

Mountains of the World

**Sustainable Development
in Mountain Areas**

**The Need for Adequate Policies
and Instruments**



Mountain Agenda

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Mountain Agenda is an informal group of people with professional interests in sustainable mountain development, drawn from the academic and development cooperation communities. The group was created prior to the Rio Earth Summit (UN Conference on Environment and Development, 1992) to enhance the position of mountains on the global environmental agenda.

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Sustainable Development in Mountain Areas

The Need for Adequate Policies and Instruments

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Foreword

In 1992, with the adoption of Chapter 13 as part of Agenda 21 at the Earth Summit in Rio de Janeiro, a global framework and a platform for sustainable development in mountain regions were created. In the ten years since, much related work has been done, mainly in the areas of public awareness, advocacy, policy, networking and implementation, with some impressive results.

The year 2002, with Rio + 10 and the International Year of Mountains (IYM2002), now presents us with a dual challenge with regard to sustainable development and the cause of mountain regions – at different levels:

Let us focus first on the sectoral level. In each of the last five years we have prepared a publication addressing one of the main topics on the meeting agenda of the Commission on Sustainable Development (CSD). These thematic brochures have focused on links between the sectoral topics on the CSD agenda and the main features of sustainable development in mountain regions. In other words, we designed these brochures – which dealt with water, tourism, forestry, transport and energy – to relate these sectoral topics and strategies to mountain regions.

Over the course of these years, we realised that not only the sectoral level but also the national level has a crucial role to play. Each country needs to define its own framework for sustainable mountain development – and related policies, laws and instruments – based on its understanding of mountain regions and their role in national development.

Our own history has taught us that sustainable development in mountain regions is a lengthy political, social and economic process that extends over decades and moves forward step-by-step – sometimes two steps forward and one step back. This process has allowed all segments and groups in the population a chance to engage in debate and discussion, as well as in decision-making procedures. Over time, this process creates the elements and instruments of a framework that permits implementation of sustainable development in mountain regions, as well as improvements in the standard of living of mountain populations.

Hence the present publication focuses on the framework and instruments needed for sustainable mountain development at the

national level. It follows the pattern established in previous thematic brochures. First an overview of the topic and its main aspects is presented. This is followed by case studies that illustrate specific instruments and policies in many different countries of the world. The brochure concludes with a presentation of concrete recommendations, issues and conclusions relevant to all of us who are ready to commit ourselves to advancing the cause of sustainable development in mountain regions.

Finally, let us return to the global level. At this level we intend to meet regularly in future in order to make common efforts to promote sustainable development and improvement of livelihoods in mountain regions. Hence we intend to create a basis for different types of partnerships in order to exchange experience, undertake joint efforts, and make common commitments. This is the aim of the “International Partnership for Sustainable Development in Mountain Regions” that was agreed upon at the preparatory meeting in Bali and is to be launched at the World Summit on Sustainable Development in Johannesburg. This partnership will be further debated and discussed, and given operational and concrete shape, at the Bishkek Global Mountain Summit.

Dear readers: let us seize the opportunity at hand and accept the dual challenge of 2002. Let us foster the conditions for sustainable mountain development at the national level and commit ourselves to the *International Partnership for Sustainable Development in Mountain Regions* at the global level. Thus we will be acting locally and networking globally. And finally, let us remember that friendships and partnerships inspire people and therefore promote the cause of development.



Walter Fust

Director General,
Swiss Agency for Development and
Cooperation

Frontispiece:
Kyrgyz ornament symbolising the eternal movement of the earth and the harmony and richness of nature and life. (Courtesy H. Meessen/CAMP)

Why policies and instruments for mountain development?

Mountains cover a significant portion of the land area of many countries in the world, and their resources are playing an increasingly crucial role in sustainable development. But the specific challenges of development in mountains are rarely reflected in national policies. Only a few countries have adopted coherent policies that address these challenges from a mountain perspective. The present publication advances the idea of policy initiatives for sustainable development of mountain areas and provides visions and principles that could help elaborate such initiatives. It presents case studies from mountain areas around the world that illustrate promising examples of mountain development.

Mountains play a key role in sustainable development, and their importance will increase in future. As water towers of the world, mountains will play a crucial role in providing fresh water for a growing number of people, for industrial development, and for agriculture and irrigation in mountains and downstream areas. Food security, poverty alleviation, and, ultimately, political stability will thus be critically linked to mountain resources, and hence to the development taking place in mountain areas. Mountains will also continue to play an important role as hotspots of biodiversity. Increasing urbanisation within mountains will put additional stress on scarce resources such as water.

At the same time, mountains are characterised by specific development challenges.

Typically, these include difficult access, economic and political marginality, outmigration, environmental sensitivity, diversity of livelihoods, and cultural diversity. These challenges need to be addressed by specific policies, laws, and institutional arrangements at the international, national, and local levels.

From Rio to Johannesburg

At the global level, the adoption of Chapter 13 of Agenda 21 (Rio 1992) was a milestone in achieving recognition of the specific challenges of sustainable development in mountain areas. Chapter 13 also recognised that mountain areas experience rapid socio-economic and cultural transformation coupled with environmental degradation, and that special efforts would be needed to address these problems.

A significant number of countries have realised the importance of mountain

More than 75% of the territory of Kyrgyzstan is classified as mountainous (see table on page 29).
(U. Lutz)



What do China, Eritrea, and Costa Rica have in common with the United States, Austria, Afghanistan, Russia, and New Zealand?

In these countries, as in 91 other countries of the world, mountains cover a significant portion of the land area – over 25%. In the remaining 101 countries of the world, mountains cover less than 25% of the land area, but often play an important role based on resources such as water, minerals, or forests (see map on pages 28–29).

2002 – a year of opportunity for the promotion of mountain development

The year 2002, celebrating both the International Year of Mountains (IYM2002) and the World Summit on Sustainable Development (WSSD2002) in Johannesburg, presents a unique opportunity for policy initiatives to support mountain development.

resources for sustainable development. They have formulated policies and laws in specific sectors such as watershed management, forestry, tourism, energy, transport and infrastructure development.

However, most of these policies were elaborated from a downstream perspective. They perceive mountains as “hinterlands” that supply specific resources needed by the national economy and society. Typically, they disregard mountain livelihoods and local development agendas and fail to consider the specific challenges of mountain development. What is needed, therefore, are policy initiatives and instruments for mountain development, that

- recognise mountain areas as equal partners in development,
- consider the specific challenges of development in mountain areas, and
- ensure that sectoral policies are adapted to take account of this specificity.

A key role for national policies and international partnerships

In the contemporary world, authority for the formulation of policies and laws rests largely with individual countries. Therefore, policies and instruments concerned with the development of mountain areas must be elaborated and translated into action primarily at the national level. Such policies and instruments will provide orientation and coherence for laws and regulations, and for programmes at the local level. National policies can be effectively supported by international partnerships for mountain development.

The purpose of the present publication

In its opening section, this publication presents ideas and principles that could help elab-



orate national policies, initiatives, and instruments (pages 6–19).

Next, regional case studies (pages 20–49) from mountain areas around the world present concrete examples of the many different ways these principles have been incorporated into policies and policy frameworks.

The final section (pages 50–54) provides an outline of how policies and instruments for mountain development could be initiated and institutionalised, and suggests where linkages are possible with international partnerships.

A map showing the main mountain areas of the world by country can be found on pages 28–29.

Remote valleys that are difficult to access: North West Frontier Province, Pakistan. (P. Walther)

Some key terms

The following terms are used in this publication in reference to mountain areas and development at different spatial levels:

Global	refers to the whole world
Regional	refers to several countries
National	refers to one country
Sub-national	refers to parts of a country, such as a province, district, or national watershed
Local	refers to specific localities, valleys, or other sub-national areas

Key issues, principles and strategies

Recognition of mountains as important and specific areas of development

Development of mountain areas is often shaped by decisions taken in political and economic centres in lowland areas. The interests behind these decisions are short-term rather than long-term, and extraction of resources takes precedence over the sustainable development of mountain areas. To end political and economic marginalisation, mountain areas need to be recognised as equal partners in development. Strategies to achieve this goal include decentralisation, local institution building, recognition of local rights to natural resources, and establishment of platforms and collaborative networks to give mountain populations a “voice”.

Externally driven development

Mountains have specific environments and economies. These constitute specific development contexts, a reality that is often not well understood – or not taken into account – by

policy- and decision-making institutions that are mainly located in urbanised and densely populated lowland areas.

Hence, many mountain areas share a long history of political marginalisation. They have only limited access to policy and decision making beyond the local or the sub-national level and their development is externally driven. It is difficult to define an agenda for development that genuinely takes into account their specific needs.

Defining mountain areas in Europe

Many European countries define mountain areas according to constraints on agriculture. Altitude, length of growing seasons and slope are typical criteria. The minimum altitude increases from north to south. While it is 240 m in the UK, it rises to 600 m in mainland France and 700 m in Italy.

In Scotland, an altitude of 240 m above sea level is sufficient to classify an area as mountainous. (T. Kohler)

Partners with equal rights

In order to enhance their position on the political agenda, mountain areas must become partners with equal rights. This can be achieved if they are given the power to advocate their interests, especially vis-à-vis political and economic centres. This requires long-term political commitment, at the national policy level, to concepts such as participation in policy making, federalism,

Community-based property rights

“A key component (of mountain development) will entail the legal recognition of community-based property rights and the devolution of management authority to mountain communities, with government maintaining monitoring and regional coordination powers.”

From: Mountain Laws and Peoples, 1999



Recognition of traditional rights in Suriago del Sur, Philippines

In traditional economies, access to ancestral land is the basis for hunting, collecting, and processing forest products. Some of these activities also have a spiritual value, as they are a form of communication with the spirits of the ancestors. In Suriago del Sur, an international NGO supported local partners in establishing a platform for negotiation with the central government. In 1997, the Government of the Philippines delivered a deed to the indigenous communities to guarantee these rights.

decentralisation, local institution building, or subsidiarity.

This is not a radical plea for political autonomy of mountain areas. Mountain communities depend on surrounding areas for the exchange of goods and services, and are well aware of this.

Recognition, policies, and laws

Development in mountain and lowland areas has to follow different paths because the conditions for resource management and production are different. Countries that differentiate between mountain and other areas at the national level, and apply this differentiation to the relevant sector policies, have made a significant step towards acknowledging the specificity of mountain areas and thus promoting their sustainable development.

Checklist for national policy makers:

- Do mountain areas have a lobby in national policy and decision making?
- Is decentralisation an issue in your country? Has it progressed in the last 10 years?
- How are mountain areas defined in your country? Do any official maps demarcate mountain areas? Are traditional rights to natural resources considered in policies and laws?
- Do mountain regions have a voice in policy and decision making, for example through interest groups?



Members of an ethnic minority community in Suriago del Sur, Philippines. (Helvetas)

Depending on the purpose of the differentiation between highland and lowland areas, it can be made according to altitude, watersheds, or political units.

It is particularly important to acknowledge local rights of access to, and use of natural resources. As the example of Suriago del Sur shows (see box), recognition of such rights can be the expression of a policy aiming to acknowledge the specificity of development in mountain areas.

Alliances for consensus building

Mountain areas harbour very diverse societies, due to differences that reach far back in history. It is therefore often difficult for mountain communities to reach a consensus, although this is currently in the interest of both the individual communities and national policy makers: in today's world, mountain areas need to advocate their interests in a concerted manner, as "one voice". It is therefore important to promote formal and informal networks and platforms through which mountain communities can exchange information, establish the terms of collaboration, build consensus and express their specific development interests.

Small towns such as this one in Peru are often overlooked by development programmes. However, they can play an important role in mountain development. On the other hand, their prosperity also depends on development in the surrounding mountain areas. (P. Walther)



Compensation for services rendered to surrounding areas

Mountains possess unique natural resources such as fresh water, forests, minerals, and attractive landscapes for tourism. Often, these resources are developed and exploited with external intervention and investment, and profits are rarely re-invested in mountain areas. Hence, they continue to suffer from a lack of capital, widespread poverty, degradation of natural resources, and outmigration. Adequate compensation for the use of these resources should be granted to mountain areas as part of a comprehensive arrangement between highland and lowland systems.

Extraction of natural resources

The ways in which mountain resources are extracted often have historical roots. Mountain areas have always been the “hinterlands” of urban centres. Their resources have been the wealth on which the development and industrialisation of a country was built; these resources have been taken for granted by “heartland” societies.

Today, such extraction is an increasingly serious threat to the sustainability of develop-

ment in mountain areas. In many parts of the world, property rights to natural resources have never been granted to local people. Often, land speculation has led to the sale of the most valuable properties to outside interests.

Globalisation increases pressure

Globalisation and current neo-liberalist trends may accelerate the extraction of mountain resources. International power engineering, water, and mining companies are building alliances with the better informed leaders of traditionally-organised mountain societies. At the end, only a few profit from the resulting investments, particularly if these do not lead to permanent, well-paid, and safe local jobs.

Mountain areas are doubly disadvantaged: mountain resources are rarely processed in these areas, which also have to buy the

Century-old commitments

In British Columbia, Canada, the provincial government leased forest lands to logging companies as early as 1900. Native communities' property rights were not on the political agenda at that time. Attempts to “right such wrongs” can lead to high costs and complex legal cases for governments.

The development of the city of Los Angeles depends heavily on mountain water resources that have to be transported over very great distances. (P. Walther)



Checklist for national policy makers:

- Are financial flows between mountains and lowlands analysed? Do sectoral policies recognise, and prevent, the negative impacts of resource extraction in mountains?
- What are the trade-offs of globalisation and liberalisation in mountain areas?
- Are the rights of mountain communities to local resources ensured in national policies and laws? Can these rights be defended in court?
- Is compensation for the use of mountain resources on the political agenda in your country? Are there any examples of compensation mechanisms?

processed goods back from the lowland areas, mostly at a higher cost than people in urban centres.

Clarifying rights and obligations

The first step, politically sensitive and most disputed, is to define the rights and obligations of mountain communities with regard to local natural resources. Rights to land, forests, fresh water and, in some cases, minerals have to be defined in keeping with a country's legal system, as traditional laws are unlikely to be defensible in court.

Legalisation provides minimal protection against inequitable extraction, and prepares the ground for local investment as well as for negotiation of compensation for use of resources. Preparation of resource cadastres and development of a court system in which



Timber royalties in northern Pakistan

In Kalam, northern Pakistan, local communities receive timber royalties from commercial firms amounting to approximately US\$ 50–100 per year and household. Royalties are negotiated between the contract partners. Some of the money is re-invested in tourism.

rights to resources can be defended is a more demanding and expensive task, requiring long-term commitment of national policy makers.

Negotiating compensation

The question whether mountain people have a right to be compensated for the goods and services that they contribute towards national growth and prosperity in downstream centres, requires political discussion at the national level. Such a debate can decisively influence efforts to address poverty effectively in mountain areas.

Once rights and obligations are agreed upon, it is possible to discuss appropriate compensation mechanisms. Instruments to devise such mechanisms for a wide range of resources exist in many countries.

In the case of large-scale resource development, such as commercial forestry or dam construction, local communities should receive compensation for negative environ-

Economic instruments

Compensation does not necessarily involve payment of subsidies to disadvantaged areas, a well-known tool in European mountain areas. Other economic instruments include: investment and social compensation funds, payment of royalties for the use of natural resources (e.g. water, forests), taxes.

mental impacts. Compensation should also be paid for loss of access to resources caused, for example, by the establishment of a nature reserve.

