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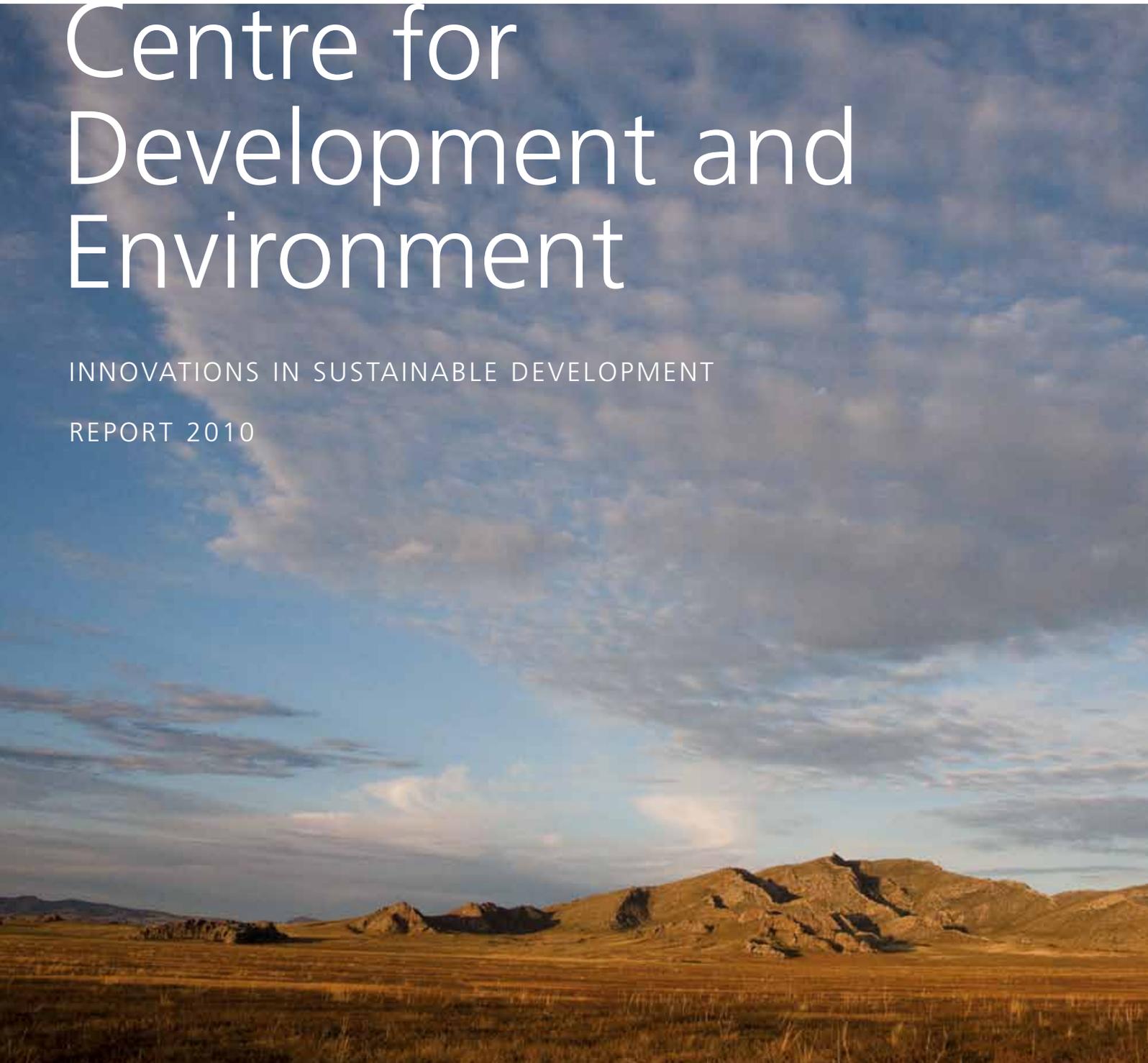
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**UNIVERSITÄT
BERN**

CDE
CENTRE FOR DEVELOPMENT
AND ENVIRONMENT

Centre for Development and Environment

INNOVATIONS IN SUSTAINABLE DEVELOPMENT

REPORT 2010



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Foreword

Switzerland today is a knowledge society that has long-standing experience in generating and making available scientific knowledge for its own genuine development. On the basis of contributions made by researchers and other specialists, be they natural or social scientists, engineers, medical doctors, economists or lawyers, Switzerland has established itself as a top-positioned nation within the international community. This status, however, brings with it a great amount of responsibility, as the state of the world is at stake.

In the past 50 years, the limits of growth and the negative side-effects of uncontrolled development have become apparent. They have gained attention as they have become impressed in the minds of a majority of the Swiss population, owing to several reports published by groups of scientists – in particular, the reports by the Club of Rome ('Limits of Growth') in the 1970s and the World Commission on Environment and Development ('sustainable development') in the 1980s, the UN Conferences ('Agenda 21') since the 1990s, and the Millennium Development Goals ('halving poverty') in the 2000s.

Mitigating global problems and helping humanity to adapt to changing living conditions have become necessities equal in importance to the furthering of development through improved technologies or socio-economic institutional reforms. Research has thus increasingly had to look into 'syndromes of global change' that are brought about by human development, and find ways of overcoming such syndromes. This has included studies of and testing of measures against climate change and, equally important, measures to deal with land use changes, degradation of biodiversity, soil and water, and growing economic and social disparities.

Such research orientations are gaining importance in development cooperation, too. Developing countries increasingly base their strategies on their own scientific research and academic education. Due to the huge disparity between developing and developed nations, which is even more pronounced in science than it is in human development, research partnerships have become a model for many OECD countries to adopt. Switzerland was a pioneer in this endeavour; it developed 'principles for research partnerships' (KFPE, 1997) and has since implemented them in many cooperation projects in more than 60 countries world-wide.

While it has existed since 1988, CDE was re-launched as a research centre of the University of Bern in mid-2009, mainly due to its leadership role in the National Centre of Competence in Research (NCCR) North-South since 2001, as well as its key position in the university's strategic field 'mastering global change' and its general policy direction of 'furthering sustainable development'. The new directorship of CDE, having these tasks in mind, has carefully evaluated the centre's current activities against its expected new roles, and presents the interim results of its institutional reorganisation in the first chapter of this annual report.

CDE is now equipped for new challenges and future roles in working towards globally sustainable development. However, it continues to remain critically dependent on benevolent institutional partners and donors to support its activities in the future.

The current report outlines the strategies and activities of the Centre for Development and Environment (CDE) in 2009 and 2010. CDE's special focus is on innovations for sustainable development. In this respect the report features four examples from CDE's research, outreach and policy activities. These examples show that innovations are not, as often conceived, purely technical solutions, but must be adapted to local circumstances, where they typically address social, institutional, and economic aspects.

Hans Hurni, Founding President, CDE Board



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The Centre for Development and Environment (CDE)

A new interdisciplinary research centre at the University of Bern

Peter Messerli, Director CDE



Karina Liechti

Taking stock of the past to reshape our future strategy

.....
In the middle of 2009 the University of Bern formally established a new interdisciplinary research centre, the Centre for Development and Environment (CDE). As a university-wide centre in its own right, CDE has a mandate to pool existing expertise in research and teaching, as well as services and knowledge exchange concerned with sustainable development and environmental issues. It will thus strengthen the national and international position of the University of Bern in these fields in the long term.

