation measures by manufacturers, and government forestry regulation all contribute to a sustainable handmade paper industry in Nepal.**
Lwang Farmers Share the Seeds of their Success

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King Mahendra Trust for Nature Conservation

Bringing change in the lives of mountain people is not always a simple task. Attempts to transform traditional subsistence farming practices into modern market-driven enterprises have produced mixed results. But the experience of farmers in the Kaski district of Nepal shows how simple but innovative approaches, carefully employed, sometimes work wonders.

As part of ongoing efforts to diversify income sources of farmers in the Annapurna Conservation Area, the King Mahendra Trust for Nature Conservation (KMTNC) implemented schemes in coffee, tea, cardamom, broom grass, vegetables, and fruit farming. Beekeeping and goat farming were also introduced. To some extent these schemes have succeeded and helped farmers generate cash incomes. Among the schemes tried, the most profitable for the Lwang Ghalel farmers in the Kaski district has been cucumber seed production. This is their story.

Not satisfied with the small return on their investment in farming and selling fresh vegetables, seven farmers from Lwang Ghalel dropped the idea of selling vegetables and decided to produce and market quality seed instead. Traditionally, they grew cucumber on small plots for domestic consumption, never producing to sell commercially. They collectively planted cucumber on their sloping land in addition to traditional crops, taking special care to provide wooden supports for the plants to climb as they grew. The cucumber plants also provided shade to the crops.

The villagers of Lwang were inspired to cultivate known vegetables employing their indigenous knowledge and innovative ways after receiving training from KMTNC. They were not worried about return on investment, which was small. Besides, they were planting on marginal lands where more superior crops such as maize or paddy would not grow. They paid special attention to ensuring that the cucumbers were not diseased while they were ripening.

The farmers sold small quantities of fresh green cucumbers at low prices and were preparing to extract cucumber seeds to sell as well and to make into a special pickle as a byproduct. They accomplished these tasks efficiently with technical advice from agricultural technicians. Selling cucumber seeds in both wholesale and retail outlets in the summer of 2003, they were overwhelmed by the income they made on this first attempt at a commercial venture. The following year, 2004, the farmers group collectively produced 292 kg of seeds which they sold at Rs 1000/kg. One member alone produced 49 kgs and earned Rs 49,000. They then collectively invested in 400 gm of additional quality seeds which they bought for Rs 1500/kg. This enabled them to nearly double their income in the second year. In the coming year, the farmers are determined to expand planting to a wider area.

Though the farmers of Lwang Ghalel are pleased over the high return on their meagre investment and have plans to expand their production and market base, Chet Prasad Tiawari, a local agricultural technician of KMTNC who has been helping the farmers group since the beginning has expressed fears regarding the capacity of the market to absorb the growing volume of seeds unless alternative markets are explored. For example, he has noted a drop in the price of cucumber seeds, from Rs 1300/kg in 2003 to Rs 1000 in 2004. The price is expected to dip further to Rs 800/kg in 2005.

This second generation issue notwithstanding, the venture of the Lwang Ghalel farmers illustrates how a small intervention, effectively mixed with traditional farming techniques can enhance farm incomes. The farmers attribute their success to the ideas they picked up during training, and to follow-on assistance provided by agricultural technicians.

Three key lessons can be distilled from this simple success story. One is to focus on high value, low volume crops.
Poverty Reduction through High-Value Agriculture: the Experience of CEAPRED

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The vast ecological diversity of the Himalayan region provides farmers with unique opportunities to produce a wide range of high-value agricultural commodities and to generate income from their limited farmlands. In order to exploit such opportunities, farmers must be organised in a manner that enables them to achieve economies of scale in production and marketing, access distant markets, and receive development services and inputs more effectively and efficiently.

This typically involves a development strategy that draws on people’s initiatives and local development potentials and priorities for rural development and poverty reduction. It is against this backdrop that a case of cooperative production and marketing of off-season vegetables in Nepal is discussed here. The Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED) has been actively promoting and popularising various types of farm and off-farm income generating opportunities as mechanisms for reducing poverty in the rural areas of Nepal. CEAPRED promotes commercial production of off-season vegetables in relatively accessible rural areas as a major income generating activity within the farm sector.

The table on the next page summarises the quantities of vegetables produced, consumed, and sold, and the amount of cash income generated from the sale of some off-season vegetables under the programmes launched by CEAPRED in different parts of Nepal.

Off-season vegetable production has become one of the most popular activities among farmers, particularly along the road corridors in recent years. The popularity of this enterprise has been triggered by the success and sustainability of an off-season vegetable production project first launched by CEAPRED in Dhankuta district of eastern Nepal during 1992-94. The ‘Dankuta model’ is being replicated by CEAPRED and other NGOs in different parts of the country.

The following section highlights some of the efforts of the ‘Income Generating Project for Women Farmers along Arniko Highway’ of CEAPRED. The overall objective of the project was to increase income and improve the quality of life of the participating households through the production and marketing of off-season vegetables along the road corridors of Kavre and Sindhupalchowk districts. The Project was implemented in two districts from 1996 to 2000 with financial support from DANIDA, and covered 20 village development committees (VDCs) and two municipalities of Kavre and eight VDCs of Sindhupalchowk districts.

After sensitisation and participatory planning meetings, 2,550 small and marginal farm families living within two to three hours walk of the Arniko Highway...
The participating farmers, mostly women and members of deprived communities were motivated and organised into 153 production groups and provided with a series of different types of production and marketing training and exposure visits. Alongside production activities, the groups were encouraged to mobilise their regular savings, which served as a binding force among the group members. During the four-year project, the farmers have been able to market over 15,000 tonnes (t) of different vegetables worth NRs.185,940,000.

The annual average household income earned from vegetables increased to NRs. 14,500 by the end of the project's first phase, and NRs. 25,700 per year by the end of the second phase. The overall impact on food security, measured by ability of the households to save after meeting domestic consumption requirements, increased significantly during this phase.

A mid-term external evaluation of the project assessed that "Income realised from vegetable cultivation has contributed to improving the living standards of the villagers. Some indicators of the growing relative prosperity, noticeable in the project area were: replacement of thatch roofing houses with more permanent materials such as galvanized iron sheets and caste cement tiles; additional household gadgets such as radio and even TV; better clothing and materials; and enrolment of children in private boarding schools. All these improvements were possible with additional income generated from vegetable growing."

In order to institutionalise project activities and sustain the income levels gained, the production groups were organised into 12 farmers' cooperatives. A separate package of support measures, including training on various aspects of cooperative management and marketing, exposure trips, and a revolving fund were provided to the cooperatives.

The project meets the sustainability criteria on at least two grounds: (a) continuity and expansion in coverage of the project activities by the farmers themselves, and (b) widespread replication of the model in other parts of Nepal.

Encouraged by the initial success in reducing poverty in the project areas, CEAPRED has since been working with more than 70,000 households through the formation of 2,353 groups. Geographically, the CEAPRED has provided its services in 332 VDCs and 10 municipalities and has acquired significant experience in working in 33 districts of the country.

### Table: Vegetable production, consumption, sale and cash income earned by households, 1992-2000

<table>
<thead>
<tr>
<th>District</th>
<th>Project period</th>
<th>Project cost (NRs* million)</th>
<th>No. of farm households</th>
<th>No. of groups</th>
<th>Production (t)</th>
<th>Consumption (t)</th>
<th>Sale (t)</th>
<th>Cash income earned (NRs*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhankuta, Kavre and Sindhupalchowk</td>
<td>1992-1994</td>
<td>8.7</td>
<td>1410</td>
<td>85</td>
<td>5157</td>
<td>849</td>
<td>4308</td>
<td>25,760,000</td>
</tr>
<tr>
<td>Kaski</td>
<td>1996-2000</td>
<td>29.84</td>
<td>2550</td>
<td>153</td>
<td>11501</td>
<td>931</td>
<td>14230</td>
<td>185,940,000</td>
</tr>
<tr>
<td>Lalitpur</td>
<td>1997-1999</td>
<td>4.5</td>
<td>624</td>
<td>43</td>
<td>492</td>
<td>90</td>
<td>234</td>
<td>13,840,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1992-2000</strong></td>
<td><strong>50.34</strong></td>
<td><strong>5406</strong></td>
<td><strong>323</strong></td>
<td><strong>23713</strong></td>
<td><strong>2957</strong></td>
<td><strong>20648</strong></td>
<td><strong>248,690,000</strong></td>
</tr>
</tbody>
</table>

*NRs 68 = US 1 (approx.) in 1999, \( t = \text{tonnes} \)
A rich endowment in natural and cultural heritage gives the Himalayan region a comparative advantage in nature-based mountain tourism. Small pockets of tourism such as the Everest and the Annapurna regions in Nepal have performed well and contributed to improving the livelihoods of many a mountain family. But despite tourism’s positive impacts in such areas, many poor and secluded groups have been unable to benefit.

Sirubari is located in Syangja district in Nepal. The village lies at an altitude of 1,700m and is about five hours walk through an unfolding mountain landscape from the road that connects Pokhara with Butwal. From the ridges, a tourist can view the Dhaulagiri, Machhapuchhre, and Annapurna peaks, some of the most spectacular mountain ranges in the Himalayas. The village itself has a rich Gurung culture. Most households have at least one male member in the Nepali, Indian, or British army.

Village tourism in Sirubari was promoted as a partnership between the Tourism Development and Management Committee (TDMC) of Sirubari and a marketing and promotion agency named the Nepal Village Resort (NVR) based in Kathmandu. TDMC had 11 members, with the Panchamul VDC as chairperson. The two parties, TDMC and NVR, entered into a three-year contractual agreement. According to the contract TDMC receives NRs 1,700 for every tourist that arrives in the area, regardless of the size of the package tour. TDMC pays the guestroom owner Rs 1,000 per tourist for two nights accommodation that includes three meals a day. TDMC keeps some of the remaining money and gives some to the occupation group of the village who are also given the role of welcoming and providing a farewell ceremony for the visitors. Some of the money goes to paying for a group that provides afternoon tea, and for porters. In sum, about 14 families in the village have accommodation and toilet facilities with running water and can accommodate visitors. All families with guestroom facilities had to be members of TDMC first and agree to the TDMC rules and regulations. To distribute benefits more equitably, TDMC has
decided to distribute visitors across available guestrooms. Income leakages were minimised as tourist guestroom operators imported less and guestrooms and toilets, furniture, and handicraft shops used mostly local materials and sold local products.

Under the ‘village tourism model’ visitors in groups of between two and four live with their host families and spend two nights on average with their hosts. The village tourism product, as currently practiced, offers visitors an opportunity to experience the traditional culture of the Gurung people first hand. Visitors usually take their meals with their host family. Meals are typical Nepali style with a strong village character. Visitors travel around the village to see the lifestyle of the villagers and their culture and way of life. The following morning, the visitors usually travel to the Thumura Hills for sightseeing. Evenings are programmed for cultural shows and dance. The next day, after breakfast, tourists begin their journey back to Pokhara.

**Economics of guestroom establishments**

A most interesting feature of village tourism is the economics of investment in guestrooms and toilets. Villagers themselves are the small investors. Members of TDM made investments to upgrade rooms in their homes and constructed toilets so they can host tourists. Some owners invested in two-room guestrooms that can accommodate four guests at a time; others in single room (two-guest) accommodation.

ICIMOD and partners conducted a survey of village tourism operation in Sirubari in late 1999. During the survey year, an average guestroom owner in Sirubari accommodated 12 tourists and received Rs 1,000 per tourist for two nights stay. Average income per guestroom was Rs 12,000, compared to average investment and annual operating cost per guestroom of Rs 50,299 and Rs 10,422, respectively. The upfront investment costs when amortised under alternative lending terms provide annual repayment cost to a guest room owner. For example, if the base investment cost (Rs 50,299) is financed at 18% annual interest rate over a five-year loan maturity period, the annual repayment to a guestroom owner is Rs 15,989. In other words, the guestroom owner would find difficulty in recovering investments. However, if a more favourable lending term of 10 years at 16% interest is applied, annual costs decrease to Rs 10,345 – barely sufficient to recover the investment.

