

Centre for Development and Environment

SPOTLIGHT ON DEALING WITH TRADE-OFFS IN SUSTAINABLE DEVELOPMENT

ANNUAL REPORT 2015



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Cover photo: These Intha people living on Inle Lake in Myanmar are on their way home from the market in Maing Thauk, where they trade their produce. Like goods on a market, different sustainable development options need to be appraised and negotiated, and we must make trade-offs: choices between desirable but mutually exclusive features. Photo: Christoph Oberlack, CDE

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A word from the President of CDE's Board



Urs Wiesmann
President of CDE Board

Dear Reader,

In the late 1970s, I faced the challenge of trade-offs between conflicting development goals for the first time. Back then I was working in the Swiss Alps as part of the Man and Biosphere (MAB) programme. The UNESCO MAB programme was launched under the positivist assumption that development problems can be identified, and solutions found, if we simply acquire enough knowledge about interrelations and dynamics in socioecological systems. In the course of research in the Swiss Alps, however, it became clear that systems knowledge which lacks reference to normative development goals is unlikely to contribute societally relevant solutions. The Swiss MAB programme eventually succeeded in making a "normative turn" and focusing more on the systemic trade-offs between development goals of living, business, recreation, or protecting nature in the Alps.

Today we face almost the opposite situation. Sustainability has successfully established itself as a global development concept, demanding that we pay equal attention to economic, social, and ecological concerns and development objectives. The negotiation and formulation of the Sustainable Development Goals (SDGs) in December 2015 marked a decisive step towards concretizing the normative concept of sustainability. However, the seeming agreement on development goals and corresponding indicators masks the reality that systemic interrelations and dynamics will inevitably lead to major conflicts or trade-offs between objectives in the different dimensions of sustainability. It will be a significant challenge for science to investigate and reveal these systemic trade-offs between SDGs, and to find ways, together with civil society, to make them politically negotiable.

Against this backdrop, this annual report's spotlight on trade-offs strikes me as timely: without addressing the trade-offs of sustainable development, it will not be possible to achieve socially negotiable, practically relevant, and truly transformative sustainability policies. And to meaningfully identify and negotiate these trade-offs, we must bridge the dichotomy between systems knowledge and target knowledge in science and beyond. The present annual report shows that CDE is meeting these challenges together with its partners and networks, fostering sustainable development concretely and in diverse contexts.

I wish you pleasant reading.

Urs Wiesmann, President, CDE Board

CDE in a nutshell

The Centre for Development and Environment (CDE) was founded as an interdisciplinary research centre of the University of Bern in 2010. Its overarching goal is to produce and share knowledge for sustainable development in cooperation with partners in the global North and South. CDE's origins date back to the Group for Development and Environment founded in 1988 at the Institute of Geography. Today, CDE has the mandate to promote research, teaching, and implementation in the field of sustainable development and global change, working together with the University of Bern's Executive Board, selected research groups, as well as national and international partners. CDE employs around 100 people from 17 disciplines, has activities in five regions of the global South as well as in Switzerland and Europe, and is currently implementing 50 projects with an annual turnover of over CHF 12 million. An important part of CDE's tasks are education and training. CDE offers courses in sustainable development and global change at bachelor's, master's, doctoral, and postgraduate levels, with currently over 400 students.

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Introduction

Thomas Breu and Peter Messerli

“The year 2015 will go down in history as the year in which the course was set for sustainable development.”



Peter Messerli

Thomas Breu

2015 in review: setting the course for 2030

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The year 2015 will go down in history as the year in which the course was set for sustainable development. Addis Abeba, July 2015: the global community signed a new framework for financing global sustainable development. New York, September 2015: the 193-member United Nations General Assembly adopted the 2030 Agenda for Sustainable Development with 17 Sustainable Development Goals. Paris, December 2015: the global community agreed on climate goals limiting global warming to below 2 °C.

Achieving these ambitious goals requires equal efforts in politics, science, society, and the economy. Global partnerships, solidarity, and the sharing of responsibility between governments and stakeholders are key to successful implementation. For science, this process presents a great opportunity to be the partner that provides knowledge for decision-making and learning processes. For research, this means making connections between entities that normally work independently of one another, such as different disciplines and actors outside of science. We are convinced that CDE is very well positioned in this regard, and can offer knowledge, methods, concepts, and partnerships. Innovative partnerships will be of growing importance, and we take this as an opportunity to look back on the past year from this perspective.



Achieving the ambitious sustainability goals for 2030 requires equal efforts in politics, science, society, and the economy. Social inequality in Ho Chi Minh City, Vietnam. Photo: Jürg Krauer, CDE

Highlights with external partners

This past reporting year we successfully expanded our involvement in international research programmes and our cooperation with development partners.

Having won the bid to implement the OneMap Myanmar programme, funded by the Swiss Agency for Development and Cooperation (SDC), CDE is operating yet another project in which we work with government organizations to provide the basis for informed policymaking. Alongside similar projects underway in Laos, Ethiopia, and Kenya, the goal of OneMap Myanmar is to provide, and make publicly available, missing or incomplete data and information to help guide progress towards the goals of Agenda 2030.

Also in 2015, CDE reinforced its commitment to the Future Earth international research programme. We were successful in our application to host the International Project Office of the Global Land Project (GLP), a project central to Future Earth. In this new role, CDE is engaging with a wide variety of international land-related programmes, networks, and stakeholders throughout the global environmental change community.



Researchers and high-level government officials from Kenya and Switzerland launch the Socio-Economic Atlas of Kenya at a press conference in Nairobi. Produced by a Kenyan–Swiss team of specialists from research organizations and state agencies, the atlas provides an ideal tool for partnership-based development efforts bringing together government, the private sector, and research institutions. Photo: Evanson Njuguna, CETRAD



“Global partnerships and solidarity between governments and stakeholders are key to achieving the sustainable development goals.”

The positioning of CDE as a prominent academic force that is strongly involved in dialogue with politics and society would not be possible without our exchange with state and non-state actors in Switzerland. We take it as a vote of confidence that the Swiss Academies of Arts and Sciences selected a representative of CDE to be part of the Swiss government delegations negotiating the agenda on financing for development in Addis Abeba and Agenda 2030 in New York. During the preparatory phase to the new global agreements of 2015, CDE together with the large aid organizations Biovision, SWISSAID, and Helvetas Swiss Intercooperation organized well-attended public events.

CDE and the University of Bern

In cooperation with our members and partners we published 38 peer-reviewed articles in the past year. In addition, CDE's portfolio of projects developed steadily: in 2015, we won bids to carry out 17 new research projects worth around CHF 10 million, from various national and international funding organizations. Working closely with the University of Bern's Vice-Rector for Quality and all faculties, we created the foundations to integrate, university-wide, the topic of sustainable development into teaching. CDE now teaches at all degree levels, having introduced the master's-level minor programme in sustainable development in the autumn semester 2015. The bachelor's course on offer since 2013 currently has over 300 students, and the International Graduate School North-South has 101 registered doctoral students; both are attracting growing interest.