As members of CDE, which was part of the Institute of Geography until 2009, we accept this task with enthusiasm and pride, as we see this new institutional status as an appreciation of our sometimes unconventional history. Founded as a small research group focusing on natural resources and sustainable regional development in the global South, we began early on to link scientific research with concrete applications and policy dialogue. This experience laid the foundations for the development of concepts and tools for inter- and transdisciplinary research, which became a key feature of our approach. At the same time we learned that our contributions to global debates on development and environment are most relevant and meaningful when we relate them to our work in concrete contexts with local partners. The long-term partnerships we established in East Africa, the Horn of Africa, Central- and Southeast Asia and South America became the basis for the National Centre of Competence in Research North-South (NCCR North-South) Programme that began in 2001. In cooperation with various Swiss universities and partner institutions in more than 40 countries, this programme has allowed

us to upscale our activities and broaden acknowledgment of sustainable development-oriented research within Switzerland and abroad.

Today CDE is a research centre whose members have grown to include more than 60 specialists from 16 disciplines working with partners worldwide. Looking back, we are grateful for the many opportunities we have had, the valuable experience we have gained, and the distinct profile we have been able to develop. By taking stock of the past we feel confident that we can address the new expectations expressed by the University of Bern and our partners, as well as the challenges related to a constantly changing environment with respect to sustainable development research and practice.

We believe that knowledge is key to concrete progress towards sustainable development

.....
In view of the new mandate given to us by the University of Bern but also in light of changes in CDE's management, we carried out a strategic review in order to revise our overall strategy for the period 2010-2015. Our aim was to assess the quality and relevance of work at CDE and to reorient and improve on this work where necessary. We assessed strategically relevant trends in the domains of development and science and compared them to our current profile. We took into account views expressed within CDE as well as by outside parties and stakeholders. On this basis we devised a new strategy, consisting of a revised vision and mission statement (see box top of page 6), but also incorporating strategic themes that were chosen to guide us during the coming years.

Our vision reiterates that the production and sharing of knowledge is our core task. We also believe that this allows us to make a concrete and tangible contribution to sustainable development, because knowledge – as for any other type of goal-oriented development – is a precondition for sustainable development.

To pursue this overall vision, CDE’s approach, as elaborated in the past, will be carried further. We aim to intensify the links between research and education as well as outreach activities and policy advice to bring about fruitful and mutually inspiring exchange. We will also focus on linking global debates to local development contexts by working at and across multiple scales and in strong partnerships with scientists and policy- and decision-makers in multiple selected regions worldwide.

We have identified six thematic clusters that represent key strategic opportunities for CDE to enhance the relevance and reputation of its contribution to sustainable development (see figure below). In three of these thematic clusters we will address sustainable development from a comprehensive perspective, focusing on core issues and competencies when dealing with this topic:

Vision

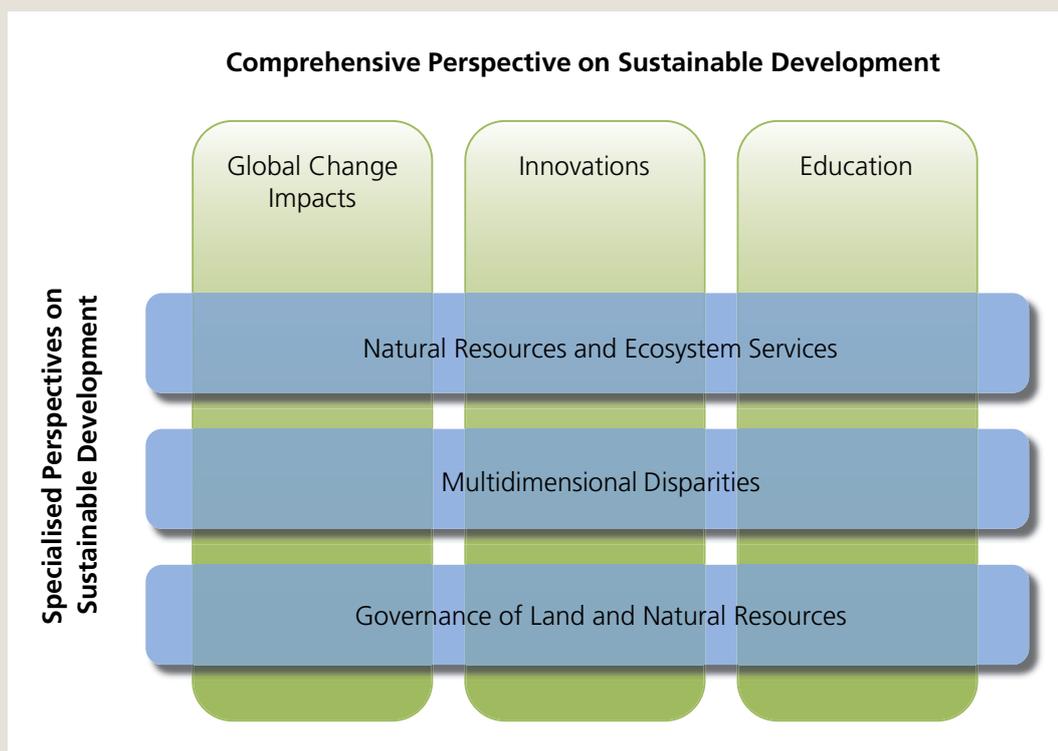
We believe that knowledge is key to concrete progress towards sustainable development. In this respect development-oriented research plays a crucial role, as it promotes innovative thinking and mutual learning within and beyond the realm of science.

Mission

Our mission is to produce and share knowledge for sustainable development in cooperation with partners in the global North and South.

-> **Global change impacts:** We observe and analyse the effects, opportunities and risks that global change processes represent for sustainable development from the local to the global level. We focus on rural spaces as multi-functional landscapes in the context of global change.

-> **Innovations in sustainable development:** We do not believe in silver bullet solutions but aim to devise and facilitate innovations in concrete contexts addressing social, institutional, and economic aspects in addition to technical ones. We initiate social learning processes and empowerment and explore possibilities for up- and out-scaling.



CDE Thematic clusters

-> Education for sustainable development:

CDE engages in learning for and from sustainable development. Individual and institutional capacity development in education is pursued in Switzerland and in CDE's partner regions. We seek to analyse the role of knowledge in sustainable development and to learn from development outcomes in order to improve their effectiveness.

To complement this comprehensive perspective, we will also pursue thematic specialisation concerned with the three main dimensions of sustainable development. For this purpose, the following thematic clusters have been defined:

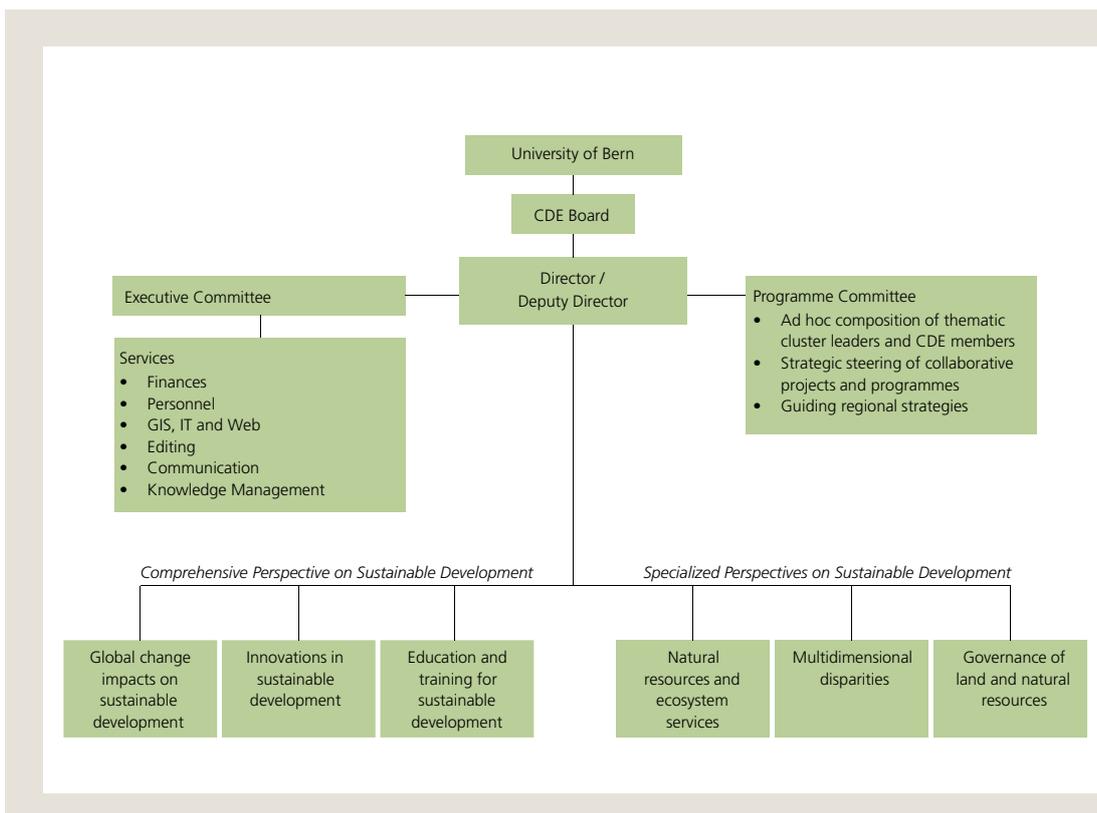
-> Natural resources and ecosystem services:

Building on understanding of key processes of land degradation and monitoring of these processes in rural observatories, we explore mechanisms to reconnect supply of and demand for ecosystem services across spatial and scalar boundaries. Building on landscape approaches, we address spatial and temporal trade-offs in integrative land and resource management and support stakeholder negotiations and decision-making.

-> Multidimensional disparities: Concurrent with economic growth in many developing countries, we observe increases in disparities along social, economic, ethnic, gender and other divides that cause ordinary poverty alleviation strategies to stall. We focus on exploring innovative pathways and coping strategies that go beyond the primary sector and local levels to address employment, markets, and rural-urban linkages.

-> Governance of land and natural resources:

With the overall goal of supporting equitable and informed negotiations and decision making, CDE will address the challenges of multi-level and multi-stakeholder governance of land and natural resources. We aim to improve the transparency of land-related decisions, enhance the voices of weaker stakeholders, and support adaptive management in shaping more sustainable human-environmental systems.



CDE organizational chart (as of 2011)

Renewing the organizational structure to efficiently implement our strategy

The organizational structure of CDE has been revised in light of our new strategy. With the overall goal of achieving efficient and pragmatic implementation of our strategy, we have decided to put the six thematic clusters at the core of our organization (see figure below). Under the guidance of newly recruited leaders, these clusters will assume responsibility in their respective thematic areas and manage a portfolio of research, outreach, policy, and educational activities. Consisting of assigned CDE staff, these clusters will also operate as platforms for cooperation with partners of the University of Bern, Swiss research centres, and international partners in the North and South.

As many CDE projects and programmes will draw on competencies and resources from more than one thematic cluster and operate in different regions worldwide, the programme committee will play a key role in strategic steering. Under the guidance of the directorate, this committee will ensure the allocation of staff and resources to different projects, oversee acquisitions, and support the regional strategies. Representatives of other institutions who carry out programmes and projects within CDE will join the Programme Committee as so-called members of CDE.

Finally, the directorate will be supported by an Executive Committee that also coordinates the services section. Overall responsibility rests with the CDE Board, which reports to the University of Bern.

Gaining momentum through cooperation

With the establishment of CDE as a new university-wide research centre, we have entered a new era. Looking back and taking stock on the basis of our long-term experience, we are determined to maintain our mission to produce and share knowledge for sustainable development. At the same time, we have revised our strategy and adapted our organization, anticipating a future which remains in many ways uncertain. Not only is there reason to fear that 20 years after the UN conference on sustainable development in Rio de Janeiro this core concept has become marginalized. In addition, global change processes are highly dynamic and their complex interrelations always produce new and unexpected outcomes. The blurred differentiation between developing, transition, and developed countries and their changing geopolitical roles is just one example. Nevertheless, the challenges



Open Source GIS-Training for natural resource management in Juba (2009), South Sudan.

of non-sustainable development remain and the urgency for rapid transition is greater than ever. As knowledge will be needed that can inform and shape effective responses to the threat of non-sustainable development calls for a new contract between science and society are multiplying, thus supporting our cause.

Against this background, we feel committed and encouraged to strive for momentum and pursue our task into the future. But this task cannot be fulfilled without close cooperation with many different partners at multiple levels. Within the University of Bern, we look forward to broadening our competence by inviting other institutes to join our work and to continuing our long-standing cooperation with the Swiss government as the university in the country's capital city. Within Switzerland, we will undertake to maintain and strengthen close cooperation with research centres after the termination of the NCCR North-South programme, through the joint International Graduate School North-South and through our common networks of national and international scientific and development partners. Finally, and most importantly, we will give the utmost attention to our ongoing partnerships with countries of the global South and East. Long-term cooperation with scientific partners from different disciplines and stakeholders transcending science, which has allowed us to address sustainable development in concrete contexts, has been key to our achievements and will remain our mutual asset in the future.

Programme work

A look back on 2010

Thomas Breu, Deputy Director CDE



In 2010, CDE experienced its biggest structural changes since its foundation in 1988. Throughout the year, much energy was invested into developing new structures and a new level of cooperation within the University of Bern and beyond. Alongside its organisational development as the University of Bern's new centre for sustainable development research, CDE's ongoing projects and programmes continued seamlessly and with impressive results, thanks to the continued commitment of our partners and staff.

Fostering research for sustainable development challenges

In research, the NCCR North-South continues to be active in 9 research regions worldwide, with 6 Swiss and 140 international institutional partners, and welcoming its 150th PhD student in 2010. For its third and final phase, it was successfully regrouped into 4 Thematic Nodes with 21 Research Projects led by senior and postdoctoral researchers on Global Change issues. The NCCR North-South cooperated with the ETH Zurich's North-South Centre to organise two conferences: the first joint North-South Forum was dedicated to transnational land acquisitions; the second examined the issue of Green Economy from a research and policy perspective. One of a number of newly-acquired research programmes, the National Research Programme "Sustainable Water Management" (NRP 61) got underway in 2010. The NRP 61 is a collaboration between the Universities of Freiburg and Lausanne, the University of Bern's Department of Geography, and CDE. NRP 61 researchers are working to determine the capacity of natural systems to absorb

the effects of changes in environmental conditions, in order to develop intelligent and forward-looking strategies for sustainable and integral water resource management. The journal Mountain Research and Development (MRD) was able to consolidate its new online and open access format with more than 150,000 downloads resulting in a markedly increased impact factor (<http://www.mrd-journal.org/>).