Families in Kalam, Pakistan received significant income from royalties paid by logging companies. They invested part of the money in local tourism development. Recently, income from royalties decreased, due to the proclamation of forest bans. (P. Walther)

Chumbivilcas, Peru. Construction of this community building was made possible with money from the social compensation fund. (P. Walther)



Diversification and the benefit of complementarities

Many of the world's mountains are marginal lands, with little potential for large-scale agriculture or other mono-functional uses. Mountain communities and families have traditionally overcome such limitations by diversifying and using complementarities. Thus, many mountain economies are characterised by use of land in various altitudinal belts and climatic zones, complementary income from other sectors such as small industry and tourism, and seasonal migration. Policy makers should build on the strength of such diversified systems.

Traditional economies

Mountain landscapes contain a mosaic of small areas with different climatic and topographic conditions. This normally imposes narrow limitations on large-scale forms of land use such as mono-functional commercial agriculture.

For centuries, multi-functionality was therefore a key principle of mountain agriculture and economies. Complex land management systems with land in different altitudinal belts required large families, as work had to be done simultaneously in several areas. These

"Farming here is enough for the stomach, but not for buying clothes or for educating our children. To achieve this, you have to add other businesses like trade or tourism." Farmer from the Annapurna region, Nepal.

Salinas de Maras, Peru.
A unique cultural landscape that provides significant income to local families.
(P. Walther)



Undermining of diversification

For centuries, the people of Maras (Cuzco, Peru) earned additional income from over 6000 salt fields (salinas), which they had inherited from the Incas. This helped them secure their livelihoods. A recent national mining law confronted them with the existential threat that the right to use "their" salt fields might be sold to an international company.

multi-functional systems provided stability in a hostile and marginal environment. The beauty of the resulting cultural landscapes has become an asset for tourism (see page 14).

The limits of modernisation

In mountain areas in the South, traditional multi-functional land management is still often practised. In most countries in the North, modernisation of traditional land-use systems was inevitable due to social change. Gradual integration of the workforce in business, industry and tourism prevented massive depopulation and land abandonment after the 1950s, when modernisation set in and agriculture no longer provided a sufficient basis for livelihoods. Simultaneously, the agricultural sector was modernised, leading to a concentration on fewer land-use zones in mountains.

But modernisation did not make mono-functional approaches and economies of scale more suitable for mountain conditions than before. Multi-functionality continued to be the best development option for many mountain economies in the North.

In the South, similar strategies oriented

towards economies of scale and mono-functional land use were adopted as blueprints from the North, seldom leading to sustainable results in mountain areas. For example, investment in large-scale fruit tree or other cash crop plantations, as well as in mass tourism, increased dependence on unpredictable external markets and climatic conditions.

Developing economic niches

Experience shows that policies and strategies for the sustainable development of mountain areas benefit from careful and participatory assessment of the opportunities and limitations of multi-functional systems in mountain economies. Identification of economic niches is one element of such an assessment.

The central role of agriculture as a local source of food, employment and income must be acknowledged, particularly in the South. If based on small-scale enterprises, industry and services such as tourism spread risks and strengthen local economies. A diversified economy based on natural resources is an important means of retaining people in mountain areas and maintaining decentralised settlement patterns. This, in turn, helps conserve unique cultural landscapes, biodiversity and ecosystems.

Mountain economies can be successfully integrated into world markets, as demonstrated by the case study on commercial cooperation programmes (pages 24–25). Better



advice, improved access to markets, quality labelling, and the use of new instruments such as information technology and export promotion programmes, increase the capacity of mountain people to strengthen their economies and define their own agenda for sustainable development.

Complementarity with lowland areas

Investing in decentralised infrastructure such as rural roads, to cover basic needs and develop land and resources, will remain an important strategy for mountain development. Improved access also increases the potential for exploiting complementarity with downstream areas and population centres. Local governments or communities can maintain rural roads if they have adequate expertise and funds. Decentralisation programmes (see pages 22–23) can help develop these resources.

Provided basic services are available, eco-tourism ideally complements mountain economies, not least because it depends on an attractive environment enhanced by diversified land use and a rich local cultural heritage.



Highly diversified land-use system in Madagascar: home garden with upland rice fields in the background. Cash crops grown in home gardens are a sustainable option to generate additional income.
(P. Messerli)

A diversified economy strengthens mountain livelihoods. Processing raw materials from artisanal mining, Bolivia.
(T. Hentschel)

Checklist for national policy makers:

- Have the characteristics of the mountain economy in your country been analysed and do decision makers know about them?
- Are sectoral policies biased in favour of promoting mono-functional resource use? If so: what has been done to prevent the risks this entails for mountain areas?
- Do national policies and programmes exist that target mountain economies, increase the range of economic options and include strategies of diversification?
- Have the possibilities of achieving complementarity between mountain and lowland areas been identified?

Taking full advantage of the local potential for innovation

Local potential for innovation is a key factor in mountain development, requiring support for human resource development and capacity building. Promotion strategies must involve local leaders and increase investment in decentralised education systems that meet the needs of mountain areas without neglecting linkage with national and global networks that promote innovation. An appropriate policy framework can create an enabling environment and support the combined efforts of local communities, governments, the private sector, and NGOs for tapping local innovation potentials.

Innovation versus brain drain

One common explanation for underdevelopment and widespread poverty in mountain

areas is that the local potential for innovation is inadequately tapped and hardly integrated into development policies and efforts to exploit production and market opportunities.

In mountains, as in other marginal areas, the local potential for innovation is weakened by brain drain. If employment and income alternatives are lacking, younger and more innovative people are the first to leave.

Protecting innovations in the Andes of Bolivia

The Agroecology Programme of the University of Cochabamba (AGRUCO) in Bolivia developed a simple methodology to document local technologies and innovations in the form of handbills. To date, around 1000 handbills have been produced. Community authorities watch over them as part of their “cultural heritage”. Innovations that have been documented in the collection of “Andean technologies” cannot be patented by foreign multinational firms.

Innovation through collaboration. Foresters seek common answers in a government tree nursery in Pakistan.
(P. Walther)

Regionally anchored education

Mountain people face specific challenges not only in securing their livelihoods but also in providing a future for their children. The provision of basic education is a vital first step towards offering a perspective to the younger generation. It is also the basis for acquiring access to higher-level education in technology, engineering, business, administration, and other skills and training that promote innovation, especially in small industry and business, but also in agriculture.

Centro Bartolomé de las Casas, Peru

Founded in 1985 as a non-profit organisation by the Church, the Centro Bartolomé de las Casas (CBC) in Cuzco has developed into a regional centre that stimulates democratisation and development in the often very remote areas of the Peruvian Andes. Besides running a study centre and a unit for applied research, the “Casa de Campesino” regularly organises courses for local leaders from the villages, and information about market prices is disseminated by radio. The Centro has its own web site:

<http://www.cbc.org.pe>



Innovation knows many small ways

Farmers in the eastern highlands of Ethiopia integrate elements of traditional and external soil and water conservation techniques. They combine terraces with trashlines of sorghum straw and traditional drainage. This unspectacular, but meaningful innovation optimises conservation, scarce land resources, and labour input.

Local agricultural colleges, technical schools, and other higher education institutions that take into account the specific needs of mountain areas while maintaining links to new developments in the wider world, can become focal points of innovation and development. Planning of education and development of curricula should involve both local and outside institutions and individuals. Centralised planning at the national level often means inadequate coverage of remote mountain areas and curricula that are less meaningful for mountain people.

In countries in the South – but not only there – technical and business colleges and other higher education facilities initiated and directed by NGOs or the private sector often play a very important role, particularly when they can create an environment for discussing an area's specific problems and for seeking innovative solutions. Such facilities can



Locally adapted terraces for soil and water conservation in the highlands of Ethiopia.
(K. Herweg)

become the main intellectual centres of an area, as teachers often speak local languages and are familiar with the local people and culture. The impact of such centres can be enhanced if they have the capacity to manage donor-funded development projects.

Creating an enabling environment

Innovation gains momentum if opportunities to exchange local and external knowledge exist. Such interaction initiates learning processes that can be enhanced by the exchange of success stories that serve as role models, and by the organisation of platforms that facilitate the exchange of experience between private enterprises, policy makers, local authorities, and research and training institutions.

Credits for new ventures, know-how about how to obtain them, access to ways of protecting intellectual property and collaborating with international specialists, and basic knowledge of business management are additional important ingredients for promoting innovation and translating it into successful local ventures.

Other enabling factors such as a reasonable range of employment opportunities, access to capital, and good quality basic services (health, education, supply of consumer goods) are commonly needed to retain trained people. Many of these factors are provided by private institutions.

Supporting the publication and dissemination of national professional journals in local languages can also support innovation and facilitate the exchange of local and external knowledge. Radio programmes can serve the same function. Such forms of exchange can enhance self-reliance and self-esteem, and strengthen the local potential for innovation.

Checklist for national policy makers:

- Is brain drain in mountain areas recognised as a problem? What does the government do to prevent it?
- What are the investments per capita for education in mountain areas, compared to downstream areas? Are the curricula adapted to the realities of mountain development? Do local technical colleges or NGO-led centres with the potential to become focal points for innovation in mountain areas exist? Is there a language barrier in education, and if so, is it being addressed?
- Does the government provide incentives to promote innovation in mountain areas? Are there examples of innovations from mountain areas that are now legally protected, such as specific brands or products?

Cultural change without loss of identity

A great diversity of cultures can be found in mountain areas. The richness and diversity of this global heritage is at risk from rapid social and cultural change. Reasons for this change include population pressure, poverty, migration, and the global dominance of urban values, transmitted to the most remote mountain areas by the mass media, standardised formal education, and tourism. Measures to counter this cultural erosion are needed, not least because cultural identity and self-esteem are essential ingredients for development.

Lively mountain cultures

A great variety of cultures can be found in mountain areas, for various reasons. Many mountain areas harbour ethnic minorities, and until recently, mountain people were often less exposed to the outside world than other societies, mainly due to difficult access.

Yet mountain cultures have never been static. Trade across mountain passes and with downstream areas, and seasonal migration have always connected mountain people to the wider world. Such interaction complemented local knowledge and values with new ideas and skills. However, pressures of change used to be less pervasive. “Abnormal” situations that led to rapid economic, social and cultural change, and sometimes disruption, occurred during wars, epidemics, and natural disasters.

Landscape and knowledge as heritage

Landscapes shaped by terraces and irrigation systems are among the great achievements of mountain cultures. Such land-use systems, including the associated institutions, developed as mountain people interacted closely with their environments, and they document long learning processes. Mountain societies carry precious knowledge, for example about stabilising sloping land, extending growing seasons at high altitudes, or using myriad plants for agriculture and medicine. This knowledge, often only oral, is a resource for sustainable development.

The risks of breaking with the past

Through modernisation and mass media, even remote mountain valleys and settlements have become exposed to mainstream western culture, which is largely urban. Tourists travelling in mountains increase this exposure, which can lead to a severe risk of

Buddhist monks celebrate the New Year festival, China. (W. Popp)



Checklist for national policy makers:

- Are traditional mountain cultures and ethnic minorities acknowledged in your country?
- Do traditional cultural landscapes and types of resource use exist that are symbols of a mountain culture? What does your country do to preserve them for future generations?
- Do sectoral policies adequately respect mountain cultures? Do national radio or TV programmes address mountain development and mountain cultures?
- Are indigenous languages officially accepted in schools, administration, and courts?

Vietnam: increasing sensitivity to ethnic minorities

In Vietnam, a Committee for Ethnic Minorities and Mountain Areas was created in 1993. It supports the implementation of a programme designed for 1715 poor communes, many of them in mountain areas. The programme, implemented jointly with the FAO since 1998 and until 2005, aims to create jobs and incomes, improve infrastructure, and allocate administrative tasks at the local level.

loss of orientation and of cultural identity, cultural homogenisation, and the collapse of traditional cultures.

The impact of such developments can be dramatic, leading to irreversible loss of indigenous knowledge. Tension and conflict can increase within communities and households when some people, eager to embrace modernity, turn their back on their own cultures and adopt new modes, norms, and values. All this can lead to undermining and disrupting a specific culture within a few decades. A culture disappears when the critical mass of young people needed to maintain traditional cultural practices no longer exists. Elements of mountain cultures may then live on among migrants in urban areas.

Adequate policy responses?

To promote nation building, integration and modern development, governments often actively advocate cultural homogenisation.

Many also lack understanding and respect for the particularities of mountain cultures. As a result, mountain people, especially ethnic minorities, often face economic, social, and political disadvantages or outright discrimination. Their language may be forbidden, or banned from public schools, government administration, and courts. These are serious obstacles for promoting sustainable development in mountain areas. They also undermine efforts to maintain political stability.

An appropriate policy response could be to officially recognise the value of cultural diversity and to support it actively. Mountain people must be given realistic opportunities for self-determination, and for defining their own pace of cultural change and develop-



ment, within the national context. Increased efforts to support cultural diversity should be reflected in sectoral policies such as agriculture and education. Documentation, sensitisation, and networking by using the media, the Internet, exhibitions, cultural associations and museums, are important to raise awareness of the value of traditions, and to foster and integrate new trends and developments that will keep mountain cultures alive.

Mountain cultures must not be “protected” from modernisation. What is important is to strengthen mountain societies so that they can resist forced acculturation that disrupts their cultures, livelihoods, and personal lives.

Rice terraces in Bali. Landscapes shaped by irrigated terraces are among the great achievements of mountain cultures and are a valuable asset for tourism.

(H.P. Liniger)

Science meets Dharma

At the request of His Highness the Dalai Lama, young Tibetan monks study English and the basics of western natural science in South Indian monasteries. The project started in 2002 and the students are expected to share this knowledge, one day, with fellow students in their own monasteries or in Tibet. The project will contribute to keeping alive Tibetan spiritual culture and opening it for dialogue and cultural exchange.

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Conservation of mountain ecosystems and early warning function

Owing to their climatic and topographic diversity, mountain areas are hotspots of biodiversity. Yet the natural heritage of their ecosystems is vulnerable and can be easily destroyed, particularly on steep slopes and at high altitudes. Due to their sensitivity, mountain ecosystems tend to react to environmental degradation and global environmental trends earlier and more clearly than lowland ecosystems. They are early warning systems and hence of increasing importance in an era of global change.

Mountains as hotspots of biodiversity

Mountain ecosystems have a particularly high degree of diversity, with significant differences over small distances. This is due to several factors such as altitudinal gradients of temperature and rainfall, and high levels of endemism, i.e. of plants and animals that are found nowhere else.

In mountains in the South, for example, tropical mountain forests typically host more species in a smaller area than lowland rainforests. About half of the global Endemic Bird Areas are in mountain regions, particularly in tropical forests. And almost all forest plants in the mountains of Hawaii and New Caledonia are endemic.

The values of mountain biodiversity have been known for centuries to indigenous people. External interest groups, such as phar-

Incorporate principles

Apart from creating nature reserves and conservation areas, it is important to ensure that the principles of conservation are adequately reflected in sectoral policies (agriculture, forestry), and in natural resource management programmes.

maceutical companies, research institutions and government agencies are becoming increasingly aware of its commercial importance.

Vulnerability and sensitivity

Mountain ecosystems are extremely vulnerable to change, particularly in areas with short vegetation periods and steep slopes. The tundra vegetation above the treeline is a case in point. Its extreme environment is characterised by high temperature variation, frequent frost, poor soils, and unstable slopes. Today, this vegetation zone is disturbed in many mountain areas by tourism or increased pressure of grazing. Once destroyed, such vegetation can hardly be restored, even with the most labour-intensive methods.