Since the guestroom owner faces both an upfront fixed investment cost and annual operating costs, net income per guestroom owner is total annual tourism income minus annuity of fixed investment cost, amortised over different lending terms. Since the current level of income was not sufficient to meet the full cost (Rs 10,422 + annual repayment Rs 15,989), alternative income determinant scenarios which play around change in price, increase in visitor numbers and duration of stay per guestroom were assessed. Given the tariff structure agreed upon by the TDMC and NVR for the guestroom, owners, to recover their costs, length of visitor stay has to increase from the present two nights to four nights, and tariff rates must increase by 20%.

**Can the villagers afford to invest?**

A fundamental question important to address is whether the initial investment cost borne by an average guestroom owner in Sirubari (Rs 50,299) is within the reach of an average mountain household. If rural households willing to invest in and build guestrooms have access to institutional credit, it is essential to know the affordable size of annual loan repayment (annuity) rate that a rural borrower will be able to bear given the level of income in the area. A typical household in Nepal spent Rs 35,834 in 1996, based on the National Living Standards Survey (1996), out of which it is assumed the household will spend about one-third (Rs 10,750) on loan repayment. With this level of income, the affordable loan that can be amortised varies anywhere from Rs 33,617 (at an interest rate of 18% and loan maturity period of 5 years) to as high as Rs 51,958 (16% interest rate and loan maturity period of 10 years). What this exercise illustrates is that the present level of investment cost for making a

Village tourism creates markets for local products and services.
The Center for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED), established in April 1990, is considered one of the pioneer non-government organisations in the area of rural poverty alleviation in Nepal.

The Center’s activities are mostly in the areas of community development, off-season vegetable production, forest resource management, and other income generating activities for the socioeconomic empowerment of poor and rural households. Over the last 15 years, CEAPRED has implemented 53 different programmes and projects in 33 districts covering 307 VDCs and 10 municipalities. The Center has worked with over 70,000 households through 2,230 groups. Cash income earned by participating households through production and marketing of vegetables is Rs.2.1 billion. Income from the production and marketing of vegetable seeds is estimated at Rs.14.6 million. Similarly, income earned by participating households through livestock products is approximately Rs.1.4 million. CEAPRED has also facilitated the construction of 41 cooperative buildings and collection centres, 238 irrigation schemes, 142 drinking water schemes, 4738 improved toilets, 2405 improved cook stoves, 30 grinding mills or ghatta, and one school. In the area of institution building, the Center has facilitated the formation, formal registration, and operation of 20 multi-purpose cooperatives, 51 marketing cooperatives, and 18 savings and credit cooperatives, 2 district unions.

The study results further indicate that if tourist numbers can be increased and if loans can be provided to villagers, village tourism can be a viable source of income. The size of the tourism market (visitor numbers and duration of stay) has to be fairly assured to establish economic links with the local production system to generate wider impacts. If numbers cannot be increased, tariff rates that match investments need to be designed.

Income realised from vegetable cultivation has contributed to improving the living standards of villagers. The overall impact on food security after meeting domestic consumption needs has been uplifting.
Sustainable Rural Tourism in Bhutan
Community Tourism in the Jigme Singye Wangchuck National Park

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Bhutan is a Buddhist Kingdom rich in cultural and biodiversity resources. Religious festivals are celebrated throughout the year and traditional customs are still very much alive. The country’s rich ecosystems are home to a variety of species, some of which cannot be found in other parts of the Himalayan region. Combined with a generally cautious approach towards tourism, Bhutan has become a model for sustainable tourism development in this part of the world.

The Royal Government of Bhutan (RGB) has identified tourism as an important sector for the country’s socioeconomic development. The 9th Five-Year Plan has set a target of 15,000 tourist arrivals in 2007, increasing to 20,000 arrivals in 2012. In 2003, the number of arrivals reached 6261; in 2004 arrivals soared to 9,249. Steady growth is expected for 2005. Accessibility, the tourist tariff system, and marketing determine the number of visitors. Tourists have to spend US$200 a day in Bhutan. All expenses like accommodation, transport, guide services, entrance fees, and others are included in this amount. Tourists need only to pay for drinks and souvenirs. Of the total amount, around US$70 are royalties and taxes, the remainder goes to the tour operator to develop the daily tour package.

Several strategies are proposed in the 9th Plan, especially related to seasonality, length of stay, new products, and new markets. Products will be developed in the fields of rural or community tourism and ecotourism, health, spa, and spiritual renewal, adventure, and domestic tourism.

How can sustainable rural tourism be developed in Bhutan, and how can local people benefit, especially considering the imposing US$200 a day tariff system? To address these questions, this article focuses on a community tourism project in the Jigme Singye Wangchuck National Park (JSWNP). The project is situated in the park close to the road between Trongsa and Zhemgang and provides opportunity for easy trekking during the winter months. Highlights of the trek include visits to small Bhutanese mountain villages, Monpa ethnic group, the diverse forests of the park, and possible sightings of the golden langur and rufous-necked hornbill.

The trek in JSWNP fits well with the agreed strategies of the 9th Plan, as it is a new product for Bhutan, provides income generation possibilities in rural areas, and addresses seasonality (the trail can be used seven months a year). The project started only in 2005, but already, initial conclusions can be drawn.

Community Tourism in Jigme Singye Wangchuck National Park
The people of the Korpu and Langthel ‘geogs’ (blocks) in the JSWNP are interested in participating in a community tourism project in the six main villages along the trekking trail. During the feasibility study, communities agreed to establish tourism management committees in the villages of Nimshong, Nabji, Korpu, Kupdra/Phrumzor, and Jangbi to plan and manage sustainable tourism. The committees are supported by the park staff of JSWNP, and by officials of the Nature Conservation Division (NCD), Department of Tourism (DOT), and the Association of Bhutanese Tour Operators (ABTO).
The objectives of the project are:

- to develop the Nabji-Korphu Trail for trekking and community tourism, planned and managed by the communities along the trail;
- to provide awareness on natural resource management, energy, waste management, and cultural consciousness to local communities, tourists, and their staff, and introduce alternatives; and
- to support improved tourism market chains, including tourism products and services, and strengthen micro and small enterprise development.

The project contributes to biodiversity conservation through a tourism awareness programme, sustainable tourism and conservation activities, and promotion of alternative socioeconomic tourism benefits. It is a capacity strengthening project based on applied research, policy analysis, participatory planning and management, and market orientation. Overall, the trek offers major benefits to the communities and the country, including:

- greater awareness, appreciation for, and protection of natural and cultural resources, among both villagers and visitors;
- a test and model for learning how to successfully apply the community tourism approach to Bhutan's unique landscape and culture;
- provision of tangible rural community assistance through training, education, improved infrastructure and facilities, and modest cash revenue; and
- enhancement of Bhutan's reputation for high value, low impact tourism;

Revenue distribution systems

To support the livelihood of local communities in the area and to create more awareness on natural, environmental, and cultural issues, specific measures have to be in place to maximise positive socioeconomic benefits from tourism development and minimise negative impacts. In this article, the socioeconomic issues are highlighted.

In each village specific activities generate community revenues. Community camping sites (Nimshong, Nabji, Kupdra and Jangbi), cultural programmes (Nimshong, Nabji, Jangbi), and local lunches, tea breaks or dinners are being developed. On a rotation basis, individuals from different villages can generate income through pack animals or portering from village to village, and assisting as cook, kitchen staff or village guide. Other activities that generate income for individuals through developing tourism include construction and maintenance work (campsites, viewpoints and trails), and sales of crafts, vegetables (and other agricultural products), and firewood.

Camping site at Jangbi

On fieldtrips and the first pilot tours, two nature tourist groups from the USA indicated that considerable rev-


enues can be generated in the villages. Based on the first visits, calculations have been made on the revenue per village and in total in the area per year, for 100, 300, or 600 visiting tourists (10, 30 and 60 groups, respectively). Even with 100 tourists a year, an additional income of over US$ 1,200 per village per year can be generated (see table).

Even considering the 200 US$ a day tariff system in Bhutan, tourists are interested in new tourism products like the trekking trail in the J SWNP. Some USA-based tour operators have shown an interest in including the trek in their brochure for the coming year. A figure of 300 tourists seems certainly feasible.

Conclusions

Although the project started officially only in 2005, several steps were initiated starting in 2002. In the national strategy and the 9th plan, it was agreed that Bhutan will develop sustainable community tourism that is beneficial socioeconomically for a wider group of people, especially people in remoter rural areas. In 2003, DOT and NCD, with the support of SNV, conducted two feasibility studies in the J SWNP. The two easy trails studied were both feasible, and it was agreed that plans would be developed for these trekking trails. In 2004, a project proposal was written for the present trek and submitted to the Small Grants Fund of the Global Environmental Facility (GEF). The project was approved in December 2004. Stakeholders at local (tourism management committees, J SWNP) and national (DOT, NCD, ABTO, SNV) level implement the project together.

Although the project is very conscious of not raising local expectations, highlighting the basic infrastructure and environmental awareness, rather than the socioeconomic benefits, based on the first indications of field-visits and pilot tours it can be concluded that the socio economic benefits can be substantial. In an area where the possibilities for socioeconomic development are limited, additional revenues of even US$ 1,200 are significant. Of course, it is much too early to indicate the success of the project, although the initial infrastructure, environmental, and socioeconomic benefits in the villages are promising.

![Table. Expected income per village in Nu (43 Nu = 1 US$) from 100/300/600 tourists](image)
Members of Sanjukta Vikas Cooperative (SVC) in Darjeeling, India have been selling certified organic, fair trade-labelled, small farmers’ tea in the international market since 2001 – and getting a premium price for it. This is helping the cooperative meet its development needs and is partly supporting SVC’s programmes including a savings and credit union, women’s self-help groups, and milk, drinking water, and consumer cooperatives.

SVC’s experience is unique and significant and comes at a time when the world-renowned Darjeeling tea industry is going through a ‘bearish’ period. It is also interesting because of the way the tea is being cultivated, managed, and marketed through fair trade, and the profits shared among cooperative members.

Producer communities own the land. SVC has a two-tier elected governance system with nominated members from the women’s self-help groups on the Board. Tea is providing the Cooperative with income nine months of the year and supporting some of its activities. There have also been fair trade inquiries for their other products, such as ginger and cardamom. Fair trade is a promising movement that bears watching as a possible avenue for small, rural poor players to cope alongside giant players in the world markets of liberalised trade, but as the movement is new, there are few actual experiences and models to draw from. This makes SVC’s experience something for the development community to watch.

Communities of Harsing, Dabaiani, and Yangkhoo villages in Darjeeling, consisting of 448 families, first organised themselves into Sanjukta Vikas (meaning, United Development) Cooperative in 1996 with assistance from DLR Prerna, a local NGO. DLR Prerna facilitated SVC’s tie-up with Tea Promoters India (TPI), which now exclusively processes and markets SVC tea under the brand label, ‘Mineral Springs Small Farmers Tea’. In 2001, SVC made it to the stringent global environmental standards for organic products after being granted a producer organic certificate under EEC 2092/91 (European Union standards), Naturland (German standards), Bio-Suisse (Swiss standards) and National Organic Program (US standards) certificates. SVC is also certified under the National Program for Organic Production (India). The organic certification is based on an internal control standard (ICS) and an internal regulation system (IRS) that decentralises organic farm certification and promotion at the community level. ICS and IRS enshrine the roles and responsibilities of organic farming at the farmer, hamlet, SVC, DLR Prerna, TPI, and IMO India levels. (IMO India is an independent inspecting body.) Responsibilities include individual documentation of farm practices and internal and external inspection procedures. The process makes the certification participatory and accessible to small farmers.