Integrating research results into development and policy

Within CDE's activities in policy and outreach, the multi-donor programme World Overview of Conservation Technologies and Approaches (WOCAT) prepared a new TerrAfrica book on "Sustainable Land Management in Practice – Guidelines and Best Practices for Sub-Saharan Africa" in English and French. With the support of SDC's Global Programme on Food Security, CDE entered into a new cooperation with the International Land Coalition (ILC) and its existing partner network on large-scale land acquisitions. Within this cooperation, CDE will be in charge of setting up a web-based platform for gathering information on land-based investments worldwide. This platform will allow crowdsourcing of information from affected communities, host governments, companies, investors, and civil society. The Eastern and Southern African Partnership Programme (ESAPP) was granted a fourth programme phase by SDC starting on 1 January 2011. During this phase, the programme will focus on the implementation of project activities in 10 selected reference sites in Eritrea, Ethiopia, Kenya, Tanzania, Mozambique, and Madagascar. A principal agree-

Rubber plantations in Laos. CDE gathers and analyses information on large-scale land investments worldwide.



ment was reached with SDC's Global Programme on Water to set up a new initiative, the Water and Land Resource Centre Project. This initiative seeks to create two Regional Resource Centres for Water Towers: one in Ethiopia for the Blue Nile Basin, and one in Kenya for Kenya/Tanzania. The centres will support the work of regional water management experts and improve the quality of information available to water users to maintain regional stability and support cooperation in the areas of water and land policies.

Institutionalising education for sustainable development

CDE has further expanded its activities in education and training for sustainable development. CDE continued to oversee courses, offer supervision, and support research on issues of sustainable development and environment at the University of Bern and at partner institutions in Switzerland and abroad. CDE prepared a draft report on promoting sustainable development which will serve the University of Bern in the preparation of its performance mandate for the cantonal government. In mid-2010, the Universities of Bern, Zurich, and Basel with the Swiss Tropical and Public Health Institute and Swisspeace signed a cooperation agreement, establishing the International Graduate School North-South (IGS North-South). It is planned that selected cooperation agreements with leading universities from countries in the South and the East will lead to a truly international graduate school.

The IGS North-South is currently training about 40 students from eight regions in Africa, Asia, Latin America, and Europe.

Supporting effectiveness with tools and services

CDE's work would not have been possible without its support units in administration, language services, knowledge management and communications as well as IT support and GIS. One highlight among many is the project funded by the Political Division IV and SDC of the Federal Ministry of Foreign Affairs, Capacity Development in Geoinformation Management in South Sudan and Darfur, which came to an end after eight years in 2010. This project has not only provided maps and geodata for this vast territory, but also made extensive efforts in capacity development and knowledge transfer. The outputs of this project facilitate the peace-building and mediation efforts in this crisis region, and have become indispensable instruments for humanitarian assistance and development cooperation.

Programme work

Programme overview

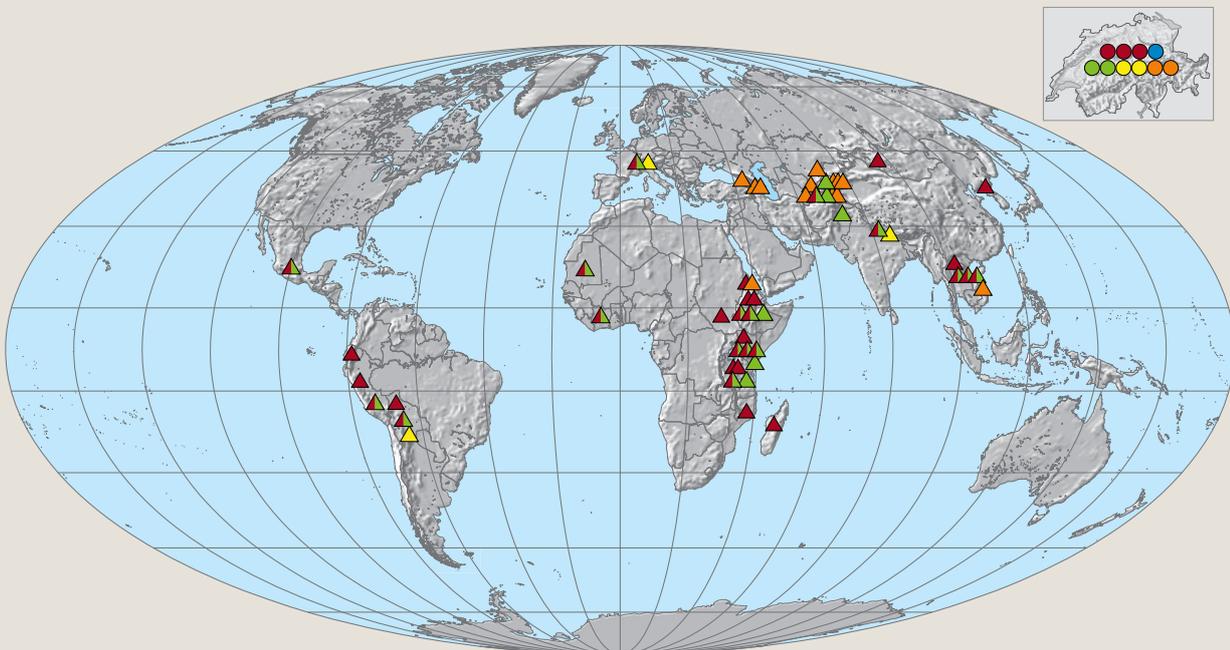
Urs Balsiger, Thomas Kohler, Associate Directors CDE

CDE currently runs programmes and mandates with a regional or country focus in 26 countries worldwide (large map below). Key regions are Eastern and Southern Africa, the Horn of Africa, the countries of Central Asia, mainland Southeast Asia, especially Lao PDR, and the central Andes. Many of these programmes represent a long-term engagement. For example, CDE has been engaged in Eastern Africa and the Horn for over 30 years, and for over 15 years in Central Asia and Southeast Asia. Such long-term engagements would not have been possible without trusted partnerships, including both regional partners who have the capacity to implement and partners and agencies in Switzerland and abroad who are willing to fund programmes that adopt a longer-term perspective.

From its headquarters in Bern, CDE also manages 9 programmes and mandates based on global networks and consortia (small map below). Geographically, the activities of these global engagements coincide with CDE's regional programmes, but also

include other countries and regions. For example, WOCAT, the World Overview of Conservation Approaches and Technologies, runs a network of over 60 partners in 40 countries worldwide through its secretariat at CDE.

CDE programmes and mandates are very largely third-party funded, i.e. by soft money and time-bound agreements and contracts. Funding for the National Centre of Competence in Research North-South (NCCR-North-South), CDE's largest programme complex, is provided by the Swiss Agency for Development and Cooperation (SDC) and the Swiss National Science Foundation, which also funds a number of specific research programmes. Funding for other programmes comes from national development agencies, international organizations and institutions, and foundations. Research is not the main focus of these programmes. In support of our newly established Centre, the University of Bern, as our home institution, makes a contribution to a number of core activities in our programme portfolio.

