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Mountains

Key players for global sustainable development

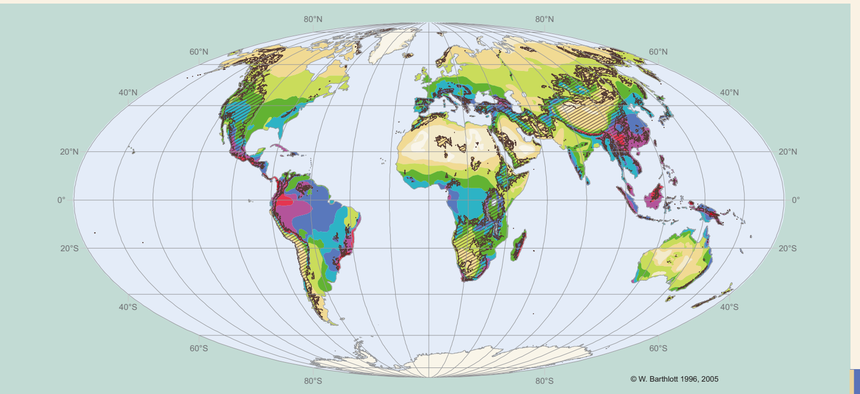
Mountains are hotspots of global biodiversity

Mountains are focal points of global biodiversity, as they host more than half of the world's biodiversity hotspots. They are also important centres of agro-biodiversity, with a great variety of locally adapted crops and livestock. This represents an important genetic resource in assuring food security for a growing world population. Mountain biodiversity provides essential goods and services such as timber, medicinal plants, and recreational landscapes. Mountain biodiversity, a global heritage, is threatened by unsustainable forms of land use, over-exploitation of resources, and climate change.

- Tropical and subtropical mountains are major centres of biodiversity: Mount Kinabalu in Sabah (Malaysia) harbours over 4000 plant species. This is more than a quarter of all plant species in the USA.
- Mountains are rich in endemic species, i.e. species that occur nowhere else. In Iran, over 50% of the mountain plants are endemic.
- The proportion of protected mountain areas has increased eight-fold in the last 40 years.
- 6 of the 8 centres of agro-biodiversity for domesticated plants ('Vavilov Centres') are found in mountain areas.

Examples of policy implications

- The UN Convention on Biological Diversity, with its Work Programme on Mountain Biodiversity, provides a framework for action. Its importance was confirmed by COP 10 in 2010.
- The International Treaty on Plant Genetic Resources provides rules that govern access to, use, and benefit-sharing of genetic resources, including those in mountains.
- At the national level, policy action for biodiversity conservation should include sensitisation, capacity development, and participation.
- Benefit sharing is crucial and can be achieved through payment for environmental services (PES), community conservation, or the establishment of conservation landscapes.



Moving Mountains to Rio 2012 and beyond

At the World Summit for Sustainable Development (WSSD) in 1992, mountains were recognized for the first time as major ecosystems important at the global scale. The introduction of Chapter 13 on fragile mountain ecosystems into Agenda 21 brought high-level political attention to mountains that contrasted with their usual marginalization. Twenty years later mountains matter more than ever but they are still treated as marginal. However, globalization and climate change have shown many political and economic leaders and humankind in general that mountains are crucial in providing ecosystem goods and services.

In view of Rio 2012, mountains need to be considered as a key context, both for greening the world's economy and for defining and implementing new institutional arrangements that will help to achieve true global sustainable development for the sake of a better future on earth. The role of mountains and their recognition in key instruments and processes – particularly in the three UN conventions on climate change, biodiversity and desertification – need to be emphasised.

Mountains also embody key global issues such as migration and urbanisation, food security, land degradation, conflicts, water supply, energy production, transport and waste management, biodiversity conservation and protected areas, extreme weather events (floods, droughts), and natural hazards. However, their physical remoteness does not mean that mountain people and their environments should be overlooked by the rest of humankind. On the contrary, without better mutual understanding and cooperation regarding mountains, the challenge of global sustainable development will not be achievable.