In 2003, the Fair Trade Labelling Organisation (FLO) included SVC as a partner-member. FLO labelling ensures that the products bearing the FLO label are ethically produced and marketed. SVC has been receiving premium price benefits from FLO since 2004 and getting benefits from being associated with it, such as the inquiries for its other agricultural produce. Mineral Springs Small Farmers Tea is being sold through international chains like Alter Eco and Equal Exchange.

SVC tea is not a plantation crop but is intercropped with other crops. Its organic certification ensures that it is environmentally safe. The SVC experience is also relevant to the fragile socioecological systems of Darjeeling as part of the Eastern Himalaya biodiversity hotspot. SVC is thus not only charting new development for themselves but also for the larger world community.

For more information, contact:
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Decentralisation and diversity remain the hallmarks of mountain systems. Mountain settlements have always been small, isolated, and scattered, where life and livelihood demand a multitude of survival skills.

Nature promotes biodiversity, and hill agriculture has been the most diverse of agricultural systems, producing wide varieties of cereals, pulses, oilseeds, fruits, vegetables, mushrooms, and medicinal and aromatic plants. The livelihood promotion programme of the Institute of Himalayan Environmental Research and Education (INHERE), an NGO active in the Kumaon and Garhwal Himalaya, focuses on promoting the agro-biodiversity of the mountain villages of Uttaranchal, India, converting this diversity into high-value products for niche markets. Basic to this effort has been the conversion largely by default of organic agriculture of the mountains into certified organic products – products organic by natural design. In 2004, the number of farmers certified growing organic was 1,250; this year (2005) it is expected to reach 2,284. Since the programme covers small farmers with marginal landholdings, acreage covered by organic certification was only 637 in 2004, but will be 1,014 acres more in 2005. The organic certification has been given by SKAL (Control Union Certifications) International and now covers 68 crops.

INHERE has adopted a strategy of adding value to the organic produce before sending it to market. This may be as simple as cleaning, sorting, and grading, or include processing into jam, pickles, and fruit concentrates. Three units are being set up by INHERE to deal broadly with three categories of agricultural produce. One unit processes and adds value to grain. Grinding, milling, and expelling oil using cold press methods are being taken up to maintain organic standards, including good manufacturing practices. A second unit has started processing fruit into jams, pickles, concentrates, and spices. A third unit, in the process of being established, will process medicinal plants into herbal products, ayurvedic medicines, and nutraceutical products. This effort has been initiated and given a business orientation only in the past year, and the period has been one of learning and exploration.

During 2004/05, only the grain unit was fully functional, and the unit’s first year was spent stocking and selling organic produce. In 2004, surplus collections were invited from 1,250 small, certified organic farmers for the first time. The first year’s collection totalled 1,402 kg, with a value IR 361,368. The collection comprised twenty-four different kinds of grain. These small surpluses had virtually no markets before and could not be sold as bringing small quantities to market was not economical. A village level purchase network set up by INHERE provided the facility.

In the fiscal year 2004/05, a farmer on average received a premium of 16% over the prevailing local market price totalling IR 57,773. The farmers were paid immediately in cash for their small surplus quantities, for which they were grateful. Additional income was generated for needy women in sorting and grading the produce. This labour had a value of IR 28,800. Employment was also generated in the transport of goods by ‘head load’ (loading and unloading of produce) and, subsequently, in packaging of produce at the local level. Income generated for the head loaders reached IR 36,000 this year. Though the project started small with a turnover of IR 542,000, market response has been encouraging. The programme is expanding with the opening of new market opportunities in the current year.

* In 2004, IR 46 = US$ 1 approx.
ICIMOD celebrates
World Environment
Day June 2005

ICIMOD celebrated World Environment Day June 2005 around this year’s theme, ‘Green Cities, Plan for the Planet!’ by organising and sponsoring, independently and in partnership with others, various programme activities. ICIMOD staffs planted trees in the new Headquarters grounds as part of the Centre’s contribution to the ‘greening’ of Kathmandu Valley.

ICIMOD also co-sponsored, a three-day inter-school Environmental Quiz among schools in the Lalitpur district in Nepal in partnership with the neighbouring Mahendra Adarsha Vidyashram (MAV) Higher Secondary Boarding School. Sixteen schools, seven government and nine private participated, showcasing their best and brightest students’ knowledge of environmental issues. It was also an occasion for the schools to mingle and interact. The quiz’s subject raised awareness among students in the audience, of environment issues in Nepal and around the world.

Mr. Huta Ram Vaidya, Nepal’s pioneering environmental activist who started the ‘Save the Bagmati River’ campaign in 1991, calling public attention to the pollution of the sacred river in Kathmandu, was the opening day speaker. Dr. Swoyambhu Man Amatya, Secretary of the Ministry of Environment, Science and Technology, of His Majesty’s Government of Nepal, graced the contest’s third and final round and awarded the prizes. ICIMOD Director General,
Dr. J. Gabriel Campbell, and Deputy Director General-Programmes, Dr. Madhav Karki were present to underscore the value the Centre gives to environmental education and young people as the vital link to the survival and sustainability of the planet. A professional quizmaster from Kantipur Television presided over the grand finals. Quiz winners brought home cash prices, other participants were given certificates and tokens of appreciation for participating, and schools received packages of books.

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Winning schools
1. Adarsha Vidya Mandir
2. Little Angels' School
3. Mahendra Adarsha Vidyashram
4. IMS Academy Boarding School

Participants
1. Adarsha Vidya Mandir (AVM), Man Bhawan
2. Ananta Secondary Boarding School, Siddhipur
3. AIMS Academy Boarding School, Lagankhel
4. Bal Binod Secondary School, Nawtoli
5. Ganesh Memorial Boarding School, Satdobato
6. Harisiddhi Higher Secondary School, Harisiddhi
7. Jalapa Secondary School, Dhapakhel
8. Lalit Secondary (Boarding) School, Satdobato
9. Little Angels' School, Hattiban
10. Lok Smritee Secondary (Boarding) School, Gwarko
11. Mahalaxmi Secondary School, Lubhoo
12. Mahendra Adarsha Vidyashram, Satdobato
13. Prabhat Secondary School, Tyagal
15. Shramjit Kishor Secondary School, Lukhushi
16. Vidyasagar Boarding School, Godawari
Around and About ICIMOD
Workshops, meetings, and training events

Stakeholders consulted on the ‘Sacred Himalayan Landscape’ in Nepal

The landscape approach to biodiversity conservation has been widely accepted as an effective means of conserving all facets of biodiversity and sustaining ecological processes, while addressing the critical needs of people who live along and shape these landscapes. The approach moves beyond isolated protected area boundaries to capture the range of biological and ecological phenomena and processes taking place in the landscape, the diversity of land-use options available, and creates strategic partnerships to achieve conservation over the long term.

As part of the design phase of the landscape, a one day meeting jointly organised by the Ministry of Forests and Soil Conservation, His Majesty’s Government at Nepal, ICIMOD, The Mountain Institute, and WWF-Nepal Program consulted stakeholders in Nepal on the proposed ‘Sacred Himalayan Landscape’. The consultation was held on 5 April in Kathmandu. Fifty-five participants representing government and non-government organisations (NGOs), international NGOs, community-based organisations, and donors working in Nepal participated. The meeting is one of several consultations taking place to develop an understanding of and foster partnerships to address conservation and livelihood issues in the Himalayan region through the proposed landscape. While this initiative learns from the lessons of landscape conservation in other areas of the region, such as Kanchenjunga, it also provides an opportunity to refine earlier conservation approaches. The model to be developed can be applicable in other conservation areas.

Developing strategies and action plans for biodiversity corridors in Kanchenjunga

Pursuing the recommendations of the regional consultation held in May in Kathmandu, ICIMOD and partners are developing strategies and action plans for each biodiversity corridor, addressing local conservation issues and community development. The feasibility of biological linkages between protected areas in the Kanchenjunga was assessed. A steering committee consultation on participatory planning and improvement of corridors between protected areas was held on May 10, 2005, at Sukna, Darjeeling District, West Bengal. Participatory planning documents prepared by partner organisations for three identified biological corridors were shared during the consultation and gaps in the process were identified. Discussions included a future strategy.

Partners for National Park Management in the Hindu Kush-Karakoram: exchanging experiences and approaches

Under the framework of partnerships, partners exchanged experiences, approaches, and management processes in conservation and natural resources management at Sagarmatha National Park in Nepal and the Central Karakoram National Park in Pakistan under the ‘Regional Decision Support System - Hindu Kush Karakoram Himalayan (HKKH) Partnership Project’. Several activities provided the opportunities for enriching exchange.

One was a policy workshop organised in Kathmandu on 12 April 2005 to sensitise protected area managers, policy makers and other stakeholders in Nepal on the Sagarmatha National Park (SNP) Management Plan being formulated by the Tourism for Rural Poverty Alleviation Programme (TRPAP). The role of decision support system (DSS) integration in the Management Plan was explored. A workshop on the same SNP Plan and DSS for ecosystem management was organised in Namche, Nepal on 19 April 2005. Seventy participants including a Pakistani delegation, an Italian group, and local stakeholders exchanged ideas and expertise.
Two exchange study tours were organised under the same partnership project being carried out with partners, IUCN, Evk2CNR and CESVI of Italy in April and May 2005. A group from Pakistan composed of Ghulam Tahir, Conservator of Forests, Northern Areas Gilgit; Muhammad Iqbal, Director, Central Karakoram National Park (CKNP) Forest Office, Skardu; and Chaudhry Mahmood Akhtar Cheema, Head, Constituency and Special Assignments, IUCN Karachi, came to Nepal from 13-23 April 2005, where they observed the work of some institutions in Kathmandu and visited Sagarmatha National Park. They also attended the workshop at Namche.

In exchange, a team from Nepal visited Islamabad and Skardu at CKNP from 30 April-10 May 2005. The team was composed of ten members representing the Department of National Parks and Wildlife Conservation, Ministry of Forest and Soil Conservation; HMG-Nepal; WWF-Nepal; the Tourism for Rural Poverty Alleviation Programme, Nepal; the SNP Buffer Zone Committee, and ICIMOD. Partners in the two countries learned from each other through these activities, exchanging experiences, approaches, and expertise.

**Birendra Bajracharya, bbajracharya@icimod.org**

**GLOF dissemination workshops for Pakistan and China**

A team of ICIMOD/MENRIS professionals visited Pakistan and China in April and May to finalise the Asia-Pacific Network (APN) for Global Change Research on the Glacial Lake Outburst Flood Project. An inventory of glaciers and glacial lakes, identifying potential glacial lake outburst floods (GLOFs) affected by global warming in the Himalayan region was disseminated in the workshops. The Pakistan workshop was organised on 28 April 2005 in collaboration with the Water Resources Research Institute, the Natural Resources Division of the National Agricultural Research Centre, and the Pakistan Agricultural Research Council, Islamabad.

A similar GLOF dissemination workshop was organised at the Bureau of Hydrology in Lhasa, Tibet on 26 May 2005 to finalise the inventory for Pumqu (Arun), Rongxer (Tama Koshi), Poiqu (Bhote-Sun Koshi), Jilongcangbu (Trishuli), Zangbuqin (Budhigandaki), Majiacangbu (Humla Karnali), Daoliqu and Jiazhagangge basins of Tibet Autonomous Region. The GLOF project activities in China were carried out in collaboration with the Cold and Arid Regions Environmental and Engineering Research Institute, Lanzhou, and the Bureau of Hydrology of Tibet, Lhasa, under the supervision of ICIMOD.

The APN-supported project to inventory glaciers and glacial lakes and identify potential GLOFs began in China, Pakistan, and India in 2003.