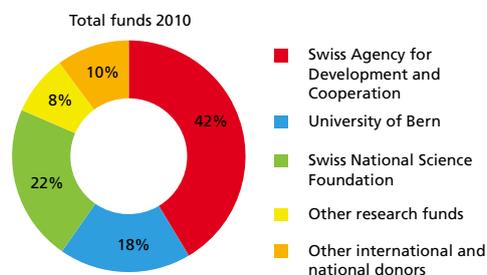


Funding partners	Programmes with regional and country focus	Global networks hosted at CDE Bern
Swiss Agency for Development and Cooperation	▲	●
University of Bern		●
Swiss National Science Foundation	▲	●
Other research funds	▲	●
Other international and national donors	▲	●

Cartography: Ulla Gämperli Krauer, Alex Hermann, 2011
 Map projection: Mollweide
 List of CDE programmes and mandates:
 Urs Balsiger, Thomas Brey,
 Thomas Kohler, Peter Messerli

Programme work

Programmes and mandates 2010



Outreach Programmes	Total funds in CHF*	Region
Eastern and Southern Africa Partnership Programme (ESAPP)	1,210,000	East Africa, Horn of Africa, Madagascar
Sustainable Land Management Programme, Eritrea	95,000	Eritrea
Songwe River Transboundary Management Project	72,000	Tanzania, Malawi
BioAndes	50,000	Bolivia, Peru
Environmental Impact Assessment - Capacity Building	80,000	Central Asia
Combatting Desertification CODEP	110,000	Mongolia
Pamir Alai Mountains Sustainable Management PALM-GEF	100,000	Tajikistan
Security Study Caucasus	38,000	Georgia, Azerbaijan
Renewable Energy Promotion in International Collaboration REPIC	70,000	Kyrgyzstan
Mapping and GeoDatabase South Sudan	47,500	South Sudan
<i>Subtotal Outreach Programmes</i>	<i>1,872,500</i>	
Research Programmes		
NCCR North-South Management Centre	1,100,000	global
NCCR North-South Thematic Nodes TN1 & TN2	1,800,000	Africa, South America, Southeast Asia, Central Asia
NCCR North-South Thematic Nodes TN3 & TN4	1,900,000	Africa, South America, Southeast Asia, Central Asia
IGS International Graduate School	800,000	global
Alpine Research World Heritage Site Swiss Alps	92,000	Switzerland
DESIRE - Desertification Mitigation	50,000	Mediterranean Basin
SNF-Biofuel	123,000	global
SNF-ProDoc	157,000	global
SNF-Landless Pastoralists Pakistan	170,000	Pakistan
SNF SCOPES-GIS Tajikistan	152,000	Tajikistan
ERA-ARD Biofuel	320,000	Africa
SNIS-Bolivia	170,000	Bolivia
<i>Subtotal Research Programmes</i>	<i>6,834,000</i>	
Policy Mandates		
WOCAT, World Overview of Soil and Water Conservation	600,000	global
Backstopping Mandate Environment and Development	664,000	global
Lao Decide Info	300,000	Laos
The Agrobiodiversity Initiative (TABI)	270,000	Laos
International Journal Mountain Research and Development (MRD)	200,000	global
Mountain Agenda	75,000	global
<i>Subtotal Policy Mandates</i>	<i>2,109,000</i>	
Operations		
Book, Brochures, Editing	45,000	
Earth Observation/GeoInformation	200,000	
<i>Subtotal Operations</i>	<i>245,000</i>	
University Funds**		
University Funds	2,230,000	
<i>Subtotal University Funds</i>	<i>2,230,000</i>	
Overall Total	13,290,500	

*includes entrusted funds

**University of Bern. In compensation for services in teaching, supervision, general university functions, and support for the new Centre

Spotlight on innovations in sustainable development

Selected features of CDE's programme work

CDE's new strategy tackles "Innovations in Sustainable Development" in one of six thematic clusters. In the coming years, CDE will focus several of its activities around this important theme. Although work is still underway on setting up activities within the new strategy, this annual report presents select experiences from innovation in research, policy, and outreach.

Degradation of ecosystems, persistent poverty, and socio-economic disparities: these are characteristics of non-sustainable development. The complexity of global change processes impedes progress along innovative development pathways. Against this background, and in view of a growing urgency for transformation processes towards sustainable development, the topic of innovation is rapidly gaining in importance.

However, this complexity and related uncertainty mean that knowledge-based innovation is often overridden by silver-bullet solutions. In general, such solutions are sectoral, top-down, short-termed, and often de-contextualised, and may end up reinforcing non-sustainable development.

CDE and its partners therefore aim to facilitate and disseminate innovations for sustainable development pathways. We intend to make these innovations context-specific, and to address social, institutional, and economic aspects in addition to technical ones. We are convinced that such innovations may derive from opportunities provided by processes of global change itself. To promote interaction between science and society, CDE aims to share and disseminate state-of-the-art knowledge. This means supporting social learning processes, capacity development, and empowerment. At the same time, we will carry out evaluation and monitoring to improve the effectiveness of innovations.

In this annual report, we present select experiences of our work on "Innovations in Sustainable Development". Subsequent annual reports will spotlight other thematic clusters introduced in CDE's new strategy.



Effective irrigation of scarce paddy fields on the Eastern Escarpment of Madagascar depends much more on functioning local institutions and the mitigation of social conflicts than on sophisticated technologies.



Hanspeter Limgier



Hanspeter Limgier

Spotlight on innovations in sustainable development

Mixed blessings: Conservation agriculture as a means for adapting to climate variability and change

On the northwestern semi-arid foot zone of Mount Kenya, the adoption of conservation agriculture has curtailed casual employment opportunities for poor farmers, while better-off farmers have taken advantage of this innovation to reduce production costs and improve their incomes. While it is environmentally friendly, conservation agriculture has nonetheless led to dissatisfaction among poor farmers and created tensions within the farming community. The presented case study shows that the implementation of innovations needs to be planned and negotiated carefully within a wider systems perspective to avoid unwanted side effects and growing disparities in societies.

Chinwe Ifejika Speranza, Senior Research Scientist

Rainfall on the semi-arid northwestern foreland of Mount Kenya is highly variable and often inadequate for rain-fed crop production, the dominant mode of farming among smallholder farmers in the area. One way of coping with inadequate rainfall is by adopting sustainable land and water management practices such as conservation agriculture. This innovative practice has been promoted in recent years by external actors such as extension services, research programmes, and private companies, with the aim of supporting adaptation to climate change and increasing production in this food deficit area. Some farmers have adopted conservation agriculture based on their own experiments, on access to information, and on their social networks.

A survey among 41 conservation farmers in 16 villages has shown that conservation agriculture has brought about improved land management and higher output, ultimately leading to an improved

income situation. For two thirds (63%) of the farmers, adopting conservation agricultural practices has reduced their expenditures for labour and inputs, and increased their incomes. Other benefits are assured harvests and food for household consumption. About 19% of the farmers have increased their income by 100%, 22% of the farmers have increased it by 50%, and 16% of the farmers by 25%. For 10% of the farmers, however, the adoption of conservation agriculture did not improve their incomes, although it increased the amount of food they had available. For example, 98% of the farmers rated the economic benefits of conservation agriculture to be above medium, explaining their ratings with reductions in the costs of labour (32%) and capital (24%) or not providing any explanation (34%). In contrast, 80% of the farmers rated the social benefits of conservation farming to be low or even "none", with 46% providing no further explanation and 24% explaining that the



While this Kenyan farmer is satisfied with his harvest, poorer smallholders are complaining about conservation agriculture.

*Left: Farmer discussing with extension workers.
Right: Non-treated maize field.*



practice of conservation agriculture shrinks the job market for many farmers who depend on casual jobs for additional incomes. This explanation leads to a hypothesis that, while conservation agriculture leads to savings in labour costs at the farm level, at the rural economy level it leads to increased unemployment for those farmers and other actors who have hitherto depended on local jobs to earn additional incomes. Advanced and in-depth analysis is now being conducted to test this hypothesis.