This is why the Swiss Government, through the Swiss Agency for Development and Cooperation (SDC), is funding the preparation of regional reports and a global synthesis on achievements and experiences in Sustainable Mountain Development (SMD) since Rio 1992. These reports will also identify gaps, upcoming issues, challenges, and opportunities for SMD. Drafts of the reports will be presented and discussed at the 'Lucerne World Mountain Conference' initiated by SDC, to be held in Lucerne, Switzerland on 11 and 12 October 2011. This event will provide inputs to Rio 2012 and to the next CSD biennium, where mountains will be one of the five key topics.

These initiatives are a collaborative effort undertaken in the framework of the Mountain Partnership (MP) Initiative. They are being carried out by a number of MP members including (in alphabetical order) the Centre for Development and Environment (CDE), the Centre for Mountain Studies (CMS), the Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), the Food and Agriculture Organization of the United Nations (FAO), the International Centre for Integrated Mountain Development (ICIMOD), the Mountain Research Initiative (MRI), the Sultan Qaboos University (SQU), the University of Central Asia (UCA), the United Nations Environment Programme (UNEP), and the Zoï Network. This group is open to other interested parties.

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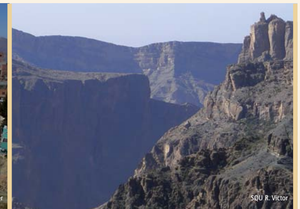
SQU R. Victor

Why mountains matter

Mountains provide key services and goods for all humankind while also facing important challenges that threaten sustainable development at the global level. Sustainable Mountain Development (SMD) should have a place at the United Nations World Summit on Sustainable Development in Rio de Janeiro in 2012.

Mountains

- cover 27% of the Earth's land surface
- are home to 12% of the world's population, who live in an often stunning but also harsh and even inhospitable environment
- provide freshwater to over half of humankind
- provide key resources such as minerals, timber, and the plant genetic resources of major food crops
- are major destinations for tourism, the fastest growing industry worldwide
- contain more than half of the world's biodiversity hotspots.

However, mountains also

- include one-quarter of the world's poorest and hungriest people, who deserve the benefit of special efforts to reduce poverty
- are among the regions most sensitive to and already affected by climate change; their ecosystems act as early indicators, for example through rapid glacier melting, with consequences far beyond mountain boundaries
- suffer from widespread land degradation that endangers livelihoods and triggers disasters which also affect lowland areas.

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Mountains provide opportunities for regional and global collaboration

Countries with mountain regions have different backgrounds in terms of population, economy and culture, but they often face similar challenges. Mountain systems frequently cross several country borders and thus present many opportunities for trans-boundary collaboration. Cooperating and speaking with one voice will make it possible to address more effectively the challenges and opportunities of mountains in the context of global and climate change.

- 53 countries have over half of their territory in mountains.
- A smaller but still important proportion of mountain lands (25-50%) is found in another 46 countries.
- Many countries have a much smaller proportion of mountains but are critically dependent on mountain goods and services such as freshwater and clean air.
- Transboundary collaboration has become more important in recent years for road and rail construction, water management, biodiversity conservation, and establishment of regional knowledge centres.

Examples of policy implications

- Promote dialogue among different mountain areas, actors and stakeholders.
- Share knowledge and experience among mountain regions and with lowland areas.
- Provide a voice to mountain people, particularly marginalized groups.
- Promote the establishment of mountain-specific institutions, laws and mechanisms to foster sustainable development.
- Enhance global political, economic and societal commitments to mountain dwellers and mountain ecosystems.

Mountains are a home, a source of income, and a place of diverse cultural heritage

Almost a billion people live in mountains. Their specific and diverse cultures are a world heritage, increasingly threatened by globalisation. Many mountains have long been regarded by mountain people and others as sacred places and as a manifestation of spiritual energy, meaning, and orientation. They provide space for recreation and have become important destinations for tourism, creating new opportunities as well as challenges for sustainable mountain development.