Getting fit for purpose

In this past reporting year we embarked upon a strategy renewal process to guide us through to 2021. The new strategy, which will be completed in 2016, will create a profile for CDE that enables us to support Agenda 2030 and the transformation towards sustainable development in an optimal way, together with our partners in Switzerland and abroad. Increased cooperation with the regions worldwide in which our research takes place will be a central pillar of our credibility and future direction. In support of a universal development agenda we are also strengthening our work in the global North, on issues such as sufficient lifestyles, policy coherence, and global networks of investments and value chains. Against the background of our competences and networks in the global South and North, we feel well equipped to make necessary contributions to global partnerships in the field of knowledge and learning processes to support implementation of the global development agenda.

Programme overview

CDE maintains a worldwide network of national and international research partnerships. Currently CDE runs 50 projects with a total turnover of more than CHF 12 million. Our cooperation activities, many of them with countries from the global South and East, enable us to better understand the impacts of global change and to develop appropriate strategies that are adapted to local, regional, and global contexts. Research partnerships drive innovation, make research more relevant for policymaking and development, and raise public awareness of how science contributes to sustainable development in the global North and South.

CDE's key partner regions

In 2015, CDE ran activities with a regional or national focus in 46 countries worldwide. Key regions were East Africa, the Horn of Africa, mainland Southeast Asia (especially Laos and Myanmar), the central Andes, and Central Asia (see orange areas in the map). Many of these projects and programmes represent a long-term engagement.

Long-term application-oriented mandates

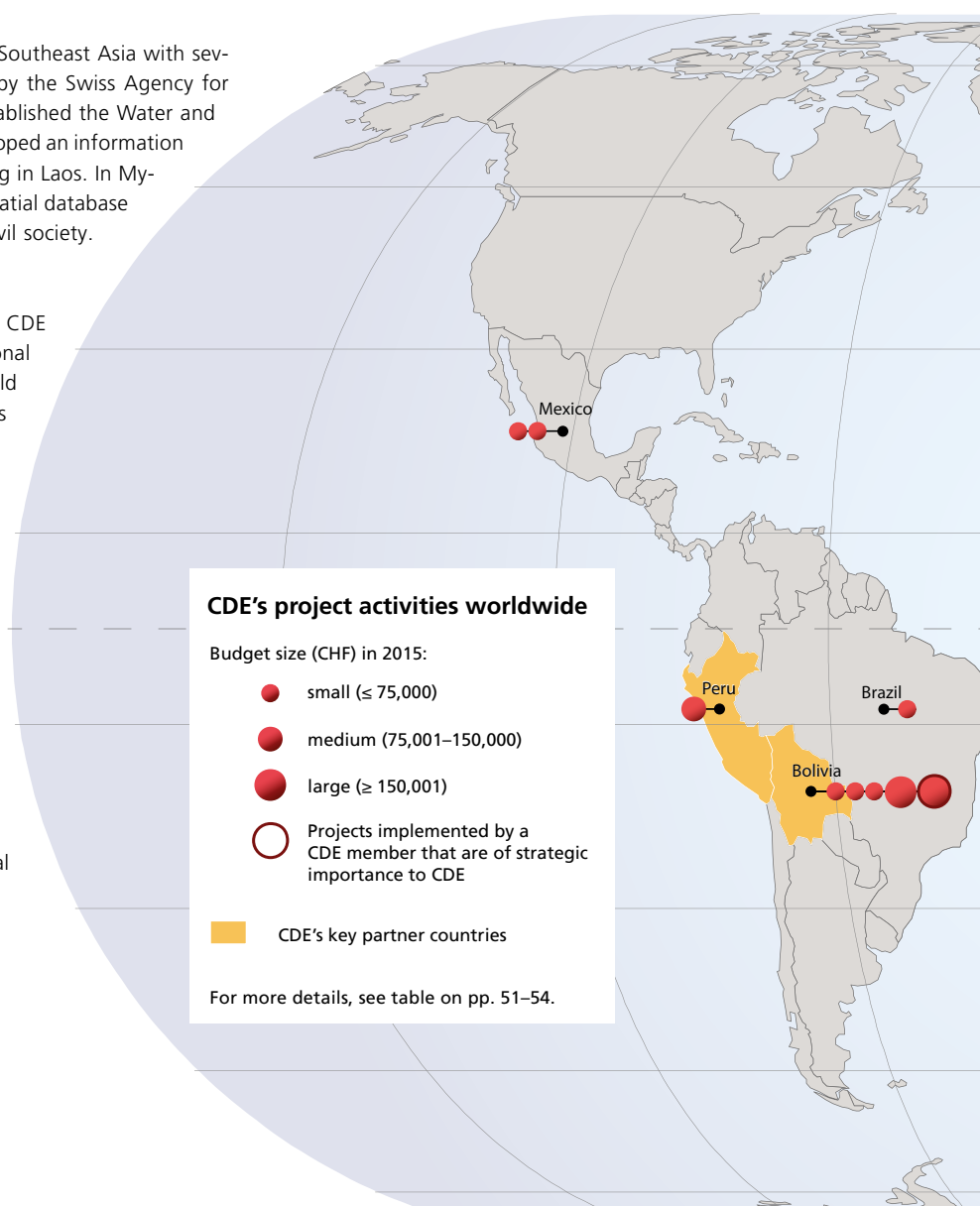
CDE was active in the Horn of Africa, East Africa, and Southeast Asia with several long-term application-oriented mandates funded by the Swiss Agency for Development and Cooperation. In this context, we established the Water and Land Resource Centres in Kenya and Ethiopia, and developed an information hub to support policy development and decision-making in Laos. In Myanmar we have commenced work on an open-access spatial database on land-related information for the government and civil society.

