

Sustainability-Oriented Research and Development: The Centre for Development and Environment (CDE), University of Berne



The Centre for Development and Environment (CDE) is a university-based institution that conducts resource- and people-centered research and development activities in Switzerland and abroad. Mountain development is one of CDE's focus areas. CDE is part of the Institute of Geography at the University of Berne and is the lead institution for the Swiss National Centre of Competence in Research (NCCR) North-South.

CDE's mountain focus

Mountain research and development has a long tradition at CDE and in the Institute of Geography at the University of Berne. Mountain-related issues are included in most of our programs and mandates in countries of the North, South, and East. Our programs and mandates have a long-term perspective wherever possible, and are sustainability-oriented. They combine research and knowledge generation with outreach and application in a broad range of activities, depending on the type and nature of the partnership.

Research

Mountains have a prominent role within the NCCR North-South: more than half of over 100 PhD candidates in the program's first phase dealt with global change-related development issues in mountain areas in Southeast Asia, Central Asia, South America, Central America, Europe, and Africa. Highland-lowland interaction has been maintained as a crucial development focus in the second phase as well. Information on the program is available at nccr.cde.unibe.ch.

Outreach

Most of CDE's outreach programs have a mountain development component, or focus on mountains altogether. The Central Asian Mountain Partnership Program (CAMP) adopts a local development approach. In

Africa, the Eastern and Southern Africa Partnership Program (ESAPP) deals with issues pertaining to the management of scarce mountain water in the semi-arid lowlands of Mt Kenya. The focus of our Eritrean program is on soil and water conservation in the highlands. In Switzerland, CDE has been entrusted with direction of the Management Centre of the Jungfrau-Aletsch-Bietschhorn (JAB) World Heritage Site (Figure 1). In Southeast Asia and in the Central Andes, 2 new programs focus on biodiversity and sustainable use of resources.

In addition to these larger programs, CDE has made a number of smaller contributions to projects related to mountain development. These include several mandates relating to hazard prevention and mitigation in the mountains of Central Asia, involving participatory approaches, promotion of learning processes, and GIS-based tools for prevention and monitoring.

The Central Asian Mountain Partnership Program (CAMP)

CAMP has been financed by the Swiss Agency for Development and Cooperation (SDC) and implemented by the Centre for Development and Environment (CDE) since 2002. CAMP's bottom-up approach has helped support the transition process in rural and mountain regions of Central Asia, focusing on institutional and policy development (CAMP agencies in Kyrgyzstan, Tajikistan, and Kazakhstan).

For the people in mountain and rural regions, local partnership and participation within CAMP village development processes has meant gaining a feeling of responsibility for the surrounding natural resources and creating new cooperative structures at the village level. CAMP has also initiated dialogue between village-based organizations and governmental structures, and has helped establish institutional structures such as AGOCA (Russian for "Central

Asian Mountain Village Alliance;" see the article by Valeria Nikonova in this issue of MRD) to advance multi-stakeholder dialogue at the strategic level of government. Moreover, "Houses" were established in Central Asian capitals as platforms for this dialogue on village development and decentralization. Examples of projects that emerged in Dom Gor, the House of Mountains in Bishkek, include the improvement of heating, insulation, and resource use efficiency in remote mountain villages. In Dom Vody, the House of Water in Dushanbe, debates led for example to a project aiming to improve distribution of drinking and irrigation water so that local village needs are covered after the decline of the former Soviet centralized distribution system. Promising local initiatives continue to emerge in these structures.

Policy

CDE hosts the editorial office of *Mountain Research and Development*, which constitutes the longest-term policy activity related to mountain development. The journal has a global readership and has been made increasingly accessible to interested readers thanks to electronic licensing agreements in recent years. In addition to sharing state-of-the-art knowledge on research and development, the journal has an important role to play as a capacity development tool for authors in the South, who provide a significant portion of the contributions, including those which are peer-reviewed.

Within the mountain mandate entrusted to CDE by the Swiss Agency for Development and Cooperation, one recent project tested a community-based module for mountain development in the Swiss Alps, based on an approach developed by CDE in countries of the South—a rare case of a South-North transfer related to



FIGURE 1 Special interest tourism in the Jungfrau–Aletsch–Bietschhorn World Heritage Site in the Swiss Alps, a sustainable development option explored by transdisciplinary research at CDE. (Photo by Hanspeter Liniger)

development tools. CDE is also a lead member of the Research Initiative of the International Mountain Partnership. In this capacity, together with other lead agencies, we conducted a survey on upcoming research issues and the future role of research among the members of the Partnership. The results will be made available on the Partnership website (www.mountainpartnership.org) in early 2007.

WOCAT: World Overview of Conservation Approaches and Technologies

In many mountain areas—especially in the tropics and subtropics—the pressure to use land for agriculture is increasing. This development may open a door to new livelihood options but it also entails serious risks, as it is taking place in a fragile environment. Mountain areas have considerable potentials: they provide freshwater, are a source of biodiversity, are attractive landscapes for tourism and, last but not least, they produce a wide range of agricultural products. But they are particularly susceptible to land degradation caused mainly by surface runoff due to high rainfall, steep slopes, and erodible soils.

Numerous efforts have been undertaken by land users and conservation specialists worldwide, leading to more sustainable land use and achievements in avoiding

and combating degradation. To date, though, most of these experiences remain isolated and little valuable local knowledge has been documented and made available and accessible to people working in soil and water conservation at the field and planning levels.

The new WOCAT overview book, *where the land is greener*, is a prototype for standardized documentation of soil and water conservation technologies and approaches. It presents a wide range of case studies in numerous mountain areas around the globe. Two thirds (66%, or 28 of 42) of the technologies presented are exclusively or partly applied in mountains. Apart from on-site benefits, most cases also mention crucial off-site advantages, such as reduction of floods, decreased sedimentation/siltation, and even improvement of water flow during the dry season.

In addition to case studies, the book includes analytical sections on the technologies and approaches under study and identifies common elements of success. Policy pointers for decision-makers offer a new impetus for further investment—to make the mountain slopes greener, at the local level, with simultaneous global environmental benefits.

While the book illustrates how to document, monitor, and evaluate sustainable land management options and their impacts, the overall WOCAT approach also shows

how local know-how can be efficiently shared and disseminated.

Education

CDE has been involved in teaching mountain-specific courses and in supervision of MSc and PhD theses at a number of higher learning institutions. This includes its home institution—the University of Berne—a number of technical universities in Switzerland, and institutions in partner countries such as the Universities of Nairobi (Kenya), Mekelle (Ethiopia), and Asmara (Eritrea). We are also supporting curriculum development—presently at the University of Cusco in Peru and the University of Central Asia (Aga Khan Foundation). Collaboration agreements with other partner universities exist within the frameworks of regional programs (eg with the Asian Institute of Technology, AIT, in Bangkok). Moreover, CDE has developed an approach and tools to promote learning processes at various levels, in particular in mountain regions, considered to be a spatial context of particular interest for sustainable development.

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