- Mountains have a disproportionally high share of poor people on a global basis.
- Mountain people have developed a great diversity of land use systems that have helped to create impressive and labour-intensive cultural landscapes, e.g. terracing on slopes.
- Mountains are considered sacred in many parts of the world; Mount Kailash in China, for example, is considered the most sacred place by over a billion people in Asia.
- Mountains have an estimated share of 15-20% of global tourism, the world's fastest growing industry. Tourism is an increasingly important source of growth and employment in many developing countries, including Least Developed Countries (LDCs), many of which are mountain countries.

Examples of policy implications

- Given the high poverty rate in many mountain regions, efforts are required to increase the income of mountain dwellers; diversification of livelihoods is an option for achieving this end.
- Policies and instruments need to be developed that stimulate investment in mountain infrastructure, promote local capacity building, and create links with the national and global economies.
- In tapping the potential of tourism for employment, economic growth, and poverty alleviation, a fair share of income must be secured for the local population and respect must be shown for local development agendas.
- Particular attention needs to be given to preserving mountain ecosystems, as they are the key livelihood capital for future mountain generations.

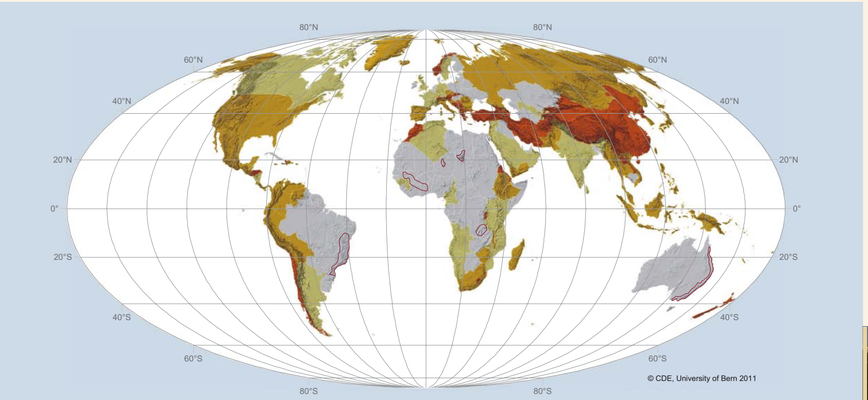
Mountains are the water towers of the world

The world's major rivers originate in mountains. More than half of humanity relies on freshwater from mountains for drinking, domestic purposes, irrigation, industry, and hydropower. Water is the world's most important source of green and renewable energy, supplying rapidly growing cities and centres of population in and around mountains. Due to climate change, less water will be available at times when it is needed most, while floods may increase in some places. These large-scale processes will impact on the development of mountain regions and have a negative effect on food security in many places.

- In arid areas mountains contribute 80 to 100% of the total runoff from river basins; in these regions, mountain water is extremely important for economic development; however, mountain waters are also important in areas of higher rainfall during summer.
- 1.35 billion people – 20% of the global population – live in the basins of the 10 largest rivers in the Hindu Kush-Himalaya mountains. Rapid economic development in this region increasingly depends on mountain waters.
- Despite increasing water scarcity, cooperation over water has been far more common than conflict; of all government interactions concerning the world's 263 transboundary rivers over the last 50 years, 67% were cooperative and only 28% were conflictual. Efforts are needed to sustain or improve this situation.

Examples of policy implications

- Recognize that careful management of mountain waters is a global priority in a world heading towards a water crisis.
- Undertake major efforts to improve the management of mountain waters by:
  - using water more efficiently for domestic and industrial purposes and for irrigation
  - increasing water storage capacity at all levels
  - strengthening institutional arrangements such as water treaties, conventions, or collaborative basin management protocols, in order to share water equitably within or between nations
  - capitalising on lessons learnt from existing arrangements such as the Rhine Commission or the Mekong River Commission.

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