Other mountain ecosystems, such as forests, are threatened by commercial agriculture and the advance of subsistence farming in countries of the South, and by underuse and air pollution in the North. These developments threaten not only biodiversity, but also the crucial roles of mountain forests with regard to provision of safe water and protection against natural hazards.

Conservation and development

In the past, conservation programmes were initiated solely in response to the need for

Mountain biodiversity, a world heritage

45% of all biosphere reserves in UNESCO's Man and the Biosphere (MAB) programme are in mountain areas.

Tropical mountain forests are biodiversity hotspots. (T. Kohler)



preserving mountain ecosystems. Today, conservation often integrates local people's need for development, for example through the creation of buffer zones around national parks.

In industrialised countries, conservation programmes have been relatively effectively based on legally binding inventories of endangered species and ecosystems that are identified for protection. Land owners have generally been adequately compensated. In developing countries, promising results have been achieved by involving local communities in planning and implementing conservation projects, and making it possible for them to benefit from the employment and income these projects generate.

An important lesson from both industrialised and developing countries is that biodiversity is well maintained in areas where traditional forms of land use continue.

Another economic activity that is largely compatible with biodiversity conservation is ecotourism. Increasing investment in this form of tourism is positive for biodiversity conservation in mountains.

Early warning: the global context

Owing to their fragility and diversity, mountain ecosystems register global environmental changes earlier and more clearly than low-land systems. Mountains are the only environments that occur in all climatic zones of the



Monitoring global change in mountains

The Mountain Research Initiative (MRI) and the UNESCO World Network of Biosphere Reserves have joined forces to study the impacts of global and environmental change in mountain ecosystems.

earth – tropical, subtropical, temperate, and arctic. Mountain areas are thus of crucial importance for global environmental monitoring. They are the only global-scale terrestrial early warning system for natural and human-induced forms of change such as climate change. This role needs to be preserved. Environmental monitoring programmes in mountains can be used to analyse trends, raise global awareness, and observe the effectiveness of remedial policies and action.

Left: Soil erosion on sloping land in Honduras.
(Ch. Küchli)

Right: Conservation and management plans for protected areas and buffer zones were prepared after completion of a national inventory of all remaining moorlands in Switzerland.
(P. Walther)

Rocky Mountains, Canada. Extreme climatic and topographical conditions, short vegetation periods and poor soils increase the vulnerability of mountain ecosystems to environmental change, including global warming.
(P. Walther)

Checklist for national policy makers:

- Are biodiversity hotspots and the most vulnerable mountain ecosystems protected by legally binding inventories?
- Is the specific need to protect mountain ecosystems reflected in sectoral policies and laws (forestry, planning, and construction)?
- Do positive examples exist which illustrate that development can be achieved without negative impacts on biodiversity and vulnerable ecosystems?
- Which mountain landscapes and ecosystems in your country are particularly endangered by global environmental change (for example global warming)? What coping strategies does your government have?



Institutionalising sustainable development of mountain areas

Despite its global importance, sustainable development in mountain areas is not yet well established at global, regional or national levels. The International Year of Mountains, IYM2002, offers a unique opportunity to anchor this issue more firmly, especially at the national level. The tasks include advocacy, lobbying and institutionalisation, as well as exchange of professional and technical expertise.

Identifying opportunities

Establishing sustainable development of mountain areas on the political agenda is a process that will take time. But the opportunity presented by the International Year of Mountains (IYM) 2002 and the World Summit on Sustainable Development in Johannesburg should be seized to institutionalise mountain development more firmly and formally at the global, regional, national and sub-national levels.

“Our secretariat checks all laws and regulations issued by the national government to make sure they take into account the interests of mountain communities.”

Member of the Federation of Mountain Cantons (Provinces), Switzerland

Mountain development should, in fact, have a broad global constituency: in 53 countries around the globe, mountains cover over 50% of the national area, and in 46 others between 25% and 50%. In many other countries, mountains play important roles – for example as water towers – despite the fact that they occupy smaller portions of the countries’ total area. Mountain development is therefore a concern for the international community.

The national level as the point of entry

The national level is the most important level for the institutionalisation of mountain development because the authority to formulate policies, laws and regulations rests with individual states. The first step could be to

In Italy, mountain development is included as a goal at the level of the constitution.
(P. Walther)



create a national task force such as the National Committees formed to prepare the IYM. The mandate of such groups could be to raise parliamentarians', decision makers' and the general public's awareness of the importance of sustainable mountain development, revise sectoral policies to improve their effectiveness for tackling mountain issues, and maintain linkages with international initiatives and partnerships.

Creating supportive networks

The creation of formal and informal networks such as private associations or NGOs for the exchange of information and for collaboration is vital to bring mountain issues into political agendas and to keep them there through advocacy, lobbying, and awareness-raising.

Both national policy makers and the private sector can benefit from the presence of such counterparts. They can play an important role in formulating or reviewing appropriate policy frameworks, policy initiatives, and sectoral policies for mountain area development. They can facilitate consensus building in broad political debates at the national and sub-national levels, involving people who have in-depth knowledge about mountain reality and who are directly affected by these realities.



Examples of pressure and interest groups

Associations of mountain municipalities, groups of parliamentarians from mountain constituencies, mountain farmers' associations, mountain tourism organisations, forestry-related organisations, mountain research associations.

Participation and public vote, Bolivia. Decentralisation, democratisation and development of local capacity are long-term processes. (AGRUCO)

Checklist for national policy makers:

- What steps have been taken in your country to institutionalise the issue of sustainable development in mountain areas?
- What is the focal point in your government administration for issues related to sustainable development in mountain areas? Has this focal point been attributed sufficient personnel capacity and expertise? Is this focal point integrated in national policy and decision making, and linked to international initiatives?
- Do any informal networks exist that are recognised by your government as counterparts in the formulation of policies for mountain development?
- Which activities has your government planned as a follow-up of the International Year of Mountains?

IYM 2002 – a stepping stone

The International Year of Mountains (IYM) 2002 offers a unique opportunity to make a first step in the process of institutionalising mountain development at the national level. At the international level, this process could be supported, for example, by an international coalition for mountain development, or a mountain partnership network involving governments, NGOs, the private sector, and research institutions.

Alliance building within the UN system is equally needed. The UN Commission on Sustainable Development and the FAO could play a leading role in such alliances. Their work could be supported by a network of governmental and non-governmental organisations that function as pressure groups.



Forests cover about 43% of the land area of Costa Rica; 60% are privately owned. The compensation fund for environmental services from mountain forests is an institution that meets economic and ecological demands. The latest firm to sign a contract was "Cerveceria Costa Rica", a brewery and water bottling company that depends on clean water for production. (Ch. Küchli)

Costa Rica's forests are characterised by rich biodiversity. Biological corridors have been identified, and the Global Environment Facility has provided funds for sustainable management of an area covering 100,000 ha. (Ch. Küchli)

National and regional experience

Central America: Costa Rica

Compensation for environmental services from mountain forests

Environmental services provided by mountain forest ecosystems are crucial to people and economies. However, there are still few initiatives that aim to compensate forest owners for these services. A successful model has been implemented nation-wide in Costa Rica, where the 1996 Forestry Law incorporated an innovative decision to compensate forest owners for the environmental services their forests provide to society. Since 1996, proposals have been put forward for financing of the system, through including the cost of watershed management in the cost of hydroelectricity and water supplies. The first contracts with private firms have now been signed.



The main assumption underlying payment for environmental services was that forests would be better maintained and protected if forest owners were compensated for the services their forests provide. As Costa Rica cannot afford to establish and effectively manage more national parks and protected areas, the

mechanism of payment for environmental services was thought to be a suitable alternative.

Costa Rica's 1996 Forestry Law acknowledged a number of environmental services, ranging from the uptake of greenhouse gases from the atmosphere to the protection of water sources, biodiversity, ecosystems, and natural scenic beauty for tourism and scientific uses. Levels of payment for environmental services and periods of commitment vary according to the type of land use.

How the compensation system works

The compensation system is managed by the National Fund for Forestry Finance of Costa Rica (FONAFIFO), which is responsible



for collecting resources and paying the beneficiaries for environmental services. Funds come mainly from two sources: a selective tax on consumption of fossil fuels, and national and international payments for environmental services of local or global value.

The sums fixed for the payment for watershed services in Costa Rica are shown in the table to the right. They result from negotiations between FONAFIFO and the companies. The reason for a higher payment, for example, by Compañía Hidroeléctrica Platanar for lands without clear land tenure is, that FONAFIFO cannot use public funds to pay for environmental services where there is no clear land tenure.

The world's first ecomarket

Encouraged by this positive experience, FONAFIFO and the Government of Costa Rica have recently negotiated the establishment of the world's first ecomarket, with the support of the World Bank and the Global Environment Facility (GEF). The World Bank has provided a US\$ 32.6 million loan, and GEF has provided a grant of US\$ 8 million, based on US\$ 10 per hectare per year for the contribution of the system to the conservation of the world's biodiversity. The aim is to promote the development of markets for environmental services from private forests.

Projections into the future

From 1997 to 2001, US\$ 57 million was invested in payments for environmental services, resulting in the preservation of 230,000 ha of private natural forests, the sustainable

Enterprise or organisation	Watershed or region	Total area funded (ha)	Amount contributed (US\$ per ha and year)
Energía Global	Volcán River	2493	10
	San Fernando River	1818	10
Hidroeléctrica Platanar	Platanar River	1400	15 for lands with title 30 for lands with no title, plus regent costs, and 5% for costs of FONAFIFO
Compañía Nac. Fuerza y Luz	Aranjuez River Balsa River Cote Lake	10,900	53 (40 for forest owner; remainder to cover costs of regent and of FONAFIFO)
GEF	Biological corridors	100,000	10
Cervecería Costa Rica	Segundo River	1000	45 plus regent costs, and 5% for costs of FONAFIFO

Source: FONAFIFO, March 2002

management of 24,500 ha of natural forests, and the reforestation of 16,000 ha. Almost 4400 forest owners have been compensated.

The demand from forest owners has been much higher than the funding available from FONAFIFO. For example, in 2000 the demand was for approximately 175,000 ha, but only 28,897 ha were funded. This indicates that forest owners have accepted the compensation system and that they might agree with the amounts paid for the environmental services provided by their forests.

José J. Campos

Private and public organisations that have acknowledged payment for environmental services in Costa Rica.
(Source: FONAFIFO)

Signing the first contracts

FONAFIFO has been able to negotiate payment for watershed services with three hydroelectric corporations, a private brewery and bottling company, and one multi-lateral fund. The first agreement was signed with Compañía Energía Global, a private company that operates two hydroelectric projects in the Central Volcanic Range of Costa Rica. These funds are used by FONAFIFO, in close collaboration with the Ministry of Environment and Energy and the Foundation for the Development of the Central Volcanic Range; this NGO provides technical assistance to forest owners.



Costa Rica's Forestry Law of 1996 established the legal basis for creation of a fund to compensate forest owners for the environmental services provided by their forests, according to the type of use. Almost 4400 forest owners received compensation between 1997 and 2001.
(Ch. Küchli)



Right: Reforestation projects became part of the development plans of many municipalities. (AGRUCO)

Below: Watershed protection goes beyond the borders of family plots and promotes cooperation and exchange of experience. (AGRUCO)

South America: Bolivia

Decentralisation and strengthening local institutions: two complementary strategies

Decentralisation and local institution building are recognised as keys to sustainable development in mountain areas. In South America, Bolivia has taken a lead. In 1994 and 1995, three new laws on People's Participation, Decentralisation, and Municipalities radically changed the architecture of the Bolivian state. Although decentralisation and strengthening of local civil society are long-term processes, valuable lessons have already been learned.

Historical background

Already at the end of the 16th century, a descendant of the Inca dynasty, Guaman Poma de Ayala, gave an initial response to the social and political disorder caused by the first years of Spanish colonialism. In his "New Chronicle on Good Governance" he claimed that the Spanish rulers should respect indigenous forms of local governance as a basis for establishing an alliance for development with the colonial administration.

Until 1994, the country remained to be, however, characterised by heavy centralisation. There were no municipal governments in rural areas, and only the larger cities received funds from the central government. Consequently, the rural areas where half of all Bolivians still lived remained generally unaffected by public investments in development.



A multi-dimensional process

The laws on People's Participation, Decentralisation, and Municipalities made possible a far-reaching decentralisation, based on democratically elected municipalities. However, it also became clear that decentralisation is a complex process with many additional requirements.

The first key element is the systematic transfer of economic resources to local governments. In Bolivia, 20% of the public revenues are transferred automatically to the local level; amounts are calculated on the basis of population figures. Recently the distribution pattern was modified with respect to six different categories of social and economic marginalisation.

Second, significant investments are aimed at strengthening the local system of planning and management. Municipal development plans are recognised as a basis for negotiation by the national government.

Third, the need for more effective social control over municipal governments has been recognised. *Comités de Vigilancia* (Vigi-



Changing the local development agenda

Irupana is a municipality of some 12,000 inhabitants located on the slopes of the eastern Andes. Livelihood systems are based on highly diversified agriculture extending over three different agroecological zones, ranging from 1000–2500 m. Before the reforms, the municipality had an annual budget of about 3000 Bolivianos; by 1998 this had risen to 2,085,450. In 1997 civil society and the municipality jointly decided to change the way financial resources were allocated. Instead of supporting activities mainly benefiting the town areas, preference was given to rural development projects. In particular, farmers focused on meeting the norms for organic coffee that can be sold to a locally based company supplying fair trade organisations in Western countries.

lance Committees) were established. They link municipal government with the many traditional indigenous organisations in order to institutionalise social control (see box below).

In order to become recognised as legitimate partners of the state, the *Comités de Vigilancia* were allowed to constitute themselves as territorial grassroots organisations.

An initial assessment of impacts

It is too early to make a firm evaluation of impacts, but some interesting lessons can be learned which might be relevant to other countries.

In the early years, development plans in the 314 municipalities still largely reflected conventional political and business activities. Local elites took advantage of their knowledge about management and public administration and tended to dominate the process.

The second municipal elections (2000) brought a change. It appears that the power of the local elites was reduced, and that more mayors were chosen from indigenous communities. Simultaneously, the number of projects targeted at rural development (for example rural roads, improvements in market infrastructure) increased.

Future perspectives

Today, some people claim there has been serious deterioration of the reforms. There is even a tendency to return to the old centralised system. Lack of capacity in municipal administrations, politisation, and lack of transparency are concerns.

While these problems have to be monitored carefully, they are increasingly understood as part of an important social learning process that goes beyond formal implementation of a new model of public administration and may last for decades. One major feature of this

learning process is that local populations have actively responded to new political opportunities resulting from the redefinition of the role of civil society, and have made proposals for introducing elements of direct democracy.

One of the particular strengths of the Bolivian experience is that the process was not imposed according to a Western model of public administration. There is a consensus among stakeholders that decentralisation and local institution building, if combined with institutionalised social control, will constitute important steps towards sustainable development of mountain areas.

Freddy Delgado, Stephan Rist



Comités de Vigilancia

The main objective of the Committees is to assure permanent and critical supervision of the activities of the municipal governments. They also help to channel the aspirations of the local population and the private sector. They have no autonomous means of sanction, but they can report irregularities to different authorities, leading to legal investigations. The members of the Vigilance Committee are appointed by civil society organisations according to their own system of legitimacy. Concerted deliberations often lead to the appointment of traditional leaders in local civil society.

Through the law on Public Participation, the Vigilance Committees, constituted as grassroots organisations, became official development partners of the government. This was an important historic step for the more than 19,000 rural communities, as it was the first time that native forms of organisation were formally recognised since the Andean people were colonised.