Global networks

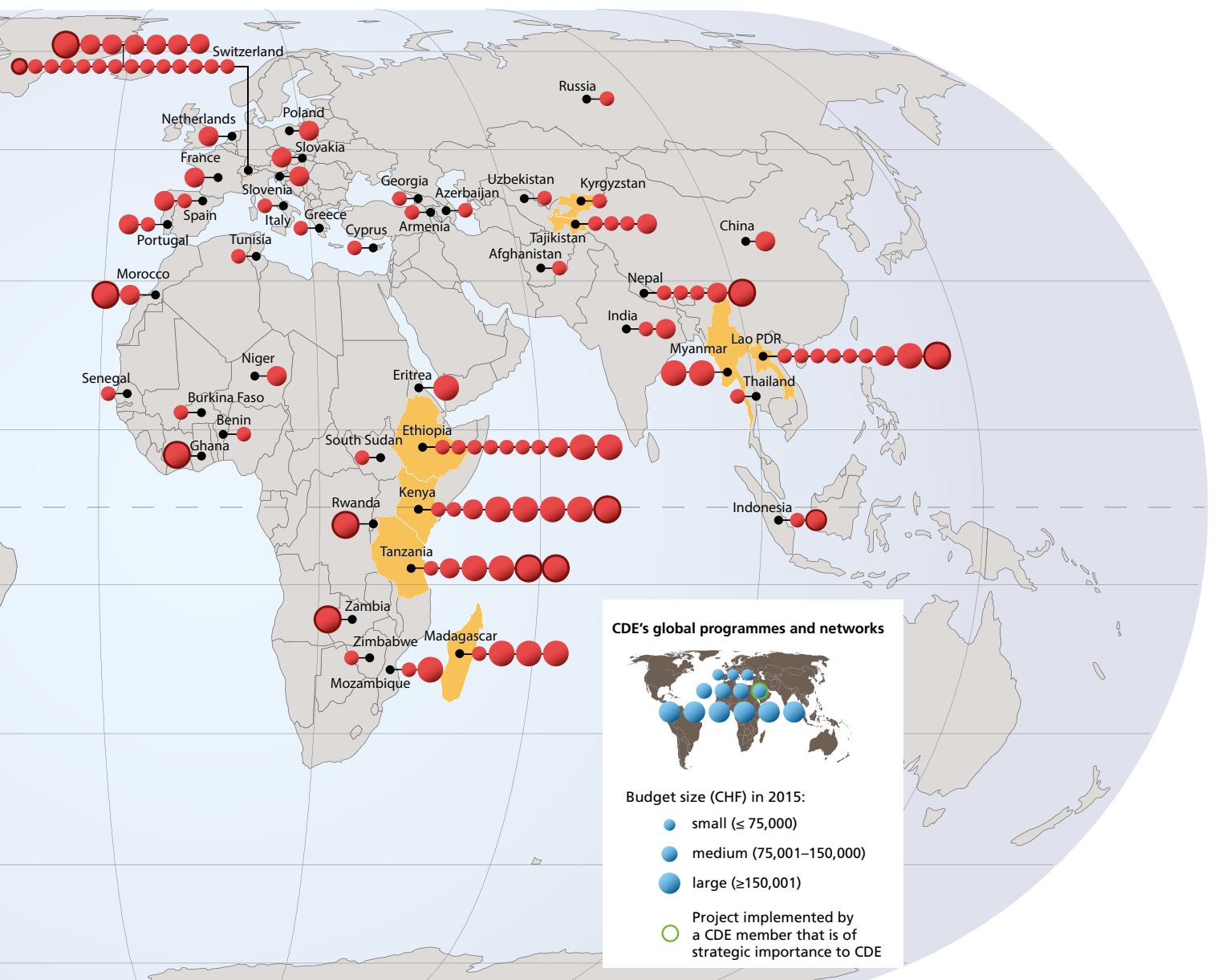
Our portfolio also comprises global networks that CDE has built and strengthened together with international partners over many years. Examples include the World Overview of Conservation Approaches and Technologies (WOCAT) network, which promotes sustainable land management practices around the world, and the Land Matrix, a global initiative to increase transparency in transnational land deals. As of January 2016, CDE hosts the International Project Office of the Global Land Project (GLP), the largest research network in land system science.

Research in Switzerland

In Switzerland, CDE's research focuses on analysis of sustainability concepts and studies on the implementation of sustainable development. This includes research on sufficiency (e.g. how sufficient lifestyles can advance sustainable development), consumption patterns, land and water management, and regional development in and around protected areas.



Students of the International Graduate School (IGS) North-South appreciate the exchange with fellow students from different disciplines and cultural backgrounds. Photo: Lilian Trechsel, CDE



Programme highlights

New study programme: master's-level minor in sustainable development



A master's-level minor in sustainable development is being offered at CDE as of the fall semester 2015. Completion of the bachelor's-level minor in sustainable development is helpful, but not required, for acceptance to the new programme, which is aimed at students from all faculties. The master's course teaches content-related and methodological skills, enabling students to engage with pressing societal issues of sustainable development in an interdisciplinary way while effectively applying their own disciplinary expertise. Students work on global challenges of sustainable development and learn about the current state and perspectives of research, scientific theories, and transformation approaches. The course also teaches and promotes skills required to conduct inter- and transdisciplinary research and project work, as well as competences in methods, reflection, and communication.

The new master's-level minor programme in sustainable development aims to enable students to work on pressing societal issues of sustainable development in an interdisciplinary way.

Photo: Stephan Schmidt, CDE

IGS North-South Summer School 2015: "Institutions, Livelihoods, and Conflicts"



The 2015 International Graduate School (IGS) North-South Summer School on "Institutions, Livelihoods, and Conflicts" was conducted in Nepal jointly by the University of Zurich's Development Study Group, Swisspeace, CDE, and the Nepal Centre for Contemporary Research (NCCR). Thirty PhD students from 12 countries representing various disciplines attended the 10-day course in Pokhara last September. They practised the inter- and transdisciplinary approaches needed when doing research for sustainable development in North-South partnerships. On field trips to the Annapurna Conservation Area, students interviewed villagers about their farming activities and household strategies. The goal was for students of various disciplines to develop research questions based on local conflicts, in cooperation with the people affected on the ground. A student documented the experiences in the film *Transdisciplinary Glimpses*, which is available on CDE's new YouTube channel. Currently 101 PhD students are enrolled at the IGS North-South, a collaborative initiative of the universities of Bern, Basel, and Zurich. It was established in 2009 within the framework of the Swiss National Centre of Competence in Research (NCCR) North-South. CDE hosts the secretariat of the IGS North-South and coordinates the annual Summer School.

IGS North-South students asked villagers in Nepal about their farming activities and household strategies. Photo: Stéphanie Jaquet, CDE

CDE hosts the Global Land Project's International Project Office

The Global Land Project (GLP) is an interdisciplinary community of science and practice that promotes the study of land system changes as a cause, consequence, and solution to global change processes. GLP works to create synergies among researchers and stakeholders and fosters co-design of solutions for sustaining people, ecologies, and landscapes. As of January 2016 the GLP International Project Office is hosted by CDE. In this new role supporting the largest research network in land system science, CDE is engaging with a wide variety of international land-related programmes, networks, and stakeholders throughout the global environmental change community. Project Office responsibilities include supporting GLP's worldwide networking activities; developing new working groups and research projects; synthesizing research; and organizing conferences and workshops to facilitate collaboration between community members, such as the GLP 3rd Open Science Meeting, to be held in Beijing in 2016. GLP is a core project of the Future Earth global research initiative.