**Pradeep Mool, pmool@icimod.org**

**High level meeting promotes regional flood information sharing in South Asia**

Government officials at ministerial decision-making levels and the heads of national hydrological and meteorological services in Bangladesh, Bhutan, China, India, Nepal, Pakistan, and the USA attended a two-day meeting in Thimphu, Bhutan, in mid-May 2005 to finalise and endorse the pilot phase of a regional project to share flood information in South Asia. A major output of the meeting was an agreement to conduct a demonstration and testing phase from June-September 2005. This would test the technical feasibility of sharing near real-time hydrometeorological data from pilot stations selected by the participating countries during national consultations for the project. The meeting was inaugurated by Bhutan’s Prime Minister, His Excellency Lyonchen Yeshey Zimba, and sponsored by the US Department of State, Regional Environment Office for South Asia and the US Agency for International Development Office for Foreign Disaster Assistance (USAID/OFDA). It is part of a project started by ICIMOD and the World Meteorological Organization (WMO) in 2001 to stem chronic flooding catastrophes in the greater Himalayan region. The project is even more relevant today, with the increasing incidents of floods and their catastrophic effects on populations and the economies of South Asia.

**Mandira Shrestha, mshrestha@icimod.org**

**GTZ supports shared learning from community-based forest management projects in Bhutan, India, and Nepal**

Mountain people depend largely on forest resources to fulfill their subsistence requirements and need for cash. Community-based natural resource management (CBNRM) is now considered a vehicle for sustainable management of forest resources and improved livelihoods for rural people. Various CBNRM practices have been implemented in the region. Nepal has a strong community forestry programme that has evolved from two decades of experience. India has it own years of experience in joint
Workshop demonstrates latest technologies for estimating precipitation

Rainfall is a generally desirable phenomenon and is nature’s way of maintaining the water balance in the soil. Intensive rainfall can, however, inundate land, and cause landslides and floods that can destroy crops and property, or worse lead to loss of lives. Being able to forecast weather, especially precipitation, can help people calculate the appropriate time for agriculture and other activities and prepare communities for potential disasters such as floods. With very few hydro-meteorological observation stations in mountainous terrains, rainfall in the greater Himalayan region is difficult to forecast and estimate, however.

A five-day workshop was held at the ICIMOD Headquarters from 6-10 June 2005 to:
- strengthen the capacity of regional and local government and non-government organisations in the region to forecast and monitor rainfall using the latest available technologies;
- share water and rainfall data and information among participating countries, and
- establish stronger links among these countries and ICIMOD to develop a joint project in flash flood monitoring, flood management, rainfall estimation and forecasting.

The workshop was sponsored jointly by the U.S. Agency for International Development/Office of U.S. Foreign Disaster Assistance (USAID/OFDA) and ICIMOD, and shared the latest techniques developed by the National Oceanic and Atmospheric Administration and the U.S. Geological Survey on rainfall estimation via satellite. Regional hydrologists and meteorologists from the eight ICIMOD member countries participated. The workshop was also a forum to share information and knowledge on weather forecast and precipitation estimation among and between participating countries. The countries through their representatives prepared implementation plans, applying knowledge they gained during the workshop. The plans will help them predict rainfall better and will enable timely and reliable forecasts. Using advanced remote sensing tools, rainfall can now be predicted with greater accuracy. These technologies can thus prepare mountain communities for impending disasters and their potentially catastrophic impacts.

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Regional workshop tackles access rights and benefit sharing of biological resources in the eastern Himalayas

In mid-July, ICIMOD, through its Culture, Equity, Gender and Governance (CEGG) Programme, and GTZ jointly organised a four-day regional workshop on Access Rights and Benefit-sharing of Biological Resources for Marginalised People of the Eastern Himalayas. The workshop identified major issues with respect to access rights and benefit-sharing of biological resources, and collectively pondered how these issues can be addressed to better secure the livelihood of marginalised indigenous people. Forty-two participants from India, China, Bangladesh, Bhutan, and Nepal, along with staff of ICIMOD and representatives from GTZ participated.

Krishna Prasad Oli, koli@icimod.org
**Platform launched for regional water data sharing**

The project Regional Cooperation for Flood Disaster Mitigation in the HKH, is conducting its demonstration and testing phase from June to September 2005. The objective is to test the technical feasibility of sharing near real time hydrometeorological data between and among countries. ICIMOD is facilitating the data sharing through a web interface for submitting and viewing data on the project website, www.southasianfloods.org. ICIMOD developed the formats for submitting data through email and file transfer protocol, a system for exchanging files across the Internet. Bangladesh, Bhutan, China, Nepal, and Pakistan are sharing their respective countries’ data on water level, water discharge, and rainfall. Data is being shared daily from selected stations since 10 June of this year. The project is also providing instruments and equipment to upgrade selected stations.

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**Eight countries present successes and lessons in watershed management**

A meeting of watershed management professionals from NGOs, government departments, and research institutes was held from 1-5 June 2005 to share successful watershed management approaches and technologies. Thirty participants from eight countries namely, Pakistan, India (Himachal, Uttarakhand and North East India), Nepal, Bhutan, Myanmar, China, Bangladesh, and Kyrgyzstan presented the successes and failures of their respective country’s work. The workshop participants also visited the ICIMOD Demonstration and Training Centre, Godavari, where they saw a wide range of technologies applicable to watershed sites. Participants took home a CD-ROM of the presentations, including conclusions from working groups on training needs, research priorities, and network development.

Roger White, rwhite@icimod.org

**ICIMOD staff and partners trained in project and proposal development**

In June 2005, ICIMOD held its second workshop on project and proposal development for both staff and partners. This was an intensive five-day interactive training. Fourteen staff, including key partners in ICIMOD’s transboundary biodiversity project, the Advocacy and Governance Programme, and the PARDYP project attended the course. Partners from Bhutan, India, and Nepal and ICIMOD staff from Policy and Partnership Development; Information Management; Communications and Outreach; the Mountain Forum; and Natural Resources Management also participated.

A variety of topics, including logical framework analysis, mind mapping, professional writing skills and concept and proposal development were covered. The Empowerment and Learning Development Centre (ELD) based in Kathmandu conducted the workshop.

Srabani Roy, sroy@icimod.org
ICIMOD participates in workshop on gender and energy

ICIMOD participated in the ENERGIA Asia regional national focal point meeting and gender and energy training workshop organised by the Asia Regional Cook Stove Program (ARECOP) in Chang Mai, Thailand in May. ETC Foundation hosted the workshop, which was attended by 35 participants representing government agencies, UN bodies, business and industry, NGOs, and academia. The forum provided an opportunity to share UNEP/ICIMOD regional experiences on water and energy projects in the rural areas of the Himalayan region and in identifying emerging trends and common ground to address gender and energy issues in Asia.

Following the meeting, a three-day training workshop on gender and energy was held from 5-7 May, also in Chang Mai. The training was instrumental in upgrading the practical application of frontier knowledge on gender and energy.

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Neighbouring villages of Godavari benefit from training in beekeeping

To expand the benefits of the honeybee project, ICIMOD’s Centre for Sustainable Apiculture and Pollination at the Demonstration and Training Centre, Godavari, trained farmers in the surrounding villages of Chapakharka and Tribeni in beekeeping. A 21-day training programme was organised with eight villagers together with other participants from Nepal and India. During the first field visit after training, participants were observed to have started making frame hives locally and transferring bees from nucs and log hives to newly constructed hives for better management.

Farooq Ahmad, fahmad@icimod.org

2005 staff advance works towards greater teambuilding, institutional learning, and staff development at ICIMOD

ICIMOD has been holding staff advances every year as part of its continuing commitment to institutional learning and staff development. This year’s staff advance was held in July (4-5) for professional and higher level general services (GS) staff, and July 6 for other staff. On the afternoon of July 6 all staff gathered for wrap-up and appreciation sessions and collective reflection.

The staff advance strengthened dialogue and enhanced team building at both inter- and intra-management levels and across units of the organisation. Staff agreed on areas that need improvement.

Over the course of the three days, ICIMOD staff were able to:
- identify a set of 14 management and team issues, including suggested actions and commitments from staff to work on these issues;
- develop a sense of team cohesiveness and a positive shift in mood/morale by sharing issues, and acknowledging and appreciating each other’s work;
- share enthusiasm to learn and practice the techniques of team building by expressing the importance of feedback and acknowledgement for team effectiveness and performance; and
- review matrix management as a mechanism for effective team building.

Overall, ICIMOD staff found the staff advance to be positive and useful, and morale-boosting. A staff party on the evening of the 6th at the ICIMOD Headquarters in Khumaltar celebrated the team building efforts.

The staff advance was facilitated by Mr. Sahadev Mahat and Mr. Sher Thapa of Pragy Management Group, based in Lalitpur, Kathmandu.

Srabani Roy, sroy@icimod.org

Letter of Appreciation

Chief Secretary, Government of Uttaranchal, India thanks CEA, ICIMOD partner

In a letter dated 4 July 2005, Dr. R. S. Tolia, eminent social scientist and Chief Secretary of the Uttarakhand Secretariat, Government of Uttaranchal, India expressed appreciation for efforts being made to enable local communities to measure and monitor carbon sequestration in community forests and to make a claim for payment for carbon service under the project, ‘Kyoto: Think Global, Act Local - Action Research’. The project brings community-based managed forests (CBFM) projects under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol.

The Chief Secretary lauded the efforts of the Central Himalaya Environment Association (CHEA), ICIMOD’s national partner in India. CHEA is based in the state of Uttaranchal. The project team keeps the Secretary informed and updated about the research and he expressed interest in receiving information on progress made not only in Nepal and India but also in the other countries on community forestry, carbon trading, and climate change. This is important to Uttaranchal since Uttaranchal state “is playing a lead role among the Himalayan states in India in the area of climate change and related issues.”

According to Dr. Tolia, based on experiences gained, the government of Uttaranchal has “used some finding and concepts profusely in sending necessary directives to the concerned state officials” and to integrate the experiences and opportunities in “framing policy related issues for the state”.

The current research project runs for four years and is being carried out in partnership between the University of Twente, International Institute for Geo-Information Science and Earth Observation (ITC), the Netherlands, and ICIMOD through national partners, the King Mahendra Trust for Nature Conservation in Nepal, and CHEA in India.

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Research Updates and Project News

ICIMOD supports greener pastures in Mongolia

When Mongolia moved from a state-managed economy during the era of Soviet influence (prior to the 1990s) to a free market economy, the state privatised all livestock and many primary and secondary industries which had been operated by ‘collectives’. The grasslands were, however, retained as free access resources, which in practical terms meant that Mongolians can move anywhere with their animals for grazing. Large numbers of state employees were laid off during the transition. Many from school teachers to engineers and factory workers, took to herding as a livelihood source. Animal numbers increased dramatically and overgrazing of the grasslands became rampant. When successive droughts and harsh winters (known as ‘dzud’) hit the country in 2000/2002, massive loss of livestock deprived many herders of their livelihood. The impact on the environment was even more severe; large tracts of grasslands became degraded from overgrazing and severe climatic conditions. In most areas, desertification set in and the only vegetation to be seen, even at the peak of the growing season was unpalatable weeds.

The Green Gold-Pasture Ecosystem Management Programme (GG-PEMP) was designed to assist the Ministry of Food and Agriculture of Mongolia and the Mongolian State Agricultural University (MSAU) to conduct action research in pasture agronomy and to build herder-based institutions to try and improve the conditions of grasslands. It has set up field trials on selecting suitable species of plants for over-seeding the degraded pastures and for improving winter fodder availability in collaboration with the Research Institute of Animal Husbandry of MSAU. Research experiments were conducted by a team of young students from MSAU at several sites representing various ecological zones in the country. The programme’s other focus is to build the capacity of herders to manage pastures in a sustainable way by introducing a system of co-management. Herders are encouraged to form user groups through which they can better regulate the use of seasonal pastures as well as water sources using a participatory approach involving local governments, development agencies, and support services. It also involves building the capacity of a group of lecturers from the MSAU to undertake participatory planning and monitoring of grassland management.