Declining job opportunities in conservation agriculture can be explained by the facts that no-till or minimum tillage means no ploughing or hoeing; using seeding equipment means much less labour for sowing; and minimal weeding or use of chemicals for weed control, although not environmentally friendly, means much less labour for weeding. This implies that farmers dependent on casual farm jobs lost this source of income, while those who were better off could save on farm expenditures and even increase their incomes. While conservation agriculture has thus contributed to better land management, increased food security and increased income for wealthier farmers, it has also increased the labour surplus, and hence rural unemployment, in an area where labour had already been in oversupply. Many farmers also complain that the reduction in on-farm jobs has increased social tensions within the farming community.

The most important lesson to learn from the above example is that innovations need to be planned, and their impact anticipated, within a wider systems perspective which includes, in this case,

the local rural economy as a whole. Unfortunately, many interventions focus on one aspect of the farming system without knowledge of what changing some components means for the others and for the whole system as such. It is thus crucial that development interventions, including those addressing climate change, first understand the functioning of such a system – in this case a specific rural economy – so as to adequately address the challenges that arise for the system as a whole when one or more of its components undergo change.

Spotlight on innovations in sustainable development

Making data available: Innovations in information and knowledge communication

How can raw data best be turned into useful information for evidence-based planning and decision-making? Over the past few years, researchers at CDE's hub in the Lao PDR have focused on this question. In well-established strong partnerships with a number of leading national government institutions, they have developed innovative ways of translating largely underused data into knowledge for effective policy formulation for sustainable and equitable development.

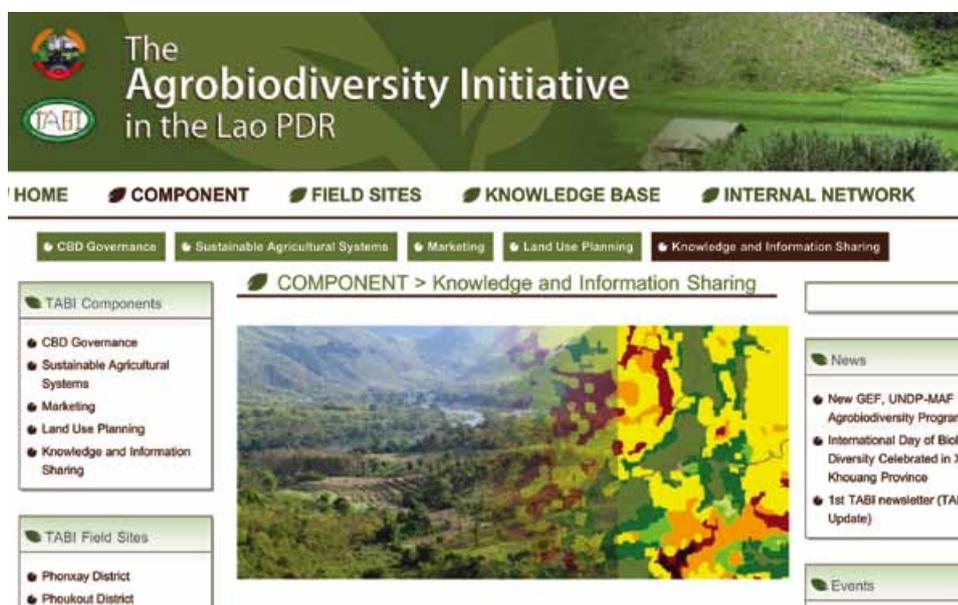
Michael Epprecht, Andreas Heinemann, Senior Research Scientists

In Lao PDR, as in many other countries at a similar level of development, vital information necessary for evidence-based planning often exists, but remains largely hidden in countless – and often largely incompatible – data sets scattered across individual institutions. To counter this, CDE is developing innovative information and knowledge communication tools, largely by building on its longstanding expertise in using the spatial dimension of data. This dimension constitutes a powerful integrative element in the establishment of multi-dimensional and multi-level information pools. Four examples of the tools are described below.

Within The Agrobiodiversity Initiative (TABI) funded by SDC, CDE set up a Knowledge and Information Sharing System (KISS) which supports continual learning from the programme's manifold field activities and their application to specific contexts. KISS also initiates cross-sectoral and cross-level (village to national) information exchange and dialogue. At present, researchers are working on new approaches to support coherent land use planning across the

different agencies and administrative levels mandated with this task. This includes innovative forms of mapping and information visualisation and communication at different levels, along with facilitation of regular multi-stakeholder workshops. Various online tools are currently being tested on www.tabi.la, in an effort to help set up different information communities which will make it easier to share and update vital data at national and provincial levels.

In another project, the Lao PDR's first Wikipedia was set up by CDE researchers and students from the National University of the Lao PDR. The Wikipedia on Non-Timber Forest Products (NTFPs) is an effective information-sharing platform containing timely data on an issue of key national importance. So far, the NTFP-Wiki has published information on over 100 NTFPs found in the Lao PDR, and is being continually expanded by internet users. Separately, a very successful geospatial metadata sharing platform was developed in collaboration with various Lao agencies. The aim of the platform is to support coherence of planning and prevent costly duplica-



Screenshot of knowledge and information sharing site of the TABI homepage. www.tabi.la

The Agrobiodiversity Initiative (TABI) strives for alleviating poverty while protecting agrobiodiversity.



Peter Messerli

tion of data generation, by increasing visibility and transparency of available geospatial data in different agencies in the Lao PDR.

Yet another platform – www.decide.la – was set up as part of CDE's ongoing capacity-building support to the Lao Department of Statistics (DoS) on processing detailed spatial socio-economic information in various formats. The courageous step taken by the DoS to make a large amount of very detailed information from the last national population and housing census available to the public is a milestone and a novelty in information-sharing, not only among government agencies in the Lao PDR, but also in a regional or even global context; it is largely the result of a long and trusted collaboration between the Government of the Lao PDR and CDE. As an extension of this project, CDE is currently supporting the DoS in training district and provincial staff of the Ministry of Planning and Investment (MPI) in how these online tools and databases can be used for their work in sub-national situation analysis and planning.

CDE's large institutional network in Southeast Asia was built up over years of mutual trust during its longstanding active engagement in the region. This network is invaluable in CDE's ongoing efforts to support knowledge-sharing and use across institutional, sectoral, and administrative borders – a precondition for transparent, evidence-based planning of sustainable development.

Spotlight on innovations in sustainable development

LforS: Learning for Sustainability

LforS is an innovative tool for planning, development, and capacity development in rural areas. Since its development in the early 1990s, CDE and its partners have used it in many programmes and under very different conditions in Africa, Central Asia, and Southeast Asia. LforS stands for learning on the job, in the local context, and with people.

Ernst Gabathuler, Felicitas Bachmann, Senior Research Scientists

“We were fools to pay lawyers and run to the courts to solve our problems. This was costly, time consuming, and the problems remained while relations in the village grew from bad to worse... thanks to your atelier we have now tackled them and can again talk to each other.” This statement was made by the village chief at Boundioba, a small village in Mali, after an LforS workshop involving the village, local administrators, and outside experts had managed to solve longstanding conflicts over the use of village water and land that had increasingly overshadowed community relations.

