

## FAO – 2007-2008 Report for UNGA (2009)

### Contributions by:

CDE (Centre for Development and Environment) University of Bern

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## Climate Change

### Central Asia

*Central Asia* is among the regions in the world which have experienced the highest glacial retreat in recent decades. For example, research done by the Swiss National Centre of Competence in Research (NCCR) North-South found that glaciers in the Sokoluk watershed in the **Northern Tien Shan (Kyrgyzstan)** have lost 28% of their surface between 1963 and 2000, most of it in the last 20 years, and projections show that the glaciers will shrink to half of their current size by 2050. As glaciers typically provide between 40-70% of runoff, glacier wastage will soon pose a serious threat to freshwater supplies to this dry region, with far-reaching implications for economic development and food security, which heavily depend on irrigation.

### Kenya

The waters of **Mount Kenya**, a world heritage and water tower for over 7 million people, have come under increasing pressure in the last decades owing to population growth and increasing irrigation demand from both large and small scale farming. Climate change is likely to dramatically increase shortage of water in future. A study completed in 2007 by CDE (University of Bern) together with local partners (CETRAD – Centre for Education and Training in Arid and Semi-Arid Regions, Kenya) northwest of Mount Kenya predicts that by 2050, river runoff will show extreme floods with up to 20 times the present flow at the beginning of what is today the dry season. On the other hand, low flow is projected to reach only 1/10 of the present value for the rest of the dry season, a crisis scenario that will put the development of the whole region into jeopardy. Until now, population growth, immigration, and land fragmentation have been the main drivers of change and conflict in the region. In future, climate change could have an impact as grave as that of those drivers. It should be factored in urgently in planning and decision making on regional development.

### Ethiopia

Climate change is projected to have profound impacts on other African mountain regions as well. A study prepared in 2008 at CDE (University of Bern), looking at climate change and temperature, concludes that *in Ethiopia*, over 60% of today's high potential **coffee growing** area, or about 100,000km<sup>2</sup>, will be unsuitable, or less suitable than today, for coffee production. The study also shows that high potential coffee growing areas will shift hundreds of kilometers eastward, and will be significantly smaller and more fragmented than today.

### Data needs and regional long-term observatories

Both the Kenyan and Ethiopian study would not have been possible without the availability of long-term regional and local data collected by regional observatories for many decades. CDE and its partners are currently renewing their efforts to secure the survival of these upland and mountain observatories, as they will become even

more important in future in the light of ongoing global change, including climate change.

## Education and Research

### Global and research partnership:

- Research in mountain and highland-lowland contexts is a key focus of over 50 PhD studies carried by the **Swiss Centre of Competence in Research NCCR North – South**, a programme of 7 Swiss research institutions and their partners worldwide, involving over 250 researchers on 4 continents.
- Relating to mountain research, the highlights of the programme include the socio-economic Atlas of Lao PDR, which illustrates the disproportionately high concentration of poverty in mountain areas as compared to lowland areas. This confirms the results presented by the Socio-economic Atlas of Viet Nam produced by NCCR North-South in 2004.
- A global overview study on *People, Protected Areas and Global Change*, published by the same programme in 2008, in which mountain regions feature prominently (5 of 13 case studies) shows that economic benefits of protected areas are generally much lower than planned for, and that institutional practices have not adhered to the participatory principles they were designed to follow.

### Transdisciplinary approaches in research:

- The importance of involving non-academic circles in research programmes, such as local communities, policy makers and administrators, is increasingly being acknowledged in research dealing with sustainability issues. For such **transdisciplinary approaches** the **LforS Platform** (*Learning for Sustainability*) provides a useful tool box. Originally developed for multi-stakeholder dialogues in the mountains of Central Asia by CDE (University of Bern) and CAMP, LforS was further developed in 2007 and 2008 to include interactive games, and was applied to a diversity of mountain development issues such as poverty alleviation, disaster risk management, soil and water conservation, and energy efficiency. It has also shown its potential to promote development in lowland areas.

### Capacity development and institution building:

- The University of Central Asia (UCA) is one of the few institutions worldwide which is dedicated specifically to mountain research and development, a field still largely neglected in capacity development at a global level. Founded in 2000 by the governments of Kazakhstan, Kyrgyzstan, and Tajikistan and His Highness the Aga Khan, UCA has signed a series of MoUs with partner universities worldwide, including an **MoU with CDE** from the University of Bern in **2007**. It covers capacity building for faculty as well as joint research initiatives, including a programme for long-term monitoring in the mountains of Central Asia.

- Institutional development is no less important for civil society organizations. The Central Asia Mountain Partnership (CAMP), initiated with Swiss support in 2001 in the context of IYM 2002, has developed into an **independent NGO - CAMP Alatau – in late 2008**, after Swiss support was phased out. CAMP, which had made itself a name by creating the Alliance of Central Asia Mountain Villages (AGOCA), is now engaged in mountain pasture management, energy efficiency, community development and disaster risk management. The institution was the principal initiator

of the **regional Dare to Share Fair** on mountain development in Dushanbe, Tajikistan, in June 2008.