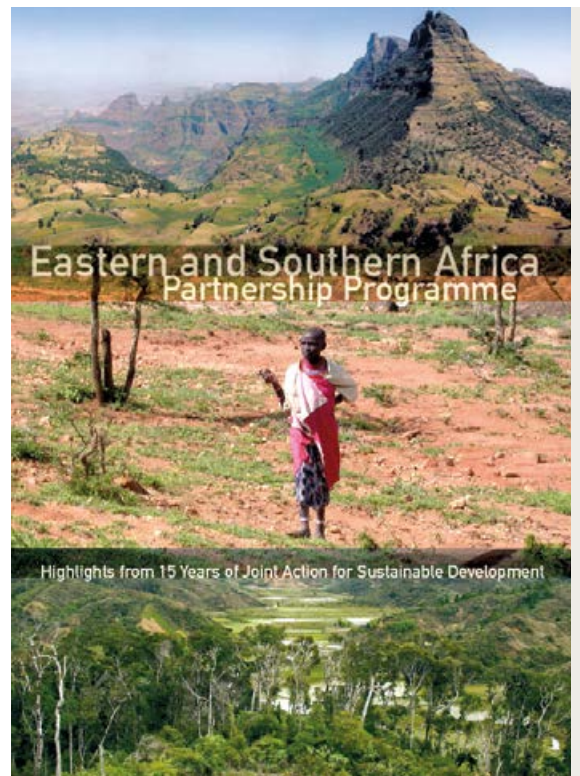
Rapid land use changes are brought about by commercial crops such as rubber and maize in Laos. Photo: Peter Messerli, CDE

New publication summarizes key insights from the recently concluded Eastern and Southern Africa Partnership Programme

Experiences and knowledge from the recently concluded 15-year Eastern and Southern Africa Partnership Programme (ESAPP) have been summarized and made available in a new publication. Through partnership-based research and action with numerous institutions in Africa, ESAPP sought to promote sustainable land management and regional development in Eritrea, Ethiopia, Kenya, Tanzania, Mozambique, and Madagascar. The publication, *Highlights from 15 Years of Joint Action for Sustainable Development*, showcases 24 representative highlights carefully selected from over 300 demand-driven, small-grant projects. It outlines some of the key principles and lessons learned during the course of the programme, which we believe will be of use in subsequent efforts to link knowledge generation and development action. The programme was funded by the Swiss Agency for Development and Cooperation (SDC) and implemented by CDE and partners throughout the region.

Eastern and Southern Africa Partnership Programme: Highlights from 15 Years of Joint Action for Sustainable Development

Ehrensperger A, Ott C, Wiesmann U, editors. 2015. Bern, Switzerland: Centre for Development and Environment (CDE), University of Bern, with Bern Open Publishing (BOP). ISBN 978-3-906813-04-2 (print); ISBN 978-3-906813-03-5 (e-print). <http://dx.doi.org/10.7892/boris.72023>.



This publication showcases project highlights and outlines key principles and lessons learned on how to successfully link knowledge generation and development action.

Sustainability Day 2015 at the University of Bern



Sustainable research and service projects of the University of Bern were presented at 20 interactive project stands. Photo: Corina Lardelli, CDE

How can we contribute to sustainable development in our rapidly changing environment? Where will our travel behaviour lead? How do we deal with the daily flood of information? Is there a cure for food waste? At the University of Bern's Sustainability Day 2015, students, staff, professors, and guests discussed the challenges of our fast-paced world. The event helped make visible current sustainability topics at the University of Bern. The varied programme included workshops, an interactive exhibition, and a speech by sociologist Nadine Schöneck-Voß on the pace of our times. Further highlights were the screening of a student film about sustainability at the University of Bern, and the "slowing down show" by comedian Baldrian. As part of the programme, chef Mirko Buri served two "no-food-waste" lunch menus in the university canteen. The Sustainability Day was jointly organized by CDE, the university's Vice-Rectorate for Quality, and the Student Association for Sustainable Development (BENE).

Discussing the new UN SDGs



Panel discussion on the new United Nations Sustainable Development Goals, organized by the development organization Helvetas Swiss Intercooperation and CDE. Photo: Corina Lardelli, CDE

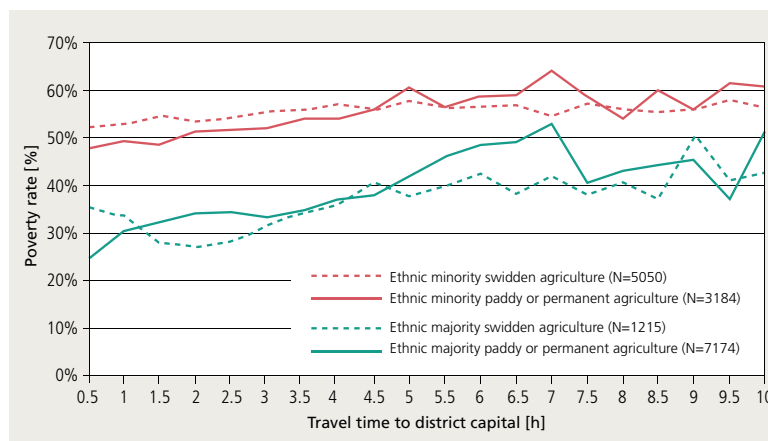
Health and education for all, equal rights for women, protection of the oceans, an end to environmental destruction, and a world without poverty: these and 11 other Sustainable Development Goals (SDGs) were adopted at the end of September 2015 by the United Nations (UN) General Assembly in New York. The SDGs focus on growth and resource use, committing industrialized nations to action. The Directors of CDE participated in the negotiations towards the 2030 Agenda for Sustainable Development as scientific representatives of the Swiss delegation. Thomas Breu took part in the Third International Conference on Financing for Development in July 2015 in Addis Abeba, Ethiopia; Peter Messerli represented the scientific community in Switzerland's delegation to the UN Sustainable Development Summit in September 2015. The CDE Directors as well as CDE researchers took part in media interviews and panel discussions with representatives of the Swiss government, science, civil society, private industry, and Swiss development cooperation about the future challenges of equitable and ecologically sound development. Discussions focused on the importance and opportunities of the SDGs, the roles and tasks of the various actors, and the responsibility of Switzerland.

The nexus between land use, poverty, and environment in Laos

In land systems, equitably managing trade-offs between planetary boundaries and human development needs represents a grand challenge for sustainability-oriented initiatives. Informing such initiatives requires knowledge about the nexus between land use, poverty, and environment. This paper presents results from Laos, where we combined nationwide spatial data on land use types and the environmental state of landscapes with village-level poverty indicators. Our results show that the concurrence of external influences with local development potentials is key to shaping outcomes of the land use–poverty–environment nexus. By addressing such leverage points, these findings help guide more effective development interventions. At the same time, they point to the need in land change science to better integrate the understanding of place-based land indicators with process-based drivers of land use change.

Towards a spatial understanding of trade-offs in sustainable development: A meso-scale analysis of the nexus between land use, poverty, and environment in the Lao PDR

Messerli P, Bader C, Hett C, Epprecht M, Heinemann A. 2015. *PLOS ONE* 10(7):e0133418. <http://dx.doi.org/10.1371/journal.pone.0133418>.



This graph shows the relation between accessibility as travel time to the nearest district capital in hours and poverty rates among different types of villages. People in ethnic minority villages (red lines) are poorer no matter how intensive their mode of farming is or how long it takes them to reach the district capital and related service provision. Conversely, people in ethnic majority villages (green lines) are better off regardless of their mode of farming, and they seem capable of transforming good accessibility into additional poverty alleviation.