Until recently, access to drinking water was a privilege restricted to urban areas. Since drinking water facilities became a part of municipal development plans, they have spread throughout indigenous communities. (AGRUCO)

Members of the *Comité de Vigilancia* of the municipality of Cliza, checking budget and development plans prepared by the local government. (AGRUCO)



South America: Bolivia and Peru

Commercial cooperation programmes to make mountain economies fit for export markets

Andean countries have attempted numerous development policies and strategies to achieve economic development. Most recently there has been a radical opening to world markets. But do mountain economies have a chance to be internationally competitive? International experts believe so. Since 1999, the State Secretariat for Economic Affairs (SECO) of the Swiss Federal Department of Economic Affairs has supported a joint commercial cooperation programme in Bolivia, concentrating particularly on mountain areas, with the aim of strengthening the private sector. Tourism, agricultural products, and mining have been identified as profitable sectors. A second programme is planned for Peru.

Developing a tourism destination

One early activity was the development of a strategy for sustainable tourism in mountain areas with spectacular attractions: the region including Sucre, the colonial capital of Bolivia; the silver-mining city of Potosí, one of the richest cities of the world in the 17th cen-

tury; and the salt lake of Uyuni, “where you can touch the sky”.

To overcome age-old differences between these regions, their people, and the authorities, it was decided to establish a new tourism destination management organisation, for joint development of the many public and private services required for tourism to flourish. One challenge is to integrate different interest groups – for example tourist, environmental, municipal – into one overarching vision and strategy to resolve conflicting attitudes and to benefit the region.

Two niche products

Botanically speaking, Quínoa and Kaniwa are meldweeds or goosefoots, not cereals. They grow between 3000 and 4000 metres above sea level and are resistant to drought and frost, but yield a grain that is very rich in high-quality proteins, minerals, and lipids, and also high in unsaturated fatty acids.

Traditional agricultural products

Bolivia’s highlands are the source of numerous traditional crops that can be turned into products with greater added value. Quínoa and Kaniwa are good examples.

The local Aymara, Quetchua, and Chipaya people have been growing these crops since pre-Incan times, and the new commercial cooperation programme is now attempting to open some exclusive export opportunities for the producers of Quínoa and Kaniwa.

The Chipayas, an ethnic group whose culture is threatened with disappearance, are specialists in growing Kaniwa. In an environment with a high incidence of night frost and soil salinity, the Chipayas leach the soil each year with water from the Lauca River, and then sow Kaniwa. The harvest of about one ton of grain per hectare gives them a modest income, but only if they can sell the grain. The issue at stake is whether it is possible to export roasted Kaniwa flour, a tasty and rich

Leaching the soil with water from the Lauca River. (E. Schaltegger)



**"We do not want free rides.
Get us into export markets,
and we will do the rest."**

Bolivian highland farmer

supplement used in the food processing industry and the niche market trade in industrialised countries.

Artisanal mining

Bolivia is a traditional mining country: zinc, silver, tin, lead, tungsten, antimony, and gold are the most important products. Small mining operations account for 16% of the export market and are a very important source of



employment in poor rural mountain areas. About 500,000 persons are directly or indirectly involved in Bolivian small-scale mining, a significant proportion of the national population of 8 million.

The commercial cooperation programme promotes the local production of jewellery from gold mined by mining cooperatives. Such jewellery is marketed internationally under a fair trade label. There will be a significant return to the miners, guaranteeing higher incomes. In return, there is no child labour in these cooperatives, and improved living and environmental conditions can be attained.

Conclusions

In all three sectors mentioned, there is little doubt about the potential for substantial development of these mountain economies.



Right: Attractive products such as breakfast cereals, instant soups, and baking flour or pasta supplements are under development or already on the local markets. About 10%, or less than 3000 tons, of the Bolivian production of Quinoa is exported each year as grain, most of it certified as organically grown.

(E. Schaltegger)

Programme strategies

The main strategies are: (a) to include more private sector representatives in decision-making about trade-related issues; (b) to reduce the burden of red tape for exporters; and (c) to search for, and to improve niche products for which there is a growing demand in sophisticated target markets.

Left: Chipaya couple sowing Kaniwa with simple devices. (E. Schaltegger)

Below: Worker in the mining industry. (T. Hentschel)

Therefore, this export promotion programme will also be extended to Peru.

Given the population concentration in mountain areas, there is a need to formulate an overall national policy that includes, first, opening mountains and their tourist attractions to a wider public; second, attracting private investment in the artisanal mining sector; and third, motivating local people to participate more fully in both development activities and their benefits. International cooperation can do much to help local products meet international standards and to open foreign markets to such products.

*Markus Reichmuth, Ernst Schaltegger,
Thomas Hentschel*



Examples of activities planned for the Peru programme

(a) Strengthen knowledge and capacities for international trade issues; (b) Support the introduction of good agricultural practice standards among exporters; (c) Identify export-oriented firms motivated to produce high-value, non-perishable products based on Peru's rich biodiversity.



Europe: Alpine countries

The Alpine Convention: an international mountain policy framework

The European Alps extend across eight countries that face similar development problems related to this mountain range. The process of considering these problems jointly began in 1952, with the establishment of the Commission for the Protection of the Alps (CIPRA). In 1991, the environment ministers of the eight Alpine states and the European Commission signed an international treaty, the Alpine Convention, in Salzburg. CIPRA had paved the way for this Convention by raising awareness with studies and lobbying. Today, the Alpine Convention is increasingly recognised as an important step towards political recognition of these mountain areas.

In light of the rapid deterioration of the Alpine environment, CIPRA decided in 1987 to lay the groundwork for an international treaty for protection of the Alps. The strategy was to raise public awareness and build an alliance involving local and regional governments.

This bottom-up strategy had an impact. In 1989, the governments of the Alpine countries and the European Commission, under the leadership of the German Environment Minister, began to draft a treaty. They signed the Alpine Convention in 1991. This constituted a significant and concrete contribution by the eight Alpine states to the 1992 UN Conference on Environment and Development.

Negotiations at the content level

Despite several years of preparatory discussions, the treaty is a framework convention containing no specified means of application, although its Article 2 contains objectives that are to become binding on each signatory through more detailed protocols. The rest of the Convention is dedicated to specifying means of collaboration.

One new and very positive aspect was the strong commitment of the governments of all

Alpine states to look at very different issues and problems (see box), using a territorial rather than a sectoral approach for the benefit of an entire mountain range. While this made the process unique, it was by no means simple. Once the Convention was signed in 1991, it was not endorsed by the first group of signatories until 4 years later, and did not become binding on all of them for another 5 years. Of the 12 implementation protocols that were to be elaborated and signed, only 8 have been drafted. They were to be ratified by the signatories in 2002, 11 years after the original Convention was signed.

Saas Fee, a renowned tourist resort in the Swiss Alps, acknowledges the positive role which the Alpine Convention plays. According to Claude Bumann, president of the community, "The Alpine Convention offers fantastic possibilities, beyond political boundaries, for collaboration and exchange of experiences about projects with which it is possible to create new jobs. Tourism is one example". (T. Kohler)

CIPRA

The International Commission for the Protection of the Alps (CIPRA) was founded in 1952 in Rottach-Egern (Germany). CIPRA is now an NGO that includes over 100 organisations and institutions interested in finding integrated solutions to problems of nature and landscape protection and management, environmental protection, and regional planning in the Alps. CIPRA has seven national offices and a regional office in Italy (South Tyrol).



Topics in the Alpine Convention

The following topics are addressed in the Alpine Convention, through a territorial and integrated approach: population and culture; spatial development; air quality management; soil protection; water management; protection of nature and conservation of landscapes; mountain agriculture; mountain forests; tourism; transport; energy and waste management.

From conservation to a framework for sustainable development

From the beginning, the overall objective of the Convention was to create favourable conditions for better protection of nature and cultural landscapes, and to define, in parallel, a new framework for sustainable development in the Alps, based on criteria of environmental and social feasibility. There was a consensus that standards and norms for environmental protection and development had to be higher than those for the surrounding lowland areas.

Yet despite clear arguments by its promoters, the Convention was not universally accepted. Many argued that it would be purely a “protection framework”, preventing development in the Alps. One reason for this criticism was that the promoters had not given adequate attention to providing the necessary information and involving stakeholders and the public.

It is gratifying to see that the participating countries had the capacity to respond with constructive arguments and to learn rapidly. The decision in 1992 to put more emphasis on socio-economic aspects and public involvement had a very positive impact on the whole process.

Positive impacts to date

The most significant impact of the Convention has been a new consensus among politicians and decision-makers that the Alps face particular development problems which must be considered jointly. Today numerous information exchange and collaborative networks, all referring to the Convention, are well established (see also pages 28–29).

It is encouraging that governments could come together in the heart of a densely populated continent to undertake problem analy-



sis and define objectives for the future of their mountain areas. Today, many of the 6000 Alpine communities perceive the Alpine Convention as an opportunity and, even more important, as an expression of the strong commitment of their national governments to the often marginal mountain areas. They know that this kind of solidarity will be increasingly important in the future. This positive assessment has replaced earlier criticisms that portrayed the Alpine Convention merely as a directive from national governments.

Andreas Goetz



The tremendous increase in trans-Alpine traffic has become a severe threat to the fragile mountain ecosystem that can best be dealt with in a framework of common policy. The signatories of the Alpine Convention have pledged to pursue a sustainable transport policy. One possible element of such a policy is the transport of goods across the Alps by rail. (A. Boillat, SBB)

The logo of the Alpine Convention creates a sense of unity. (Courtesy CIPRA)

The Alpine Convention: A model for the Carpathian mountains?

The Carpathian mountains, a trans-boundary mountain range with unique flora and fauna, cover an area of more than 200,000 km² and extend into six Central and Eastern European countries. The Carpathian mountain ecosystem is under increasing pressure. The process of transition and structural changes now underway are having a heavy impact on relations among the people living in the Carpathians. A common policy framework for all Carpathian countries could help create a sustainable future in this unique region. The content of such a Convention would have to be adjusted to the regional conditions.

The countries of the world and their mountain areas

Map sources

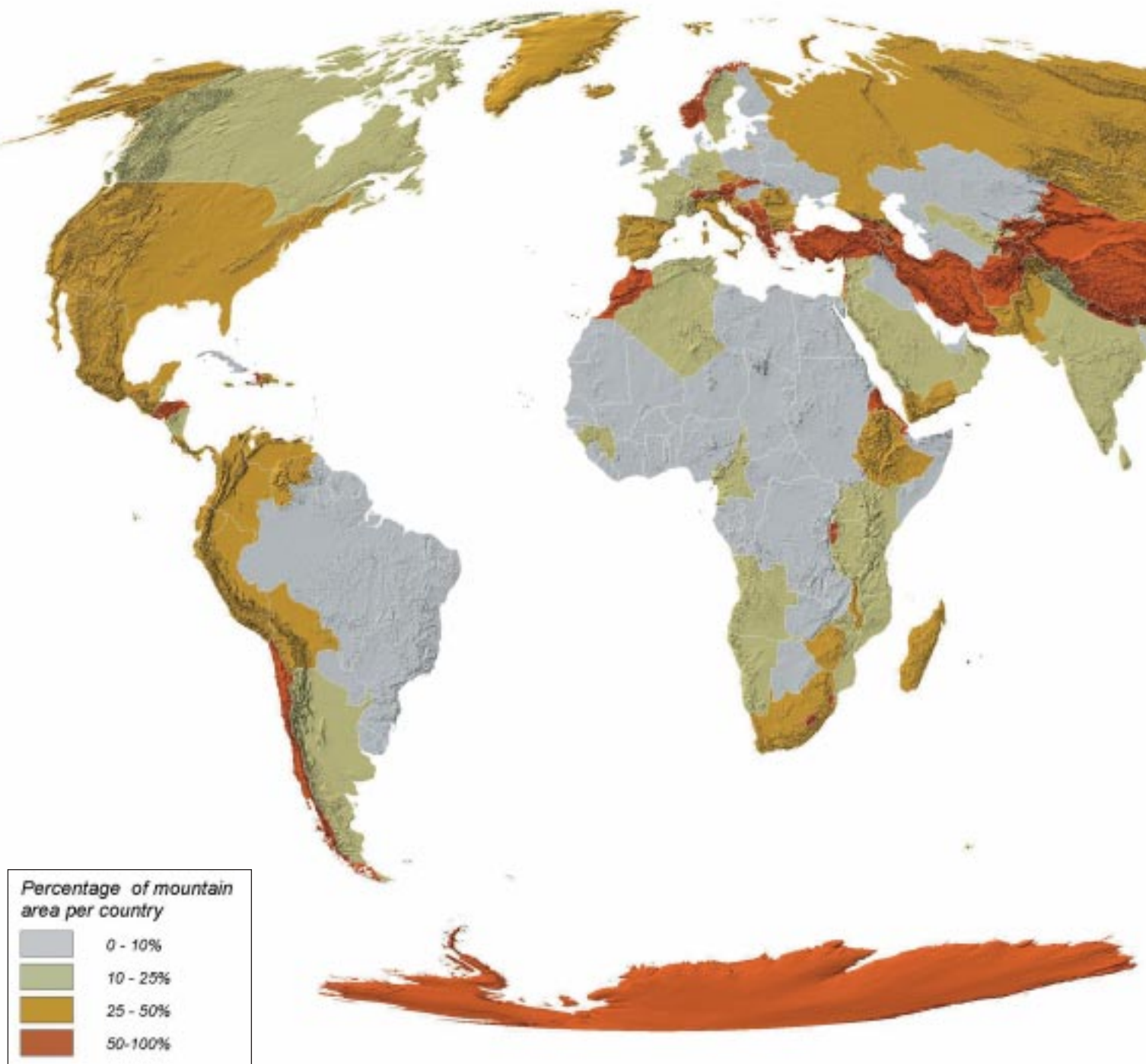
Terrain data: Resampled from the GTOPO30 Digital Terrain Model (DTM) produced by the US Geological Survey (USGS) using a model by Kapos et al. (2000). The following parameters have been derived from the DTM and were considered in the model: elevation (metres asl), slope (degree) and elevation range (metres) as maximum elevation difference in a circular neighbourhood of 5 km radius.

Administrative data: ESRI Data and Maps, World CD.

Map scale: approx. 1:100 million.

Map projection: Mollweide

Authors: GIS, research, cartography and layout: Sebastian Eugster, Albrecht Ehrensperger (CDE) and Andreas Brodbeck (Institute of Geography, University of Berne). Concept, texts: Hans Hurni, Kristina Imbach, Thomas Kohler (CDE), Martin Price (University of the Highlands and Islands, Perth). Map date: 2002.



What is a mountain country?

The map shows the countries of the world classified according to the percentage of their mountain area. Countries with a high percentage of mountain areas are found on all continents, and range from large countries such as China and Iran to small ones such as Lesotho, New Zealand, or Slovenia. Other countries such as the United States and Russia, or India, Canada and Algeria, with extensive mountain areas have a lower percentage due to their large plains and lowlands. The underlying hill shading shows that even countries with low percentages of mountain areas, such as Australia, Brazil, or Thailand, do have mountains – which play an important role, for example, for the supply of fresh water. The map therefore indicates that sustainable mountain development is an issue of global importance that needs to be addressed in all regions of the world.

The map was produced according to the pragmatic global approach by Kapos et al. (2000), that uses elevation, slope and local elevation range to define the “mountain areas of the world”. Included in this classification were highlands and elevated ice shields above 2500 m, as well as areas with an elevation range greater than 300 m within a horizontal distance of 5 km below that altitude.