This was back in 1995. While LforS has since been further developed, its principles have remained the same. They are exceedingly simple: LforS stands

for learning on the job, in the local context, and with local people. Based on workshops of varying duration, local people and experts address specific burning development issues and try to negotiate solutions to them. All participants – experts, administrators, external consultants – reside in the rural area, often with local residents, and work out solutions in mixed teams guided by a professional moderator. The innovative, and challenging, element lies in the combination of social learning, capacity development, and negotiating sustainability in concrete local contexts. However, LforS was found helpful beyond sustainability issues proper. In Mali, for example, LforS was later used to introduce rural communes to the mechanisms of decentralized governance as decreed by the state – over 150 workshops were conducted to this end in the whole country by our local partners.



Ernst Gabathuler

LforS in action, Kyrgyzstan: simulation game engaging stakeholders in disaster risk management.

Access to rangeland is critical for sustainable development in Kyrgyzstan.



Daniel Maselli

Following the Mali experience, LforS has been used in many regions where CDE is active. It was introduced in Central Asia's mountain areas for risk management, as landslides and local floods are a frequent occurrence there. Close to 100 workshops were conducted, and checklists, responsibilities, and action plans established with local communities. In the wake of this experience, our local partner, the Central Asia Mountain Partnership (CAMP), received a number of mandates from international agencies to develop LforS modules in soil and water conservation and pasture management, two other fields of key concern in the region. In Thailand, the Ministry of the Interior used LforS to develop a nation-wide training programme for its community development agents.

Links with research have also been exploited. Together with an EU-funded research programme on combating desertification, an LforS module was developed for appraising and selecting practices in sustainable land management, which was successfully applied in Morocco and Tunisia, involving local communities, authorities, and our EU research partners.

In Mongolia, LforS is currently used to support rural communities in maintaining garden irrigation as a supplement to livestock production. The challenge is to increase water use efficiency and to introduce more sustainable land use practices in water-scarce areas. Achievements include the improvement of irrigation channels, mulching, and the establishment of shelterbelts to reduce wind speed and

hence evaporation. These are not new technologies by themselves; it is the approach that makes the difference – or in the words of a local resident, “this is the first time ever that we were asked our opinion and were actively involved in shaping our environs”.

The experience gained by LforS has now been documented in a book entitled *Reshaping Rural Extension*, published in early 2011 by two internationally renowned publishing houses specializing in rural development. The LforS team also contributed to a rural extension manual produced by the University of Göttingen for *Gesellschaft für Internationale Zusammenarbeit*, the German international development agency.

Partners and networks

The Regional Coordination Office in the Horn of Africa

The programmes and mandates presented in this report all depend on strong partnership with institutions in our fields of activity, including the global, regional, national and local levels. Many of these partnerships have led to close ties with personalities at our partner institutions in academia, public administration, international organizations, and civil society. CDE has also helped establish new institutions especially at the regional level, for example in Eastern Africa and Central Asia. Most of these have developed into independent platforms, which acquire and run projects in their own name and responsibility and which are now led by local experts.

It is impossible to present, and appreciate, the work of all our partners in a succinct annual report such as this present one. We have thus asked one specific partner – the regional Coordination Office in the Horn of Africa, to provide an account of the activities, highlights, and challenges of the last year.

Berhanu Debele, Regional Coordinator, Horn of Africa

The Regional Coordination Office in the Horn of Africa is located in Addis Abeba. It operates both the NCCR North-South programme and CDE's Eastern and Southern Africa Partnership (ESAPP) Programme. The main activities of the NCCR North-South include coordination of research and facilitation for researchers. ESAPP focuses on Sustainable Land Management and Sustainable Rural Development.

The year 2010 was one of sweet and bitter memories for our office. Sweet, because four new PhD students started their research projects; and the 2010 NCCR Integrated Training Course (ITC), with the highest number of participants ever, was hosted in the region, as was the NCCR Review Panel.

Moreover, the first "Science Policy Forum", where researchers meet with policy makers to discuss key issues and research findings, was also held. But the year also had a bitter note: Sibilo Keno, a student in his final year of research, died under tragic circumstances from a liver disease.

Turning to the highlights of the year, the ITC attracted about 120 participants from all over the world. The main contents of the training programme included introduction to the NCCR North-South Programme, scientific writing and publishing, communicating with the public and the media, research methodology, and inter- and transdisciplinary research. In addition to these courses,



NCCR North-South

Participants of the 2010 NCCR North-South Integrated Training Course in Ethiopia.

3 days of field trips were organized along 3 thematic lines: protected area management, sustainable land management, and urban development and management.

Another major achievement was the incorporation of a course on hydro-politics into the curriculum of the Political Science and International Relations Department (PSIR) of Addis Ababa University. This was the direct result of the tandem North-South-PhD research of Simon Mason and Yacob Arsano, which showed that there is a clear difference between the hard political positions of the riparian states and the more pragmatic views of the citizens of these states relating to water issues.

Land degradation is at an advanced stage in many parts of the Horn, especially in northern Ethiopia, and crop failures and famines have been a recurrent phenomenon. The data collected by our soil conservation research activities in different agro-ecological zones of the Amhara region clearly demonstrated that the process of land degradation is proceeding at an alarming rate. Research has also shown that there is hope for rehabilitation if the right measures are taken and maintenance can be assured. The results of the project have been brought to the attention of the political and administrative leadership, followed by personal explanations in recent years. These efforts have now begun to bear fruit, as the regional authorities are convinced that massive countermeasures are absolutely necessary to control the situation. Conservation measures are being applied across the region, and 2.7 million lead farmers are being trained to mobilize the population in their respective localities. This is a gratifying outcome of the untiring efforts of the last 35 – 40 years made by the NCCR North-South, the ESAPP, and its forerunner, the Soil and Water Conservation Research Programme. The new Sustainable Water and Land Management Project, approved by the Swiss Agency for Development and Cooperation (SDC) in 2011, will certainly contribute to sustainable land management in the coming years.

Furthermore, an ESAPP project was launched in Ethiopia to find means of putting coffee by-products (pulp, husks) to economic use as an ingredient in animal feed, with the use of Effective Micro-organisms (EM). While implementing the project, a technician suffering from asthma resulting from the bad odour of poultry droppings was advised to apply EM to the drinking water of birds – which reduced the odour dramatically. An additional astonishing result was obtained: The hatchability of poultry doubled from about 30-49% to over 70%. This is of great economic significance for the many poultry keepers.

The regional office was also engaged in public health: the Borana, a community of Ethiopian pastoralists, have a custom which allows married spouses to have extramarital sexual relations. But it is feared that sexual pluralism exacerbates the problem of HIV/AIDS. In order to alleviate this situation, a project was designed together with the Swiss Tropical and Public Health Institute, one of the partners in the NCCR North-South, to make the community aware of the existence of this disease and to find ways of controlling it. A tool called “community conversation” was applied to openly discuss the problem and to design a mechanism for its social control. Despite fully understanding the danger involved, the community was not willing to ban the custom, although the use of condoms was accepted as a viable means to control its negative effects.

In conclusion, it should be noted that for our Regional Office, the path is not a completely rosy one, as the above outcomes might suggest. For example, we are obliged to operate under a government-run, inefficient telecommunication operator who has a total monopoly. This has resulted in poor connectivity within and outside the country; the mobile phone service is agonizingly poor, internet connections are extremely slow and intermittent, and voice over the internet is prohibited. In addition, the power supply is frequently cut, which interferes with our PC operations.



Gully erosion - one of the forms of land degradation mitigated by research in soil and water conservation in Ethiopia.