The commodity sector from a sustainable development perspective

Commodity trading in Switzerland has attracted increasing scrutiny in recent years, in particular because of its rapid growth and its importance to resource-exporting developing countries. Swiss academia has started engaging in the debate, but faced challenges in contributing to an informed dialogue due to the overall paucity of data surrounding cross-border and transit activities of Swiss-based commodity companies, and the substantial gaps in existing literature. A working paper by researchers from CDE, the World Trade Institute (WTI), and the Institute for Business Ethics (IWE) seeks to identify critical knowledge gaps and to provide a basis for further academic research on the commodity industry, including the commodity trading sector, which is particularly relevant for Switzerland. The paper was written in the context of the project “Global change and developing countries: Why should we care?” managed by the Commission for Research Partnerships with Developing Countries (KFPE) and the Forum for Climate and Global Change (ProClim).

The Commodity Sector and Related Governance Challenges from a Sustainable Development Perspective: The Example of Switzerland. Current Research Gaps

Bürgi Bonanomi E, Wehrli J, Bucher D, Rist S, Giger M, Espia I, Franzi S, Elsig M, Gelb SR, Holzgang M, Dey P, Wettstein F. 2015. CDE WTI IWE Joint Working Paper No. 1. Bern and St. Gallen, Switzerland: Centre for Development and Environment (CDE) and World Trade Institute (WTI), University of Bern, and Institute for Business Ethics (IWE), University of St. Gallen. <http://dx.doi.org/10.7892/boris.71327>.



The publication outlines key challenges, knowledge gaps, and research questions concerning Switzerland's role and responsibility as a leading commodity hub.

Photo: © M. Johannsen / Fotolia

Geographer Thomas Kohler has worked in development research and practice for more than 35 years. His career began in Kenya, with research on the livelihoods of small-scale farmers. Later, he managed projects in Eritrea, the Mekong region, and, most recently, the Caucasus and Eastern Europe. He was also committed to promoting the development of global mountain regions. Over the years, he has been spurred on by surprising, disillusioning, and fascinating moments. A member of CDE's Executive Committee for more than two decades, Thomas Kohler retired in December 2015.

Interview by Corina Lardelli

Looking back on more than 35 years of development research and practice

Thomas Kohler, you took your first steps in research for development in Kenya – in Laikipia, a semi-arid region northwest of Mount Kenya. What was it about?

That was for my PhD dissertation. We were a small team. I studied the livelihoods and development priorities of small-scale farmers. We found that their priorities lay in ensuring the survival of their household, and that farming was not necessarily always their top priority. Many had an off-farm income or support from an extended family to compensate for the frequent harvest failures. They all wanted to irrigate, but there was by far not enough water for that. There was a risk of local conflicts. We tackled these problems in water seminars, events which our colleagues in Kenya continued to hold. Today, there are many Water User Associations (WUAs), whose members share the river water by mutual agreement and based on the data provided by our programmes. They contribute significantly to local peace. The WUAs are even enshrined in Kenya's new Water Act. I have nothing but praise for my CDE colleagues and our Kenyan partners for this institutional innovation.

Eritrea came after that. What drove you to conduct research in this politically difficult environment?

In 1994, when we started, there was a great spirit of optimism in Eritrea. The country was one of the hopes for the future of Africa! We worked on soil conservation and village infrastructure, and combined both with university education. The political environment in the country was optimal. The exchange with our donors was extremely good – content-wise and at a personal level. Unfortunately, the political environment has changed to such an extent that today our support is limited to a minimum: all we can do now is provide university-level teaching material. Because our donors have left and we lack the money for visits, we now do so by correspondence via email.

Thomas Kohler, geographer and CDE Associate Director. Photo: Matthias Fries, CDE



Is there a particular success story that you experienced in Eritrea?

Yes, there is: our project helped to supply 15,000 people with clean drinking water. I will always remember the dancing priests of Afdeyu, a small village in the highlands – dignified old men drumming as they danced. In this way they sanctified the water supply that we had provided in cooperation with local partners and people from the village. The local population's involvement in this work and the sanctification ceremony secured local ownership. Religion and spirituality play a central role in many countries, especially in rural regions. We tend to overlook that.

In mountain regions worldwide you worked on sustainable resource use and food security. From a scientific point of view, what are the most important findings of the last years?

We are better able to show what role mountain regions play for global development. In terms of resource use, water is particularly important: more than half the world's population is dependent on fresh water from the mountains. In arid areas, mountains supply 90 per cent or more of all water. This is the case in the Nile Valley in Egypt, in Pakistan, in Central Asia, and even in California. In addition, we are able to document the development deficits of mountain regions more comprehensively. In the mountains, food security is not guaranteed for one in three people. Globally, including lowland regions, this figure is one in nine people. The poverty rate in mountains is often higher. The big challenge lies in making policymakers at global and national levels aware of the importance of mountains. At both levels, mountain areas tend to be neglected.

In 2015, the United Nations (UN) General Assembly in New York adopted a comprehensive set of 17 goals – the SDGs – for a global sustainable development. By 2030 these goals are intended to help overcome poverty and contribute to the sustainable use of natural resources. Is there a demand for science here?

Yes, as a partner and not as a saviour. Keywords for the role of science are innovation, documentation, monitoring, awareness creation, and policy support. To guide poverty reduction, for example, scientists have developed an innovative, multidimensional poverty index, which was adopted by the UN; and science is also needed for monitoring poverty reduction. The same keywords also apply to the use of natural resources. CDE, for example, coordinates WOCAT, a global network which documents sustainable land use methods from more than 50 countries in a global database. The video clips, handbooks, and policy briefs thus created serve to raise awareness and provide policy advice. We always speak about development problems – but here, for a change, we are able to show the positive things that already exist!

What personal advice would you give future development researchers?

First, they should choose a specialization without giving up thematic breadth. Everything I had ever learned was useful when I worked on projects. Second, they should specialize in a region and, whenever possible, learn the local language. I say this as a human geographer. Every language opens a new world. Knowledge of it is decisive for the interpretation of research results, advice, and policy support. Third, they mustn't neglect field exposure. Book knowledge is important, but the reality in the field is often a little different. Research is exciting when observations and theory do not match. When this happens, we should not force reality to fit the theory, but rather expand the theory. That's how innovation comes about.





Fieldwork is essential for understanding the reality on the ground. Thomas Kohler with a project partner in Merhabete, Ethiopia, in 1987. Photo: Jürg Krauer, CDE

To what extent will you remain connected to sustainable development and the University of Bern after you retire?

In 2016 I will continue to teach at the Institute of Geography and supervise students' theses up to their completion. I have handed over the development programmes that I was in charge of, but am available to provide advice. I will also remain connected to development cooperation through my role on the Board of SWISSAID. And I will start tidying up. Things have accumulated throughout the years. What do I keep, what do I pass on, and what do I throw away? What will I publish? That also keeps connections alive.

“The concept of sustainable development is all about conflicts and negotiations. It makes visible the trade-offs as well as winners and losers.”



