

Investing in mountains: Innovative mechanisms and promising examples for financing conservation and sustainable development

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Background

Mountain communities have traditionally been stewards of globally significant mountain resources. As more mountain resources are used, downstream beneficiaries have contributed little or no reinvestment in the resources or their traditional stewards, the mountain communities. As a result, mountain resources are being depleted at unsustainable rates, and traditionally self-reliant mountain communities are becoming marginalized. In order to ensure a sustainable flow of resources to national and global populations, policy makers must develop and implement mechanisms which capture and reallocate an appropriate share of benefits from resource outflows to mountain communities.

Building upon a need identified at the UN Conference on Environment and Development, this initiative identifies and describes various innovative mechanisms which have been used to finance conservation and sustainable development of mountain resources. This document is the result of an electronic conference on the subject of investing in mountains. The mechanisms discussed during the conference explore innovative strategies to capture revenue from resource outflows as well as to redirect an appropriate share to the stewards of these resources.

In an effort to promote replication of these mechanisms and to encourage the application of new mechanisms, the report explores the variety of mechanisms which have been used to finance conservation of specific mountain resources as well as the conditions of the social and economic policy environments which have contributed to the success of the mechanisms.

Investing in Mountains: Innovative Mechanisms and Promising Examples for Financing Conservation and Sustainable Development

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Foreword

Over the past five years, political and institutional momentum has been building to develop better policies and mobilize more resources for conservation and sustainable development in mountainous areas. At the 1992 Earth Summit in Rio de Janeiro, Brazil, the world's largest gathering of national leaders endorsed Agenda 21, the global blueprint for action on environment and development issues. The thirteenth chapter of this document, entitled "Managing Fragile Ecosystems: Sustainable Mountain Development" helped raise the prominence of mountains as a priority for environment and development initiatives and developed the Mountain Agenda.

Charged with organizing the follow up to the mountain chapter, the U.N. Food and Agriculture Organization, through its Departments of Sustainable Development and Forestry, made funding available and requested The Mountain Institute to develop guidelines to contribute to the implementation of the Mountain Agenda. It was agreed that initial efforts would focus on the crosscutting theme of innovative financial mechanisms for conservation and sustainable development initiatives in the World's Mountains.

An electronic conference on this topic, entitled "Paying for Mountains: Innovative Mechanisms and Promising Examples for Financing Conservation and Sustainable Development," was hosted by the Mountain Forum with collaboration from Mountain Forum Facilitating Committee members: the International Centre for Integrated Mountain Development, the International Potato Center and The Mountain Institute. In this discussion mountain policy makers, activists and professionals from around the world shared ideas and experiences on financial mechanisms which have been effective in balancing the downward flow of resources from mountainous regions.

This initiative would not have been possible without the participation of the many electronic conference participants--those who contributed case studies and ideas, those who reviewed earlier drafts as well as those who read and circulated contributions to others. Their participation has been invaluable in producing this document. It is also recognized that these specific contributions rest on the broad base of effort of those who are contributing to make the Mountain Agenda a reality. We want specifically to acknowledge and appreciate all of these efforts.

Lynelle Preston served as the guest moderator for this conference as well as the editor responsible for collating, analyzing and drafting this report. Her tireless work and participatory approach is testimony to the commitment of mountain advocates and we wish to thank her particularly for her central role in producing this document. In this task she was greatly assisted by Gabriel Campbell who helped in developing and revising drafts, Elizabeth Byers, the Moderator of the Mountain Forum who provided guidance and help at each

stage, and Jason Espie, the Program Officer for the Mountain Forum. We would also like to thank Doug McGuire, who provided intellectual and management support, Tage Michelson, who helped start the cooperative process through which chapter 13 of Agenda 21 continues to be implemented, and Sam Kunkle, who supported the team at FAO and was involved in the first steps of this exercise.

We especially want to thank the individuals who graciously devoted extra time to provide detailed reviews and input into this document. In particular, the wise and thoughtful guidance of Martin Price provided insight into the structure of the document and helped to identify the unique aspects of this electronic endeavor. Narpat Jodhas detailed review provided guidance on replication of the cases and on highlighting conditions conducive to success. In addition, we especially wish to thank the following reviewers: John Shilling and David Reed for providing useful economic insights, including the nature of mountain resources as "nearly pure public goods" and the importance of addressing the broader macro-policy framework; John Cool for providing a detailed review of the final draft prior to printing; Clint Andrews, Mahesh Banskota, Lynne Bennet, Joe Cooper and Ruth Norris for providing clarification of certain economic concepts; Barry Spergel for providing valuable resources and contacts early last summer; Suzanne Warsinsky for providing editorial assistance on the preliminary draft; and Derek Denniston and Brian Peniston for help in the early stages of this initiative.

The Mountain Agenda presents all of us with a challenge as high as the mountains it seeks to protect and as diverse as its biological and human populations. This participatory conference, and the guidance it has produced, helps us to better address an action agenda for the mountains which should engage all of us well into the 21st century.

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Executive Summary

Mountain communities have traditionally been stewards of globally significant mountain resources. As more mountain resources are used, downstream beneficiaries have contributed little or no reinvestment in the resources or their traditional stewards, the mountain communities. As a result, mountain resources are being depleted at unsustainable rates, and traditionally self-reliant mountain communities are becoming marginalized. In order to ensure a sustainable flow of resources to national and global populations, policy makers must develop and implement mechanisms which capture and reallocate an appropriate share of benefits from resource outflows to mountain communities.

Building upon a need identified at the UN Conference on Environment and Development, this initiative identifies and describes various innovative mechanisms which have been used to finance conservation and sustainable development of mountain resources. This document is the result of an electronic conference on the subject of investing in mountains. During the conference, over sixty individuals from Asia and the Pacific, Africa, Latin America, Europe, and North America contributed promising examples of innovative mechanisms currently being used in their mountainous region.

The mechanisms discussed during the conference explore innovative strategies to capture revenue from resource outflows as well as to redirect an appropriate share to the stewards of these resources. The document focuses particularly on mechanisms which have the potential for widespread adoption in mountain areas. The following mechanisms were discussed: property rights, transferable development rights, conservation easements, tradeable water rights, royalties, entrance fees, user fees, tour operator fees, hunting and fishing fees, environmental taxes, regional trademarks, green marketing tools, micro-enterprises, cooperatives, micro-finance, foreign aid, trust funds, debt-for-nature swaps, and mobilization of private sector funds.

This initiative is a preliminary effort to address this complex issue and to provoke new actions and research in an area of critical importance to mountains and the world below. In an effort to promote replication of these mechanisms and to encourage the application of new mechanisms, the final section explores the variety of mechanisms which have been used to finance conservation of specific mountain resources as well as the conditions of the social and economic policy environments which have contributed to the success of the mechanisms.

Introduction: Why are Resources Flowing Downhill Unsustainably?

For centuries mountain communities have played a critical stewardship role in maintaining a sustainable flow of mountain resources to the plains below. With the advent of new technologies, infrastructure, and demographic and socio-economic changes, the magnitude of resource outflows has increased dramatically with little or no reinvestment from downstream beneficiaries in the resources or their traditional stewards, the mountain communities. As a result, mountain resources are flowing downhill at unsustainable rates and mountain communities are becoming increasingly marginalized. In order to protect the mountain ecosystems, provide incentives for mountain communities to continue in their stewardship roles, and ultimately to maintain the very resources on which national and global populations depend, policy makers must develop and implement mechanisms which capture and redirect revenue for mountain resources.

During recent years, political and institutional momentum has been building to develop better policies and mechanisms to mobilize more financial resources for conservation and sustainable development of the world's mountainous regions. The endorsement of Agenda 21, Chapter 13, entitled "Managing Fragile Ecosystems: Sustainable Mountain Development" at the 1992 United Nations Conference on Environment and Development, has increased recognition of the fact that mountain communities are often net exporters of globally significant natural resources to the lowlands below. As stated in The United Nations Commission on Sustainable Development Report on the Third Session, ". . . There is a need to take a new look at the overall flow and full-cost pricing of resources and services to and from mountain areas. . . The Commission further recognizes the need for a fair share of the benefits derived from the use of mountain resources to remain with the local people and their communities."

This initiative is an initial effort to address this complex issue through a participatory electronic conference focused on identifying innovative and promising mechanisms which are currently being employed in mountain areas to pay for mountain resources. The ultimate goal is to increase investment in conservation and sustainable development of mountains. It is assumed that this can best be achieved by returning an equitable share of the benefits accruing to downstream users to mountain communities, and by promoting national and global transfers for the less tangible values provided by mountains.

The specific objectives are fourfold: (i) to provide national policy makers with a set of instruments which will motivate conservation and sustainable use of the world's mountain resources; (ii) to encourage mountain people, beneficiary communities and governments to devise systems by which mountain people, as stewards of globally significant resources, receive an equitable share of the benefits derived from the use and value of these resources; (iii) to experiment with a new vehicle, electronic communication, for mountain communities to

become active participants in mountain planning and policy making; and (iv) to provoke new actions and research on an area of critical importance to mountains and the world below.

Identifying and Valuing Mountain Resources

"Reflecting only the present costs of extraction and distribution, today's prices for natural resources do not even come close to telling the ecological truth: they ignore the full costs of denuded forests, eroded hillsides, and dammed or polluted rivers--not to mention the incalculable social costs of uprooting people living atop the resource. Recognizing full costs provides direct incentive to minimize environmental impacts, which then yield higher returns."

--Denniston, 1995a

As identified by the International Non-governmental Organization Consultation on the Mountain Agenda, "Mountain peoples, in their sloping islands of human and natural variety, have become the guardians of irreplaceable global assets. Their homelands serve as storehouses of timber, minerals, meat, and hydroelectric power for the surging populations below them. At least half of humanity depends on mountain watersheds for their supplies of fresh water. For more than 1 billion people, mountains are sacred places. Mountains are also becoming recreational refuges from crowded cities for the tourist elite." (Mountain Forum, 1995)

Some of these goods and services produced by mountains, such as timber, hydro-power and minerals, have a measurable economic value, although historically this value has not been measured. As a result, the full value of these resources is not included in the price of the product, and the mountain communities, as suppliers, do not derive appropriate benefits from the resources they provide.

The first challenge, therefore, in equitably compensating mountain communities as stewards and thus ensuring a sustainable outflow of resources, is to identify and value resources as accurately as possible. Once the values of resources are identified and recognized, mechanisms can be employed which capture this value and redirect it from downstream users to mountain communities. In addition to traditional economic tools, innovative environmental valuation techniques provide means for attaching economic values to many of these resources which traditionally have not been measured.

The environmental valuation study of the major ecosystem commodities and services done by Sierra Nevada Ecosystem Project in northern California, USA serves as an important model. Despite popular attention to timber and grazing as the two most highly valued resources within the Sierra Nevada ecosystem,

the report concluded that water resources are by far the most valuable resource. The study illustrates that although water resources provide over 60 percent of the total value of basic goods and services, they provide limited employment for mountain peoples. Moreover, virtually zero funds are allocated for reinvestment in managing or maintaining the natural resources on which downstream benefits depend. This study demonstrates that it is possible to measure and place economic value on mountain resource flows which have traditionally not been economically valued, despite the large magnitude of benefits provided to downstream users.

Environmental Valuation Study: The Sierra Nevada Mountains, USA

In a final report to Congress, the Sierra Nevada Ecosystem Project reports on the estimated annual resource values and reinvestment for major ecosystem commodities and services. Based on estimates of direct resource values (not the total revenue produced by resource-dependent activities), the Sierra Nevada ecosystem annually produces about \$2.2 billion worth of commodities and services. Water resources provide \$1.35 billion dollars worth of resource values, constituting 61 percent of the total, yet their share of direct reinvestment is basically zero since water rights are not taxed as property and the commercial real estate assessments are "very low compared to the revenue generated." In contrast, recreation and residential use provide 21% (\$470 million) of the total resource value and provide reinvestment of \$10 million; timber provides 14 percent (\$320 million) of the value and provides \$23 million in reinvestment; and grazing, providing only 2 percent (\$32 million) of the resource value, is subsidized by \$7 million in general funds. (Summarized from Sierra Nevada Ecosystem Project, 1996. Economic component conducted by William Stewart)

Such studies are invaluable steps in understanding the outflow of mountain resources and in developing policies which appropriately reinvest in the protection of these resources. Additionally, the studies help to establish resource prices which internalize and reflect more of the social and environmental costs of using the resource.

While the economic value of many of these resources can be measured by their economic uses, their ownership spans the spectrum from private to public. Forests, grazing lands, and water resources are frequently owned by communal or public entities with ambiguous ownership and weak regulatory or management regimes. In addition, there are substantial non-market resources flowing from mountains which are considered by economists to be nearly pure public goods. In economic terms public goods are defined as ones in which the users cannot be excluded and ones consumption of a good does not diminish the amount available for others (Tietenberg, 1996). Clean air and biodiversity are classic examples. The benefits of non-market goods usually are not directly exchanged. For example, while a particular forest may have local market

benefits, the existence of the forest contributes to clean air, a non-market resource for everyone, regardless of whether they have contributed to the protection of the forest.