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Board Members CDE		
Name	First name	Professional background
Hurni	Hans	Prof., physical geographer
Wiesmann	Urs	Prof., human geographer
Znoj	Heinzpeter	Prof., social anthropologist
Directors CDE		
Name	First name	Professional background
Messerli	Peter	PhD, human geographer; (100%)
Breu	Thomas	PhD, human geographer; (100%)
Executive Committee		
Name	First name	Professional background
Kohler	Thomas	PhD, geographer; (80%)
Balsiger	Urs	MBA, economist; (80%)
plus the Directors CDE (names see above)		
Programme Staff		
Name	First name	Professional background
Bachmann	Felicitas	MA, anthropologist; (70%)
Eckert	Sandra	PhD, GIS/RS specialist; (80%)
Ehrensperger	Albrecht	PhD, human geographer; (90%)
Epprecht	Michael	PhD, geographer; (100%)
Gabathuler	Ernst	MA, social pedagogue/agronomist; (100%)
Gämperli Krauer	Ulla	MSc, human geographer; (25%)
Gasser	Judith	MSc, geographer; (50%)
Gerber	Kurt	MSc, GIS/IT specialist; (80%)
Giger	Markus	MSc, agroeconomist; (80%)
Gurtner	Mats	MSc, physical geographer; (50%)
Heim	Eva	PhD, psychologist; (100%)
Heinimann	Andreas	PhD, environmental scientist; (100%)
Hergarten	Christian	MSc, GIS/IT specialist; (100%)
Herweg	Karl	PhD, physical geographer; (100%)
Hett	Cornelia	MSc, physical geographer; (100%)
Hirschbühl	Tina	BA (Hons), international relations; (60%)
Hoeggel	Udo	MSc, eco-agronomist; (100%)
Hösli	Christoph	MSc, physical geographer; (80%)
Ifejika Speranza	Chinwe	PhD, human geographer; (35%)
Kläy	Andreas	MSc, forest engineer; (80%)
Krauer	Jürg	MSc, GIS/IT specialist; (90%)
Liechti	Karina	PhD, human geographer; (25%)
Liniger	Hanspeter	PhD, physical geographer; (100%)
Lörcher	Sylvia	MSc; human geographer; (25%)
Mathez-Stiefel	Sarah-Lan	MSc, ethno-botanist; (100%)
Meessen	Heino	PhD, landscape ecologist; (60%)
Mekdaschi	Rima	PhD, agronomist; (40%)
Michel	Claudia	PhD, human geographer; (70%)

Ott	Cordula	MA, anthropologist; (100%)
Portner	Brigitte	MSc, human geographer; (100%)
Rist	Stephan	PhD, agronomist; (95%)
Rueff	Henri	PhD, economist; (100%)
Salmi	Annika	MA, sociologist; (100%)
Schäfer	Nathalie	MSc, human geographer; (80%)
Schwilch	Gudrun	MSc, physical geographer; (100%)
Wachs	Ted	PhD, historian/editor; (100%)
Wallner	Astrid	PhD, anthropologist ; (25%)
Wolfgramm	Bettina	PhD, environmental scientist; (100%)
Wymann	Susanne	MSc, physical geographer;(50%)
Zimmermann	Anne	PhD, language scientist/editor; (100%)
Services		
Name	First name	Professional background
Achermann	Sarah	Assistant; (25%)
Balsiger	Nicole	Financial administrator; (30%)
Baumgartner	Iris	Assistant; (25%)
Fedail	Ahmed	Project manager web; (50%)
Heierle	Emmanuel	IT coordinator; (80%)
Hodel	Elias	Assistant; (25%)
Jöhr	Franziska	Secretary; (80%)
Kummer	Simone	Desk-top publishing specialist; (70%)
Lannen	Anu	Assistant, editing & translation services; (40%)
Lazzini	Mirjam	Assistant; (25%)
Lundsgaard-Hansen	Lara	Assistant; (25%)
Paulsson	Maria	Assistant; (20%)
Schnegg	Ralph	Librarian; (20%)
Thibault	Marlène	Assistant, translation services; (100%)
Tresch	Jeannine	Secretary & IT; (60%)
Vollenwyder	Barbara	Management assistant; (80%)
Willi	Barbara	Administrative assistant; (35%)
Willi	Yasmine	Assistant; (25%)

*Status 31.12.2010

Finances

Finances 2009

Financial account 2009 (in CHF / rounded)

INCOME		
External funds		
Programme income	3,905,800	
Other income (services)	177,400	
<i>Total External funds</i>	<i>4,083,200</i>	
University funds		
Contribution to office rent	200,000	
Contribution to personnel expenditure	1,361,900	
Contribution to operating expenses	271,800	
<i>Total University funds</i>	<i>1,833,700</i>	
Total income	5,916,900	
EXPENDITURES		
Personnel		
Salaries		4,297,900
Social benefits		975,200
<i>Total Personnel</i>		<i>5,273,100</i>
Other expenditures		
Office rent		220,000
Office operating expenses		175,700
Travel		16,500
Miscellaneous		1,800
IT (CDE share)		210,100
<i>Total Other expenditures</i>		<i>624,100</i>
Accruals		19,700
Total expenditures		5,916,900

Balance of accounts per 31.12.2009 (in CHF / rounded)

ASSETS		
Current assets		
Liquid funds CDE		2,758,800
Accounts receivable		780,700
<i>Total current assets</i>		<i>3,539,500</i>
Fixed assets		
EDP equipment		0
Furniture		127,900
<i>Total fixed assets</i>		<i>127,900</i>
Total assets		3,667,400
LIABILITIES		
Current liabilities		
Accounts payable		57,000
<i>Total current liabilities</i>		<i>57,000</i>
Equity capital		
Capital		699,300
General reserves		696,900
Tied reserves		1,058,600
Accounts received in advance		1,135,900
Accruals 2009		19,700
<i>Total equity capital</i>		<i>3,610,400</i>
Total liabilities		3,667,400

All accounts were audited externally and internally and were unconditionally approved

Finances

Finances 2010

Financial account 2010 (in CHF / rounded)

INCOME		
External funds		
Programme income	3,602,700	
Other income (services etc.)	45,200	
<i>Total External funds</i>	<i>3,647,900</i>	
University funds		
Contribution to office rent	200,000	
Contribution to personnel expenditure	1,771,200	
Contribution to operating expenses	261,100	
<i>Total University funds</i>	<i>2,232,300</i>	
Total income	5,880,200	
EXPENDITURES		
Personnel		
Salaries		4,345,000
Social benefits		827,600
<i>Total Personnel</i>		<i>5,172,600</i>
Other expenditures		
Office rent		220,000
Office operating expenses		232,200
Travel		56,700
Miscellaneous		0
IT (CDE share)		122,100
<i>Total Other expenditures</i>		<i>631,000</i>
Accruals		76,600
Total expenditures		5,880,200

Balance of accounts per 31.12.2010 (in CHF / rounded)

ASSETS		
Current assets		
Liquid funds CDE		1,251,400
Accounts receivable		1,953,400
<i>Total current assets</i>		<i>3,204,800</i>
Fixed assets		
EDP equipment		133,100
Furniture		18,100
<i>Total fixed assets</i>		<i>151,200</i>
Total assets		3,356,000
LIABILITIES		
Current liabilities		
Accounts payable		77,300
<i>Total current liabilities</i>		<i>77,300</i>
Equity capital		
Capital		699,300
General reserves		716,600
Tied reserves		1,053,400
Accounts received in advance		732,800
Accruals 2010		76,600
<i>Total equity capital</i>		<i>3,278,700</i>
Total liabilities		3,356,000

All accounts were audited externally and internally and were unconditionally approved



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