Defining “trade-offs” in sustainable development

“Trade-off” is a term that often shows up in discussions of sustainable development, but its meaning is not always clear, especially in translation. According to the Oxford English Dictionary, a trade-off is “a compromise between two desirable but mutually exclusive features; a concession or sacrifice made in one area to obtain benefits in another”. When translated into German, the term may take on slightly different meanings, such as *Dilemma* (“dilemma”), *Zielkonflikt* (“conflict of interest”), *Güterabwägung* (“weighing of interests”), or *Tauschhandel* (“barter”). In CDE’s understanding of sustainable development, trade-offs relate to conflicts of interest between different stakeholders and their respective claims to development. These conflicts occur in human–environment systems because certain interests can only be fulfilled at the cost of other claims, which may arise in another of the three sustainability dimensions (environment, economy, society) or at a later time. Making trade-offs means negotiating and eventually transforming such conflicts of interest. Efforts to search for compromises, modify claims, or compensate unfulfilled interests must be based on sound knowledge of the rationales behind decisions, and of their consequences. This ensures transparency and empowers stakeholders in weaker positions to stand up for their concerns. CDE’s integrative research provides knowledge to support fair negotiations.

Spotlight on dealing with trade-offs in sustainable development

Peter Messerli

In terms of major agreements reached, 2015 marks a turning point in development policy. The Addis Abeba Action Agenda on Financing for Development was signed in July, and the Paris Agreement on climate change in December. Perhaps of greatest historical importance was the signing of the United Nations 2030 Agenda on Sustainable Development, committing nations to work towards 17 Sustainable Development Goals (SDGs).

Sceptics, however, question whether a catalogue of 17 goals and 169 targets does not simply represent a random wish list which will end up further diluting the concept of sustainability. What influence can Agenda 2030 really have on the life of an African farming family, the working conditions of a Cambodian factory worker, or the excessive consumption of meat by households in Switzerland?


Agenda 2030 is a values compass. It points us in the direction global development should take over the next years. Together, 193 countries have agreed on a comprehensive catalogue of goals that aim at promoting people's well-being, prosperity, peace, and global partnerships on a healthy planet. The responsibility to achieve these goals now lies with governments – and citizens can demand accountability.

Agenda 2030 is full of unresolved contradictions and conflicts of interest. How is the climate goal compatible, in the long term, with sustainable economic growth? What land use ensures that demands for food are met, while at the same time requiring less fossil energy, conserving ecosystems, and protecting the rights of small-scale farmers? The emergence of such questions is a clear sign that Agenda 2030 is taking a big step towards a concrete understanding of sustainability. The concept of sustainable development is all about conflicts and negotiations. It makes visible the trade-offs as well as winners and losers: between various sectoral interests and their stakeholders, between North and South, global and local, today and tomorrow. The question of sustainable development becomes the question of how trade-offs can be overcome to promote justice.

Agenda 2030 is not an instruction manual for overcoming trade-offs. While we possess extensive knowledge of the problems of global development, we still do not know how to get from where we are now to the new goals. The task facing business, policy, civil society, and science is immense: initiating transformations, and achieving sustainability.

This responsibility is instrumental in shaping CDE's understanding of science. Science for sustainable development aims to solve problems and combines disciplinary excellence with interdisciplinary and trans-disciplinary approaches. In this way it contributes constructively but also critically to social transformation processes.

By spotlighting sustainable development's inherent trade-offs in this annual report, we want to illustrate some of the aspects of our understanding of science and our concrete work. In her PhD research, Julie Zähringer analysed trade-offs between forest conservation and rural development in Madagascar. The conservation of biodiversity



Agenda 2030 calls for an end to poverty, the construction of durable infrastructure, the reduction of inequality, and protection of the climate. To prevent conflicts of interest between these goals, trade-offs must be overcome in the name of justice. Urban contrasts in Vietnam. Photo: Christoph Oberlack, CDE

“Together, 193 countries have agreed on a comprehensive catalogue of goals that aim at promoting people’s well-being, prosperity, peace, and global partnerships on a healthy planet.”



What land use ensures that demands for food are met, while using less fossil energy, protecting ecosystems, and securing the rights of small-scale farmers? Science is called upon to critically examine and help shape measures for achieving the Sustainable Development Goals. Farmers on a rice field in Vietnam. Photo: Christoph Oberlack, CDE

is only possible and legitimate if we are aware of and understand the local population’s claims, and if we know how protected areas and rural development in the region influence each other. Stéphanie Jaquet’s PhD research demonstrates that labour migration in Nepal contributes to sustainable development by raising incomes and even contributing to a decrease in land degradation. However, the price of these gains is often paid by divided families that have few choices in life, and in which the women’s workload is often excessive. Targeted empowerment of those affected could alleviate these social trade-offs. At the development policy level, Markus Giger

highlights the conflicts of interest that can arise. He illustrates how CDE provides knowledge on the trade-off between climate protection and poverty reduction, as for example in CDE’s contribution to the Swiss Government’s Advisory Committee on International Cooperation. He refers to the growing challenge of shaping development, economic, and environmental policies more coherently, in terms of sustainable development. Elisabeth Bürgi Bonanomi focuses on commodity trading to explain how CDE and its partners have engaged with the topic of policy coherence for sustainable development and will continue to do so in future.

By providing and actively imparting knowledge, CDE wants to critically examine, support, and help to shape sustainability transformations. We believe that Agenda 2030 gives us a unique opportunity to concretize sustainable development as a central concept of our time in policy, development, and science.

Conservation or agricultural development? Trade-offs in tropical forest areas in Madagascar

Julie Zähringer

Progressive deforestation in the tropics is leading to a loss of biodiversity and reduced ecosystem services. The most important ecosystem services provided by rainforests include the uptake and storage of carbon; the filtration and storage of water; the function as a natural habitat of numerous animal and plant species; and the provision of wood products and cultural services. On the east coast of Madagascar, rainforests are disappearing mainly because of deforestation by small-scale farmers seeking land to grow rice. International nature conservation organizations have been trying to protect these forests for a long time, but their demands differ from those of the local population, leading to conflicting objectives in the region. A CDE project is using a combination of satellite image analysis and socio-economic data to develop an increased understanding of land change between 1995 and 2011 as well as different actors' current demands on ecosystem services. The goal is to create an evidence base for future negotiations on the reduction of land use conflict.