Traditional economic tools are often inadequate in measuring these non-market goods. While such tools provide partial measurements through the value of the indirect damages that the lack of these goods cause--the health costs of unclean air, damage caused by floods, or foregone revenue from recreational/ecotourism opportunities, the value of these "repair costs" are often insufficient indicators of the true value of the resource.

Perhaps more importantly, the market is not the universal determinant of values. Lack of a monetary value does not mean lack of value. An individual's personal enjoyment derived from enjoying mountain scenery or from knowing that nature's creations have been conserved may have tremendous value which can not be measured economically. Similarly, the sacred values which many people find in mountains is not conducive to measurement, although for many it may be reason enough to pay for conservation.

Despite the inherent difficulties in economic valuation, redressing the imbalance in mountain resource investment requires identifying, and where possible, measuring the resource values provided by mountains. Fortunately or unfortunately, an increasing percentage of mountain resources are becoming commercialized. For example, water resources are harnessed for electricity, agriculture, urban and industrial uses; biodiversity is prospected for pharmaceuticals, cosmetics and agro-chemical uses; and forests and landscapes are turned into recreational areas. As a result, they are assuming measurable market values. New environmental economic tools are being developed to place monetary values on these traditionally immeasurable public goods.¹ Immeasurable values can now be identified and their importance documented in the case of many mountain resources. (Campbell, 1996) Once these values have been identified or estimated, mechanisms can be developed and implemented to help capture the values flowing from mountains and redirect them to the mountain communities as suppliers.

Acknowledging and Strengthening the Critical Role of Mountain Communities as Suppliers of Mountain Resources

"Local communities must participate in all decisions that affect their natural resources and gain direct economic benefit from their use."

--International NGO Consultation on the Mountain Agenda, 1995

Another factor contributing to the downward flow of net benefits from mountain resources is the marginalized position of many mountain communities. Despite the critical role that mountain communities play as

suppliers of resources, the communities typically suffer from insecure tenure rights, giving them little control over the very resources they essentially manage. Throughout history they have tended to be disempowered from mainstream economic and political life. The isolation and inaccessibility of mountain environments have created mountain communities with little access to information or to the decision-making powers of their national governments. They have typically had access to external markets only on unequal and unfavorable terms of trade. (Byers, E., 1995)

Unless mountain communities are empowered as critical stewards of irreplaceable natural assets, given secure tenure rights, access to information and decision-makers, and an improved economic standard of living, mountain communities may be forced to deplete globally significant resources in the face of short-term extractive opportunities. Even more importantly, without adequate empowerment and control over their resources, they may not be able to prevent over-exploitation by others.

Methodology--The Electronic Conference

As stated in the UN Commission on Sustainable Development Report on the Third Session, initiatives which strive for conservation and sustainable use of mountain resources "must incorporate a participatory approach involving all stakeholders, including farmers, women, and local and indigenous communities, as well as non-governmental organizations." (Commission on Sustainable Development, 1995) In short, mountain communities must become active participants in all decisions affecting them and the resources upon which they depend and manage.

It is with this underlying belief in participatory processes that the UN Food and Agriculture Organization, as task manager for implementing UNCED Chapter 13, (Sustainable Mountain Development), asked The Mountain Institute to develop guidelines which encourage conservation and sustainable development of mountain environments. To involve the mountain community, The Mountain Institute, with the full endorsement of FAO, enlisted the participation of the Mountain Forum. The Mountain Forum is a newly-formed electronic network of non-governmental, governmental, intergovernmental, scientific, and private sector organizations and individuals working and living in mountain environments. Its purpose is to provide a forum for mutual support and the exchange of ideas and experiences. The overall goal of the Mountain Forum is to empower participants to raise mountain issues on local, regional, national and international agendas and to promote policies and actions for equitable and ecologically sustainable mountain development. (Mountain Forum, 1995)

The forum provides a decentralized network through which mountain peoples and professionals, living in remote and rugged regions, can join together to address mountain issues and concerns. In an effort to extend the network

beyond those individuals with access to computer technology, the forum has created a number of regional facilitating committees. Through a combination of traditional and electronic communication methods, these regional committees serve as connecting points to the larger global organization. This initiative represents an innovative effort to overcome the physical barriers of mountains and to provide isolated mountain communities with access to national decision-making bodies.

After a series of internal workshops and training sessions regarding the use of electronic networks as a medium for discussion, the electronic conference entitled "Paying for Mountains: Innovative Mechanisms and Promising Examples for Financing Conservation and Sustainable Development" was hosted for six weeks during the months of July and August, 1996 as the first Mountain Forum conference.

A number of prominent scholars, professionals, nongovernmental and governmental organizations were rallied to participate and share their experiences. An unfamiliar medium to many involved, the conference began slowly as participants gathered courage to offer their ideas to a large and unknown set of readers. Behind the scenes, the conference organizers made phone calls and personal appeals urging colleagues to register for the conference and participate in this new medium of exchange. Momentum was building to see whether this was a vehicle which could in fact link mountain communities around the world.

With only twenty participants registered at the end of the first week, the conference soon grew to include over two hundred people from twenty-three different countries by the end of the six-week conference. The conference was moderated daily to meet the dual goals of keeping contributions reasonably focused while also allowing for the maximum level of participation and diversity of ideas. Sixty-seven participants directly contributed case studies or comments, and many others followed the discussion, circulated materials, and/or added commentaries to the ongoing exchange. At two different stages, the draft was circulated for participant review. Over forty-five people contributed reviewer comments.

Though a learning experience for the majority of participants, the conference enabled ideas, concerns and experiences of mountain peoples living around the world to be represented and collected. The result is not only this document, but a heightened sense of community and shared knowledge among the participants of the newly-formed Mountain Forum.

Innovative Mechanisms and Promising Examples

The mechanisms and promising examples described in this section are intended to provide planners and policy makers with a set of possible strategies to use in

capturing revenue generated by mountain resources and then in reallocating an equitable portion of the revenue to the mountain communities as suppliers of global resources. Many mechanisms overlap and work best in conjunction with others. Because each mountain range faces a unique set of challenges, constraints and opportunities, these mechanisms will need to be adapted, amended and combined to meet the specific needs of a particular region.

The examples are not intended to be exhaustive; they represent the mechanisms identified during the course of the conference. Fortunately, a wide range of mechanisms, geographic areas, and resources are represented. However, due to the participatory nature of this initiative, the cases are necessarily unevenly distributed with several gaps in terms of geographic regions, certain resources, as well as mechanisms which were not represented by the conference participants. For example, the disproportionate number of Himalayan cases may reflect the widespread attention which these mountains, the worlds highest, have received from the global community. The distribution of cases also reflects the limitations of electronic communication systems, a relatively new medium of exchange. Despite its improvement over traditional conferences in terms of providing access to large numbers of people, participation still depends on access to computers and telephone lines, and therefore does not yet reach and unite all peoples.

The presentation of mechanisms provides policy makers with a number of options and opportunities for investing in those mountain resources which have the highest resource values in their countries and localities. Table 1 describes each of the mechanisms and the associated case studies. The categorization used is one of many ways in which this collection of mechanisms could be presented. It is intended to stimulate the identification of new opportunities for policy action and further research.

Table 1: Innovative Mechanisms and Promising Examples			
MECHANISM	HOW IT WORKS	PROMISING EXAMPLES	PAGE
Tenure Rights			
Property Rights	Legal rights to manage, use or own a particular piece of property or resource.	Community Forest User Groups in Makalu-Barun Conservation Area	16
Transferable Development Rights	Legal rights to develop a piece of property which can be traded on the market.	Ejidos, Mexico	17
		Mountain Protection Plan, Virginia, USA	17
Conservation Easements	Legal agreement which entails the sale or donation of a property owner's right to develop a piece of property.	Conservation Easements in Vermont	18
Tradeable Water Rights	Legal rights to use water resources which can be traded on the market. Certain restrictions apply to the use of water.	Tradeable Water Rights in Chile	19
User Fees			
Royalty Fees	Fees charged by a government for use of a national resource.	Mountaineering Royalty in Sagarmatha National Park, Nepal	20
Entrance Fees	Fees charged upon entry into a protected area.	Annapurna Conservation Area, Nepal	20
		Buffer Zone Regulation, Nepal	20
Tour Operator Fees	Fees charged to the tour operator rather than the tourist.	Fees for Viewing Gorillas, Rwanda	21
		Tour Operator Contribution to Conservation, Nepal	21
		Pippen System of Generating Revenue from Tour Operators, India	22
Hunting and Fishing Fees	Fees charged for the right to hunt and fish.	Akagera Domaine De Chasse, Rwanda	22
		Control of Species, New Zealand	22
Environmental Taxes	Fees attached to the price of a good or service.	Lodge Taxes in Langtang National Park, Nepal	23
Redirection of User Fees	Fees channeling back to protect the resource being used.	New York City Watershed Agricultural Program, USA	23
Market Strategies			
Regional Trademarks	Exclusive legal rights to the production and sale of high quality, locally-produced foodstuffs. Also called appellation of origin.	Cheese Production in the Beaufort Valley, France	25
Green Marketing Tools	Tools which capitalize on value addition from environmentally benign products.	Ecotourism Marketing in Sikkim, India	26
		Hindelang Nature & Culture Program	26

MECHANISM	HOW IT WORKS	PROMISING EXAMPLES	PAGE
Micro-enterprise Development	Training and support for developing new small businesses.	Hydel Programme, Northern Pakistan	27
		Micro-enterprise Development, Nepal	27
Cooperatives	Entrepreneurial systems of associations with roots in the local region and run by self-management.	Co-operative Movement in Trentino Region, Italy	28
Micro-finance	Credit and savings programs for low-income people.	Aga Khan Rural Support Program, Pakistan	28
		Village Banking Model	29
Capturing Revenue from Genetic Resources	Strategies which enable communities to derive appropriate economic value for their biological diversity.	Bioresources Development and Conservation Program, Cameroon	29
External Funding Sources			
Foreign Aid	Bilateral and multilateral assistance given to countries in need of financial support.	Global Environment Facility	30
National Trust Funds	Money invested at the national level to provide a long-term source of funding.	Mgahinga and Bwindi Impenetrable Forest Conservation Trust, Uganda	31
		Bhutan Trust Fund for Environmental Conservation, Bhutan	31
Debt-for-Nature Swaps	Hard-currency debt of one country exchanged for conservation, or preservation, of globally significant natural resources.	National Trust Fund for Protected Areas, Peru	32
Local Trust Funds	Money invested by local community or organization to provide a long-term source of funding.	Warm Springs Indian Reservation Trust, Oregon, USA	32
		Wolf Compensation Fund, Rocky Mountains, USA	33
		Snow Leopard Trust, Mongolia and Tibet	33
Private Sector Funds			
Mobilization of Private Sector Funds	Use of private sector funds for conservation.	Shore Trust Bank, Washington USA	34
		Recreational Equipment, Inc. USA	34

Tenure Rights

Property Rights

In mountainous areas natural resources are often held in common or nominally by the state rather than privately-owned. Thus, an initial step in motivating conservation and sustainable use is to provide mountain communities with a more clearly defined relationship to, and ownership of, their mountain resources.

When people have secure property rights, there is often greater incentive to manage their resources sustainably. The immediate costs of depletion and/or deterioration are born by the stewards themselves rather than by the larger society as in open access or state owned resources. Therefore, the stewards are more likely to absorb this depletion and degradation costs in the prices of the goods and services and discount their value over longer time horizons. In an ideal scenario, the producers will produce and sell resources if the revenue received exceeds the total costs (including those of depletion or degradation). As a result, the price of a resource would include the longer term social and environmental costs of depletion and send accurate signals to the producer regarding resource scarcity and the corresponding resource value--the result being sustainably managed resources.

While the above scenario is true in some situations, it is important to recognize that not all resources can be privatized and that privatization can lead to destructive and unsustainable uses. For example, monetary currency may be more useful to a particular individual than its equivalent as a standing forest. In such situations, private ownership of a forest may lead to short-term gains and unsustainable use. Additionally, while secure property rights might provide incentives for an individual to sustainably manage the resources on his/her property, there may be no incentives to prevent downstream environmental problems such as poor water quality.