Countries and territories of the world and their mountain area	1 (%)	2 (no.)	3 (%)
(Countries in this category are not listed)	0–10	70	1.3
Algeria, Angola, Argentina, Belize, Cameroon, Canada, Equatorial Guinea, Faroe Islands, France, Germany, Guinea, Guadeloupe, India, Jordan, Kenya, Martinique, Mozambique, Namibia, Nicaragua, Oman, Uganda, Saudi Arabia, Sri Lanka, St. Lucia, Sweden, Syria, Tanzania, Tunisia, United Kingdom, Uzbekistan	10–25	30	3.5
Bolivia, Bulgaria, Colombia, Croatia, Cyprus, Czech Republic, Dominican Republic, Ecuador, Ethiopia, Fiji, French Polynesia, French Southern & Antarctic Lands, Greenland, Guatemala, Indonesia, Israel, Jamaica, Jan Mayen, Madagascar, Malawi, Malaysia, Mauritius, Mexico, Mongolia, Myanmar (Burma), Pakistan, Panama, Papua New Guinea, Peru, Philippines, Portugal, Puerto Rico, Romania, Russia, Sao Tome and Principe, Solomon Islands, South Africa, South Korea, Spain, St. Vincent and the Grenadines, Thailand, United States, Venezuela, Vietnam, Yemen, Zimbabwe	25–50	46	10.4
Afghanistan, Albania, Andorra, Antarctica, Armenia, Austria, Azerbaijan, Bhutan, Bosnia and Herzegovina, Burundi, Cape Verde, Chile, China, Comoros, Costa Rica, Djibouti, El Salvador, Eritrea, Georgia, Greece, Haiti, Honduras, Iceland, Iran, Italy, Japan, Kyrgyzstan, Laos, Lebanon, Lesotho, Macedonia, Montenegro, Morocco, Nepal, New Caledonia, New Zealand, North Korea, Norway, Reunion, Rwanda, Serbia, Slovakia, Slovenia, South Georgia and the South Sandwich Islands, Svalbard, Swaziland, Switzerland, Taiwan, Tajikistan, Turkey, Vanuatu, West Bank, Western Samoa	50–100	53	11.0
Total countries and territories analysed	0–100	199	26.2

Legend: 1 Percentage of mountainous area within a country (four categories)
 2 Number of countries analysed per category
 3 Percentage of total land area in category (total global land and ice area is 147 million km², of which about 38 million km² are mountainous)



Salgesch, Switzerland, was among the founding members of the Alliance. Today, other municipalities around the Pfywald forest (see centre of the picture) are also members. They jointly implement the "Landscape Experience Pfywald".

After decades of conflicts between environmentalists, planners of roads, flood protection projects, and foresters, this project now defines the development goals for this unique forest ecosystem. (Alpenbüro)

Europe: Alpine communities

"Alliance in the Alps": filling a policy framework with the spirit of innovation

After the signing of the Alpine Convention in 1991, the process of cooperation on concrete problems got underway relatively slowly. The situation changed in 1996 with the foundation of "Alliance in the Alps", an organisation in which 27 Alpine communities started to collaborate actively to implement the principles of the Alpine Convention. This was an important breakthrough. Today, over 150 Alpine communities participate in this international network, which has become a breeding ground for innovation and exchange of experience.



Constitution of the network

"Alliance in the Alps" is an international non-profit organisation (association) with a board of actively engaged community presidents. In each of the eight Alpine countries, the association is represented by a country office, usually organised as a non-profit association. In Switzerland, where about 80 communities participate, the government finances a small network secretariat.

One of the characteristics of the network is the great variety and heterogeneity of the participating municipalities, each of which faces different development issues. Though it is sometimes difficult to define common interests shared by small rural communities with less than 100 inhabitants and world-class tourism resorts or industrialised communities

with more than 5000 inhabitants, variety among Alpine municipalities can also be regarded as a particular strength of the network.

The network in practice

The network regularly organises national and international workshops and conferences that provide important opportunities for direct interaction between municipal leaders. Many new ideas are born at these events, and projects initiated. However, the most important benefit is exchange of experience. What is important is the professional follow-up that the network provides to its members. Experts from the network are facilitators and thus fill the gap between formulation of stimulating

"Direct benefits for us"

"The Val Lumnezia had already embarked on a sustainable development path prior to the establishment of the network. But we joined the Alliance as we wanted to further improve our projects. The network provides us with access to experience in other municipalities and to material already available in other parts of the Alps. It is also important to know people and to be informed in a timely manner about new initiatives that may be of interest to our community."

Statement of Silvio Capeder, who for ten years has been the president of Cumbel, a small village in the Swiss Alps, and is now the manager of the "Val Lumnezia" project.



ideas and embarking on concrete projects. Collaboration creates new capacities for sustainable development. Among other things, the participating communities have the right to use a specific label, recognised across Europe, which increases their competitiveness, though only on a formal level.

What has been achieved

In its few years of existence, the "Alliance in the Alps" has achieved a number of results. More than 70 projects have been initiated using a bottom-up approach. An impressive

innovative capacity is developing in the competitive environment of the network as a result of this process. A report on the first five years of the network, including a list of projects, can be ordered from the secretariat of the parent association (r.siegele@maeder.at). The projects relate to, and link together the following areas of activity: sustainable tourism, agriculture, forestry, energy, transport, nature protection, and economy.

Jöri Schwärzel

Bohinj, a partner community of the Alliance in Slovenia. (CIPRA)



The municipality of Lauerz, Switzerland, which joined the network in 2001, is located at the foot of Mt. Rigi. In 2001, around 40 residents participated in a conference which led to project ideas in education, recreation and sport, marketing of local products, and social integration in the village. The projects are now being implemented. (Alpenbüro)



The village of Corippo in the Verzasca valley, Switzerland, was more or less abandoned in the 1970s, though it is located only about 25 km from the tourist centres of Locarno and Ascona. (P. Walther)

Europe: Switzerland

A compensation fund to support development in mountain areas

For the last six decades, Switzerland has followed a policy designed to avoid widespread depopulation of its mountain areas that would also have led to severe ecological problems. First, farmers and forestry operations in the mountains received subsidies and sectoral infrastructure programmes as compensation for the disadvantages they face when competing with lowland farmers. Second, an umbrella law (IHG) was passed in 1975 to provide loans for small investment projects in mountain communities. To gain access to the IHG, the politically independent mountain communities must organise themselves into so-called development (IHG) regions and reach consensus on their development priorities.



Origins and objectives of the IHG

The late 1960s were years of economic growth. The Swiss government was therefore inclined to think about a more equitable distribution of economic benefits between better-off areas and marginal areas found mostly in the mountains.

The main political objective was to ensure that mountain areas would not be depopulated rapidly, and that mountain agriculture would not collapse due to the impact of modernisation. This objective was to be achieved

with a broad-based loan programme, under an umbrella law providing a Swiss Investment Fund (IHG) for mountain areas. This law was passed by the Parliament in 1975.

Establishing development regions

To become eligible for the soft loans provided by this law, communities had to be classified according to topographic criteria as 'mountain communities' and collaborate in 'development regions' organised as private associations by the communities. By 1983, 54 such development regions, composed of 1225 municipalities, had been registered by the federal government. The IHG also provided the new associations with funds to establish small secretariats.

The first task of each development region was to prepare an integrated development plan. The plans identified the individual development projects for which funding was sought through the IHG. They also had to

"It is not possible to start something new without taking a certain risk. We should have the courage to take this risk. I think that it can be calculated and managed."

Statement of Federal Councillor Brugger during a debate in the Swiss Parliament, in November 1973, on the IHG and whether it should be established as an expression of solidarity by the Swiss population with its mountain areas.

Opportunities for learning

The Swiss experience with the IHG could also be relevant to other social compensation funds, for example in many countries of South America (funded by the World Bank and other donors). The key principles are: (a) bottom-up organisation; (b) local and participatory decision-making and planning; (c) demand-driven; (d) significant (financial) contribution from benefiting communities.

address issues of nature and landscape protection, in accordance with national legislation. The fact that the IHG regions were partially in competition with each other helped put the process on track relatively quickly.

25 years of achievement

By 1991, 3078 development projects had been co-funded by the IHG, and the imbalance in basic service infrastructure between mountain and lowland areas had been reduced. The population increased by 10% between 1970 and 1990.

At a more psychological level, involving recognition of the mountains as specific development areas, the impacts were perhaps even more sustainable. While the municipalities initially found it difficult to organise themselves into 'development regions' and agree on setting boundaries or development objectives, they soon overcame these problems and began to collaborate more effectively. This was a very important achievement, as the level of decentralisation and local autonomy is extremely high in Switzerland for historical reasons.

The regional secretariats are important focal and entry points for all business and public sector contacts, including potential investors. To further strengthen their new roles, a national organisation of the regional development secretariats was established in 1993. Its main objective is to facilitate exchange of experience and collaboration between the development regions.

New roles in the future

Experience has shown that projects which make an area more attractive by creating incentives for potential investors from industry, services and tourism are, in the long run,



more effective and sustainable than projects which focus too narrowly on basic services for mountain people. Through wise investments, the IHG can help create new jobs in the mountains. Examples include projects to buy land for business development, investments in tourism infrastructure such as thermal bath centres, congress or sport facilities.

Jörg Wyder



The map indicates mountain regions qualifying for funding by the IHG.
(Source: SECO)

The hill area of the Emmental is an IHG region. To become eligible for IHG funds, the communities had to organise themselves into associations. Today, these communities feel that they can effectively shape their future by working together.
(T. Kohler)

Farm house in the Bernese Oberland: the IHG does not support private projects, but primarily investments into public infrastructure, such as access roads and community centres.
(T. Kohler)



The valleys of the Western Pamir are dotted with villages where the population engages mainly in irrigated farming, under severe topographic and climatic constraints. Developing additional economic opportunities is a crucial issue in negotiations for a strategy aiming at sustainable mountain development. (Ch. Hergarten)

Central Asia: Tajikistan

Generating knowledge for development in the Pamir mountains

The collapse of the Soviet Union brought independence to the Republics of Central Asia. The transition from planned economy to market economy has brought profound changes that have had a particularly heavy impact on marginal mountain areas. In the Tajik Pamir, characterised by increasing poverty and dependence on external humanitarian support, the Pamir Strategy Project aims to promote sustainable mountain development by generating knowledge about the status and trends of selected sectors and negotiating a strategic vision for the region.

The Pamir mountains cover parts of Afghanistan, China, Kyrgyzstan, Pakistan, and Tajikistan. The heart of the Pamir is the Gorno Badakshan Autonomous Oblast (GBAO) of Tajikistan, a 70,000 km² area, with peaks rising to 7400 m. This remarkable landscape is dominated by high plateaus in the east, and deep valleys with glaciers and traditional settlements on alluvial fans in the west. The arid climate and low levels of human disturbance in these sparsely populated moun-

tains have given rise to a remarkable diversity of plants and animals.

Transformation in the Tajik Pamir

Reality for most people in the Tajik Pamir contrasts with visitors' first impressions of a human and natural paradise. After Tajikistan's independence, the Soviet Union cut off considerable subsidies for energy, food, and infrastructure. Almost immediately, in 1992, a civil war broke out in Tajikistan, bringing many refugees to the GBAO, which was not directly involved. Both developments brought the region to the edge of humanitarian catastrophe. Famine was only avoided through massive relief efforts undertaken by the Aga Khan Development Network (AKDN), which are still continuing.

The region is characterised by increasing poverty, structural economic problems, and decaying infrastructure. From 1995 to 2000, the number of jobs was cut in half; unemployment among the region's 200,000 inhabitants now exceeds 20 %. Barter trade has practically replaced the former cash economy. Pressure on natural resources has also increased, as arable land is very limited. Energy supplies are minimal, and the region's few trees and bushes are cut to replace fossil fuel. A fragile peace within Tajikistan and with its neighbours, combined with isolation due to the remote location and the limited and unreliable transportation links, poses major hurdles for development.

Yet the region has obvious potential which remains largely unexploited. This includes rich natural resources, such as minerals and the potential for hydropower; scenic beauty attractive for tourism; and relatively high levels of education due to the unifying cultural





orientation of the Ismaili culture of Shia Islam. Full exploitation of this potential will require a transport and communication infrastructure for regional integration.

Developing a knowledge base

Promoting sustainable development in the GBAO is a great political, economic, social, and ecological challenge. As part of its programme for the IYM, the Swiss Agency for Development and Cooperation is supporting a strategy to address this challenge. One prerequisite is a knowledge system to provide information about the status, trends, and mechanisms of the social and ecological systems.

To begin accumulating the necessary knowledge, baseline information was gathered through participatory fieldwork in selected villages and high pastures in the summer of 2001, in cooperation with the AKDN and the Agency for Technical Cooperation and Development. This work emphasised the living conditions and perceptions of villagers and herders. To complement this information, remotely sensed data, data on natural resources and socio-economic data were incorporated in a Geographic Information System.

Participatory strategy negotiations

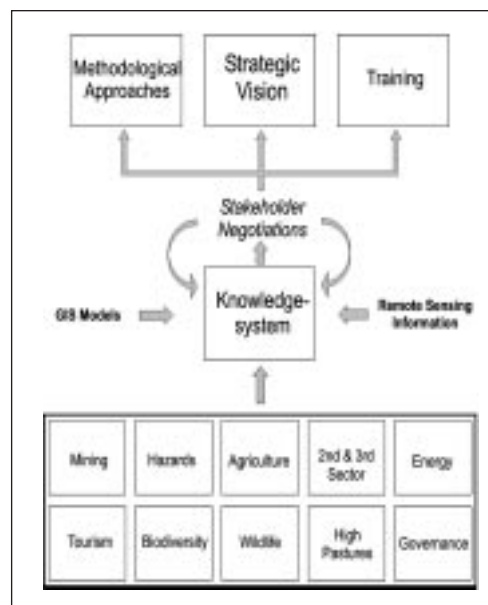
Based on the information and knowledge acquired in summer 2001, problems relating to natural resources, land use, socio-economy, and governance were identified. Initial visions for further development, as well as options and constraints, were then outlined.

A workshop will be held in the GBAO to ensure a sound and widely accepted develop-



ment strategy, with active involvement and broad participation by local, provincial, national, and international stakeholders. The workshop will enhance knowledge about the Tajik Pamir for all participants, provide a platform to achieve joint visions, and negotiate a path towards sustainable development.

Thomas Breu, Hans Hurni



Left: In the Eastern Pamir, high plains extend over a vast area at an average altitude of 3500 m. This area is used by the Kyrgyz minority, who let their yak herds graze during the summer months. The Pamir Strategy Project is examining the option of expanding the use of these pastures while also taking account of the limitations imposed by conservation of the unique biodiversity. (J. Hangartner)

Right: The Pamir mountains are marked by extreme remoteness. This narrow road, carved out of the rocks, connects Gorno Badakshan with Tajikistan's capital, Dushanbe, a distance that requires a two-day journey. (E. Kleinn)

Knowledge about selected topics should establish a basis for negotiations among development stakeholders. The process should ultimately lead to a sound and well-adapted strategic vision for the Tajik Pamir mountains. (T. Breu)

Building on a transdisciplinary approach

The process of knowledge generation and strategy development benefits from the transdisciplinary mode of work, which brings together experts from various disciplines and government offices, and most importantly, the people living in the project area. Multiple outcomes will ensue, including an information database to be used for planning, education and monitoring; a common knowledge base arising from involved stakeholders; and a strategy to improve the livelihoods of mountain people in a well-preserved environment.