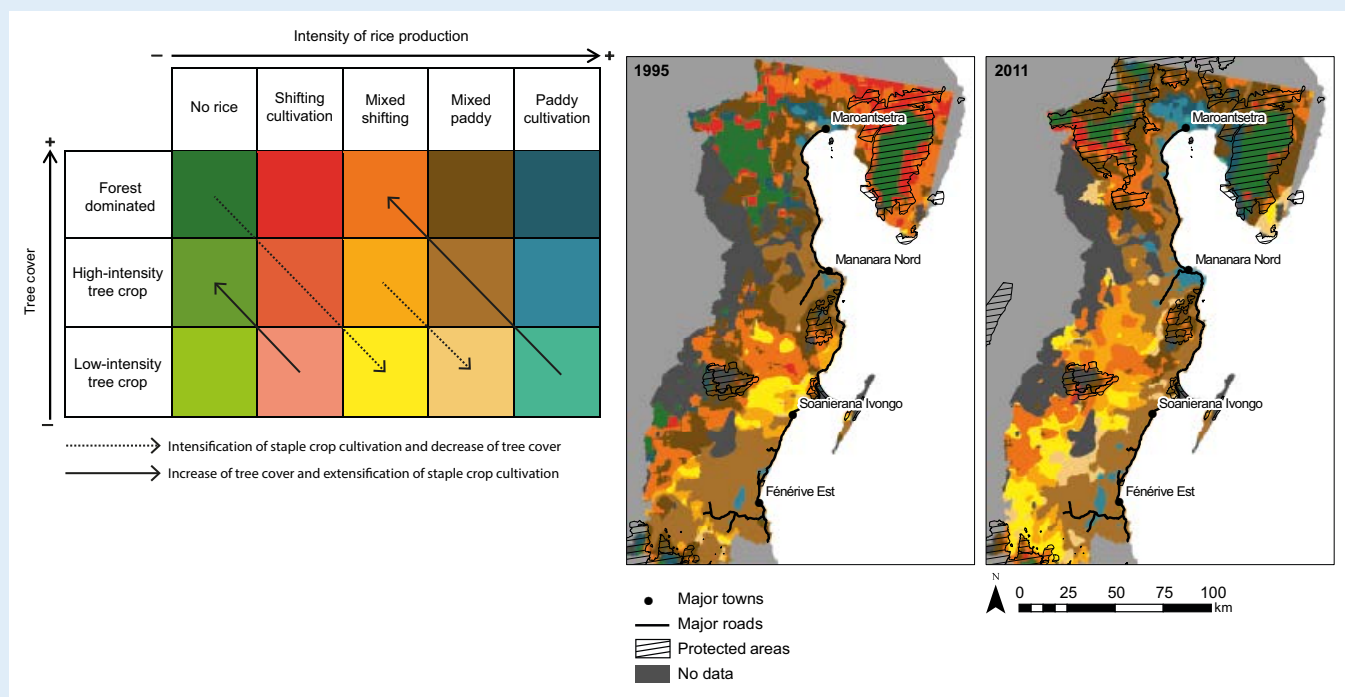
Young women use forest products to weave mats and baskets, either for their own use or for sale. Photo: Julie Zähringer, CDE

Deforestation and agricultural development in north-eastern Madagascar between 1995 and 2011

Between 1995 and 2011, the forest area in the study region in north-eastern Madagascar decreased by 11 per cent. The areas most affected were the small forest fragments outside the parks, while the forests inside the large protected areas were relatively well protected. During the same period we observed in many areas in the region an intensification of agriculture, with rice production through shifting cultivation being replaced by irrigated rice production. This was the case particularly along the western border of the Masoala National Park, probably because of a strictly enforced ban on shifting cultivation there. But we also observed that the number of trees both in the forest and in agroforestry systems hardly decreased in the areas where rice production had been intensified. This indicates that it is possible to intensify agriculture in the region without significant loss of trees (and thus, ecosystem services).

Spotlight on dealing with trade-offs in sustainable development

Conservation or agricultural development? Trade-offs in tropical forest areas in Madagascar



Compare the colours on the map to the left (land use in 1995) with those on the map to the right (land use in 2011): Where has the forest area decreased? Where has forest been turned into intensive rice production sites? Where has agricultural use increased while leaving the forest intact? The coloured fields in the matrix to the left will help you find out. Graphic: Julie Zähringer, CDE

Different claims on ecosystem services provided by the forest

Half of the almost 1,200 households interviewed in the region use the forest to gather different forest products such as wood for construction, palm leaves as roof covering, medicinal plants, honey, or lianas to make ropes. The other households either said they had no forest nearby, or that they no longer had access to the forest due to protected areas. Many households have replaced the products they used to obtain from the forest with products from fallows, which are an important part of shifting cultivation. However, access to such products is becoming increasingly difficult: with the further intensification of agriculture and the corresponding reduction in shifting cultivation, fallows are becoming rare.

The forest is appreciated by a large proportion of households for providing regulating ecosystem services. The ecosystem services perceived by land users as the most important are the regulation of water supply (needed to irrigate the rice fields), regulation of the microclimate, protection from cyclones and erosion, as well as provision of a habitat for animals. The forest is also associated with various cultural aspects. This illustrates that local land users are very much aware of the forest's value. The fact that they are nonetheless cutting down the trees shows how big the trade-off is between the maintenance of ecosystem services and the land users' need to expand the agricultural land that ensures access to their staple food, rice. At the moment it appears that nature conservation organizations in a number of areas are successful in seeing through their claims on protecting the environment, while local people seeking to expand their land are losing out. Conservation is being enforced through drastic measures such as prison terms for non-compliant land users, who are detected by means of satellite imagery data monitoring. As a result, land users are not only unable to turn forest into agricultural land – they also lose their right to use various forest products. On the other hand, they



A clearly visible border between a protected area (left) and agricultural land (right) in north-eastern Madagascar.

Photo: Julie Zähringer, CDE

benefit from the maintenance of important regulatory functions of the forest. Both conservationists and land users have been powerless to stop a further group of actors: those involved in the illegal logging of valuable tropical wood.

Discussions with all parties involved

Our results show that intensifying agriculture while at the same time protecting forest regions is possible. The question is whether all local land users benefit from the intensification, or whether some slide even further into poverty as a result. In addition, there is a big imbalance between various actors' claims on the forest and the related ecosystem services. This is why efforts are needed to bring these actors together and encourage them to discuss and work towards common goals and strategies. Through its R4D project "Managing Telecoupled Landscapes", CDE is attempting to initialize such processes both in Madagascar and in similar contexts in Laos and Myanmar.

Outmigration in Nepal's mountain areas: challenges and opportunities

Stéphanie Jaquet

Migration – either internal, or towards India – has always been important in Nepal. However, the past decade has seen a change in migrants' destinations, with ever more people headed for Arabian Gulf countries or Malaysia. As CDE found in a study in the middle hills of Nepal (Harpan watershed, Kaski district), migration can have negative as well as positive impacts on livelihood strategies and land management. First, we observed an empowerment of women and a feminization of agriculture in the mountain villages, as the migrants are mostly men. Second, because of the lack of labour, land was abandoned, increasing vegetation and forest cover and resulting in a decrease in soil erosion. Third, remittances, which account for about 30 per cent of gross domestic product, not only influence consumption patterns in the region but transform the structure and dynamics of the country's overall economy.