Recognizing the potentially significant role that property rights could play in creating incentives for conservation and sustainable use, the Government of Nepal embarked on a national program to create community managed forests in 1978. Through innovative legislation and regulations which have been periodically refined, this community forestry program has turned over approximately 250,000 hectares of national forest to 3,500 registered User Groups to manage, use and sell the products under operational plans.² Although the government still retains title to the land, the local people now have a legal means to increase their revenue (in kind and cash) from the resource. The costs of this transfer of limited property rights are borne by the government (the national population) in terms of sales revenues foregone. The increased allocation of benefits to mountain stewards however, has resulted in substantial gains in the protection of public goods. (Campbell, 1992)

Community Forest User Groups, Makalu Barun Conservation Area

In a joint initiative between His Majesty's Government of Nepal and The Mountain Institute, the Makalu Barun National Park and Conservation Area Project has transferred a total of 6,250 hectares of forest lands from government control to that of 71 community forest user groups established within the conservation area boundary. Before receiving management authority, the user groups must show that the resources will be sustainably managed. More than 2,000 households have been given stewardship rights and have consequently become recipients of revenue generated from these resources.

When these forests were managed by the central government, the local people paid a high price to the central government for their legal use. Now the user groups have authority to set and collect the fees themselves and to impose fines and penalties for community members who violate the regulations for sustainable harvesting practices. The majority of user groups have generated funds which are being invested in community development projects. The initial investment by The Mountain Institute and His Majesty's Government in the first three years is creating a self-sustaining project which achieves the goals of both conservation and sustainable development. (Summarized from Makalu Barun Conservation Area Project Staff, 1996)

When the resources were owned by the government, there were great incentives for villagers to extract forest resources illegally because there were no direct personal costs to them for doing so. This was exacerbated by the fact that the government often could not play an active stewardship role due to its lack of physical proximity and an intimate knowledge of the resource base. The predictable consequence was significant resource degradation with numerous external social and environmental costs to society. Now the local people have authority to generate money from the resources through sales and fines while also meeting their own needs for products legally. The forests have taken on more economic value to each villager giving them incentives to sustainably manage their resource base.

A similar example of Nepal's nationwide community forestry management comes from Madan Pokhara in western Nepal in which complete protection of forest resources has been enforced through the establishment of local forest management committees and forest management plans developed jointly by villagers and the forest ranger. (Banskota, 1996)

In Mexico, the formation of *ejidos* has given communities communal ownership and management responsibilities for forest lands. This system provides economic incentive for local communities to sustainably manage the resources upon which their livelihood depends.

The Mexican Ejidos

Land reform efforts of the Mexican Revolution (1910-1917) culminated in the formation of ejidos. An ejido is an expanse of land with its title held in common. The word ejido refers to both the land and the community holding title. All forest lands of an ejido are owned and managed communally. Decisions regarding forest use are made collectively through oversight and approval of plans formulated by Mexican government forestry technicians. Management and forest use however are carried out by the ejidos themselves. Profits from timber sales are distributed to ejido members and also used for ejido infrastructure. In this way all ejido members both influence and benefit from forest activities.

In Mexico's largest ejido, the Ejido El Largo y Anexos, members have recognized their dependence on forest resources and have a corresponding desire to sustain the resources. They have agreed to participate in a joint effort involving government agencies and universities to implement ecosystem management. The members are concerned about forest aesthetics and have rejected clear cutting. Because much of the ejido forest activity is not mechanized, timber extraction impacts on the forest are reduced and employment is high within the ejido. (Summarized from Thoms, 1996)

These examples have illustrated that communal property rights, where the title to land is held in common, are often just as effective as private property rights. Such mechanisms have proven particularly effective in developing countries.

Transferable Development Rights (TDRs)

Transferable Development Rights are another form of property rights which refer to an

Individual's right to develop: These have been increasingly instituted through zoning regulations in many developed countries. A common form of TDRs involves dividing land into conservation and development areas. Those people who own land inside the conservation area retain their development rights, but are not allowed to exercise these rights within the conservation area. Instead they are permitted to sell or transfer these development rights to those in the development area where the rights can be used. Because the size of the development area is much larger than the conservation area, the demand and therefore corresponding economic value of such development rights are high.

TDRs provide a structure which enables people to capture revenue by conserving their resource-rich property and selling their development rights. Rather than producing actual goods and services from their natural resources, land owners are fully compensated for their "frozen" development rights and

thus receive a share in the benefits of economic development occurring downstream. The recently passed Mountain Protection Plan in Albermarle County Virginia introduced the idea of TDRs to decrease the amount of development occurring in rural mountain areas and to protect watershed values.

Mountain Protection Plan, Virginia, USA

While the creation of a Mountain Overlay District and proposed revisions to the Subdivision, Erosion Control, and Zoning Ordinances will reduce many of the problems associated with development in mountain areas, the large number of development rights in these areas continues to threaten the mountain resources. Transfer of Development Rights will provide a means for shifting development rights out of the mountains while providing landowners with a means of profiting fairly from the transfer.

The County program will purchase development rights for preservation of agricultural and forest lands, significant plant and animal communities and areas of significance to tourism and recreation. Such a program could be funded from real estate transfer tax, cellular phone tax, meals or lodging tax, grants, or private contributions. Such a program will allow landowners to choose monetary compensation in exchange for protecting natural resources of public value. (Summarized from Tice, 1996)

Conservation Easements

Another mechanism related to development rights is conservation easements. A conservation easement is essentially the transfer of development rights through a sale or donation. A conservation easement is a voluntary legal agreement entered into between a landowner and a qualified conservation organization, such as a Land Trust or a government entity. In order to protect the lands natural resource value, an easement often permanently limits the owners ability to develop the land. In some cases this reduces the value of the property because certain activities, subdivisions, or developments are no longer permitted. The benefits to be gained by the landowner placing his/her land in an easement include: (i) the property stays in private ownership; (ii) the property, income and estate taxes may be reduced; and (iii) the act of placing land in a conservation easement is considered a charitable gift which may provide an income tax deduction. ("Farmland Protection," a publication of the Vermont Land Trust) The benefits to be gained by the greater society may include open space, wildlife habitat and corridors, view-sheds as well as public goods such as biodiversity, clean air and water.

Conservation Easements, Vermont, USA

In the Green Mountains of Vermont, the Farmland Preservation Program, orchestrated by the Vermont Land Trust, has permanently conserved 150 farms during its first ten years. As property prices and taxes become unaffordable, farmers are often forced to sell or subdivide their farms. However, if these farmers want to continue their farming lifestyle and/or to pass the farm on to future generations, a conservation easement makes this economically feasible. The Vermont Land Trust buys the development rights from farmers using a combination of public and private funds, thus placing a conservation easement on the farm. While this may decrease the marketable value of the land, it is less of an issue for farmers who want to continue farming. Easements help aid in the transfer of a farm from one generation to the next if desired, or provide income which can be invested in equipment, livestock, facilities, retirement or other uses.

Through this program, small family farmers in Vermont have been able to maintain their livelihood despite the economic efficiency of large industrial farms in the mid-western plains regions of the United States and the increasing presence of "flatlanders," ski hills and subdivisions. Conservation easements have also helped to preserve the traditional Vermont culture of hard-working family farms found primarily in the northern part of the state. (Summarized from Vermont Land Trust)

The use of conservation easements, as a means to generate revenue through the sale of development rights, makes farmland conservation in Vermont an economically viable option, thereby enabling mountain farmers to maintain their farming lifestyle and the undeveloped farmlands. The easements shift the burden of conservation from those who have title to the resource to those who place economic value on it, whether a government or the Land Trust supporters.

Easements are becoming a common tool in many regions of the United States. The South Mountain Coalition, North Carolina's newest land trust, reports a total of 1,100 land trusts across the United States which have helped protect well over 4 million acres of land. (South Mountain Coalition, 1996)

Tradeable Water Use Rights

In Chile, a system of tradeable water rights explores a variation on this theme of transferable development rights.

Tradeable Water Use Rights, a Full-cost Pricing Policy, Chile

Like most other countries in the world, Chile considers water to be a national resource, yet individuals are granted perpetual irreversible and freely tradable

water use rights independent of land ownership and use. Water use rights are defined for a fixed quantity per unit of time and are awarded following application by a potential user. The government grants the water right provided that (a) the new water right does not impair existing rights and (b) the ecological requirement of minimum flow has not yet been reached by previous right allocations. Water use rights are granted free of charge and recorded in a national register. The granting authority reserves the right to restrict water consumption in times of water shortage.

Downstream owners of water rights are entitled to a percentage share of the river flow but no protection against reduction of downstream flows due to increases in upstream use. While owners of consumptive rights (e.g. irrigation) have no specified obligation with regard to quality or quantity of return flows, owners of non-consumptive rights (e.g. hydropower and recreation) are required to return the same quantity and quality of water. The distribution of water, according to existing property rights, is organized by water users associations under the control of the general director. The water users associations are also responsible for maintaining the irrigation infrastructure.

Water rights are freely tradable and the market for water rights is quite active. Seasonal water rentals are particularly frequent within the agricultural sector. Farmers also sell or lease water rights to water supply utilities who often find such purchases a significantly less costly source than the development of new sources of supply for urban and industrial use. Individual negotiations determine the price of each transaction. (Summarized from Panayotou, 1994)

The benefit of having tradeable water rights in Chile is that water scarcity and therefore water use is regulated through the market. Water users receive a price signal indicating the highest value of water on the market, thereby creating incentives to sell the water rights to the individual who places the highest value on it. On the other hand, these unregulated water markets may fail to include the costs to society for impacting on water quality changes, return flows, and watershed protection, and could potentially benefit from policies which reward watershed protection measures.

Fees and Taxes

User fees and environmental taxes are mechanisms used to capture the full value of a particular good or service. User fees refer to any direct fee attached to the use of a particular resource while taxes refer to a fee which is attached to the existing price of a good or service. Theoretically, the fee or tax should be set at a level which incorporates the cost of depletion and/or degradation of a resource as a result of its use. For example, a fee charged upon entering a national park should contribute to the maintenance costs of protecting the resource for future visitors, thereby ensuring sustainable resource use. Depending on the specific political and economic system, fees and taxes can be

a relatively direct way to generate money from the resource users themselves. They can be charged by individual property owners or by a government entity which has legal title and responsibility for a public resource such as a national park. In the latter situation, an intermediary body is often used to collect revenue from the users and then to redistribute it to the appropriate stewards and/or producers.

The challenge for establishing effective fees and taxes is twofold. First, an appropriate amount must be set which accurately reflects the costs of maintenance and protection of the resource. Environmental valuation studies like the one mentioned previously can be especially helpful in determining an appropriate fee level. While many governments have been successful in implementing a fee system where revenue is collected from various resources, the amount charged often has no correlation with the economic value of the resource. The second challenge is to redirect the revenue earned back to the communities so that they are given incentives to continue in their stewardship roles. The following examples of user fees highlight successful implementation in one or both of these arenas.

Royalties

Royalties are fees which are imposed by a government in an effort to capture the full costs of conservation and sustainable use of these resources. The royalty charged for climbing Mount Everest in Sagarmatha National Park in Nepal provides a good model.

Mountaineering Royalty for Mount Everest, Nepal

World Wildlife Fund negotiated and entered into a tripartite agreement with the Ministry of Tourism and Civil Aviation, Government of Nepal and a local nongovernmental organization, Sagarmatha Pollution Control Committee, to return 30 percent of Mt. Everest royalty fees to Sagarmatha Pollution Control Committee for clean-up activities inside the park. The royalties for climbing Everest are \$50,000 per expedition, with approximately five expeditions a year. World Wildlife Fund put in the first three years of funding (approximately \$50,000) and now the Government of Nepal returns \$40,000 per year (slightly less than the agreed 30 percent) for clean-up and community development work in Nepal's Sagarmatha National Park. (Summarized from Sherpa, 1996b)

Entrance Fees

In many mountainous areas entrance fees have become one of the most common means for generating revenue which can then be reinvested in conservation of the resource. In the Annapurna Conservation Area in the Nepal Himalaya, visitors pay an entrance fee of \$12 which is then channeled back to

the local people using the King Mahendra Trust for Nature Conservation, a local non-governmental organization, as an intermediary.

Annapurna Conservation Area, Nepal

In most protected areas of Nepal the income generated from entrance fees has traditionally gone to the central coffers. The Annapurna Conservation Area is an exception. A special legislation was passed to retain entry fees for operation and development costs of the Annapurna project area. Today, over \$400,000 is collected and is sufficient to pay for operation as well as local development programs in the region. The protected area is viewed as self-sustainable. World Wildlife Fund put in \$1.3 million to the project over the past ten years, but in 1996 the input was only \$30,000. (Summarized from Sherpa, 1996a)

Recognizing the visible successes of both the Annapurna and Sagarmatha models, His Majesty's Government of Nepal has also begun to take a leadership role in reinvesting protected area entry fees in the local communities living adjacent to and within the protected areas. The Government hopes that this will provide incentives for local people to become active participants in conservation. The Fourth Amendment to the National Park and Wildlife Conservation Act 2029 contains this new regulation.