## Networking and Communication

### International journal *Mountain Research and Development (MRD)*

- ***Mountain Research and Development*** is the only peer-reviewed international journal that deals with research as well as development in mountain areas worldwide. Since its start in the early 1980s, the journal has always strived to present cutting-edge contributions to key issues, and has continued to do so during 2007 and 2008. The topics featured in this period include migration and vulnerability, policy and institutions for mountain development, and mountain rural development in the face of globalisation, among others. Many of its contributions come from authors from the South and East, thus giving them a voice and an opportunity to access, publish and review academic research.

Following a general trend, the journal has decided to move to an on-line and open access mode of production in 2009. Users' response has been very positive, as downloads have increased 4-fold since early 2009, indicating that the new format meets the needs of the global community interested in mountain research and development.

The journal's institutional home is the International Mountain Society, a Swiss-based association with institutional members only, including FAO, ICIMOD, CIP-Condesan, WWF International, MRI, and CDE, which also hosts the Editorial Office of MRD.

### WOCAT – World Overview of Conservation Approaches and Technologies

- The Centre for Development and Environment at the University of Bern, Switzerland, hosts the secretariat of WOCAT (World Overview of Conservation Approaches and Technologies, a global network of governments, national and international institutions and civil society organizations that aims to ensure that local sustainable land management knowledge and experience, including that related to mountains and highlands, is evaluated, shared and used locally, nationally and globally. In 2007, the network published a global overview on sustainable land management entitled *where the land is greener: case studies and analysis of soil and water conservation initiatives worldwide*, which also included policy recommendations for decision makers. The document reveals that not all is doom and gloom in global land management, and that a wealth of proven practices exists especially with regard to mountains and uplands. Since then, WOCAT has made major efforts in mountain regions such as the Himalaya-Hindu Kush area where a regional project has been initiated in close collaboration with ICIMOD, including an inventory with fact sheets on natural resource management approaches and technologies. Additional initiatives were also started in the mountain regions in Central Asia and China, where the WOCAT methodology is used to demonstrate the importance and impact of good land management practices on-site in mountains as well as off-site in adjoining lowlands.

For UNCCD and the COP-9 meeting in 2009, WOCAT prepared a brochure on benefits of sustainable land management in 2008, highlighting land management on mountains and highlands and its impact on surrounding lowlands.

## Regional Initiatives – Research and Outreach

### Central Asia:

#### **Sustainable Land Management in the High Pamir and Pamir-Alai Mountains**

- Building on the Swiss-funded Pamir Strategy Project (2001-2003), CDE and its partners submitted a full proposal for sustainable land management in the High Pamir and Pamir-Alai mountains, which was approved in 2007. With its duration of 4 years and a volume of 9.7 million USD, the programme aims at establishing proven practices and promising standards in a participatory and *transboundary approach* for the sustainable and equitable use of the region's natural resources. Partners include GEF, UNU, UNEP, local and international universities, as well as authorities from Kyrgyzstan and Tajikistan. The programme will be initiated in 2009.

### Central Asia and Caucasus:

#### **Environmental Impact Assessment (EIA)**

- EIAs have become increasingly important in mountain areas as well. In 2007-2008, for example, CDE (University of Bern) has been engaged in capacity development for EIA in Azerbaijan, and Tajikistan, Kyrgyzstan and Kazakhstan. Funded by the Swiss Federal Office for the Environment, the programme focused on legal frameworks, public participation, and environmental strategies. It takes up concrete issues based on field visits, with a view of establishing a pool of expertise, including data. Issues addressed included road construction, gold mining, nature conservation, and tourism.

### Andes:

#### **BioAndes Programme in Bolivia, Peru, and Ecuador**

- BioAndes aims at conserving *biodiversity* through its valorization in economic, socio-cultural and political terms. This regional programme started in 2007 and is funded by the Swiss Government and implemented by the University of Cochabamba in Bolivia, with two civil society partners in Peru and Ecuador, and CDE (University of Bern) as a back stopper. Work is in progress in 7 bio-cultural zones focusing on action-research and bottom-up policy support. BioAndes has also positioned itself in the international debate on biocultural diversity, stressing the close links between biodiversity, in-situ conservation, and sustainable mountain livelihoods.

### European Alps:

#### **World Heritage Site Jungfrau-Aletsch, Switzerland**

- In the Swiss Alps, the Jungfrau-Aletsch World Heritage Site, the first Natural World Heritage in the European Alps, is noted for its comprehensive knowledge system covering environmental as well as socio-economic and cultural data on the Site and neighboring communities. The system now also includes a long-term research and monitoring concept established by the Site's Management Centre with support from CDE of the University of Bern.