Since August 2003, ICIMOD has been involved with a Swiss Agency for Development and Cooperation (SDC)-assisted programme to restore Mongolia’s degraded grasslands. ICIMOD was involved in the feasibility study and formulation of the programme as well as in providing regular backstopping to the project support unit in Ulaanbataar. The Green Gold-Pasture Ecosystem Management Programme (GG-PEMP) is now in its second year and will run under its current phase until 2008.

Case studies will examine natural resource policy processes in the Hindu Kush-Himalayas

ICIMOD’s Policy and Partnership Development (PPD) Programme, as part of a GTZ-supported activities on policy and natural resources, is conducting case studies in Bangladesh, Bhutan, China, Myanmar, Nepal, India, and Pakistan to understand natural resources policy making processes in these countries. The studies also hope to identify issues, gaps, and bottlenecks in policy making that set constraints to the sustainable use and management of natural resources. Except for Bangladesh, all the studies are being conducted by national consultants from partner organisations in ICIMOD regional member countries. The Bangladesh case study is being conducted by ICIMOD’s policy staff and focal person for the country. The studies are expected to enhance our understanding of policy processes involving natural resources and the environment, and the stakeholders involved at different stages of policy making, and their respective roles. The case studies will also help identify policy measures that will improve policy making processes and fill in gaps that will facilitate policies. The case study in India focuses on non-timber forest products; the Pakistan and Bhutan case studies focus on water policies, the Bangladesh and Myanmar case studies look into forest policies, and the Nepal case study examines the community forestry programme.

UNEP/ICIMOD mission evaluates women, water and energy project as a success

Since 2002, the United Nations Environment Programme (UNEP) and ICIMOD have been implementing energy and water management projects that build the capacity of women in the mountain and hill areas of Bhutan, India, and Nepal. Through national collaborating partners - the Royal Society for Protection of Nature in Bhutan, the Energy and Resources Institute in India; and the Centre for Rural Technology/Nepal - water and energy projects implemented in the districts of Phobjikha and Limuka in Bhutan, Uttarakanchal and Himachal in India, and Palpa and Dhankuta in Nepal are improving the quality of the
of a Punkva river site in the Czech Republic (14 June 2005)

Scientists from Europe and Asia conduct a multi-habitat sampling held in June 2005 in Brno, Czech Republic, clarified partner roles and responsibilities and charted a road map of project activities to develop sustainable management strategies. It is also coordinating the project with regional partners. An inception meeting for assessing the water quality of major rivers and water systems. ICIMOD is leading the work on analysing the results in order

Nepal, and Pakistan. It seeks to transfer the technical knowledge of European countries to the region, in order to develop tools for assessing the water quality of major rivers and water systems. ICIMOD is leading the work on analysing the results in order to develop sustainable management strategies. It is also coordinating the project with regional partners. An inception meeting held in June 2005 in Brno, Czech Republic, clarified partner roles and responsibilities and charted a road map of project activities in the coming months. A multi-habitat sampling of micro-organisms in the Punkva River in the Moravsky kras area was demonstrated to help countries harmonise sampling methods and data collection. Field sampling is planned in each of the five countries by November 2005, the post monsoon season; and in March 2006, during the pre monsoon. A next meeting is planned in Dhaka, Bangladesh in mid-December 2005.

More mountain inputs to Pakistan's National Environmental Policy 2005

The Government of Pakistan, specifically its Ministry of Environment (MoE), is developing a national environmental policy as an important step to addressing the country's environmental problems, which are intricately linked to the country's economic and social development. Following completion of the draft policy, MoE sought comments and feedback from all sectors and important partners, including ICIMOD. ICIMOD's Policy and Partnership Development (PPD) Programme responded with the following review: the document, provided a fair analysis of the country's environmental problems and addressed several of these issues adequately. Two important aspects – managing mountain ecosystems and poverty reduction – need to be given more much attention, however. ICIMOD provided detailed inputs on how these two issues might be more vigorously addressed.

Beekeeping project considers greater collaboration with the private sector

ICIMOD's honeybee project is convinced that involving the private sector is essential if the benefits of the project's development interventions are to be scaled up. Honey and beeswax-based beauty and health products are important elements of conservation apiculture. To promote them, a dialogue was initiated with a Chiang Mai-based Japanese company, Naiad Co. Ltd. The company imports organic beeswax from Nepal to formulate into healing and beauty products for the high-end markets of Japan. The project facilitated communication and networking between Nepali beekeepers and traders of raw beeswax. Efforts are being exerted to strengthen and expand this network to Bhutan, where quality beeswax from Apis laboriosa is produced in considerable quantities.
Open House 2005: ICIMOD opens its new home to partners, family, and friends

In May, ICIMOD opened its new home in Khumaltar to partners and friends in a celebration of mountain development. A big crowd of ICIMOD partners, donors, alumni, schools, family, friends and others turned out for the Open House. Activities included visits to the different programme offices, films on various ICIMOD activities and projects, and a book fair and information bazaar. Fourteen of ICIMOD’s partner organisations participated in the fair.

ICIMOD Director General, J. Gabriel Campbell, and Deputy Director General-Programmes, Madhav Kharki and the head of Administration and Finance, Milan Raj Tuladhar gave an orientation on ICIMOD and its programmes – the first such briefing for a general and not just ‘development community’ audience. Villagers from Lakhuri Banjyang in the Pulchowki Watershed staged a street drama entitled 'Daura ra Pani' ('Firewood ad Water') to the delight of the crowd that had gathered at the ICIMOD grounds after the briefing. A ‘Ramailo Mela’ featuring games, handicrafts, and food stalls lent the Headquarters grounds a festive air and capped the event. It was a fun way to celebrate mountain development, share ICIMOD’s work with the public, and show the home in Khumaltar.

Partners in the ICIMOD book fair

- Apiculturists’ Network (API-NET, Nepal)
- Dabur-Nepal
- Department of Forests/HMG Nepal
- Federation of Community Forest User Groups Nepal (FECOFUN)
- Federation of Irrigation User Groups Nepal
- Himal Association
- IUCN - The World Conservation Union Nepal
- King Mahendra Trust for Nature Conservation
- Legal Aid and Consultancy Centre (LACC)
- Mountain Forum
- National Forum for Advocacy Nepal (NAFAN)
- Nepal Agricultural Research Council (NARC)
- World Wildlife Fund (WWF)
- United Nations Development Programme (UNDP)

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Alternative Media

Tapping creative community ways of disseminating information in the mountain communities of the HKH

The project

The Alternative Media Project was initiated in 2002 as an action research project to explore and promote the use of traditional media to convey relevant information on natural resources management (NRM), livelihood issues, and biodiversity conservation to mountain communities in the region. The project was supported by the Ford Foundation.

The process

Four sites were selected to test indigenous methods of communicating NRM and other mountain issues with mountain people. The areas selected were Nagaland in India, Chitral in Pakistan, Thaiba in Nepal, and Banderban in Bangladesh. Most of these communities had traditional media in place that had served the communities for generations. The Alternative Media Project tapped these media forms to disseminate mountain development issues.

During the project’s preliminary phase, country partners carried out a needs assessment in the selected areas. Common NRM and other issues such as the problem of clean drinking water, watershed management, agricultural...
productivity, environmental degradation, and lack of opportunities for off-farm employment and income, were some of the issues these communities faced.

In the project's second phase 'alternative media prototypes' were developed to deliver knowledge on some of these issues, with messages developed by the community with partners and presented in the villages. Some of the villagers were apprehensive about the project and its objectives at first. But ICIMOD and the project implementing organisations helped them with knowledge transfer by playing a facilitator role. In some communities, events were organised to reach as many people as possible to deliver the intended programme messages. In the name of sporting events such as a polo tournament, and cricket and football matches, for example, or a poetry symposium, a puppet show, or a street play, development issues were analysed and presented before audiences of community people. The project attracted the attention of people in every village of the study. By stimulating audience interest the groundwork for participatory development activities has been set and avenues for village development paved.

What are 'alternative media'

Indigenous or alternative media are communication systems embedded in the culture or existing well before the arrival of modern technology and mass media. They remain a vital mode and channel of communication in mountain communities not yet reached by electricity and mass media (such as television, radio, and the Internet). In some of these communities they are the only means of sharing information and constitute the 'mainstream' and not the alternative.

Current concepts of development focus on capacity building, grassroots participation, and empowerment. This approach has led to a rediscovery of the advantages of traditional media as vehicles for promoting development. In a nutshell, alternative media:

- form part of the rural social environment and, hence, are sources of information people in particular areas are familiar with and believe in
- commands an audience as live media and are ideal examples of two-way communication,
- have proven useful in generating grassroots participation and dialogue between performers and their audience,
- are flexible and action-oriented, adaptable to any subject,
- invite the populace to take part without restrictions on roles, providing a fertile ground for experimentation, and
- are relatively inexpensive, with a rich variety in both form and theme.

- Excerpts from the Alternative Media Desk Study Report

Lessons from ICIMOD’s Alternative Media Project

Three years of the project have provided ICIMOD and partners with the following valuable lessons.

- Various forms of alternative media such as puppetry, street plays, dance, and songs work very well in multi-lingual settings. The project has increased the capacity of communities to prepare alternative media tools to promote social change. It has empowered local people in the project areas to plan, test, fine-tune, and deliver alternative media packages and messages integrated into indigenous performances such as traditional music, dance, and theatre. The communities have thus gained greater appreciation for the effectiveness of their own indigenous practices for conveying messages, heightening participation, and developing community interest.

- Officials from government departments have come to realise the power and effectiveness of participatory communication that tapped traditional folk media. They now hope to use such methodologies in their own programmes.

- Provided with the right information and consulted on concerns important to the community, community people take charge and begin to use the traditional communication or media channels in ways useful to them.

- Involving local or traditional institutions like the village councils, the village development boards, and religious establishments such as guthis, churches, and mosques is important. People feel more confident when they are involved in a process in which the village authorities and institutions are also engaged.

The pilot phase of the Alternative Media project is over but mountain issues remain around which alternative media can be used effectively to discuss issues and share knowledge and information to communities. This may lead to informed choices and to sustainable ways out of the cycle of poverty.

Zbigniew Mikolajuk, zmikolajuk@icimod.org
THE MOUNTAIN FORUM SECRETARIAT

The Mountain Forum, a global network of networks for information exchange, mutual support, and advocacy for equitable and ecologically sustainable mountain development is an independent organisation hosted by ICIMOD in Kathmandu, Nepal. During the last quarter, the Mountain Forum and ICIMOD were involved with the following key activities.

Mountain Forum Board and Node Manager meetings in France

The Mountain Forum (MF) participated in the Annual Board and Node Manager meetings in Chambery, France in June 2005. The meetings brought together for four days 25 people from five continents comprising Mountain Forum Secretariat staff, regional node managers, and Board members, to update the Mountain Forum Board and node managers on the progress of the regional nodes and the MF Secretariat activities in the past year. The meetings were also an opportunity to bring to the Board’s decision issues needing resolution and ideas for future collaboration and new projects.

Among the new initiatives explored during the Chambery meetings were:

i) spreading the benefits of the community radio project (begun in Nepal in 2003/04) across Latin America and North America;
ii) strengthening the African and the European Mountain Forum and sustaining all MF nodes;
iii) the possibility of a global digital photo gallery on the theme of sustainable mountain development;
iv) the new MF on-line library; revisiting MF membership, as well as subscription, database management, ownership, and service delivery;
v) new e-conferences on amenity migration, an HKH initiative.

The Board also approved the progress reports and plans for 2006.