Buffer Zone Regulation, Nepal Himalaya

In order to address perimeter development problems, Nepal adopted the Fourth Amendment to the National Parks and Wildlife Conservation Act which authorizes the creation of buffer zones adjacent to existing parks. A buffer zone is defined as a "designated area surrounding a national park or reserve . . . to provide for the use of forest resources on a regular and beneficial basis for the local people." (Fourth Amendment to the National Parks and Wildlife Conservation Act) The amendment incorporates contemporary principles of local participation and sustainable development to promote responsible management of adjacent forests.

Until recently, all park-generated resources have been returned to Nepal's central treasury, often leaving adjacent villages with little if any economic benefit from a park's presence. The recent buffer zone legislation, however, provides for the return of 30 to 50 percent of national park entrance fees and other park revenues to local communities living in the buffer zone area.

Before funds are disbursed for community development programs, buffer zones must be delineated, user committees formed, and accounts for receiving funds opened by each national park warden. The specific amount will depend on the annual revenue earned by the park, the population of the buffer zone, the extent of impact, local interest in community development, and contributions of local people to the conservation of the park. The local users have the

following responsibilities: "1) commitment of free labor for the completion of the project, 2) payment of the project maintenance fees, and 3) render necessary cooperation in implementing the programs." (Summarized from Buffer Zone Management Rules, 1996)

In order for funds to be disbursed to buffer zone communities, the regulation requires active participation by both park personnel and the local users; they must organize themselves and demonstrate that the money will be spent on community development projects. The regulation has been passed and the rules are being finalized; many in Nepal are eager to see whether this regulation accomplishes its objectives and emerges as a model piece of legislation for other mountainous areas.

Despite its innovativeness, certain elements of the regulation are still being discussed and questioned among resource managers and policy makers. One limitation of this regulation is the fact that some mountain communities will benefit more than others depending on the specific value their resources provides, tourism or biodiversity, for example. Although other factors are considered in the dispersal of funds, buffer zones around parks like Chitwan and Sagarmatha, which earn \$800, 0000 and \$500,000 respectively in entrance fees, will receive substantially more revenue than the buffer zone around the Makalu Barun National Park, which has a lower tourist value, but a potentially higher biodiversity value. The legislation, could provide incentives for areas to develop higher levels of tourism at the expense of, or rather than, protecting other resource values such as biological or cultural diversity unless adequate measures for sharing reinvestment funds are also developed.

If this regulation is successful, it will have enabled Nepal as a country to move beyond traditional central regulatory strategies and redirect revenue in ways which increase the protection of the park while decreasing the enforcement role traditionally played by park staff and military. The local people will have incentives to be effective guardians of the very resources which bring them economic benefits.

User Fees which Capitalize on Scarcity and/or Charismatic Appeal of a Resource

In the Parc National Des Vocans in Rwanda, a user fee has been employed to generate revenue from the mountain gorillas. Since these animals are an endangered species and are considered to be a "charismatic megafauna" (a species which gets special attention because of its beauty, size, or other special characteristic), Rwandans have been able to charge high fees to merely view the animal.

User Fees for Gorilla Viewing, Rwanda

One of the greatest threats to mountain protected areas is, of course, warfare, and it may be many years before the tragic situation in Rwanda is resolved. However, in the 1980s, the highlighting of the "charismatic mega-fauna" value of the mountain gorilla, plus \$200/day fees to visit them in their unique Afro-Montane forest homes, were major contributions to the preservation of this region and its wildlife. Funds were sent to the National Park office in Kigali and reallocated during the next fiscal year for patrol and staff salaries, facilities maintenance and other park needs. (Summarized from Byers, 1996)

Tour Operator User Fees

Tour operator fees are another type of user fees which charge the tour operators, rather than the actual tourist for using a particular resource. Although the cost may be passed on to the tourist, the tour operator is responsible for paying it up front.

Tour Operator Contributions to Conservation, Nepal

Some of Nepals trekking agencies and the overseas retailers contribute a portion of each trekkers payment to support conservation causes (both environmental and cultural) in the Himalayan regions. This may include purchasing kerosene, carrying out garbage, providing warm clothing for porters, or supporting environmental education and eco-tourism training programs for trekking staff. Mountain Travel Nepal was the first tour operator which paid a conservation fee per tourist. They began charging \$20/trekker as a conservation fee and now other operators are, or at least advertise to be, doing the same. The types of projects supported include monastery restoration, and construction of schools, libraries, and health posts. Other overseas trekking agencies support charitable causes through monetary donations and donations of clothes, medicine, equipment, and books. (Summarized from Lama, 1996c)

In Sikkim India, a similar situation has been created whereby local leaders, Pippens, collect fees from the tour operator rather than the tourist. As Jain points out, "In some ways it makes more sense to collect from the operator since his/her long-term income will depend on good relationships and conditions in the destination, rather than on the tourist who visits once and probably never again."

The Phippen System of Generating Revenue from Tour Operators in Sikkim, India

Lachung is a small community of Sikkimese people of Bhutia origin, who call themselves Lachungpa. Unlike the rest of India, Lachung and another village

Lachen further east, are not part of the prevailing Panchayat system of local political administrations. Instead, community members elect two village leaders known as "Pippens." What distinguishes Pippens from Panchayat leaders is the tremendous amount of power invested in them by the villagers to make decisions on their behalf. Pippens have authority to make all resource management decisions such as the pastoral movements of yaks and to fine those who deviate.

When tourists come to the area, Pippens charge the major operator (who is a local resident) a fee to bring tourists to Lachung. While this fee is not a large amount, Pippens distribute the money among the village or for village activities, usually after getting input from other villagers in an open meeting. These funds are most often used for community activities. (Summarized from Jain, 1996)

While benefitting the sustainable use and protection of resources, the Pippens also provoke a more equitable distribution of resources among the various stewards. With the Pippens as intermediaries rather than the state government, the actual exchange of goods and services takes place amongst those most intimately connected to and dependent upon the resources.

Hunting and Fishing Fees

Hunting and fishing fees are yet another form of user fees which often contribute to the conservation and sustainable use of a resource.

Hunting Fees, Rwanda

In the Akagera Domaine De Chasse (Hunting Preserve) in Rwanda the income generated from the hunting and trophy fees far outweigh those from all other forms of tourism in Rwanda. Local people were also given the meat from the harvested animals. (Summarized from Byers, 1996)

In the United States, the collection of hunting and fishing fees also comprise a significant portion of the states natural resource agency budgets. According to an employee at the Michigan Department of Natural Resources, "the departments operating budget comes almost entirely from fishing and hunting license fees."

In the South Island High Country of New Zealand, hunting revenues are being used as an incentive to control introduced species which severely impact the natural environment. As a result of increased revenue, farmers now play a more active role as stewards of their natural resources.

Revenue Generated from the Control of Species, New Zealand

During the last half of this century, management of introduced species such as deer, Himalayan Tahr and chamois in the mountains of New Zealand has been problematic. At high densities, these animals severely impact the natural environment. To control these populations, a Himalayan tahr control plan has been developed by the Department of Conservation. While the Crown is responsible for management of much of the tahr range, the high country farmers on leasehold land are responsible for the rest. In order to encourage farmers to be effective control agents, therefore minimizing expenditures of the Department of Conservation, mechanisms have been devised which enable farmers to benefit from meeting the conservation/control targets. Some farmers allow commercial meat operators to recover animals, some have leased land to commercially guided hunters, and still others allow recreational hunters to be their control agents. In this way, New Zealand farmers are appropriately compensated for controlling species which negatively impact the natural environment. (Summarized from Hughey, 1996)

Environmental Taxes

Environmental taxes are used as a means to capture the full value of a particular good or service. The level of tax is set such that the price of using a particular resource reflects the full costs of depletion and degradation to society at large. Ideally, the level of tax is set at a level equal to the social and environmental costs not already accounted for in the price. For example, assume the price of a room in a lodge costs the owner \$10.00 to provide. In addition, there are external costs not borne directly by the lodge owner and therefore not included in the price of the room. Such costs could include the costs of additional tourists trampling fragile environments or the social cost to the neighboring community who may be negatively impacted by the presence of tourists. In Langtang National Park, a locally imposed lodge tax aims to capture revenue and redirect it to pay for such external costs.

Lodge Taxes in Langtang National Park, Nepal

Under the guidance of the Partnership for Quality Tourism Project, the lodge operators in Syabrubensi, a good-sized village at one of the main trail heads to the Langtang Valley trek, organized themselves into a Lodge Management Committee and agreed to contribute NRs. 2 per trekker for each night in a lodge or private campground. These fees are self-imposed on the honor system, collected by the committee for community development projects, and matched by other Project funds. Projects have included improved water drainage, installation of some litter bins, and latrine construction and maintenance. (Summarized from Lama, 1996a)

Redirecting Water Use Fees

Despite the fact that mountain and highland forests play a key role in watershed protection, the majority of benefits from a protected watershed accrue to downstream users, not to the local communities who maintain the forests. Downstream users do not pay a charge to have their water protected, but rather they pay to use the water. Consequently, watershed protection and forest protection are not being appropriately financed. Downstream users must pay the full cost for water by paying for the maintenance of watersheds, if sustainable quantity and quality are to be assured. By channeling some of the revenue from water sales to local communities, the revenue will serve as an incentive for watershed conservation and in turn protect the highly valued water resources.

The New York City Watershed Agricultural Program effectively does this. Without altering the price of water use, the revenue is reinvested in protecting the watershed thus creating great incentive for conservation while ultimately reducing costs to the end-user.

New York City Watershed Agricultural Program, New York, USA

A partnership has recently been formed between New York City and the upstate farmers who inhabit the Catskill Mountains in the watershed feeding New York City's reservoirs. The project is viewed as a model program by federal officials and many policy makers across the country are watching it with interest. It has been successful at bridging the concerns of rural and urban, upland and lowland, powerless and empowered, which typify resource conflicts in the World's Mountains.

The problem for New York City has been a concern about a potential decrease in the quality of its water due to runoff from barnyards and faulty sewage treatment systems upstream. The City was facing the possibility of having to build a federally (Environmental Protection Agency) mandated water filtration system at a cost of \$6 billion. What began as a rather domineering approach by City officials has turned into a cooperative agreement. New York City has put up \$35.2 million for farmers to purchase or build pollution abatement devices. Under the agreement, the participating farmers must entice at least 85 percent of the 400 farmers in the watershed to join the program. The average farm receives about \$75,000 for improvements such as cement manure pipes, fencing to improve cattle feeding, and riverside tree planting. Federal and county agriculture experts predict improved productivity in 9 out of 10 cases, in addition to the cleaner operating systems. The program is voluntary and run entirely by the farmers themselves. They meet as a 21 member Watershed Agricultural Council to disburse the city funds for pollution prevention projects.

One of the primary benefits of the program has been a renewed sense of cooperation and trust between the farmers and the city. New York City had not lived up to previous promises concerning mitigation measures related to reservoir construction. As a result, the level of distrust among the upstate communities was high. The long process which led up to the current agreement has helped to heal the old wounds and build new bonds of trust and understanding. The project is still in its early phase, but it is being touted by federal officials as a model approach to urban-rural water quality problems. It is being scrutinized by officials from all across the United States for possible adaptation to their own locales. (Summarized from Beckhardt, 1996, and Morrow, 1996)

The redirection of these funds creates an immediate incentive for farmers to conserve their resources. The program, requiring 85% of the farmers to participate, mandates that farmers work together. With this incentive-based mechanism in place, actual value has been attached to watersheds, and not just to the water resources.

Market Support

Market support mechanisms are ones used to help mountain communities compete in the larger market economy while also enabling them to continue their traditional production systems, livelihoods and land stewardship roles.

"I think the critical piece in paying for mountains is to make the link between the receiver and the giver as direct and short as possible."

--Jain, 1996

Regional Trademarks

Regional trademarks sometimes referred to as "geographical indications" or "appellations of origin," provide exclusive legal rights to the production and sale of high quality, locally-produced foodstuffs. A regional trademark guarantees the origin of a product, thus prohibiting its production in other areas. The most famous of all regional trademarks, champagne, is legally only permitted to be produced in the Champagne region of France. Similarly, makers of other European cheeses, wines and meats benefit from being granted the same status, thus ensuring that unfair, low cost competition is avoided and that the quality of the product is maintained. A stamp on the packaging of a product, indicating its origin and quality, serves to ensure the quality and thus enable producers to receive a higher return. In addition, it makes traditional (and often more environmentally benign) production systems an economically preferred option over large scale production systems. The use of regional trademarks creates an intimate link between the cultural heritage of an area, its people, its environment and its economy.

"Mountain Agriculture cannot compete with that of the plains. Its survival depends on its quality, providing added value and justifying higher prices."

--Alp Action, 1992

The two-way protection referred to in the Alpine Convention is at the heart of the effectiveness of the regional trademark.

"The promotion must be assured, amongst other measures, by the use of regional trademarks and labels of quality, permitting the protection of both the producers and consumers."