Central Asia: Kyrgyzstan

Rural development through investments in community-based tourism

Kyrgyzstan, until recently largely unknown outside the CIS countries, is now becoming a destination for adventure and cultural tourism. During the 1990s, tourism development was mostly managed by private tour operators based in the capital city. To counter this imbalance, the concept of community-based tourism has been introduced.

Most of Kyrgyzstan is above 2500 m. The Tien Shan mountain range, containing high peaks such as Victory Peak and Hantengri (both over 7000 m) divides the country into two distinct parts. Northern Kyrgyzstan includes Lake Issyk-Kul, at 1600 m the second largest mountain lake in the world after Lake Titicaca, and is mostly populated by Kyrgyz, Russians, Chinese, and Koreans – all in minority groupings. Southern Kyrgyzstan is mainly populated by Kyrgyz and Uzbeks. Kyrgyzstan's rich and diverse cultural heritage stems from the nomadic lifestyle of its people and its location on the Great Silk Road to China.

The Year of Tourism (2001) as a starting point for policy reforms

The Kyrgyz Republic is a country still undergoing political and economic transition. Emphasising the importance of tourism for the country's economic development, President Akaev declared 2001 the Year of Tourism. The state administration put considerable effort into tourism marketing but owing to various adverse factors, including

Tourism – a state priority in Kyrgyzstan

The tourism industry, still a fledgling sector in the economy, has become a priority concern for the Kyrgyz government. A 10-year action plan concentrates on developing small and medium-sized enterprises (SMEs) in tourism, abolishing bureaucracy, and promoting (foreign) investment through a conducive legal framework of privatisation, tax reduction, a state policy for destination marketing, and a state-run Tourism Promotion Board.

terrorist threats and the September 11th incident, the increase in tourism was marginal and certainly not of the magnitude expected. Other negative factors are the poor quality of services and high prices in relation to the quality of the state-run tourism services.

As a result of these shortcomings, President Akaev's administration has devised a 10-year tourism development plan focusing on marketing, infrastructure, tourism education, improvement of quality, and control and privatisation of state-run resorts. For instance, only 16% of the resorts around Lake Issyk-Kul had been privatised by 2000. This situation is changing, but painfully slowly, due in part to excessive bureaucracy and vested interests. Hopefully, a comprehensive strategy, supportive national and regional policies, and cooperation between the private and state tourism sectors will make tourism a major economic sector, although it is still at an early stage.

Community Based Tourism (CBT)

Tourism development in the ten years since independence has been managed by private tour operators, mostly situated in the capital city of Bishkek. Due to interest in the Silk Road and the mountainous landscape, tour

The beautiful mountain landscape of the Tien Shan along the Silk Road is an important asset for tourism development. A community-based approach guarantees that the income generated by tourism benefits local communities. (Helvetas)



operators have had an annual growth rate of 10–25%, with most tourism-related business and profits generated in Bishkek. To counter this imbalance, community-based tourism (CBT) has been introduced and developed by an international NGO, with the goal of generating income in rural Kyrgyzstan.

The project, which started in 1999, offers capacity building and marketing support to local tourism providers in rural and mountain areas. There are now seven CBT groups in different locations. Each group is self-managed and has received hospitality, tourism, and business-related training or specifically outsourced service providers, such as tour operators. A self-managed quality-monitoring system helps to maintain high-quality, adapted standards.

Integration and networking for better marketing

In order to advertise, publicise and expand their activities and facilities, it is necessary to link tourism providers to external niche markets of eco-tourism and cultural tourism. The CBT groups actively cooperate with a tourism

CBT in practice in Kyrgyzstan

Annual tourism planning and evaluation workshops are conducted independently by the CBT group members in seven sites. Action plans also include indicators to evaluate success and sustainability of tourism actions.

Tourist information centres in four locations are self-managed by CBT groups. They inform incoming tourists about tourism services.

Pricing and quality control in CBT sites foster greater tourist satisfaction. CBT groups enforce standardisation of facilities, minimum prices, and control of services.

CBT group members elect coordinators in each location with the aim of coordinating and achieving common results and building capacity for joint actions. CBT groups manage a fund created from commissions on tourist services.

Examples of micro-enterprises in CBT locations include trekking and horseback riding guides, interpreters, and drivers who will take care of the guests once they have reached a CBT site.

Community Based Tourism (CBT) in brief

In its ideal form, CBT is initiated and operated by local tourism providers or stakeholders in harmony with their traditional culture and responsible for the stewardship of their land. In tourism development, community participation provides means through which local control and ownership can be maintained and the following local concerns can be addressed: (a) conservation of natural resources; (b) improvement of the socio-economic situation; (c) conservation of historical and cultural resources; and (d) more effective planning and implementation, and monitoring of tourism activities.



Horseback riding guides in Kyrgyzstan are an example of micro-enterprise creation in remote mountain areas. (K. Füeg)

development company in Bishkek. In its third year of operation, the company is already viable and profitable, marketing CBT services abroad – mostly in Switzerland, Germany, France, and the Netherlands. This collaboration was essential in promoting CBT services abroad and making CBT services available to package holidaymakers and individual tourists in the West.

From 2002, the seven CBT groups are establishing a national CBT association aimed at unifying quality standards, joint marketing, and lobbying for rural community-based tourism at the national level.

Karin Füeg

Tourism is a state priority in Kyrgyzstan. Investments in Community-Based Tourism include capacity building, marketing, and business-related training. Today seven CBT groups are about to create a national CBT association to ensure uniform standards of quality and undertake joint marketing and lobbying at the national level. (K. Füeg)





Asia: Vietnam

New challenges for sectoral policy making and planning in an economy in transition

Bao Loc District in the Central Highlands of southern Vietnam is one of the best areas in the world for silk farming and production. Recently, US\$ 18 million was invested to modernise the state-owned silk processing factory. Yet silk production has declined rapidly to around 10% of what was targeted in government plans. A pilot project was undertaken to determine how this could be related to policy issues and the deficiencies of the heavily centralised government planning system. The project's results are relevant to many transition countries moving towards a market economy. Numerous economic and ecological benefits could be achieved if the agricultural planning system were modernised.

Government planning in a state economy

In the initial phase of the study, a representative of the local Department of Planning and Investment (DPI) described his problems: "Only around 10% of the targets for the silk industry and the socio-economic plans that we have defined in our sector will be met, despite the fact that Bao Loc is one of the best areas in the world for sericulture. We have invested around US\$ 18 million in the local state-owned silk processing plant (VISERI), but VISERI complains about a lack of raw material, as farmers are increasingly moving into coffee plantations. These plantations cause soil erosion on steep slopes, which is

not sustainable in the long run. What should we do to improve our planning system?"

This final question reflects the logic of the old state-controlled economy in which the government, the only investor in the country, was perceived as responsible for solving every problem. The government still prepares numerous socio-economic and sectoral plans, with little involvement of stakeholders. The draft plans are submitted at the national level for final decisions about public investment and targets. Many plans demonstrate a lack of clarity about the ways and means of achieving targets and objectives. There is also a lack of coordination between the different sectoral plans.

The state-owned enterprise, VISERI, continues to operate according to sectoral plans which are elaborated without consultation with stakeholders. Production targets are output-oriented and not balanced with inputs and programmes needed to achieve them. The logic of a business plan is still a novelty for VISERI. (B. Wiedmer)



Challenges in a market economy

Today, in a market economy, farmers' decisions regarding investment in long-term perennial cash crops are no longer under the complete control of the government or VISERI. Farmers make alternative investment decisions, based on their own perceptions of demand, input, and familiarity with a technology package for efficient management of such investments. As mulberry production

The silk industry creates jobs

Reviving the silk sector could pave the way for sustainable development in Bao Loc in the Central Highlands of southern Vietnam. One of the main advantages of sericulture is that it is very labour-intensive and can provide gainful employment to large numbers of rural residents.

**Mr Nguyen Xuan Kien,
Director of the Lam Dong
Department of Planning
and Investment (DPI),
about the pilot project:**

“This project has already brought several benefits to Lamdong. First, economic evaluation confirms that there is great potential for development of the silk industry. Development of this sector will bring socio-economic benefits as well as solutions for the employment problem, which is very severe. Second, public meetings with farmers and stakeholders helped them to gain a comprehensive understanding of the silk sector. They came to understand which parts of the system need strengthening.”

and silk worm rearing is not perceived as very profitable, coffee is replacing more traditional production in the area.

Discussions with farmers revealed many opportunities for improving farming technology in sericulture. It was estimated that with more suitable technology packages such as those used in China or in Thailand, Bao Loc's farmers could triple their return per hectare, making sericulture once again very attractive for further investment. At the same time, soil erosion could be minimised.

The present government planning system is not responding to such challenges. Instead of setting socio-economic and sectoral targets, it would be more profitable and effective for the government to concentrate on its core responsibilities – such as defining a policy for sericulture development, agricultural research, and dissemination of information through agricultural extension services. The current planning system adds virtually no value to sericulture in Bao Loc.

New role for sectoral policies?

The study established, for the first time, a provincial platform for discussing the above-mentioned problems and elaborating possible solutions, in a spirit of collaboration between all stakeholders – including DPI, VISERI, and representatives of farming associations. The government played a facilitating role, and the platform was seen as having the potential to develop into a new planning approach at the district or provincial level.



The landscape of Bao Loc District, Lam Dong Province: an unimproved mulberry variety at an early stage of growth can be seen in the foreground.
(B. Wiedmer)



One of the first local (provincial level) platforms was established for direct discussion of particular development issues relevant to the silk industry in Bao Loc with the stakeholders concerned (farmers, planners, VISERI).
(D. Ellingson)

However, the results still require political discussion.

This analysis showed that maintaining a high level of central government control makes it difficult, especially in remote mountain areas, to address local development issues in a concrete fashion. What is required from the national government is not more or better planning but rather a sectoral policy that clarifies the roles and responsibilities of the different stakeholders in development – VISERI, the sericulture research institute, the private sector, agricultural extension services, farmers – and that defines a regulatory framework for environmental issues.

Bernhard Wiedmer, Dennis Ellingson

Below: An improved high-yield mulberry variety, with proper planting density, for optimal production, soil protection, and erosion control.
(B. Wiedmer)



Introduction of new concepts in a market economy

The relationship between the capacity of agricultural extension services and development of sericulture is not yet understood. As VISERI is not accountable to farming associations but only to the national government, it is increasingly investing in tourism and other operations instead of promoting sericulture. There is also no legal basis that allows VISERI to sign contracts with farming associations to secure supplies of raw material.



Asia: Japan

The Mountain Village Development Act and its impacts on sector policies

Most of Japan is mountainous land, mainly covered by forests which have various important functions in this highly industrialised country. Mountain communities ensure that their forests are managed in a sustainable way, but they have been partially neglected by national policy makers. In 1965, in response to the problems of depopulation of mountain villages, the Japanese government approved the Mountain Village Development Act. One of the aims of this act is to eliminate socio-economic differences between mountain and lowland areas.

As in many parts of the world, the mountain areas in Japan lack well-developed transportation and communication infrastructure and adequate social services. As local economies are often weak, mountain areas face the serious problems of depopulation and ageing. Young people migrate from these areas, particularly in countries with vibrant economies such as Japan.

An integrated approach...

The villages targeted by the 1965 Act are those in need of development, located in mountainous areas with high forest cover and declining population. The main objectives of the Act are:

1. To improve communication among mountain villages, and between mountain and lowland populations, through transportation and telecommunication infrastructure;
2. To ensure that mountain land, forest, and water resources are effectively exploited through such measures as road construction,

electric power generation, and improvement of agricultural land;

3. To strengthen local industries and increase employment in mountain areas through measures such as the establishment of modern forest management and farming systems, development of processing industries for agricultural and primary forestry products, introduction of tourism, and the cultivation of markets for unique, local products;
4. To control erosion and prevent natural hazards such as landslides and avalanches, by maintaining and conserving forests and key infrastructure;
5. To increase access to social services by building schools, hospitals, clinics, cultural centres, and other facilities, in order to generally improve living and working conditions.

...implemented through sectoral programmes

Within the framework of this law, 12 ministries and government agencies have adopted and implemented specific policies and programmes.

Recently, the 1964 Forest and Forestry Act was revised to better reflect the changes that have taken place in the mountain areas. This was a form of recognition of the long experi-

Below: Mt. Fuji from a distance. Volcanic landscapes are an important feature of mountain areas in Japan. (Ministry of Foreign Affairs, Japan)

Right: Education in the forest. Children measuring the size of a tree, Hokkaido. (M. Sato)





ence of the Japan Forest Agency in undertaking projects to revive mountain villages, such as preservation activities and educational programmes.

But the sustainable development of mountain areas requires a multidisciplinary approach. While the Mountain Village Development Act covers mainly the social and the economic aspects of mountain development, environmental aspects are addressed by other policies and laws, such as the Basic Environment Plan and the Nature Conservation Law.

Some mountain areas are also protected by other laws, such as the Natural Parks Law, the Forest Law, and the Cultural Properties and Protection Law.



Greater cooperation among sectors

Though no specific institution currently deals with mountain issues, Japan is committed to a comprehensive and integrated approach to sustainable development of its mountain areas. 12 ministries and government agencies are working together to achieve this goal, and close cooperation among them is increasingly essential. They hold regular discussions on both the planning and implementation of their policies and programmes. Without this collaboration, individual ministries and agencies will not be able to meet the overall goal of sustainable development in mountain areas.

Maho Sato

Left: Northern Japanese Alps seen from Hakuba Village, Nagano.
A significant proportion of Japan's territory is mountainous.
(Ministry of Foreign Affairs, Japan)

Right: Kamikochi Highlands, Nagano.
Recreation in mountains and mountain forests is an important function in Japan's highly industrialised economy.
(Ministry of Foreign Affairs, Japan)

Local development plans

The municipal governments of mountain villages are required to elaborate development plans that include programmes for various projects designed to achieve development goals.



Within the framework of the Mountain Village Development Act passed in 1965, 12 ministries and government agencies have adopted and implemented specific policies and programmes. Environmental aspects are addressed by other laws, and through the Ministry of Environment.
(Source: M. Sato)



Africa: Morocco

Elaborating a policy framework for conservation and mountain development

To respond to the challenge of Chapter 13 of Agenda 21, and also to the need to conserve forests subject to degradation, Morocco's Ministry of Water and Forest, in coordination with other departments concerned, began in 1999 to draft a policy framework for conservation and integrated development of the country's mountain areas. This process led to the adoption of a strategy for protection and development of these areas. It also had an important impact in promoting recognition of the importance of mountains.

A broad focus

Morocco's mountains cover about a quarter of the nation's total land area. A series of studies and plans conducted at the national level have concluded that the mountains have significant potential in terms of natural resources; that their economic, ecological, and social systems are fragile; and that there is a need to formulate a specific policy for mountain development.

To respond to these insights and the increasing threat of degradation of mountain forests, the national forestry programme recommended the drafting of a policy and a law for protection and integrated development of the country's mountains. There was broad consensus that the policy should not be limited to strategies and measures at the technical and/or administrative level. Increasingly, the need became clear for a policy to mobilise the

government administration and local communities and actors, in a voluntary and participatory manner. One objective of the process was to create national solidarity to benefit the mountains and their integration into national policy.

The process of consensus building

The first step was establishment of an inter-ministerial task force on the initiative of the Ministry of Water and Forest. This resulted in various working groups that included both technical staff and representatives of research institutes and NGOs. The process received financial and technical support from the French government.