Regional MF elections: eDemocracy in action

The Mountain Forum recently elected representatives from among its membership to serve on the Mountain Forum Board of Directors for three years beginning 2005. Regional MF elections were organised by InfoAndina for Latin America, and by the Asia Pacific Mountain Network for the Asia-Pacific region. Members from the regions nominated candidates who met the criteria laid down in the election guideline. Voters voted using web-based or email-based voting forms. Nearly 300 votes were cast in the Asia-Pacific election, and 50 in the Latin American election. The members elected are Mr. Ismail Khan for the Asia-Pacific region, and Dr. Sonia Salas for Latin America.

Words of commitment from the newly-elected board members

“This has been a truly amazing exercise in eDemocracy - with a click of the mouse you have 'elected' and 'sent' a representative to the Mountain Forum Board... from a remote and humble village in Skardu - Karakoram.”

- Mr. Muhammad Ismail Khan, elected MF board member from Asia-Pacific

“ I will undertake this role with great modesty, and with a strong commitment to ensure that mountain men and women will be represented with equity, promoting opportunities for mountain people - the most excluded in the world - in order to ensure they will be able to decide themselves on their development and progress paths in order to build an equitable world while maintaining their diversity.”

- Dr. Sonia Salas, elected MF board member from Latin America

President of the National Rural Agroindustry Network (REDAR)

The two newly elected members participated in the MF Board meetings held in Chambery, France, June 22-24, 2005.

The Board also re-elected Dr. J. Gabriel Campbell, ICIMOD Director General, as Chairperson for a second two-year term; and Dr. Hugo Li Pun, Deputy Director General, International Potato Center, China Planning Committee, as Vice-Chairperson for a two-year term. Other Board representatives present at the meeting included: Dr. Ann Stroud, Coordinator, African Highlands Initiative; Christopher Komornicki, EMF Board representative; Dr. Leslie Taylor, Associate Director, Banff Centre; Dr. Michael Wiehen, Transparency International; Mr. Muhammad Ismail Khan, APMN representative; and Dr. Sonia Salas, President of REDAR-Peru. Thomas Hofer, Mountain Partnership representative, FAO; and Dr. Ulrich Lutz, Senior Executive, Natural Resources and Development Division, SDC, came as observers.

The Mountain Forum Bulletin is back!

The Mountain Forum Bulletin is back with a new ‘look’. Its first revival issue focused on the theme, ‘conflict in mountain regions’, which is closely related to the theme of the last International Mountain Day – Peace and Conflict in Mountains. The new MF Bulletin, published in June 2005, will soon be made accessible to Mountain Forum members through the MF website http://www.mtnforum.org. The MF Bulletin will also be sent to all organisational MF members as well as to offline members with no Internet access or/email connectivity.

The revival issue features articles on conflict from various mountain regions, such as dams in Pakistan, amenity migration in North America, water in the Andes, parks for Peace in Africa, and helicopter skiing in the Alps.

Organisations and individuals with slow or no Internet access may request a copy of the Bulletin by writing to the publication team at bulletin@mtnforum.org or at the postal address given below. The Mountain Forum encourages readers to provide feedback on the new MF Bulletin and to contribute to future issues.

Mountain Forum Secretariat, c/o ICIMOD, GPO Box 3226, Khumaltar, Kathmandu, Nepal
Recent ICIMOD Publications

The major documents published between April and August 2005 are shown below. The three prices quoted are applicable to developed countries, developing countries, and ICIMOD's regional member countries respectively, and include post and packing (p&p). Publications are available without p&p at the Centre itself. Publications can be provided free of charge to institutions actively involved in sustainable development of the greater Himalayan region. Order on-line (see below) or from the Distribution Unit<distri@icimod.org>.

**Land Use History in Montane Mainland Southeast Asia**


In January 2005, an interdisciplinary team from eight countries participated in a unique learning process to gather, experience, and exchange information about land use and land cover and the impact of policies and modern developments in the Montane Mainland Southeast Asia (MMSEA) eco-cultural region. The region comprises the upland areas of Yunnan in southwest China, Myanmar, Thailand, Laos, Vietnam, and part of Cambodia. Supported by the Rockefeller Foundation, the 'mobile workshop' traversed through the heart of the MMSEA, stopping at venues in three countries, China, Laos, and Thailand. Its innovative approach included case studies in each area, thematic working groups, community assessments, and policy dialogue. Major questions arose as to whether land use and land cover change can be governed through policy interventions.

The book summarises the outcomes of the workshop, provides insight into the land use dynamics in the Greater Mekong sub-region, and outlines the mobile workshop approach, which proved highly successful. It will be of interest to all those interested in innovative approaches to learning and information exchange on complex regional issues, to planners and policy makers coping with Land Use and Land Cover Change (LUCC) issues, and to those interested in the MMSEA region itself.

**Water Quality in South Asia: Issues and Status**

The book, Water Quality in South Asia: Issues and Status - Proceedings of a Regional Integrated Workshop on Water Quality held in Kathmandu in June 2004 with support from the US Department of State, Regional Environment Office for South Asia and the US Department of Energy, Sandia National Laboratories. The book will interest those involved in transboundary activities and information sharing processes in the greater Himalayan region in general, and in water quality issues in particular, and hopes to stimulate interest in the project.


The greater Himalayan region is one of the largest storehouses of freshwater in the world and the source of major river systems. Yet sufficient and clean water remains an elusive resource, and water management is one of the critical challenges in the region. Poor water quality of the rivers and water bodies resulting from increasing industrial, domestic, and other pollutants threatens both the region's environment and people's health. In 2004, ICIMOD joined the Cooperative Monitoring Center (CMC) at Sandia National Laboratories in the US to form the South Asia Water Analysis Network (SAWAN) – an initiative to support the collection and sharing of water quality information in South Asia, in particular along transboundary sections of the Ganges and Indus rivers in Bangladesh, India, Nepal, and Pakistan.


Livestock are an important component of the local economy in the Northern Areas of Pakistan. In 1998, a research project called the Agri-Karakoram Project began to study how livestock productivity may be improved in the Karakoram Mountains. The study examined the constraints livestock production in the region faced, and explored ways of overcoming some of those constraints while sustaining the fragile mountain ecosystem of the Karakoram. The research was funded by the European Commission under the INCO-DC programme and involved seven other organisations.

The book, Livestock, Fodder, Pastures and People: An Integrated Study in the Northern Areas of Pakistan, represents the outcome of the project. It documents the project's research process, summarises the findings, identifying key biological and socioeconomic constraints to improving livestock productivity in the area, and suggests ways in which some of those constraints may be overcome. Although the project was

**ICIMOD publications on-line – order direct at**

http://www.icimod.org/publications/pubmenu.htm
http://www.panaseanemall.org/shop/icimod.htm
http://www.earthprint.com/icimod
undertaken in Northern Pakistan, some of the principles the research identified and its findings are widely applicable and relevant to similar mountain agricultural settings. The book hopes to contribute to improving the livelihoods of mountain people in general, and those in the Karakoram Mountains in particular.

Managing renewable natural resources in hillside and mountain areas is critical to sustaining these resources and the livelihood opportunities they present, especially to marginal farmers. This publication presents the findings of a Symposium and Research Workshop on ‘Renewable Natural Resources Management for Mountain Communities’ held in Nepal in 2003. The papers describe the results of research undertaken by ICIMOD’s People and Resource Dynamics in Mountain Watersheds Project (PARDYP) and the Natural Resources Systems Programme - Hillsides (NRSP) of the Department for International Development (DFID) UK, in the highlands of the Himalayas, the Andes, and Africa. The book looks at generic issues in watershed management and presents a series of case studies on a range of natural resource management issues and themes including: the role of participation in developing and promoting hillside farming strategies; issues such as water management, common property, and land rehabilitation; and techniques, tools, and interventions to address declining soil fertility. The central theme of the case studies is finding ways of bringing together farmers’ and scientists’ knowledge and ensuring participation of farmers at all stages of technology development. Finally, a platform is proposed for generating new research and bridging gaps in current projects.

**ICIMOD CD-ROM gets high marks in ADBI, Tokyo, Japan review**

The CD-ROM Review Program of the Asian Development Bank Institute (ADBI) based in Tokyo, Japan has given ‘Developing Sustainable Communities - A Toolkit for Development Practitioners’ a high 4 (out of 5) rating. The toolkit was jointly published by the Netherlands Development Organisation/Nepal and ICIMOD and is also available as a CD-ROM.

A review of the CD reads: “The toolkit was clearly written... even users whose first language is not English can understand it.” Details of the review may be read at: http://www.adbi.org/cdrom-review/2005/05/12/1069.sustainable.communities/


Price: either separately: US$15, $10, $7.50; both volumes US$22, $15, $11

Advocacy Strategies and Approaches: A Training of Trainers Manual on Advocacy Strategies for Community-based Organisations in the Hindu Kush-Himalayas, and its companion Resource Manual were developed for potential trainers of community-based organisations (CBOs) in the HKH region. The manuals are intended to provide useful guides for conducting regional and local level training on advocacy applicable to a variety of mountain development issues and themes. The Resource Manual provides trainers with more in-depth material on subjects discussed in the training manual. The manuals attempt to provide clarity on the concept of advocacy and to help equip CBOs and their networks with tools, strategies, and techniques that will help them assist mountain people to advocate for appropriate strategies to address their social, economic, gender, and other issues. It also attempts to articulate their needs and perspectives to governments, policymakers, and development organisations. The manuals are also likely to appeal to development practitioners and others interested in promoting people-centred, sustainable mountain development.


Translation of the book published in English by ICIMOD in 2001

**General Publications**

1. Newsletter No. 47: Knowledge Management for Mountain Development, Spring 2005
2. Annual Report 2004
3. WHEM Brochure
4. ICIMOD Brochure (update) August 2005

**ICIMOD E-news**

http://www.icimod.org/enews/index.htm

- Sixth Issue: June/July 2005
- Seventh Issue: August/September 2005
Visitors to ICIMOD

High level SAARC Secretariat members visit ICIMOD, explore future partnership

The Secretary-General of the South Asian Association for Regional Cooperation (SAARC), H.E. Chenkyab Dorji, with the directors of the SAARC Secretariat and senior staff visited ICIMOD on 11 June 2005. SAARC is a high-level platform for the peoples of South Asia to work together to accelerate economic and social development in member states. The SAARC team toured the ICIMOD Headquarters, including its library and Mountain Environment and Natural Resources Information System (MENRIS) facilities.

ICIMOD Director General, J. Gabriel Campbell and senior ICIMOD staff welcomed the team and briefed them on the current programmes and activities. Expressing appreciation for ICIMOD’s work in the region, the SAARC team also noted that five of the ICIMOD member countries are also SAARC members. The team proceeded to the ICIMOD Demonstration and Training Centre at Godavari, where they observed various rural technologies, including sloping agricultural land technology, energy technologies, forestry, horticulture, floriculture, livestock and beekeeping. Discussions followed on areas of possible joint programme initiatives and the future of a SAARC-ICIMOD partnership.

Ayushma Basnyat, ayrana@icimod.org

(Upper photo) A SAARC delegation being briefed about the Mountain Environment and Natural Resources Information Systems facilities at the ICIMOD Headquarters and (lower photo) inspecting goat-raising as a livelihood opportunity for mountain communities.
In Memoriam
Dr. Mohammed Ali
ICIMOD conveys its deepest sympathies to the family and friends of the late Dr. Mohammed Ali and a shared sense of loss over his untimely passing. Dr. Ali was ICIMOD’s long-term collaborator in the Regional Rangeland Programme. At the time of his death in a car accident in May 2005, he was also Technical Officer with the Sheep Husbandry Department at Leh, Ladakh, and Assistant Director of Sheep Husbandry. An active veterinarian, he was admired and respected by all who knew him. ICIMOD’s rangeland staff and other partners from the region who had the good fortune to share his insightful knowledge of rangelands and livestock and many memorable moments of joy and laughter will miss him. Dr. Ali was born 10 July 1961 at Chushot village. A devout Muslim, he was equally loved by both Muslims and Buddhists in his community and was the Secretary of the Imamia Mission School which he helped establish. He is a loss to his family and to the development community in the region. His contributions to the development of Ladakh and to his community are well known and were honoured in separate condolences meetings by officials of the Animal/Sheep Husbandry Department of the Jammu and Kashmir State Government and by his village community.