--Article 11.2--Promotion of Commerce, Alpine Convention

The Uruguay Round of the GATT trade negotiations introduced the first specific set of

International requirements regarding regional trademarks while also expanding the realm required protecting them to include most of the trading countries of the world. Under the

Agreement on Trade-related Aspects of Intellectual Property Rights (also known as the TRIPS Agreement) all members of the World Trade Organization are required to protect "geographical indications" by providing a legal mechanism to prevent "unfair competition within the meaning of the Paris Convention, and indicating or suggesting that a product originates in a geographic area other than the true place of origin." (Ewing, 1996) The production of Beaufort cheese provides a good model.

Cheese Production in the Beaufort Valley, France

In the pre-war Beaufort Valley, residents lived by the rhythm of the seasons in producing their livelihood, Beaufort cheese. In the 1950s, a French electricity company began building a dam and flooded significant amounts of pasture lands. This was a time in which the rural exodus had already begun, and the youth of the area were happy to have a job constructing the dam. However, once the dam was finished and the workers were out of a job, community leaders realized that they had to react quickly if they were to save and revive their heritage.

Refusing to depend upon government subsidies and realizing that only quality production could safeguard what was left of traditional pastures, Maxime Viallet led the community in weaving together traditional know-how and new technology creating a new slogan of "tradition in modernity" through which they resuscitated life in Beaufort. The community leaders skillfully negotiated a rise in the rent payments for the dam, conducted studies to see how their

traditional production methods could benefit from modern technology, improved the health and sanitation conditions of production, and began to target potential consumers. By opening its production workshops to the public, practicing point-of sale promotion, and launching local awareness campaigns, the community succeeded in developing a loyal micro-market, as well as a global market, for its world-renowned and trademarked "Prince of the Gruyeres cheeses."

As a result, average milk production has increased from 600 to 3,000 tons, and the price of Beaufort milk is 25% higher than other milk. Beaufort production includes 800 dairy farmers, twelve cooperative workshops, roughly twenty cheese-making farms, and over 10,000 dairy cows--exclusively the indigenous Tarine and Abondance breeds which were dwindling in numbers and could otherwise be extinct by now. The region is flourishing with the community sense and structure modernized within tradition, just like their cheese. (Summarized from Warsinsky, 1996)

As Martin Price (1996) of the Environmental Change Unit at Oxford University adds, "the producers in the Beaufort region of France have created their own micro-markets by using the regional trademark to its best advantage, joining traditional savoir-faire with modern technology. The success in the Beaufort region is due not only to regional trademarks but also to making the most of new technology. For example, small mobile milking machines which are taken up into the pastures each day allow more rapid transport of milk to the factory, and also let the participating farmers go and sleep in their beds!"

Green Marketing Tools

As the value of environmentally-friendly products has increased, entrepreneurs are recognizing the economic benefits associated with "green" (environmentally friendly) products. The Sikkim Biodiversity and Ecotourism Project in India--a joint effort of The Mountain Institute and G.B. Pant Institute of Himalayan Environment and Development, in association with the Travel Agents Association of Sikkim and The Green Circle, provide a useful model. In conjunction with a variety of other strategies, the project has capitalized on marketing the natural and cultural heritage of Sikkim in its tourism strategy.

Sikkim Biodiversity and Ecotourism Project

In 1996 the Sikkim Biodiversity and Ecotourism project started work in the Himalayan state of Sikkim to improve local livelihoods and generate economic incentives to conserve the unique biodiversity at key ecotourism sites. The project is working with stakeholders to develop and implement a variety of informal and formal mechanisms to increase and retain tourist expenditures. In conjunction with tour operators, the project has recently developed a Code of Conduct for Ecotourism which serves not only as a voluntary regulatory

mechanism for using fuelwood alternatives, but has also led to a change in government policy, increasing the availability of kerosene and bottled gas to operators. At the same time, operators consider the Code and their adherence to its contents a marketing tool to increase the charges per client and the use of local products and services.

In addition, local communities in one site identified low site-based tourist expenditures as an opportunity to increase revenues linked with efforts to improve the conservation value of the site. As part of a participatory community ecotourism and conservation plan, community members have conducted clean-up campaigns, planted native tree species and undergone training to improve their skills as naturalist guides, vegetable growers, porters and lodge owners. A marketing effort based on local natural and cultural attractions and improved services is underway to encourage visitors to extend their stay and increase expenditures at the site. (Summarized from Jain, 1996)

In a similar situation, the Hindelang district of Bavaria recognized the importance of mountain agriculture to their tourism industry and established the Hindelang Nature and Culture Program. In addition to preserving the local culture and lifestyle of mountain farmers, the program has contributed to the conservation of agrobiodiversity and has become an effective marketing tool for specific agricultural products.

"Hindelang Nature and Culture" Program, Bavaria

In the Bavarian Alps, holiday homes have mushroomed around traditional villages, creating twin problems: village life conditioned by the ebb and flow of tourism, and the flight of youth forced to leave because of the burgeoning price of land. The regions diversity--ranging from woodlands to mowed prairies--is the work of the mountain farmers. As these farmers produce agricultural goods, they manage the landscape as well. Despite the value of landscape management, this activity has never been remunerated. Mountain farmers have depended on meager agricultural revenues and can never hope to compete with the productivity of the plains.

After losing half of its farmers in 20 years, the Hindelang was faced with a stark dilemma: to remain passive and helplessly watch the continuing degradation of the landscape or to find ways to improve the lot of the farmers. Fortunately, an innovative solution was found. All the parties concerned--including not just farmers and government officials but also tour operators, hotel and restaurant owners, even shopkeepers--spent eight years forging what is now called "Hindelang Nature and Culture."

Thanks to this unique, district wide program; farmers who manage the landscape are now actively sustained through a special fund. The fund was launched with the help of Alp Action and its corporate partner Riso

Deutschland, along with the International Commission for the Protection of the Alps (CIPRA). The fund is kept alive by enthusiastic corporate and local support. In return for the support of their neighbors, the districts 86 farmers have unanimously committed themselves to cultivating their lands without the use of chemicals that would harm the environment. Grouped into an association, the Hindelangs farmers allocate the fund according to the needs, difficulty of terrain, and hardships of individual members.

"Hindelang Nature and Culture" is more than just a fund; it has become a brand name as well. Local merchants now market the quality meats and cheeses produced by the regions farmers under a special label, at premium prices. In Hindelang, tourism and agriculture now march hand in hand. (Summarized from Alp Action, 1992)

As stated by Dr. Peter Gauweiler, Bavarian environment minister, "The project can set an example for many other Alpine communities and demonstrate new ways to sensibly combine environmentally safe tourism with farming that preserves nature."

Micro-enterprises

Micro-enterprises are another mechanism by which mountain communities can generate revenue to improve their standard of living, develop a stake in conserving the local resources upon which they are based, and conserve their cultural heritage. A widespread example is that of micro-hydro projects in many of the Worlds Mountains. Energy from hydro projects is becoming a major factor in building a more viable economic base to sustain increased levels of well-being for mountain peoples.

Micro-hydels in the Chitral, Northern Pakistan

Energy is a critical component of development. Renewable energy from hydro sources, solar and wind power represents an environmentally benign clean source of power for the people of the Aga Khan Rural Support Programme area. In addition to providing power, it often provides the means for empowering mountain communities.

Through the Aga Khans commitment to build the strength of village and womens organizations, the people of Chitral in Northern Pakistan have had a unique head start in launching a substantial programme of renewable energy production. Since micro-hydels were introduced into the program, there has been a dramatic expansion of micro-hydels resulting in thirty-nine completed installations of small turbine generator facilities producing 1,560 Kilowatts of energy which are used for both household and economic purposes. Fourteen more hydel installations are in process and will be completed in the next year. (Summarized from Cool, 1996)

The development of micro-enterprises in Nepal provides another example of the role such income generating activities can play in financing the sustainability of natural and cultural resources and in capturing value from mountain resources.

Micro-enterprises, Nepal

Handicraft production and sales activities in trekking areas help improve the economic condition of mountain communities. For example, the women of Langtang/Helambu area knit socks, mittens and hats, and weave belts, purses, and knick-knacks to sell to tourists. They learn from each other, and are quick to imitate new designs. What is lacking is pricing and market strategies which reflect their labor and provide equitable returns. Likewise, in Solu Khumbu, women knit hats and sweaters; painters paint whimsical paintings; monks sell thankas; ACAP people weave panda carpets; and farmers in Marpha sell fruit liquor, preserves, and dried goods to trekkers. Along some trekking routes locals have started bakeries in the Khumbu (Everest) region using hydro-electricity. (Summarized from Lama, 1996b)

As Malcolm ODell points out from his experience in Sagarmatha National Park and Makalu Barun National Park, "income distribution depends on local control rather than on the influx of outside development investments." Focussing primarily on small-scale industries which can be locally managed has enabled local travel agents to meet trekking tourist's needs through indigenous market mechanisms.

Jairo Castano-Galvez illustrates that micro-enterprise development initiatives, in addition to increasing incomes, often end up increasing conservation as a by-product. Through linking income earning opportunities to soil conservation practices, Castano-Galvez demonstrates that increasing incomes is an effective instrument to reduce natural resource degradation and encourage sustainable use. This again points to the conservation merits of micro-enterprise development. (Castano-Galvez, 1996)

Cooperatives

The Cooperatives in the Trentino region of the Italian Alps offer a unique and highly successful model of an entrepreneurial venture. Through the action of strong economic cooperatives across many sectors, this rugged mountain region has maintained its rich cultural traditions, cared for its natural environment, and achieved economic prosperity.

Co-operative Movement in the Trentino Region, Italy

At the end of the nineteenth century, the Trentino Region of the Italian Alps suffered a severe economic crisis. The fragmentation of agricultural property,

outdated farming methods, a new outbreak of diseases, as well as severe floods triggered the creation of the Co-operative Movement. In response to this crisis, local farmers established a number of cooperatives to increase availability and reduce the costs of food, agricultural and financial inputs.

The first co-operative was set up in 1890 by Lorenzo Guetti, a priest born in the Valley of Gindicarie. It was established as a food store in an effort to guarantee the supply and distribution of basic foodstuffs, for which there was an urgent need. It was later called "Family Co-operative" to underline the absence of any profit-motive from the co-operative enterprise. Two years later, in 1892, the first Co-operative Bank was founded which later played an important role in allowing the recovery of the agricultural sector in Trentino and in facilitating the accumulation of resources by local economies. Today, cooperatives nourish brisk economic activity in wine, cheese and fruit production, banking, points-of-sale, and other sectors. (Summarized from Bassetti, 1996)

Micro-finance

Because many mountainous regions do not have access to capital with which to start micro-enterprises, many rely on programs which not only provide loans, but also provide training in loan management and the use of small loans. Micro-finance programs have been successful in providing rural poor communities with greater access to credit, markets and technical training in many different regions. The Aga Khan Rural Support Program in Northern Pakistan has become a model for improving the productive capacity of its rural mountainous population during the 13 years of its operation.

Access to Credit, the Aga Khan Rural Support Program, Pakistan

The Aga Khan Rural Support Program has become a model for improving the economic condition, productivity and welfare of communities in the Karakorum Mountains of Pakistan. In addition to its interventions in productive investments and production-support investments such as access roads, raining, and financial and technical services, credit has become easily accessible so that households are able to purchase more production inputs.

A key element has been institutional development at the village level through village organizations and women's organizations. Through these organizations, the program has improved skills in handling, processing and presenting their produce, as well as providing linkages with established markets and/or traders.

The results include doubling of average household incomes, expansion of cash crop, forestry, fodder, vegetable, and small-scale poultry production as well as a high degree of independence among communities and individuals who now have their own personal savings accounts. Through access to credit and

markets, these communities have been given tools which enable them to generate revenue from their natural resources. (Summarized from World Bank, 1995, and Bennett, 1996)

Village banking projects are another mechanism which provides savings and loan for rural poor populations. The village banking model described below was introduced in the early 1980s and has now been introduced in more than 14 countries. Because many of the world's poorest people live in mountainous regions, it is no surprise that the model has been applied primarily in mountainous countries: Bolivia, Chile, Costa Rica, Dominican Republic, El Salvador, Guatemala, Haiti, Mexico, Peru and Thailand.

Village Banking in Marginalized Mountainous Countries

The Foundation for International Community Assistance (FINCA) is a nongovernmental organization which has pioneered village banking projects in many different regions of the world. Village banks are community-managed credit and savings associations. They are established to improve poor peoples, and especially poor women's, access to financial services, build a community self-help group and financial association, and to help members accumulate savings.

Sponsoring agencies provide loans to village bank members. These loans function as catalysts to generate internal savings (and a community fund) for members. Initial loans from the sponsoring agency, operating through an external account, are for \$50. While these loans are being repaid at commercial interest rates, members deposit savings into an internal account. The model is structured to encourage internal and external accounts to grow simultaneously, because external loan eligibility is determined by the previous loan plus a members total savings contribution. After three years (nine four-month loans), if a members savings have grown at the anticipated level of 20 percent per cycle, each member will have accumulated \$300 in savings in the internal account.