Workshops were held on topics such as delineation of mountain areas, agricultural development, commercialisation, the handi-

The introduction of the national forest law in the mid 1930s declared forests, which were previously owned and managed by the community, to be state property. Deforestation was induced by the selling of logging rights to external contractors. Interventions in this fragile environment were so drastic that forests did not regenerate. Local people were even forced to extract dead tree trunks for firewood. A new national policy aiming at the rehabilitation of these degraded forest areas and restoration of responsibility to the local communities could be a promising way of reversing negative trends and moving towards sustainable development. (D. Maselli)





Remote mountain areas often suffer from out-migration to modern urban centres. However, newly built terraces still lacking bush and tree cover are positive signs that people intend to stay and that they believe in the future of their traditional livelihood. (D. Maselli)

craft sector, tourism, transport and access, natural resources, social services, institutional instruments for mountain development, and financial and economic regulatory frameworks for implementing strategies.

The process also included meetings in the field with local authorities and leaders as well as elected officials, with the further aim of establishing processes of mutual learning, improving problem analysis, and increasing public awareness of the process. Both workshops and meetings in the field allowed the government to define a realistic strategy for the protection and integrated development of mountain areas.

Innovative elements in the policy framework

The framework had two main objectives: decreasing the social and economic imbalance between mountain areas and the rest of the country, and combating poverty by stimulating local self-governance. These broad objectives were addressed by the following strategy:

- promotion of a territorial approach, to provide mountain areas with a socio-economic framework that favours the organisation of communities for the management of their natural resources;
- integration of sectoral policies and activities concerned with basic social needs in a new partnership, to ensure greater stakeholder involvement;
- adoption of a partnership and a participatory approach for the conservation of natural resources;
- incentives to increase national solidarity on

behalf of mountain areas.

The strategy was adopted by the Inter-ministerial Council on Sustainable Development.

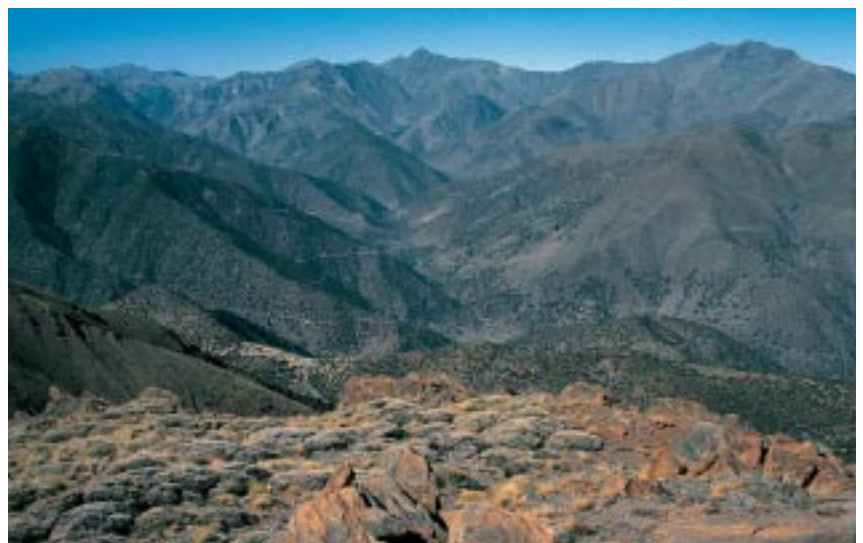
Preliminary conclusions

Consultation about the drafting of the law for conservation and integrated development of mountain areas is also underway, and a high commission has begun implementation of elements of the policy framework.

One crucial issue was that the particularities of different mountain areas, or massifs, must be taken into account when defining and implementing concrete measures, orders, guidelines, and regulations. At this concrete level, the involvement of the local stakeholders will be essential.

Ghanam Mohamed, Hammou Jader

The Atlas Mountains cover much of Morocco and are home to about 20% of the total population. Accessibility is still poor, and in particular young people tend to leave for the cities. They are thus no longer available to help maintain the traditional terraced land-use system. A comprehensive development policy for mountain areas must therefore include provisions that make it possible to connect these remote areas with the modern world by means of roads, electricity, telecommunication, sanitation, and health services. (D. Maselli)





Africa: Lesotho

Water policy and management: trade-offs between mountains and downstream areas

Water is the principal natural resource that the land-locked Kingdom of Lesotho sells to its neighbour, South Africa. In the 1980s South Africa's apartheid government signed an agreement with the military regime in Lesotho to build the massive Lesotho Highlands Water Project. Two of five large dams have now been completed. The project has brought water revenues, hydroelectric power, and major infrastructure to Lesotho and water to Gauteng Province, the metropolitan and industrial centre of South Africa. While the benefits to South Africa are clear, the mountain people of Lesotho have lost arable and grazing land, and remote mountain communities have experienced major changes.

The mountain Kingdom of Lesotho: water tower for southern Africa

The Kingdom of Lesotho, one of the poorest countries in Africa, is completely surrounded by the Republic of South Africa, the continent's most powerful nation. Sometimes referred to as the "Kingdom in the Sky", the Lesotho Highlands receive the greatest amount of rainfall in the region and are the origin of some of the most important rivers in southern Africa.

Whereas South Africa dominates almost all spheres of economic and political relations between the two countries, the peripheral mountain kingdom has been able to market one asset to the South African lowlands: its water. The Lesotho Highlands Water Project is the largest civil engineering project in sub-Saharan Africa. This gigantic inter-basin transfer scheme is designed to divert about 50% of the water of the southwest-flowing Senqu River (Orange River in South Africa) north into the Vaal River system for use in the province of Gauteng, which includes the major cities of Johannesburg and Pretoria

(some 7 million people altogether), and the Witwatersrand, which contains about 50% of South Africa's industry and generates almost 80% of its mining output. The Lesotho Highlands Water Project appears to meet the crucial requirement of sufficient water availability for further urban expansion and industrial development.

The governments that signed the contract for the Lesotho Highlands Water Project in 1986 were South Africa's apartheid government and a military regime in Lesotho, at a time when downstream Namibia was governed by the United Nations Council. The present democratic government of South Africa also recognises the importance of the project, since for example the promise of more equal distribution of water supply requires higher quantities of water for the large townships.

Managing white gold ...

Diverting this amount of water into a different watershed requires several dams and reservoirs, a series of pumping plants, and interconnecting tunnels blasted through the Highlands. The entire project consists of six proposed dams, 225 km of water transfer tunnels, the 72-megawatt Muela hydropower station, and construction or upgrading of 650 km of roads. It is expected to cost US\$ 8 billion by the time it is completed in 2020. Plans for the inter-basin water transfer scheme were agreed in 1986 and construction started in 1991 with the first large dam, Katse (1950 million cubic metres), delivering water in 1997. At present, Mphahle, the second large dam (958 million cubic metres), is nearly completed. Further project phases will involve the

Livestock husbandry is an integral part of livelihood strategies in the highlands of Lesotho. Especially the wetlands, which provide a perennial water supply, are used as valuable grazing areas. (M. Nüsser)



construction of additional dams at Mashai, Tsoelike, and Ntoahae. However, the viability of the last three phases will be reconsidered, as growing concerns about serious economic, social, and ecological impacts have been expressed by various actors, including the World Bank.

Whereas South Africa receives all of the water from the project, Lesotho receives annual payments for the sale of water. This will be its largest single source of foreign exchange and is expected to boost the country's economy by US\$ 40 million annually. Moreover, Lesotho receives hydroelectric power from the Muela plant and massive infrastructure in the form of roads and transmission lines. From the perspective of modernisation, these are important development incentives. While the capital, Maseru, and other urban areas in the lowlands of Lesotho have become independent of other power supplies, the mountain communities in the upper tributaries do not benefit from the new hydropower, as most of the high altitude catchment areas have not yet been connected to transmission lines.

... for whose benefit?

The project is managed by the Lesotho Highlands Development Authority, a semi-governmental organisation responsible for resettlement and compensation issues, environmental protection, and overall construction management. Critics of the controversial highland-lowland project point to developmental and environmental problems such as the prospective loss of thousands of hectares of arable or grazing land, the involuntary resettlement of 2000 people, and dramatic changes experienced by formerly remote mountain communities, combined with insufficient and delayed compensation for the loss of grazing land, fuelwood, and thatch grasses. Moreover, the high expectations of non-agrarian income opportunities for the local population of the Lesotho Highlands have not been fulfilled. Environmental concerns include the serious effects on downstream drainage patterns, such as reductions of water availability and wetlands, as well as other ecological consequences. These concerns led to huge protests over the large dams in Lesotho, and the realisation of further project phases is bound to be controversial.

Marcus Nüsser



Large tussock grasses (*Merxmüllera drakensbergensis*) used for rope making. Indigenous knowledge of botanical resources and multi-functional utilisation are part of the traditional resource use systems in Lesotho. (M. Nüsser)



With a height of 185 m, the Katse dam is the highest in Africa. (M. Nüsser)



The Katse dam is the key element of the completed Phase 1A of the Lesotho Highlands Water Project. The reservoir has a storage capacity of 1.95 km³. (M. Nüsser)



Due to the combination of high quantity summer precipitation and regular winter snow, the hydrology of the Senqu River is characterised by constant water supply. (M. Nüsser)



Right: Warm Springs Reservation with Mt. Jefferson in the background.
(D. McMechan)

Below: Action-packed Indian rodeo is popular with tribal members of all ages.
(D. McMechan)

North America: United States

How the people of the Warm Springs Indian Reservation defined their own policy

Strong tribal leadership and an insistence on receiving fair value for natural resources have seen the Warm Springs Indian Reservation through difficult times. Through capable decision-making coupled with persistence, a long-term outlook, deliberate diversification, and an ability to adapt to changing circumstances, the Warm Springs Indians have created a homeland that offers decent jobs as well as cultural richness and landscape beauty.

Indian reservations: a unit for policy formulation

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, a treaty was signed in 1855 between the tribes of middle Oregon and the US government. This treaty ceded 4 million hectares of land in return for the equivalent of US\$ 150,000 in tools, clothing, provisions, salaries, and the right to continue fishing at traditional sites. Over half a million acres of forest and range mountain land on the edge of their traditional range were set aside as the Warm Springs Indian Reservation, where several tribes, including the Wasco, Walla Walla, and Paiute, were forced to relocate.



Leadership, committed to a vision

Many Indian reservations have lost much of their area or have been terminated since their establishment more than a century ago. Warm Springs is lucky to have had leaders who effectively fought the many attempts to reduce the size of their reservation – including privatisation and subsequent re-sale to non-Indians, inaccurate surveys, and frequent changes in the legal status of reservation land.

In 1957, a major setback – the loss of traditional salmon fishing sites on the Columbia River, due to flooding caused by The Dalles

The People's Plan, 1999

Nearly one quarter of the 4000 members of the Warm Springs Indian Reservation participated directly in developing a comprehensive plan that goes beyond economic goals to consider what is good for their culture and the health of their community.

The 20-year plan is not a dry bureaucratic document but rather a keepsake book, in a customised binder for each household. The whole idea is to have a plan that families keep and value. In the words of planner Jolene Atencio, "Our sovereignty is based on us knowing our culture."



dam – was turned to advantage. The tribes negotiated a US\$ 4 million settlement from the US Army Corps of Engineers, 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 development path of diversification

The first big expenditure was an Oregon State College study of the reservation's natural and human resources and their potential for sustainable economic development. This study, adopted in 1959, has proved to be a key investment in developing land policies to preserve the integrity of the reservation. Deliberate diversification led to investment in a number of economic activities, about half of which were successful. Today, the fruits of this policy include a forest products industry, a luxury resort, a hydroelectric plant, rental monies from two utility-owned dams, and cattle ranching. The reservation is filled with young people, and a lively museum/cultural

A vision for development

"We the people of the Confederated Tribes of Warm Springs, since time immemorial, carry forth the inherent rights of sovereignty and spirituality through unity and a respect for the land, water, each other and the many gifts given by the Creator."

The People's Plan, 1999



Putting tribal values at the centre

"In my work with the community over the past five years, I have learned the importance of having our inherent tribal values be the heart of our plans. I feel we need to be very selective in adopting non-tribal models, laws, and policies. If models are adopted, we need to be sure they are 'alignable' with tribalism. This will be one of our biggest challenges, since much of our governmental success was built upon non-tribal structures and thinking. Professionally, I have had to learn the tribal thinking to begin to distinguish the difference. I thank my tribal people for these lessons."

(Jolene E. Atencio, planner and coordinator for the "The People's Plan" for Warm Springs, as well as an enrolled tribal member)

centre celebrates the cultures of the tribes, both past and present.

The tribal organisation continues to work toward effective governance, including clarity in its own relationships, roles, and responsibilities. In 1999, a People's Plan was elaborated, which further bundles development under the vision of sustainable development.

Common lessons to be learned

This example demonstrates how a relatively independent territorial entity, an Indian reservation, can succeed in defining, within the legal boundaries of its autonomy, its own vision and policy, for the benefit of sustainable development. Clearly, such examples can have a positive impact on the policy discussions as a whole. They can become true pioneers of sustainable development in mountain areas.

Elizabeth Byers



Below: Guests at the Kah-Nee-Ta Resort can choose to stay in an Indian teepee as part of cultural heritage tourism initiatives on the Warm Springs Indian Reservation.
(D. McMechan)



Below left: Young girl prepares for traditional celebration (powwow) at the Warm Springs Indian Reservation.
(D. McMechan)

Below right: First day of school for tribal youth. Three native languages are taught in elementary school, but all of them are in danger of dying out. The Kiksht (Wasco) and the Numu (Paiute) only have five fluent speakers each, none of them under the age of fifty.
(D. McMechan)



North America: Canada

Integrated Resource Management (IRM) as a policy for public lands management

Most of the mountainous area of western North America consists of public lands managed by government agencies. Several decades ago, the provincial government of Alberta, Canada, adopted the “philosophy” of Integrated Resource Management (IRM) for management of the many valuable natural resources on the eastern slopes of the Rocky Mountains. Today, IRM continues with the same objectives: integration and sustainable development. But IRM strategies have evolved in order to make the concept more effective.

IRM since 1977

The eastern slopes of the Rocky Mountains of Alberta, Canada, cover an area of roughly 90,000 km² of mountains and forested foothills. The region supports forestry, oil and gas development, mining, tourism and recreation, and forms the headwaters of the prairies’ major rivers.

The land is owned and managed by the public sector, providing an opportunity to

manage land and resources for the public good. Realising that opportunity – balancing current benefits with opportunities for future generations – is an ongoing challenge.

In 1977, the Province of Alberta adopted the concept of IRM as its leading resource management philosophy in a major policy document. In order to make IRM operational, it established a programme to develop Integrated Resource Plans (IRPs).

These IRPs provided integrated objectives for resource use and protection for each area. Their lasting legacy was to delineate sensitive lands and withdraw them from industrial or commercial development. The IRPs also provided a forum for the various provincial management agencies to work toward common goals. The public involvement component was advanced for its day.

Economic aspects

Revenues from royalties and bids for resource use titles are significant for the Alberta government, but they are also subject to fluctuations. In 1980, they amounted to about 50% of the provincial budget, in 2000 to only about 20%.

Development of resource-based industries (logging, mining) began in the late 19th century, overwhelmingly with a sectoral focus, and with little concern about environmental impacts.
(Calgary, Historic Archive)



IRM and sustainable development

In the 1990s, the IRP programme declined as provincial revenues dropped (see box) and impatience with the lengthy IRP process grew. In a slower economy, the plans were less effective in stimulating appropriate development than they had previously been in restricting inappropriate development.