Memoranda of understanding and agreements signed

Agreements signed with partners in the Hindu Kush-Himalayan region
- April 2005, with SUNGI Development Foundation, Pakistan
  Framework agreement for collaboration during ICIMOD’s Medium Term Action Plan (2003-07)
- February 2005, with Ladakh Autonomous Hill Development Council, India, to conduct a case study in Ladakh, under the Regional Rangeland Programme - Phase II
- February 2005, with North Eastern Hill University, India, to enhance the capacity of community-based organisations in advocacy strategies in Meghalaya, India
- April 2005, with Ladakh Environment and Health Organisation, India to conduct a case study in Ladakh, under the Regional Rangeland Programme - Phase II

New ICIMOD Board member
Dr. Ram Prasad Chaudhary
Dr. Ram Prasad Chaudhary, Honourable member of the National Planning Commission, Nepal was nominated by His Majesty's Government to serve as the ICIMOD Board member representing the host country, Nepal. His status as the Chair of the ICIMOD Board of Governors until the expiry of Nepal's term has been approved by the Board.

Dr. Chaudhary, born on June 10, 1953, comes from a Tharu family from Bara district. He began his academic career as an assistant lecturer in Tribhuvan University in 1978. He received his Ph.D. in Biology (Plant Systematics) from the Komarov Botanical Institute, St. Petersburg (then Leningrad), Academy of Sciences of the USSR in 1988.

Over the last 25 years, Dr. Chaudhary has been involved in postgraduate teaching and research on biodiversity, plant systematics, ethnobotany, environment, plant genetic resources, and molecular approaches to biodiversity assessment. He has conducted independent and collaborative research and has been involved in several academic and professional programmes. He has also served as a visiting scientist at such prestigious institutes as the Swedish Museum of Natural History, Stockholm (1990); Cornell University, Ithaca, USA (2001); Hollins University, Roanoke, Virginia, USA (2001); University of Vienna, Austria (2001); and University of Bergen (UB), and is on the board of many professional and social organisations in various capacities. Professor Chaudhary has published four books and written over 130 scientific research and popular papers in national and international journals and research reports.

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New Staff Members

ICIMOD attracts competent professionals in their respective fields from around the region and the world. Full-time staff are selected through open competition. During the period the following new staff joined ICIMOD.

Ayushma Basnyat, Senior Receptionist Operator, Personnel section

Ms. Ayushma Basnyat was appointed Senior Receptionist Operator under the Personnel section in June 2005. She holds a Master's degree in International Business from Schiller International University, London, U.K, and a Bachelor's degree, with Honours, in Commerce from the Lady Sri Ram College in Delhi, India.

Before joining ICIMOD, she worked as an intern in Adopt-A-Minefield, a UN-affiliated organisation in London where she was involved in employing a content management system to post articles to the organisation's website and to assist in fund raising activities. In May 2004 she joined ICIMOD as an intern in the Policy and Partnership Development Programme for a year, where she assisted in preparing the Annual Report for the ICIMOD Board of Governors, and created, updated, and managed the ICIMOD donors' database.

Prativa Chhetri, Research Assistant, Medicinal and Aromatic Plants Programme for Asia (MAPPA Project), ARID

Ms. Prativa Chhetri first joined ICIMOD in the Travel and Hospitality section in 1997 where she played a pivotal role in ensuring that all areas relating to staff travel and hospitality ran smoothly. She brings eight years of this experience in office and administrative management as well as in travel hospitality to the Medicinal and Aromatic Plants Programme for Asia (MAPPA), the Centre's newest network project devolved by IDRC, Canada, to ICIMOD. As she forays into programmes in her new capacity as Research Assistant for the MAPPA Project, she looks forward to contributing to the project's overall objectives.

Ms Chhetri has a Master's degree in Sociology from Tribhuvan University in Kathmandu, Nepal, where she graduated top of her class in 2004, and a Bachelor's degree, with Honours, in Chemistry from the North Eastern Hill University Shillong, Meghalaya, India.

Muhammad Ismail, Assistant Regional Rangeland Research Officer, NRM

Before joining ICIMOD in May 2005, Mr. Ismail worked with the Aga Khan Rural Support Programme, Pakistan, as Natural Resource Officer in Natural Resource Management and as Resource Development Analyst for seven years.

During this period he was involved in natural resources management activities, mainly rangeland management, afforestation, nurseries development, juniper conservation, environmental education, bee farming, fish farming, and developing community linkages with line departments of the government and with NGOs.

He received his Masters in Forestry from the Pakistan Forest Institute (PFI) Peshawar in 1997. Mr. Ismail comes from Chitral, NWFP, Pakistan.

A. Beatrice Murray, Senior Editor, IKM

Dr. A. Beatrice Murray commenced as Senior Editor at ICIMOD in May 2005. She has been associated with ICIMOD for a number of years working as a freelance editor and later as Editor and Senior Scientific Advisor.

Dr. Murray has a Ph.D. in Biophysics from King's College London, and a B.Sc in Physics from University College London, UK. Her first career was in research science. She worked for some years as a cell biologist at a large research institute in Germany that covered a diverse range of disciplines related to health and environmental science. Later she joined the United Nations Environment Programme where she focused on harmonisation of environmental measurement, in particular urban air quality measurement and vegetation classification. During this time she published more than 100 authored articles, books, and short communications in scientific journals and monographs, as well as non-authored reports, handbooks, and information sheets.

Before joining ICIMOD, Dr. Murray worked as a freelance editorial and publications consultant and as a scientific consultant for data collection and analysis. She has more than 25 years of experience in editing technical and scientific materials for second-language English speakers in pure and applied environmental and medical sciences, and more recently in areas related to different aspects of integrated mountain development in the greater Himalayan region.

Sugam Nepal, MF-APMN Node Manager, IKM

Ms. Sugam Nepal, a Nepalese national, was a research assistant with the Culture, Equity, Gender and Governance (CEGG) Programme of ICIMOD prior to taking up her new position as Node Manager of the Mountain Forum Asia-Pacific Mountain Network in the Information and Knowledge Management Programme. At CEGG, she contributed in the areas of governance, decentralisation, environmental justice, and minority rights. Before coming to ICIMOD, she worked with Media Services International as a Programme Officer where she was responsible for the monitoring and evaluation of a project on media rights.
Ms. Nepal holds a Master's degree in Social Work with specialisation in Urban and Rural Community Development from Tata Institute of Social Sciences, Mumbai, India. While a student she was awarded ‘Best Foreign Student’ by the Institute for “her ability to contrast and compare various facets of development issues in different context”.

Krishna Prasad Oli, Regional Coordinator, Strengthening Access and Benefit Sharing of Biodiversity Resources in the Eastern Himalaya, CEGG

Dr. Krishna Prasad Oli is an Agriculture, Natural Resource Management, and Law professional with 29 years of experience in agriculture research and development, natural resource management, biodiversity conservation, and environmental law. He has been involved in policy and strategy development and planning for biodiversity conservation and sustainable livelihoods, and in coordinating and implementing natural resource management projects in the mountain areas.

Dr. Oli started his career as a livestock officer in Pakhribas Agriculture Center in 1976, continuing to work in this field until 1988. He has since worked with Winrock International Institute of Agriculture Development, and the World Conservation Union (IUCN) where he was an Environmental Planner and Programme Coordinator for 12 years. He has also been a freelance consultant for UNDP/FAO, ADB, IUCN, South Asian Free Media Association and ICIMOD, undertaking assignments on biodiversity resources management, environmental impact assessment of projects, law and research on issues of natural resources governance at a time of armed conflict, in addition to teaching Environmental Law at Tribhuvan University.

He holds a Masters degree in Animal Science from the University of Edinburgh, and a Ph. D. in Geography from Tribhuvan University where he also obtained his law degree. Dr. Oli speaks fluent Nepali, Hindi, English, Urdu and other South Asian regional languages.

Bandana Shakya, Research Assistant, Transboundary Biodiversity Project, NRM

Ms. Bandana Shakya holds a Master's degree in Botany, from Tribhuvan University. She recently completed a second Master's degree, in Biodiversity and Taxonomy of Plants, from the University of Edinburgh, UK. She brings with her the knowledge of plant sciences, biodiversity and conservation, natural resources management, and herbarium/botanic garden management and eight years of teaching experience at Tribhuvan University and private colleges in Kathmandu. She has conducted research on plant systematics (plant evolutionary diversification), biodiversity, and population genetics.

Ms. Shakya was awarded a Chevening Scholarship from the Foreign and Commonwealth Office, UK in 2003; the Mahendra Vidhya Bhushan award from the Ministry of Education, Nepal in 1995, and the Brahma Dutta Pandey Medal from the Association of Plant Physiologists of SAARC countries, Nepal in 1993 for her outstanding Masters in Science research. She worked as an intern with the Global Mountain Forum before joining ICIMOD.

Ujol Sherchan, Programme Officer, Information Services and Content Development, Mountain Forum Secretariat

Mr. Ujol Sherchan belongs to a minority indigenous mountain community called the ‘Thakalis’, and the ‘jankri khala’ (traditionally, shamans) within the Sherchan clan, and spiritually identifies with Bon, a pre-Buddhist religion.

He holds an International Baccalaureate diploma (Armand Hammer United World College, New Mexico, USA), a Bachelor of Arts degree in Economics from Franklin and Marshall College, Pennsylvania USA, and is currently pursuing a graduate degree in the same field at Tribhuvan University.

He joined ICIMOD in 2001 as Node Manager of the Asia Pacific Mountain Network (APMN) – the Asia-Pacific node of the Global Mountain Forum. He joins the Mountain Forum Secretariat – hosted by ICIMOD – as Programme Officer in charge of information services and content development. His areas of expertise and work are moderating discussion lists, organising e-conferences, synthesizing e-discussions, e-governance, and knowledge networking, particularly in the context of sustainable mountain development. Before ICIMOD, Mr. Sherchan worked as a freelance consultant for a number of organisations including the Nepal Tourism Board and the International Labour Organisation - Nepal.

Samden Lama Sherpa, Godavari Centre Manager, NRM

Mr. Samden Lama Sherpa from the Solokhumbu region of Nepal was appointed Godavari Centre Manager under the Natural Resources Management Programme in June 2005.

Before joining ICIMOD, Mr. Sherpa was with the Natural Resource Management Sector Assistance Programme of DANIDA as Regional Programme Manager in the Eastern region, a Forestry Coordinator in the Churia Forestry Development Project of GTZ in Lahan, and a Forestry Officer at the Pakhribas Agricultural Research Centre. He has 17 years experience working at the community-level with forestry user groups and community development groups through the district forest offices, district soil conservation offices, and non-government organisations in the hills and Terai of eastern Nepal. He promoted sustainable forest management and soil conservation, integrated watershed management, and community-based agroforestry and biodiversity.

Mr. Sherpa received his Master’s degree in Agroforestry from the University of Aberdeen in Scotland, UK.
Keshar Man Sthapit, Country Coordinator, PARDYP, NRM

Prior to joining ICIMOD in July 2005, Mr. Sthapit was Senior Programme Officer of the DANIDA-supported soil conservation and watershed management component of the Natural Resource Management Sector Assistance Programme in Nepal.

He has held various positions in the Department of Soil Conservation and Watershed Management-Nepal including Director General as last position. He also served as a visiting scholar in the Institute of Forestry, Pokhara under the International Timber Trade Organization.

Mr. Sthapit has over three decades of experience in the field of soil conservation and watershed management. He holds a diploma in Forestry from Indian Forest College, Dehra Dun India, and a Master's degree in Forestry from North Carolina State University in the USA.