All but one project have experienced high external account repayment rates between 92 and 100 percent. Flexibility in repayment seems to be acceptable as long as it is well managed; members who are late in their payments must pay a penalty. Loans greater than \$300 are not made because it is assumed that these bigger loans will not be going to the poor. This prevents elites from dominating projects.

--Summarized from Holt, 1992

This village banking model emphasizes "empowerment." Poor people are provided with social and financial tools to move themselves out of poverty. The model shows promise in its ability to reach the poor, to mobilize local

resources (including savings and labor), to foster community participation and investment, and to achieve high repayment rates.

Capturing Revenue from Genetic Resources

Genetic resources have become an increasing source of income for communities living in biologically diverse areas. These resources are a major source of molecular diversity for such industries as pharmaceuticals, agrochemicals, the seed industry, industrial enzymes, consumer products including perfumes, environmental biotechnology, the food industry including natural sweeteners, and the nutritional supplements/phytomedicines industry. These natural sources include microbes, plants, insects, animal venoms and marine organisms. Many research and development firms seek out collaborations with local institutions to maximize their ability to discover promising new chemicals or genes. As a result, developing-country research institutes have opportunities to collaborate with private firms on genetic resources research and development. The parties typically negotiate the terms of the agreement with up-front "rental" fees for samples, technology transfer arrangements, and royalty sharing agreements. The Bioresources Development and Conservation Program in Cameroon have entered into one such partnership.

Bioresources Development and Conservation, Cameroon

A local nongovernment organization known as the Bioresources Development and Conservation Program has entered into agreements with the British Overseas Development Administration and the Limbe Botanical Garden to train local villagers as "parataxonomists" to collect and characterize genetic resources. Samples are analyzed first at universities in Cameroon and then further analyzed through a consortium of research groups in the United States. Samples remain the property of the Bioresources Development and Conservation Program. If the research partners discover valuable new drugs, these will be licensed to pharmaceutical companies for development. This approach is noteworthy for attempting to add substantial value to the genetic resources samples before transferring research material to the private sector. A comprehensive benefit sharing agreement exists which includes a profit-sharing formula among all parties in the collaboration, including the local communities participating in the genetic resources inventory. (Summarized from Putterman, 1996)

A similar partnership has been formed in Surinam which allows mountain communities to capture revenue from biological diversity. Local tribes have been trained to gather genetic resources which are then shipped to a company for processing. In return, the company pays money to a trust fund which is used for community development projects.

External Sources of Funds

"Biodiversity conservation in the mountains must hinge upon a wide range of financing mechanisms, not all of which need to be strictly utilitarian or product driven. Some could appeal to the philanthropic or even the adventure seekers among the world and generate additional income for local mountain residents."

--Jackson, 1996

External mechanisms, as termed in this document, are primarily used to capture revenue from resources which are not directly used; these resources provide what economists term, non-use values.³ Such resources are not directly exchanged in the market economy because their consumption and production values, as dictated through the use of a resource, become less significant. External funding mechanisms have been particularly effective at capturing revenue from non-market resources such as biodiversity.

Foreign Aid

Although not addressed during the conference, bilateral and multi-lateral foreign aid remains one of the largest sources of external funding for poor mountain countries. Extensive research is required to quantify the portion of this assistance which is going specifically for mountain communities to finance their stewardship of mountain resources, either directly or indirectly. However, many of the examples in this report have received financial support from foreign aid, and it is evident that foreign aid has a major role to play in promoting the adoption of the kind of innovative mechanisms for self-sustaining financing as identified in this report. The Global Environment Facility is one such mechanism which has played a significant role in providing sustainable funding for conservation projects.

Global Environment Facility

Following on the Montreal Convention on global climate issues, the Global Environment Facility (GEF) was established to compensate individual countries for extra costs involved in conserving globally important environmental resources. Because mountains are repositories of great biological wealth, they have become the focus for a number of GEF projects. As a financial mechanism providing grants and concessional funds to developing countries for projects which protect the global environment, the GEF enables governments to address global environment issues they would otherwise be unable or unwilling to undertake. In doing so, the GEF demonstrates a new approach to global cooperation. The World Bank is a GEF implementing agency along with the United Nations Development Program and the United Nations Environment Programme. This indirect resource transfer, or payment, for benefits which cannot be easily valued is perhaps one of the most encouraging examples of

how nations can work together to help pay local stewards for the costs of conservation (or foregone production). (Summarized from World Bank Environment Department, 1996)

Trust Funds

Trust funds are another common tool used to compensate mountain stewards for the indirect benefits they provide. A trust fund is a sum of money generated from donor agencies, private foundations, conservation organizations, national governments, or occasionally internal fundraising efforts which is used to fund specific objectives. Trust funds differ from other mechanisms in that they are designed to provide long-term funding. Once a trust fund has been fully endowed, it operates independently from donor and institutional budget fluctuations, thus ensuring its long-term stability as a conservation funding mechanism.

A trust fund is managed by a trustee or board of trustees which holds legal title to the fund. Trust funds can be established as endowments meaning that only the interest/income is spent each year while the principal remains invested; or as revolving funds meaning that new funds are invested in the trust as existing funds are spent; or as sinking funds meaning that the entire principal is used up over a set period of years.

The Conservation Trust in Uganda is one of the many successful examples of a trust fund which redirects money to the conservation of valued natural and/or cultural resources of an area.

The Mgahinga and Bwindi Impenetrable Forest Conservation Trust, Uganda

In Uganda, the Mgahinga and Bwindi Impenetrable Forest Conservation Trust has recently been established to protect the Bwindi Impenetrable National Park and the Mgahinga Gorilla National Park. These areas represent some of the few remaining Afro-montane and Afro-alpine ecosystems. The forested mountains contain most of the world population of gorillas and serve as critical water catchment areas and sources of forest products used by local people. Additionally, they are among the more densely inhabited areas in Africa. Recently, the area has suffered from harvesting of timber and other forest resources, poaching, and agricultural encroachment.

The trust has been set up to provide a guaranteed long-term source of funding for sustainable conservation initiatives. One of the three funding priorities is to provide economic benefits to communities to help balance negative impacts arising from their proximity to the national parks.

The trust is jointly owned and controlled by the government, local and international conservation NGOs, and the local communities. Decision-making,

therefore, represents a balance of the stakeholder's perspectives. A \$4 million GEF grant has been invested to generate income for disbursement to local stewards. Each year forty percent of the trust income will be used to provide support for park management and related research. The remaining sixty percent will be used to fund grants to help communities develop economic activities. (Summarized from Spergel, 1995, and GEF, 1995)

This trust fund has created long-term financial support for conservation and sustainable development initiatives in the region. The indirect consumers, often governments acting for society at large who value the natural resources of this national park, have invested money to conserve and manage these resources sustainably.

A trust fund which has accomplished similar objectives is the Bhutan Trust Fund. The interest from this fund goes directly into the operational costs of all their national parks.

The Bhutan Trust Fund for Environmental Conservation

The Bhutan Trust Fund for Environmental Conservation is an innovative long term funding mechanism for conservation. The fund, set up in 1993 by the Royal Government of Bhutan, United Nations Development Program and the World Wildlife Fund has reached its target of \$20 million with funding from GEF, World Wildlife Fund, Dutch Government, Norway, Danish, Swiss, etc. With this amount, it generates a minimum of \$1.5 million per year from interest to fund conservation programs. Current estimates show that this amount is sufficient to operate three parks, enabling Bhutan to manage all their parks (operation costs) for the long run without any donor funding. (Summarized from Sherpa, 1996b)

Debt-for-Nature Swaps

In many situations, debt-for-nature swaps have been used as a source of funding for trust funds. These transactions reduce hard-currency debt in exchange for conservation, or preservation, of globally significant natural resources.

There are three main components in each debt-for-nature swap: (i) a significant debt which is owed by the country in question to a bank or to a creditor country; (ii) an agreement by which the creditor agrees to accept something less than the full amount owed, in order to clear the "bad loan" from its books; and (iii) a commitment by the debtor country to make payments to support conservation efforts.

With regard to financing trust funds, the usual exchange involves the central bank of the donor country issuing bonds or agreeing to make annual payments

into the trust fund. A conservation organization may serve as an intermediary to purchase commercial debt at discounted value on the "secondary market." If the debt is bilateral (owed, say, to the U.S. or Canadian government) the creditor government may agree to cancel the debt or reduce it in return for the creditor's agreement to make regular payments into the trust fund. Debtor governments are often willing to do this because they can make payments in local currency, and because the total amount they actually pay is usually considerably less than the full amount owed. (Summarized from Norris, 1996)

Debt swaps work well in countries whose debt is seriously in arrears and deeply discounted in order for the swap to be of interest to creditors, and where natural resources are considered worthy of protection by the creditors.

"Debt-for-nature swaps recognize that the debt crisis and the environmental problems in the developing world are inter-linked. The goal is to reduce hard-currency indebtedness of developing countries and make critical investments in the environment."

--World Bank Environment Department, 1995

The National Trust Fund for Protected Areas in Peru is an example of a fund which is financed largely by debt swaps.

National Trust Fund for Protected Areas, Peru

In 1992, the Government of Peru passed legislation creating the National Trust Fund for Protected Areas and a private, non-profit organization, PROFONANPE, to administer the fund. PROFONANPE has received more than \$10 million in debt donations to date with the goal of a trust fund totaling \$80 million.

To date, virtually all of PROFONANPEs funds have had an international component. Seed capital came from the GEF (\$5 million), and most of the rest of PROFONANPEs assets have come from donations of bilateral debt. PROFONANPEs unique public-private structure (with a majority on the Board representing the parks agency) has been key to its ability to maintain the government's interest in negotiating debt swaps to benefit the fund. Having nongovernmental organizations presence on the board helps assure the transparent and participative processes which are vital to donor interests.

PROFONANPEs Executive Director has analyzed Perus foreign debt in detail and developed a strategy for approaching creditor countries to develop strategic alliances. Demonstrating that the programs are based on a sound analysis of local and national needs has paid off. (Summarized from Schmidt, 1996)

While many trust funds are established at the national government level, there are numerous examples of funds which have been initiated at a more local

level. One such example is that of the Warm Springs Indian Reservation in Oregon, USA.

Warm Springs Indian Reservation Trust, Oregon, USA

High in the Cascade Mountains of Oregon, USA lies the Warm Springs Indian Reservation, a cultural and economic powerhouse that could be a model for many mountain peoples. Ancestors of the people of Warm Springs are believed to have occupied what is now Oregon for at least 11,000 years. As a result of the westward expansion of white settlers in 1855, the Warm Springs Indians were forced onto a small plot of poor mountain land set aside as the Warm Springs Indian Reservation.

In 1957 they were faced with a similar situation of losing their traditional salmon fishing sites on the Columbia River, due to flooding caused by The Dalles dam. The Tribes skillfully negotiated with the U.S. Army Corps of Engineers for a 4 million dollar settlement, and proceeded to invest this money wisely in their own future. Rather than distributing the entire settlement among tribal members (as is commonly done), the money was held in trust for the reservation as a whole.

The first major expenditure was a university study of the reservations natural resources and their potential for sustainable economic development. Deliberate diversification led to investments in a number of economic activities, about half of which were profitable. Today, the fruits of this policy include a stable forest products industry, a luxury resort, a hydroelectric plant (plus rental monies from two utility-owned dams), and more jobs than people to fill them. The reservation is filled with young people, and a lively museum/cultural center celebrates the cultures of the Tribes, both past and present. (Summarized from Byers, 1996)

This trust fund illustrates a locally-based initiative to establish a long-term funding mechanism which will sustainably finance the economic development of these mountain dwellers. Although such relocations of people is not uncommon, investing the settlement is a rare and innovative strategy.

Another example of a locally-based trust fund is the Wolf Compensation Fund founded by Defenders of Wildlife in the Rocky Mountains of the United States.

Wolf Compensation Fund, Wyoming USA

The Wolf Compensation Fund was established in response to a strong anti-wolf outcry on the part of Montana ranchers. Shortly after wolves were reintroduced into the Rocky Mountains, several ranchers lost cattle to wolves for the first time in nearly 50 years. Defenders of Wildlife, a national nongovernmental organization, rallied its supporters and raised enough money in forty-eight

hours to pay the ranchers compensation, effectively dissipating the controversy.

Since 1987, Defenders has raised \$100,000 and has paid \$19,916 to 25 different livestock producers in compensation for 42 cattle and 12 sheep lost to wolves. In an effort to go beyond compensation, the fund has been used to begin a public relations program to turn the reputation of wolves from that of a liability to an asset. One way of accomplishing this is through paying \$5,000 to any private landowner in the Northern Rockies who can provide proof that wild wolves reproduce and raise pups on his/her land. (Summarized from Defenders of Wildlife)

Related to this fund is the International Snow Leopard Trust which capitalizes on the aesthetic value of snow leopards, especially among the wealthy "developed" nations, and invests the money in local communities. The program is based upon the precept that individuals and communities are likely to act more responsibly if all parties (i) recognize a direct linkage between conserving resources and their economic or social welfare by perceiving existing threats to such resources and having a measure of control over them; (ii) act communally and individually to establish and maintain sustainable management practices through vested land-tenure and other legal land-use rights; and (iii) are rewarded for "good behavior," while being penalized for negative environmental actions.