This decline did not, however, represent a loss of commitment to the goals for which IRM had been established. Sustainable development subsequently became a core concept, and in 1999, the provincial government released a policy statement, “Alberta’s Commitment to Sustainable Resource and Environmental Management”. This document expressed a vision of a vibrant economy and a healthy environment for all Albertans, and it set out a strategy to achieve that vision.

The new policy provides high-level policy direction for sectoral policies. It also directs

Pioneering regional planning

The Northern East Slopes Sustainable Resource and Environmental Management Strategy could become a model for regional planning in other areas. To date, the process has led to: (a) a regional vision, including goals and indicators; (b) the identification of important regional development issues. Simulation models are used to forecast the cumulative ecological and economic consequences of various options.

reform of the decision-making and regulatory regime, to make it more efficient and firmly based on sustainability and IRM principles.

IRM: new directions

Today's resource and environmental management agenda in Alberta includes a number of thematic areas:

1. Cross-government initiatives and cooperation have become the norm, as the vision of sustainable development is clearly defined at the most senior levels. Increasingly, government departments focus on this strategic level, leaving programme delivery to others.

2. Streamlining regulatory systems: a clear and efficient regulatory system is an essential element of an attractive investment climate. Today, there is a greater focus on desired outcomes, defined through planning.

3. In the past, IRM was often perceived as a necessary expense. Today, it is seen as a means to a more efficient, outcome-focused management system.

4. Cumulative effects: IRPs were good at defining where activities are not appropriate, but they were less successful in determining how such activities should take place and to what extent they could be supported in an area. Today, new management tools also address cumulative effects.

5. Many cumulative effects are regional in scale and scope, and they demand regional solutions (for example forest fires, large wildlife reserves).

6. Industry-led operational integration: Under "command and control" regulation, government imposed rules on each industry or company separately, specifying how they were to operate. Today, inter-industry collaboration is increasingly important. It minimises conflicts and negative environmental impacts, while also saving companies money.



Classification of Alberta's land into "white" and "green areas". The "green areas" were established in 1948 to withdraw forest lands from agricultural settlement. They remain almost entirely in public ownership, managed for multiple uses. (Province of Alberta)

Regional strategies through partnership

The new commitment to sustainable development also encouraged new initiatives for regional planning. In 2000, the Alberta government launched the Northern East Slopes Sustainable Resource and Environmental Management Strategy, covering an area of 40,000 km² of mountain land. The strategy was initiated following highly contentious public hearings into a proposed new coal mine (Cheviot), to be located adjacent to Jasper National Park.

The process is led by a committee of citizens and government representatives, and is considered a prototype for other strategies that may eventually cover the rest of the province.

David W. Belyea

Kananaski: a beautiful landscape on the eastern slopes of the Rocky Mountains in Alberta, Canada. (D. Belyea)



Improved collaboration between resource industries

One good example of collaboration is coordination and sharing of road access for forestry, oil and natural gas development. Previously, each company would have constructed its own roads.

A call for multi-level policy initiatives and partnerships

There are many ways to incorporate the principles of sustainable development into policies and instruments that promote mountain development, as illustrated by the experiences of mountain areas around the world presented in the preceding chapter. However, there is a need to enhance coherence in mountain development and to adjust policies accordingly. In order to achieve tangible results, these processes must especially take place at the national level. The National Committees that have been established for preparation of IYM2002 could be used as a platform to elaborate such processes through policy initiatives. International partnerships are needed to support national initiatives, promote the exchange of ideas and experiences, and initiate concrete programmes for mountain development.

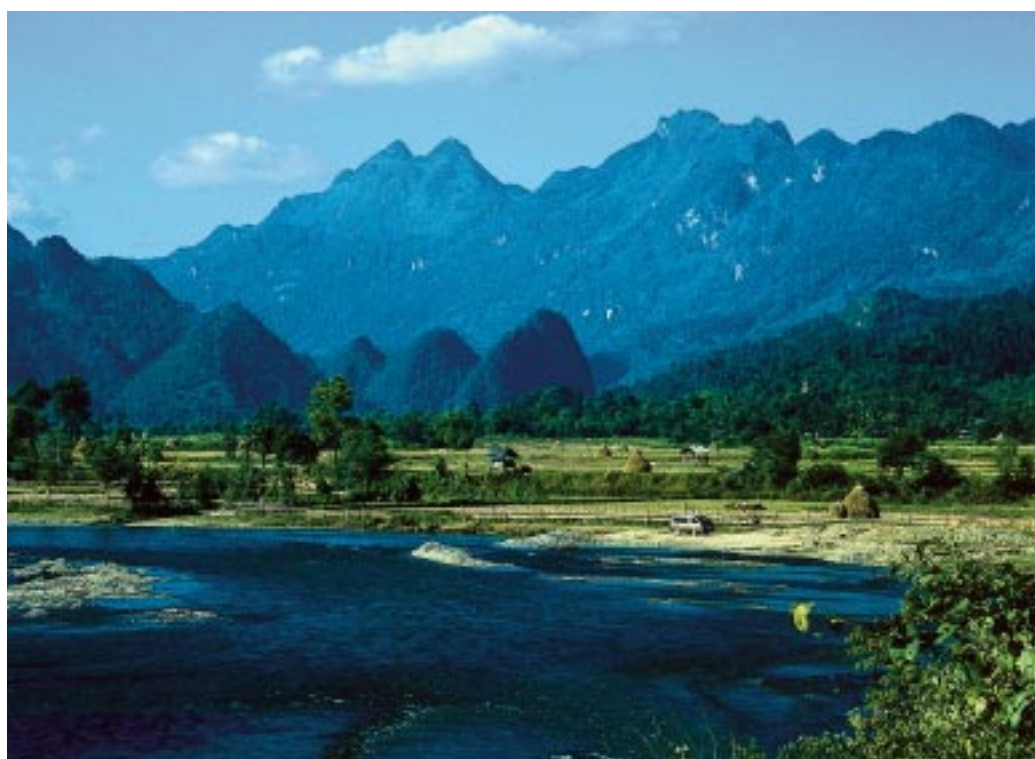
10 years after Rio

Chapter 13 of Agenda 21 of the 1992 Rio Conference identified two major programme areas: generation of knowledge about the ecology and sustainable development of mountain ecosystems, and promotion of integrated watershed development and alternative livelihood opportunities in mountain areas. Where do we stand 10 years after Chapter 13 was adopted?

Significant progress has been made in acquiring knowledge of mountain ecosystems

and in gaining insight into the specific challenges of mountain development. However, progress with regard to the management of mountain resources is much less impressive. Livelihoods in mountains have deteriorated in many places. Poverty is widespread. In other words, the gap between knowledge and action, between information and implementation, has widened. The coming decade should be devoted to narrowing this gap and renewing efforts to achieve tangible and lasting results in the development of mountain areas.

A recent study of the Mekong region conducted by the Asian Development Bank, concluded that four out of five conflict areas involving a clash between environmental and development interests, are located in mountain areas. (T. Kohler)



Inadequate policies

Many countries have realised the importance of their mountain areas and have elaborated sectoral policies, laws, and regulations for the use of their resources. However, most of these instruments were formulated to serve downstream interests, a bias which permeates, for example, large hydropower and electrification plants, concessions for timber and mineral extraction, and road construction. National policies tend to disregard mountain livelihoods and local development agendas. Moreover, they do not consider the specific challenges of mountain development.

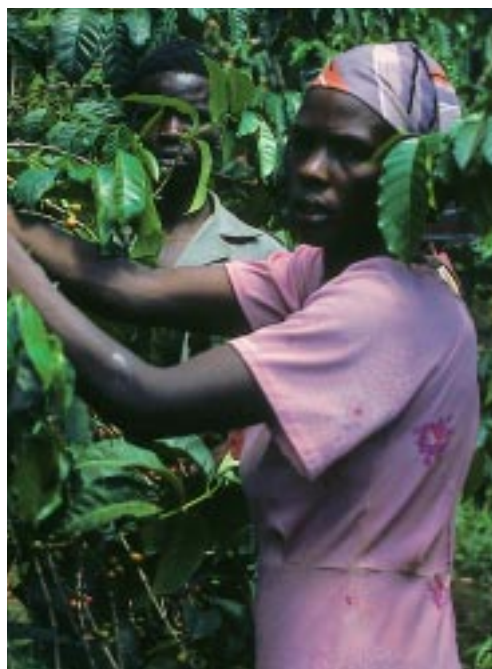
These challenges are different in industrialised and developing countries, and may also differ within one and the same mountain region. However, they typically include problems such as difficult access, economic and political marginality, outmigration, environmental sensitivity, and diversity of livelihoods and cultures. In future, these problems might be compounded by increasing local, national, and transboundary conflicts over scarce mountain resources such as water, land, plant genetic resources, timber, and minerals.

The need for multi-level policy initiatives and partnerships

What is needed, therefore, are policies and instruments which promote mountain development from a mountain perspective, without neglecting the wider political context,

Key elements and principles of a policy initiative for sustainable development in mountain areas:

- Recognition of mountain areas as important and specific areas of development
- Compensation for services rendered to surrounding downstream areas
- Diversification and the benefits of complementarities
- Exploitation of the local potential for innovation
- Cultural change without loss of identity
- Conservation of mountain ecosystems and early warning function
- Institutionalising sustainable development of mountain areas



Women in mountain areas often have a difficult life. Their important roles in farming and natural resource management contrast sharply with their limited rights of ownership and access to resources, education, health care, and positions of influence in many mountain communities. When formulating policy initiatives and partnerships, women must be given a voice, and their specific concerns addressed.
(T. Kohler)

including downstream interests and the increasing potential for conflict over mountain resources within and between countries. Such policies and instruments will build on national and international partnerships, and involve mountain communities as equal partners.

- What is called for are policy initiatives that
- put sustainable development of mountain areas on the political agenda,
- consider the specific challenges of development in mountain areas, and
- ensure that sectoral policies are adapted to take account of these challenges and that they complement and reinforce each other, thus enhancing their effectiveness for the benefit of overall development.

Guiding principles

Ideas and principles that could form the basis for such policy initiatives are presented on pages 6–19 of the present publication. For easier reference, they are summarised in the box to the left.

Countries play a key role

In the contemporary world, authority for the formulation of policies and instruments rests largely with individual countries. Therefore, policy initiatives for the sustainable development of mountain areas must be initiated, formulated, and translated into

Creating an enabling policy environment: a key role of the government

Often, sustainable development of mountain areas can be achieved through initiatives undertaken by civil society and the private sector, including commercial cooperation. However, national policies and instruments are important for creating an enabling environment, including an adequate legal and regulatory framework. Providing such an environment must be one of the aims of national policy initiatives for mountain development.

instruments and action primarily at the national level.

Such policy initiatives will give coherence to laws and regulations, institutions, incentive and support systems, and specific sector programmes for mountain development within a specific country. They will help formulate effective programmes at the local level, and provide orientation for regional and trans-boundary cooperation between countries that share the same mountain areas. And they will provide a frame of reference for the integration and implementation of global partnerships, conventions, agreements, and laws.

There is no blueprint for enacting and institutionalising policy initiatives at the national level. Each country has to find its

own way, depending on its specific situation, political culture, and system of governance. The National Committees and similar mechanisms that were created by about 70 countries worldwide in preparation for IYM 2002 could serve as practical platforms to get the initiatives started.

The need for broad alliances

Policy initiatives elaborated in an isolated manner by national governments or any other single institution are unlikely to have concrete and lasting effects – a fact that is confirmed by the case studies collected in the present publication. Thus, mountain policy initiatives need to be based on a process that involves a broad coalition of partners from the government, the private sector, and civil society. Support from the mass media and from important personalities can be useful to raise awareness among the general public and mobilise potential partners.

Linking global, national, and local efforts in an international partnership for mountain development

Policy initiatives for mountain development should also be initiated at the international level, with a view to supporting national initiatives, linking international, national, and local programmes for mountain develop-

Partnerships could be initiated for development of public lands, where policy formulation and implementation are less complex than for private lands. (P. Walther)



Different countries – different approaches

Many different approaches can be taken to the institutionalisation of national policy initiatives for the development of mountain areas. For example, Morocco, Austria, France, Georgia, Poland, and Cuba are drafting an integrated policy framework for mountain development. Nepal, Japan, Bulgaria, and Colombia are incorporating a regional focus on mountain development into relevant sector policies.

Source: FAO, 2002

ment, and promoting cooperation and partnership between major stakeholders such as donors, implementing agencies, NGOs, the private sector, the scientific, research, and technological communities, and mountain communities.

The *International Partnership for Sustainable Development in Mountain Regions* is an example of such an international policy initiative. It was prepared for the World Summit on Sustainable Development in Johannesburg 2002 by FAO, UNEP, and by Switzerland as a representative of the Mountain Focus Group, a group of countries that are interested in promoting mountain development. This International Partnership was conceived as an umbrella alliance under which all partners could enter into specific sub-partnerships according to their interest, competence, and willingness. Sub-partnerships could be organ-

The International Partnership for Sustainable Development in Mountain Regions: an initiative linking global, national, and local actors

“The international partnership was conceived as an umbrella alliance under which all partners could enter into specific sub-partnerships according to their interest, competence and willingness.”

ised around specific areas where action is needed, such as food security, poverty alleviation, biodiversity conservation, and other priorities, or around specific geographic regions or institutional concerns, such as mountain policy and law. Partnerships within this initia-

tive will be guided by clearly agreed goals, and their operations will be based on commitments made by partners. The Partnership will place special emphasis on transboundary cooperation.

Multilateral instruments

Given the transboundary character of many mountain areas, multilateral cooperation is another important instrument for achieving sustainable development, as shown by the case study on the Alpine Convention (pages 26–27). Therefore, future policy initiatives taken at the international or national levels should seek to establish closer linkages with existing multilateral instruments, such as the Convention on Biological Diversity (CBD), the UN Convention to Combat Desertification (UNCCD), the UN Framework Convention on Climate Change (UNFCCC), the International Strategy for Disaster Reduction (ISDR), and other instruments which are thematically or geographically related and relevant to the development of mountain areas.

Potential policy platforms

In preparation for the International Year of Mountains 2002, about 70 countries established National Committees or similar mechanisms to address the challenges of mountain development. These could become platforms for initiating and elaborating national policy initiatives and instruments for the development of mountain areas.

A herder's family in Kyrgyzstan. Livestock husbandry is important in many mountain areas due to climatic limitations on crop production.
(U. Lutz)



Formulating adequate policies and instruments for mountain development is a challenging process. Many elements and components have to be addressed, arranged, and rearranged. However, if this is done in accordance with agreed principles and within an accepted frame, coherent and meaningful results can be achieved. (U. Lutz)



Previous issues in the *Mountains of the World* series:

- **Mountain Agenda 1997: Mountains of the World: Challenges for the 21st Century**
- **Mountain Agenda 1998: Mountains of the World: Water Towers for the 21st Century**
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Web sites for IYM 2002 and beyond ...

Food and Agriculture Organization of the United Nations (FAO)
<http://www.fao.org>

Commission on Sustainable Development (CSD)
<http://www.un.org/esa/sustdev/>

Mountain Forum
<http://www.mtnforum.org>

International Centre for Integrated Mountain Development (ICIMOD)
<http://www.icimod.org>

The Mountain Institute
<http://www.mountain.org>

PANOS
<http://www.panos.org.uk>

Swiss Agency for Development and Cooperation (SDC)
<http://www.deza.admin.ch>

Mountains of the World:

Sustainable Development in Mountain Areas

The Need for Adequate Policies and Instruments

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