His diverse experience in policy, strategy and guideline formulation, and implementation of participatory soil conservation and watershed management, watershed planning, and watershed research will be useful in the documentation and evaluation of soil and watershed technologies in PARDYP. Mr. Sthapit is from Nepal.

VISITING SCIENTISTS

John Hummel, Visiting Scientist, ARID

John Hummel is from The Netherlands but has lived and worked in several of the world's mountain ranges. He studied forestry with specialisations in nature tourism and sustainable development at Wageningen University, The Netherlands. Dr. Hummel worked as a trekking guide in Europe and the Himalaya in the early 1990s. At that time, he was also a part-time researcher on ecotourism development in Costa Rica, India, and Nepal for the same University. He joined SNV Netherlands Development Organisation as a tourism adviser in 1996. He was first project coordinator in Albania, then senior tourism adviser in Nepal. From Nepal he worked in several countries of the Himalaya and in the Mekong. At present he works at SNV Bhutan as Regional Team Coordinator Pro-Poor Sustainable Tourism (PPST)-Himalaya. He is also the SNV Asia Pro-Poor Sustainable Tourism (PPST) knowledge network leader. He is a visiting faculty in Wageningen, in the graduate course, ‘Tourism, Leisure and Environment’. He has published chapters on ecotourism and sustainable and pro-poor tourism in scientific and popular articles.

Huang Jiyung, Visiting Scientist, PPD

Ms. Juying Huang works as an associate professor at the School of Economy and Management, Tibet University, where she teaches Practice and Theory of International Trade, Economy Application Writing, and The Action of Consumers.

She is on short-term attachment to ICIMOD with the Policy and Partnership Development unit (PPD). She will be working with NRM, ARID, and PPD professionals to develop a methodology for assessing the impact of globalisation on the sustainable livelihoods of remote mountain communities under the supervision of Dr. Golam Rasul. She will work towards bringing some regional dimensions into her work, and further refining her study design and analytical methods, and will prepare a proposal on “Research on the Border Trade between Shigatse Prefecture in Tibetan Autonomous Region in China and Nepal”. This paper will analyse the impact of policy on border trade between the two countries and on income and living conditions of people living in the border areas.

Staff departures

The ICIMOD family extends its best wishes to staff members who have left the Centre since April 2005.

- Mr. Bhubaneswor Shrestha, PARDYP, NRM July 1992 - 30 May, 2005
- Ms. Geeta Pant, Communications Unit, Personnel section, 1997 to 30 May 2005
- Mr. Kazuya Shinagawa, Intern, NRM 30 June’05 - 30 June 2004
- Ms. Prativa Pradhan, Intern, CEGG 1 May’04 - 30 April 2005
- Ms. Ranju Acharya, Research Assistant, TBM-NRM, 1 Nov, 2004 - 11 Aug 2005
- Ms. Sharda Gurung, Communications Unit, Personnel section 15 Oct 1984 - 31 July 2005
ICIMOD Staff Members  
As of August 2005

**Directorate**
- Dr. J. Gabriel Campbell, Director General
- Dr. Madhav Bahadur Karki, Deputy Director General - Programmes
- Mr. Milan Raj Tuladhar, Head, Administration & Finance

**Support Staff:** Ms. Tika Laxmi Gurung, Ms. Anjeli Shrestha, Ms. Prerna Thapa

**Natural Resource Management (NRM)**
- Dr. Eklabya Sharma, Senior Agricultural Specialist/Programme Manager
- Dr. Pema Gyamtso, Agriculture Resources policy Specialist
- Ms. Elisabeth E. Kerkhoff, Agroforestry Specialist
- Dr. Nakul Chetti, Transboundary & Biodiversity Specialist
- Dr. Yan Zhao, Rangelands Specialist
- Mr. Muhammad Ismail, Assistant Research Officer-RRP II
- Mr. Samden Lama Sherpa, Godavari Centre Manager
- Mr. Roger John White, Regional Programme Coordinator, PARDYP
- Dr. Sanjeev Kumar Bhuchar, Assistant Programme Coordinator, PARDYP
- Mr. Keshar Man Shihapi, Country Coordinator, PARDYP
- Mr. Anil Shrestha, Consultant, PARDYP

**Support Staff:** Ms. Sami Joshi, Ms. Neetu Ghale, Ms. Bandana Shakya (Thapa), Mr. Pradeep Man Dangol, Mr. Madhav Prasad Dhakal, Mr. Bhawani Shankar Dangol, Ms. Samma Shakya, Mr. Giri Bahadur Shrestha, Mr. Jwan Tamang

**Agriculture and Rural Income Diversification (ARID)**
- Dr. Kamal Banskota, Senior Environmental Resource Economist/Programme Manager
- Dr. Narpin Singh Jodha, Senior Associate Scientist/Policy Analyst
- Mr. Bikash Sharma, Energy Specialist
- Mr. Dyutiman Choudhary, Enterprise Development Specialist
- Dr. Ester van der Blonk, Eco-tourism Expert
- Dr. Kurt Luger, Visiting Scientist
- Dr. John Hummel, Visiting Scientist
- Dr. Farooq Ahmad, Project Coordinator, Beekeeping Project
- Dr. Uma Partap, Research Officer/Pollination Specialist, Beekeeping
- Dr. Surendra Raj Joshi, Action Research Officer, Beekeeping
- Mr. Min Bahadur Gurung, Institutional Development Officer, Beekeeping

**Support Staff:** Mr. Anirudha Nath Shukla, Mr. Satyananda Thapa, Mr. Rajendra Lal Upadhyaya, Mr. Rajendra Shah, Ms. Shova Bhandari, Ms. Prativa Chhetri

**Water, Hazards, & Environmental Management (WHEM)**
- Dr. Xu Jianchu, Ethno-ecologist/Programme Manager
- Ms. Pradeep K. Mool, Remote Sensing Analyst
- Ms. Mandira Shrestha, Water Resources Specialist
- Mr. Jacob Fritz Ferdinand, Consultant

**Support Staff:** Mr. Rajendra Lal Shilpakar, Ms. Sarita Joshi, Mr. Vijay Ratan Khadgi

**Culture, Equity, Gender and Governance (CEGG)**
- Dr. Nani Ram Subedi, Coordinator, Decentralised & Local Governance
- Ms. Radhika Gupta, Coordinator, Equity and Rights
- Mr. Krishna Prasad Oli, Regional Coordinator, Strengthening ABSIBIO-EH
- Mr. Joy Dasgupta, Assistant Coordinator, ABSIBIO-EH
- Dr. Mark Turin, Visiting Scientist

**Support Staff:** Mr. Govinda Shrestha

**Policy & Partnership Development (PPD)**
- Ms. Sabina Roy, Programme & Project Development Specialist
- Mr. Prem Krishna Manandhar, Programme Officer
- Dr. Golam Rasul, Policy Development Specialist
- Mr. Fard Ahmad, Monitoring & Evaluation Officer
- Mr. C.N. Anil, Assistant Coordinator
- Ms. Jayunj Huang, Visiting Scientist

**Support Staff:** Ms. Samjhana Thapa, Ms. Mamata Shrestha

**Information and Knowledge Management (IKM)**
- Dr. Zbigniew Nikolajuk, Senior Knowledge Management Specialist/Programme Manager
- Dr. A. Beatrice Murray, Senior Editor
- Ms. Joyce M. Mendez, Publications Editor
- Mr. Sanjay Madhni, Information & Communication Specialist
- Ms. Nira Gurung, Communications Officer

**Support Staff:** Mr. Bishwanath (Sadus) Sharma, Mr. Asha Kaji Thaku, Mr. Dharma Ratna Maharjan, Ms. Purna Pradhan, Mr. Deependra Tandukar, Ms. Shanti Prabha Bajracharya, Mr. Ram Shan Thapa, Mr. Anil Jha, Ms. Shiva Hari Khatri

**Asia Pacific Mountain Network (APMN):** Ms. Sugam Nepal, Node Manager, APMN

**Mountain Environment and Natural Resources Information Systems (MENRIS)/Division**
- Ms. Basanta Shrestha, Division Head
- Mr. Cung Chinh Thang, Associate Expert - GIS/NR
- Mr. Sushil Man Pradhan, GIS Analyst
- Mr. Sushil Raj Pandey, Systems’ Officer
- Mr. Birendra Bajracharya, GIS Analyst
- Mr. Samjwal Ratna Bajracharya, Geomorphologist/GIS Analyst
- Ms. Bidya Pradhan Banmali, Environment/Air Pollution Officer

**Support Staff:** Mr. Saisab Pradhan, Ms. Govinda Joshi, Ms. Monica Moktan, Ms. Mandakini Bhatta, Mr. Lokap Rajbhandari, Mr. Gauri Shankar Dongol, Mr. Kiran Shikya, Mr. Rajan Man Bajracharya

**Global Mountain Forum Secretariat (Hosted by ICIMOD)**
- Dr. Ana Maria Ponce, Executive Secretary
- Mr. Prashant Sharma, Deputy Executive Secretary
- Mr. Celine Curi, Programme Development Officer
- Mr. Sani Malam Karami, Information Technologies Officer
- Mr. Ujol Sherchan, Programme Officer, Information Services & Content Development

**Support Staff:** Ms. Anju Rana

**Administration & Finance Section**
- Mr. Rajendra Prakash Mali, Budget & Finance Officer
- Mr. Kiran Man Shrestha, Ms. Prabha Raj Shrestha, Ms. Nabinbunda Raj Shrestha, Ms. Pramila Shrestha, Mr. Akil Nepal

**Store Unit:** Ms. Jenny Vaidya, Mr. Rabindra Ranjet

**Personnel Section**
- Mr. Chandra Bir Singh Kansakar, Personnel Officer
- Ms. Shree Mani Amatya, Ms. Nani Keshari Bajracharya

**Communications Unit**
- Ms. Ayushma R.L. Basnyat, Mr. Pashupati Sadasankar

**Security and Maintenance Unit**
- Mr. Prem Dhoj Malia, Mr. Krishna Tamang
- Mr. Ram Bahadur K.C., Mr. Ram Singh Rai, Mr. Birikha Jirel
- Mr. Kishore Maharjan, Mr. Babukaji Thapa, Mr. Shamshu Thapa

**Procurement and Equipment Maintenance Support**
- Mr. Niranjwan Khanal, Procurement & Equipment Maintenance Officer
- Mr. Narendra Bajracharya, Electrical Overseer

**Photocopy Unit:** Mr. Shyam Shrestha, Mr. Gangya Rana

**Travel & Hospitality Section**
- Mr. Rajan Upreti, Travel Officer
- Mr. Rishi Ram K.C.

**Motorpool Unit**
- Mr. Mohan Krishna Shrestha, Mr. Kishore Shrestha
- Mr. Ram Lal Maharjan, Mr. Bishnu Magar, Mr. Krishna Maharjan,
- Mr. Pancha Narayan Maharjan Mr. Jai Bahadur Subedi, Mr. Sabak Singh, Mr. Dhubra K.C., Mr. Sudhama K.C.

**ICIMOD**
- Ms. Chhinkaj Maharjan, Mr. Ram Maharja

**Interns/Volunteers/Associates**
- Dr. Surya Bahadur Singh, Associate Scientist, NRM
- Dr. Chodok, MENRIS- IKM
- Ms. Chandri Singh, Intern, PPD
- Mr. Jaya Bahadur K.C., Intern, IKM/MENRIS
- Ms. Srijana Limbu, Intern, IKM/MENRIS
- Ms. Prajna Regmi, Intern, IKM/MENRIS
- Ms. Tseyang Lhamo, Intern, IKM/MENRIS
- Ms. Prabina Dahal, Intern, Personnel section
- Ms. Stuti Basnyet, Intern, Personnel section
- Ms. Dipa Thapa, Intern, NRM
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