The International Snow Leopard Trust, Mongolia and Tibet

People are attracted to remote parts of the Himalaya by popular books which immortalize the snow leopard as a unique, beautiful and almost mythical creature. How can we harness this image to the benefit of local people, who often have a very different perception of snow leopards as killers? They blame the cat for causing significant economic losses by feeding upon valuable livestock--losses of up to 100 sheep or goats in a single incident, while exceptional, are not unknown.

It is clear that local mountain people are and could play a significant role as stewards of mountain biodiversity. The question is how to reward them (financially and otherwise) for this biologically important service? The Snow Leopard Trust and The Mountain Institute are experimenting with "incentive conservation" initiatives in Mongolia and Tibet, based upon the premise that people would be willing to tolerate some loss of livestock if these were offset by other benefits.

Herders are being encouraged to protect snow leopards and their major prey in exchange for mutually-identified economic services and incentives such as improved access to better quality foodstuffs, clothing, and veterinary care. A direct link is established between behavior and reward: only those herders who

demonstrate a sincere commitment to conservation and follow good herding practices are eligible for the programs benefits. Communities are expected to protect all wildlife, not just snow leopards; it serves as an umbrella for broader conservation objectives. One long-term goal is to encourage ecotourism with significant benefit actually accruing to local residents, so that the conservation initiative can become more self-sustaining. (Summarized from Jackson, 1996)

Mobilization of Private Sector Funds

As stated in Ecotrusts annual report, "investment funds for integrated conservation and development projects can be raised from the private sector," especially in industrialized countries. An innovative partnership between Shorebank Corporation in Chicago and Ecotrust, a nongovernmental organization in Portland, has successfully demonstrated this.

Shore Trust Bank, Washington, USA

Shorebank is a community development bank holding company with over 20 years experience in increasing market opportunities and access to capital for residents of low-income neighborhoods. Ecotrust is a nonprofit organization focused on "conservation-based development" throughout the temperate rain forests of North America, which grow on the western slopes of the regions coastal mountains.

Together, the two organizations have established ShoreTrust--the nation's first environmental bancorporation. Scheduled to open in spring of 1997 in Southwest Washington, ShoreTrust Bank will expand upon the work of ShoreTrust Trading Group, a non-profit organization created by Shorebank and Ecotrust in 1994. The organization supports conservation-based development through its revolving loan fund and its marketing and technical assistance programs. STTGs role as an incubator for environmental businesses will become even more important as ShoreTrust Bank begins to make commercial loans to environmental entrepreneurs.

Approximately 400 individuals and institutions from 37 states and 5 countries have supported the program by investing close to \$7 million in EcoDeposits, a full line of FDIC-insured bank products including Savings, Checking, Money Market, CD and IRA accounts available from ShoreTrustBank. (Summarized from Grosky, 1996)

Another example of using private funds for conservation are the conservation grants programs of Patagonia, Inc., and Recreational Equipment, Inc. (REI), two leading outdoor equipment retailers based in the USA.

Recreational Equipment Incorporated (REI)

Recognizing that their business depends upon the availability of outdoor recreational opportunities, REI has begun reinvesting funds to support advocacy-oriented, grass-roots organizations who are involved in conservation at the local, state and national level. One percent of pre-tax profits goes into the conservation grants program. REI grants typically average \$3,000. In 1995, \$537,971 was awarded as conservation grants. (Summarized from REI, 1996)

Implications for Policy and Action

The mechanisms described in the previous section have helped achieve, either singly or in combination, the desired result of providing mountain communities with incentives to sustainably manage the mountain resources, thus helping to ensure a continual flow to national and global populations and to provide more equitable benefits to mountain people. In replicating the mechanisms, the challenge for mountain planners, policy makers and practitioners is twofold: (i) to work at a local or national level to understand the site-specific characteristics of and opportunities for their mountainous areas and then develop and implement appropriate mechanisms; and (ii) to promote information sharing and further action and research regarding this critical issue on a more global scale. Through this combination of acting locally and thinking globally, mountain communities and mountain resources may begin to receive the attention and financial resources necessary for their sustainability.

The first challenge, therefore, is to understand and identify the opportunities for capturing and redirecting more resource benefits at a local and/or national level. This involves three tasks:

1. Identify and appropriately value the resource flows;
2. Identify site specific opportunities and mechanisms which have been and/or could be used to capture and redirect revenue from mountain resources to the appropriate suppliers; and
3. Recognize and promote conditions of the social and economic policy environment which have been conducive to the successful implementation of the mechanisms discussed.

1. Identify and Value Resource Outflows

As discussed in regard to the environmental valuation study of the Sierra Nevada Mountains, resource values need to be identified and measured before choosing and implementing specific mechanisms. While there are a number of innovative economic techniques to use in measuring the value of non-market goods, the Sierra Nevada study illustrates the critical role that traditional economic tools can play in identifying resource values. Such studies also serve

as an important first step in beginning to document and analyze the total resource flows from mountains both at a local and global level. A more thorough understanding and documentation of this situation will provide necessary information for action and policies which redress the imbalance of mountain resource investment.

2. Identify Site Specific Opportunities and Mechanisms

The mechanisms and promising examples described by conference participants provide mountain planners, policy makers and practitioners with a variety of strategies and tools to use in capturing and reallocating benefits from mountain resources. Drawing from the electronic conference, Table 2 illustrates the variety of mechanisms available for financing conservation of specific mountain resources. To simplify the table, the resources have been grouped together. The numbers on the table refer to the case studies as numbered on the following table, Table 3.

Table 2: Mechanisms Identified in Case Studies Which Have Been Used to Finance Specific Mountain Resources

	Forests	Grazing/ Agriculture	Biological diversity	Water	Cultural	Aesthetic/ Recreation	Human Dev't
Property Rights	1,2		1,2				
Transferable Development Rights	3	3	3			3	
Conservation Easements		4	4	4	4	4	
Tradeable Water Rights		5		5			
Royalties						6	
Entrance Fees	7,8		7,8,9	7	7	7,8	8
Tour Operator Fees			10,11		10,11	10,11	
Hunting and Fishing Fees			13	12		12, 13	
Environmental Taxes			14		14	14	
Redirection of Water Use Fees				15			
Regional Trademarks		16	16		16		16
Green Marketing Tools							
Micro-enterprise Development				19			19, 20
Cooperatives		21					21
Micro-finance		22					22,23
Capturing Revenue from Genetic Resource	24		24				
Foreign Aid			25				25
Trust Funds	26	26	26,27,30,31	26		27,31	26,30,31
Debt-for-Nature Swaps			28				
Mobilization of Private Sector Funds	32		32, 33			33	
TOTAL mechanisms	7	7	13	7	5	10	6

1. Existing legal, regulatory, and enforcement structures
2. Decentralized decision-making structures
3. Local ownership and control of resources (secure tenure rights)
4. Mechanisms to redirect national revenue from resources to appropriate stewards
5. Equitable market access
6. Local institutional and organizational capacity
7. Equitable access to education, information and resources for community development
8. Partnerships with downstream institutions, especially NGOs and the private sector
9. Recognized value of traditional production systems and cultural diversity
10. Linkages with donor institutions

Table 3: Conditions Relating to the Social and Economic Policy Environment Which Have Contributed to the Successful Implementation of Mechanisms

		Conditions Conducive to the Social and Economic Policy Environment									
Case Examples		1	2	3	4	5	6	7	8	9	10
1	Community Forest User Groups in Makalu Barun and Madan Pokara, Nepal	▲	▲	▲	▲		▲	▲	▲	▲	▲
2	Ejidos, Mexico	▲	▲	▲	▲		▲	▲	▲	▲	
3	Transferable Development Rights, Mountain Protection Plan, USA	▲	▲	▲	▲		▲	▲	▲		
4	Conservation Easements, USA	▲	▲	▲		▲	▲	▲	▲	▲	▲
5	Tradeable Water Rights, Chile	▲	▲	▲	▲	▲		▲	▲		
6	Mountaineering Royalties, Nepal	▲	▲	▲	▲	▲	▲	▲	▲		
7	Annapurna Entrance Fee in Nepal	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
8	Buffer Zone Regulation, Nepal		▲		▲	▲	▲	▲			
9	User Fees for Viewing Gorillas, Rwanda	▲		▲	▲	▲			▲	▲	
10	Tour Operator Fees, Nepal	▲	▲			▲	▲				
11	Tour Operator Fees, Sikkim	▲	▲	▲		▲	▲	▲		▲	
12	Hunting Fees, Rwanda	▲				▲				▲	
13	Hunting Fees in New Zealand	▲	▲	▲	▲	▲	▲	▲	▲	▲	
14	Lodge Taxes, Nepal	▲	▲				▲	▲	▲		
15	Water Use Fees, USA	▲	▲	▲	▲	▲	▲	▲	▲	▲	
16	Regional Trademark on Cheese, France	▲	▲	▲	▲	▲	▲	▲		▲	
17	Hindelang Nature and Culture Program, Bavaria	▲	▲	▲	▲	▲	▲	▲	▲	▲	
18	Green Marketing of Ecotourism, Sikkim	▲	▲	▲	▲	▲	▲	▲	▲	▲	
19	Micro-Hydel Projects, Pakistan	▲	▲	▲		▲	▲	▲	▲		▲
20	Micro-enterprise Development, Nepal	▲	▲	▲	▲	▲	▲		▲	▲	▲
21	Co-operative Movement in Trentino Region, Italy	▲	▲	▲	▲	▲	▲	▲		▲	
22	Aga Khan Rural Support Program, Pakistan	▲	▲	▲			▲	▲	▲	▲	▲
23	Village Banking	▲	▲	▲		▲	▲	▲	▲	▲	▲
24	Genetic Resources, Cameroon	▲	▲	▲		▲	▲	▲	▲		
25	Global Environment Facility	▲							▲		▲
26	Uganda Trust Fund	▲	▲		▲		▲	▲		▲	▲
27	Bhutan Trust Fund	▲	▲		▲			▲	▲		▲
28	Debt-for-Nature Swap, Peru	▲	▲		▲		▲	▲	▲		▲
29	Warm Springs Indian Reservation Trust, USA	▲	▲	▲	▲		▲			▲	
30	Wolf Compensation Fund, USA	▲	▲	▲	▲		▲	▲	▲	▲	▲
31	Snow Leopard Trust, Mongolia and Tibet	▲	▲	▲	▲		▲	▲	▲	▲	▲
32	Mobilization of Private Sector Funds—Shore Trust Bank, USA	▲	▲		▲		▲	▲	▲	▲	
33	Recreational Equipment Incorporated (REI), USA	▲			▲						

In addition to illustrating mechanisms which have been used in mountain areas, the table also illustrates gaps where certain mechanisms could be applied to a greater variety of resources than the cases have illustrated. For example, the case study used to illustrate foreign aid is the Global Environment Facility. As described in this case study, GEF has been used as a funding mechanism for

biodiversity and human development. However, as illustrated in the Uganda and Bhutan Trust Funds, both partially financed by GEF grants, GEF money is also being used to finance conservation of forests, agriculture and grazing, water, and cultural diversity as a means for conserving biodiversity.

Similarly, the case study used to illustrate royalty fees is the mountaineering royalty collected for climbing Mount Everest. While this fee is used to protect the aesthetic and recreational values of the Everest region, royalties in general often have much wider applicability and can be used to redress a variety of resource flows. This table therefore provides a means for identifying mechanisms which have already been used to finance conservation and sustainable development of certain resources as well as mechanisms which have the potential to be applied to the specific conservation needs of an area.

The table also illustrates the potential for combinations of mechanisms to be used to protect natural and cultural resources. In the description of innovative mechanisms and promising examples, each of the case studies is used to highlight a certain mechanism. It is important to recognize, however, that the majority of the examples depend upon the use of a blend of instruments. As Jain (1996) points out in relation to the Sikkim Biodiversity and Ecotourism Project, "The mix of market-driven, private sector and formal policy and legislative initiatives in the public sector is critical, since neither alone is sufficient or sustainable in long-term, successful community-based conservation."

3. Recognize the Underlying Conditions Contributing to the Successful Implementation of these Mechanisms

The case studies presented have highlighted the outcome or result of each mechanism rather than the underlying conditions and characteristics which have contributed to their successful implementation as effective strategies. However, in replicating these mechanisms, understanding the underlying conditions of the social and economic policy environment becomes essential for mountain planners, policy makers and practitioners. For example, some of the mechanisms only work in a situation where there are secure property rights; some depend upon decentralized decision-making; others depend upon the existence of effective legal regulations and enforcement mechanisms; and still others only work in a situation where there are strong linkages to donor agencies. Understanding the specific conditions conducive to success, decision-makers may be better able to identify mechanisms which will be appropriate and effective in their particular situations. Perhaps more importantly, they may be better able to identify policy gaps and work towards creating a policy environment which is more conducive to redressing the resource outflow and promoting mountain sustainability.

Table 3 illustrates some of the conditions which have been identified through the case studies as central to the successful implementation of various mechanisms. While each of the conditions may not have been discussed specifically during the electronic conference, there was universal support from responding participants⁴ that these are key issues which emerged, and therefore deserve attention at the national and global policy levels. Many of the mechanisms do not require that all conditions be met; however, the more successful mechanisms tend to rely on a majority of conditions being fulfilled.

This table provides a preliminary basis for planners, policy makers and practitioners to begin identifying and implementing mechanisms which are likely to be effective given the specific characteristics of their social and economic policy environment. The table can also be used to help identify policy gaps which need to be addressed in order to effectively implement mechanisms which will contribute to the financing of mountain conservation and sustainable development.

As illustrated in Table 3, the conditions which have been identified as significant contributors to the successful implementation of the various mechanisms are the following:

1. *Existing legal, regulatory, and enforcement structures.* The majority of cases rely upon effective legal and regulatory structures such as resource royalties, taxation, zoning, fee collection, development rights, etc. The cases relating to fees and taxes illustrate the important role of enforcement structures, without which fees may not be collected as planned.
2. *Decentralized decision-making structures.* A commitment by national governments to decentralize at all levels and across all sectors is critical to a government's effectiveness in redressing resource flows. Local organizations, interest groups, and citizens who are intimately familiar with the issues and will be most directly affected by the decisions have the greatest stake in developing mechanisms when they are empowered to make decisions locally.
3. *Local ownership and control of resources.* As illustrated particularly in the community forestry examples, when people are given secure and clearly-defined ownership rights over a particular resource, they become more active and effective at managing for sustainable resource flows over the long term.
4. *Mechanisms to redirect national revenue from resources to appropriate stewards.* Once prices are set and revenue captured, an appropriate share of the revenue needs to be returned to the community responsible for protection of the resource. Recognizing and strengthening the direct link between sound stewardship and economic compensation will provide incentives for mountain communities to continue managing for the sustainable flow of resources.

5. Equitable market access. Market strategies need to be implemented which provide mountain communities with access to markets on favorable terms of trade. The remoteness of mountain communities, combined with the large-scale production systems of the plains, has made it increasingly challenging for mountain communities to market their goods and services. Market strategies such as regional trademarks, savings and credit programs and development of micro-enterprises have become essential to protecting the small-scale production systems which play a significant role in the health of mountain ecosystems and communities.

6. Local institutional and organizational capacity. If local institutional and organizational capacity is increased, mountain communities will become more effective and active participants in decision-making processes and sound management. Many of the examples were dependent upon strong local organizations such as community forest user groups or village organizations, for effective implementation.

7. Equitable access to education, information and resources for community development. The remoteness and inaccessibility of mountainous regions places the communities who live in them at a disadvantage in terms of access to information and resources. Special attention needs to be given to assist mountain communities in meeting their basic needs and getting access to education and resources which will improve their standard of living, increase their role in national decisions and increase their effectiveness in developing and implementing effective mechanisms.

8. Partnerships with downstream institutions, especially NGOs and the private sector. Almost all the examples and mechanisms discussed attest to the critical role that NGOs have played as intermediaries in developing and implementing effective mechanisms. The cases also illustrate the great potential for private sector organizations to become more engaged in protecting the mountain resources, upon which their industries often depend.

9. Recognized national value of traditional production systems and cultural diversity. In situations like the Bavaria case study, the existence and recognition of the important role of traditional production systems and cultural identity turned out to be the critical element in the health of the tourist economy. While such traditions need not be romanticized or glorified, their potentially important role needs to be recognized and encouraged where appropriate. Often the cultural knowledge and traditional practices, which have been refined through centuries of adaptations, are an invaluable asset for better planning and sustainable management of mountain resources.

10. Linkages with donor institutions. The trust fund examples in particular illustrate the important role played by donor organizations in facilitating social transfers from indirect or geographically distant beneficiaries of mountain

resources to the mountain communities. Such organizations include nongovernmental organizations, bi-lateral aid as well as more global institutions like the Global Environment Facility implemented by multi-lateral organizations.

Once the resources and corresponding values are measured and recognized, the options for mechanisms assessed, and the desired conditions understood, mountain planners, policy makers and practitioners can begin to develop action plans and implement more effective policies in mountainous areas. In an effort to continue building upon the knowledge base regarding innovative mechanisms and the conditions conducive to their success, monitoring and evaluation systems need to be built into all project components. Identifying case studies as "promising" examples has been feasible only through the use of such monitoring and evaluation systems which have documented their success. Without feedback mechanisms, it is difficult to accurately assess whether a mechanism has in fact captured and reallocated revenue from mountain resource flows and whether it has led to sustainable management and local benefits. When a mechanism is found to be effective, the mechanism has obviously helped to accomplish the ultimate goal of increased financing of mountain conservation and sustainable development. However, a mechanism which has failed to achieve the desired results also contributes to the end goal by adding to a greater understanding of mechanisms and of the conditions conducive to their success.

Conclusion

As local and national level planners, policy makers and practitioners develop and implement action strategies to redress the specific outflow of their mountain resources, there is a corresponding need to work together at the global level. The Mountain Agenda and the resulting Mountain Forum are examples of the cooperation and collaboration which may prove to be essential in fully redressing the imbalance of resource flows from mountain environments. "No reira, kia ora tatou katoa." (May we benefit from each others endeavors.--Alisa Smith.) Such partnerships and strategies address mountain issues at a global level and strengthen the basis for national and international action. Because mountain ranges often don't conform to geopolitical boundaries, intergovernmental approaches will be needed to address the complex issues involved in sustainable mountain investment.

As Narpat Jodha, in his extensive review of the results of this conference, points out, "More than anything else, the examples provide evidence that market-linked approaches to enhance and transfer resources for conservation and sustainable development of mountain areas does fall within the realm of possibility. This will help in invalidating the conventional view that conservation does not take place because it does not pay " (1996b). And as David Reed observes, "To have enduring effects, these instruments must be

part of a broader social policy designed to promote environmental and social equity, themselves conditions for promoting sustainable development."

These examples illustrate that if policy makers have an adequate understanding of the nature of the resources, the relative position and nature of the parties involved in the resource transfer, the options and opportunities available to them, and the conditions under which resource transfers can be most effective, more financial resources can be transferred to mountain communities in exchange for the goods and services they provide to global populations as custodians of the worlds mountains.

Those sharing in the benefits of mountain resources must share in the responsibility for their sustainability. Once individuals recognize this common responsibility, mountain communities can be equitably compensated for their stewardship roles, which in turn can help ensure that resource flows continue for mountain populations and downstream users to the enduring benefit of both.

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Appendix B: Related Organizations and Institutions

(The following information is provided so that policy makers can find more information about a particular mechanism or example.)

AlpAction. 1, rue de Muzy, 1207, Geneva, Switzerland. Tel: 022-735-92-95; Fax: 022-736-80-60.

The American Himalayan Foundation. 909 Montgomery St. Suite 400. San Francisco CA 94133 USA. Tel: 1-415-288-7245.

The American Mountain Foundation. 1520 Alamo Avenue, Colorado Springs, CO 80907

Annapurna Conservation Area Project. P.O. Box 183, Pokhara, Kaski., Nepal. Tel: 977-1-21102.

Biodiversity Conservation Network. 1250 24th St. NW Washington DC 20037 USA. Tel: 1-202-293-4800.

Department of National Parks and Wildlife Conservation. His Majestys Government of Nepal. Kathmandu, Nepal.

Defenders of Wildlife. Northern Rockies Regional Office. 1534 Mansfield Ave., Missoula, MT 59801 USA. Tel: 1-406-549-0761. Washington DC Office. 11101 Fourteenth St., NW, Washington, DC 20005 USA. Tel: 1-202-682-9400. Fax: 1-202-682-1331.

EcoDeposits at South Shore Bank. 71st and Jeffery Boulevard Chicago, Illinois 60649-2096 USA. Tel: 800-669-7725. Fax: 312-493-6609.

Ecotrust. 1200 Northwest Front Avenue, Suite 470 Portland, Oregon 97209 USA. Tel: 1-503-227-6225. Fax: 1-503-225-1517.

European Inergovernmental Consultation on Sustainable Mountain Development. 4-7 July 1996. Organized by: ARPE, 14 Rue de Tivoli--31 068 Toulouse, France. email: Arpemp@mipnet.fr; CIAPP, 14 Rue de Tivoli--31 068, Toulouse, France. email: Ciapp@starnet.unisoft.fr

Global Environment Facility. 1818 H Street, NW, Washington, DC 20433 USA. Tel: 1-202-473-1816. Fax: 1-202-522-3256.

Growth and Equity through Micro-enterprise Investments and Institutions (GEMINI). 7250 Woodmont Avenue, Suite 200 Bethesda, Maryland 20814 USA. International Center for Integrated Mountain Research and Development (ICIMOD). P.O. Box 3226, Kathmandu, Nepal. Tel: 977-1-525-313. Fax: 977-1-524509.

International Mountain Society. P.O. Box 1978, Davis, CA 95617-1978 USA

International Snow Leopard Trust. 4649 Sunnyside Ave. N., Suite 325 Seattle, WA 98103-6900, USA. Tel: 1-206-632-2421. Fax: 1-206-632-3967.

IUCN--The World Conservation Union, 28 Rue Mauverney, CH-1196 Gland, Switzerland

King Mahendra Trust for Nature Conservation. P.O. Box 3712, Kathmandu, Nepal. Tel: 526571. Fax: 977-1-526570.

Makalu Barun Conservation Area Project. P.O. Box 2785, Kathmandu Nepal. Tel: 977-1-419224. Fax: 977-1-410073. Email: mbcp@mountain.wlink.com.np

The Mountain Institute. Central Office: Main and Dogwood Streets P.O. Box 907, Franklin WV 26807 USA. Tel: 1-304-358-2401. Fax: 1-304-358-2400. Email: summit@mountain.org. Himalayan Program: PO Box 2785, Kathmandu, Nepal.

Tel: 977-1-419224. Fax: 977-1-410073. Andean Program: Apartado 01, Alameda Grau 1028 Huaraz, Peru, Sud America. Tel: 51-44-72-1884. Fax: 51-44-72-5996. Email: postmaster@tmi.org.pe. Spruce Knob Mountain Center: Circleville, WV 26804. USA. Tel: 1-304-567-2632. Fax: 1-304-567-2666.

Mountain Protection Committee. Albermarle County, VA. USA

The Nature Conservancy. 1815 N. Lynn Street, Arlington, VA 22209 USA. Tel: 1-703-247-3730. Fax: 1-703-841-4880.

New York City Department of Environmental Protection. 59-17 Junction Boulevard Corona, NY 11368 USA.

Partnership for Quality Tourism, UNDP. P.O. Box 107, Kathmandu, Nepal. Tel: 413991; Fax: 977-1-410744.

Recreation Equipment, Inc. P.O. Box 1938, Sumner WA, 98390-0800 USA. Tel: 1-206-395-3780

Sagarmatha Pollution Control Committee. Kathmandu, Nepal.

Sikkim Biodiversity and Ecotourism Project. P.O. Tadong, Gangtok, Sikkim, India 737102. Tel/Fax: 91-3592-23335.

South Mountain Coalition, Inc. P.O. Box 3023, Morganton, NC. USA. Email: somoco@vistatech.net.

United Nations Development Program. 1889 F St. N.W. Washington, DC. USA. Tel: 1-202-289-8674.

United Nations Environment Program. 1889 F St. N.W. Washington, DC. USA. Tel: 1-202-289-8456.

United States Agency for International Development. 1500 Wilson Boulevard, Suite 1010, Arlington, VA 22209-2404 USA.

Vermont Land Trust. 8 Bailey Avenue. Montpelier, VT 05602 USA. Tel: 1-802-223-5234.

Womens Entrepreneurial Association of Nepal. Kathmandu, Nepal.

Womens World Banking. 8 West 40th Street, New York, NY 10018 USA. Tel: 1-212-768-8513. Fax: 1-212-768-8519.

World Bank, Global Environment Division, Environment Department. 1818 H Street, NW. Washington DC 20433 USA. Tel: 1-202-473-1816. Fax: 1-202-522-3256.

Worldwatch Institute. 1776 Massachusetts Avenue, N.W., Washington, DC 20036-1904

World Wildlife Fund. 1250 24th St., NW Washington DC 20037-1175 USA. Tel: 1-202-293-4800. Fax: 1-202-293-9211