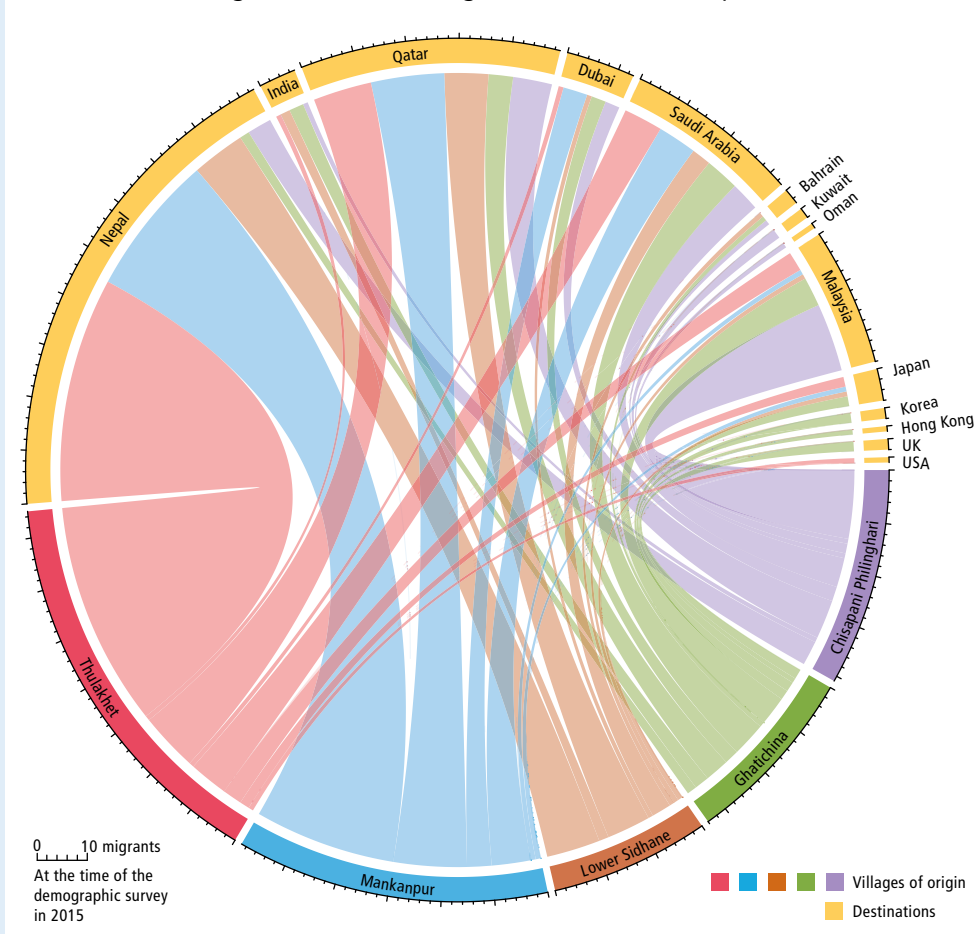


Rice field terraces (light green). Where land has been abandoned for two years or more, bushes have begun to grow on the fields (the darker green areas around the terraces). Photo: Stéphanie Jaquet, CDE

Transformed village structure

Every day, some 1,500 Nepalese leave their country to look for a job abroad. Top migration destinations include Qatar, Saudi Arabia, and Malaysia (see diagram), where demand is high and continuous for new workers to construct business towers, shopping malls, and luxury hotels. These opportunities attract mainly men, aged between 15 and 34 and driven by low income and a lack of perspectives. They represent 47 per cent of Nepal's male working population. In the Harpan watershed, 63 per cent of all households have at least one migrant member. In extreme cases, as in the village of Chisapani, there are no men between the ages of 25 and 35 living permanently in the village. Village life is managed by women, children, and the elderly.

Destinations of migrants from five villages in Kaski District, Nepal, in 2015



This diagram shows how many migrants left the five villages in 2015, and where they went. From Thulakhet village, for example, about 45 people migrated to other places in Nepal and about 30 migrated abroad. Graphic: Stéphanie Jaquet, CDE

Recomposing ties and tasks in distant families

In Chisapani, in the Annapurna region, Anita Nepali is one of the villagers whose husbands migrated from Nepal for lack of job opportunities, first to Saudi Arabia and then to Qatar. She has two children, a 13-year-old boy and a 5-year-old girl. Her husband has been abroad for almost seven years, visiting his family every two years for one or two months; the family feels sad when he goes back to work. In his absence, Anita looks after the children and cultivates the farmland, but without her husband, farming is physically difficult. She has no choice but to continue, however, as the remittances from Qatar are not enough income. The women in Chisapani are organized in a women's group, one of whose recent activities was to build a community hall. They meet and attend regular farming and health trainings given by local government authorities as well as health- and social workers.

Thus, for the women, the effects of male migration are not only negative. They face new challenges and opportunities at the household or community levels, and take on new forms of leadership. These new roles lead to empowerment, awareness building, skills enhancement, and decision-making power.



Anita Nepali's husband works in Qatar, while she cares for the children and manages the household and farmland in Chisapani, Nepal. Photo: Stéphanie Jaquet, CDE

Effects on land management

CDE researchers explored how the land and its management in the Harpan watershed were affected by migration, and what measures and strategies were being taken by the resident population. A mapping methodology was used to assess land management practices. Combined with a variety of other research methods, it illustrated the impacts of migration on land degradation and conservation. The main degradation problems found were an increased spread of invasive alien plant species, mainly due to a lack of weeding and maintenance of terraces. Land abandonment had led to a growth in vegetation and forest cover, and a reduction in some types of degradation, such as soil erosion or landslides.

Increased income

In the Harpan watershed, families benefit from an average of USD 206 in remittances per month, which is higher than the average monthly income in Nepal. Total remittances in Nepal generate about 30 per cent of gross domestic product. Because political turmoil and natural disasters have repeatedly destabilized the country and reduced tourism, money transfers from the oil metropolises have become Nepal's most important economic sector.

Development and migration

The study shows that labour migration has the potential to increase sustainable development in terms of economic benefits and environmental impacts in the migrants' home countries. While these benefits occur partly at the national or village scales, there are trade-offs to be made by households and individual family members. In Nepal with its economic difficulties, both women and men face livelihood challenges: empowering individuals to increase their choices seems to point the way forward. To provide alternatives to outmigration, it would be important to invest in skills corresponding to the needs of the local labour market, and to develop entrepreneurship and social welfare.

Poverty reduction vs climate change: are they compatible?

Markus Giger

In 2015 CDE was actively involved in discussions towards the new Dispatch on International Cooperation by the Swiss Federal Department of Foreign Affairs. As part of this process, CDE was invited to a closed meeting of the Swiss Government's Advisory Committee on International Cooperation in September 2015. The topic of this event was strongly influenced by the 2030 Agenda for Sustainable Development, with discussions centring on the large amount of funding that must be invested into climate protection, as well as on how development cooperation and climate protection might be efficiently combined. Are climate protection measures and poverty reduction measures contradictory, do they complement one another, or are they unrelated? Markus Giger, head of CDE's Global Change Cluster, addressed this question at the event. He pointed out that measures to combat extreme poverty have no significant impact on global CO₂ emissions. Conversely, however, while global climate protection measures can create positive synergies, specific measures can also exacerbate poverty.



Construction of the Three Gorges hydro-power plant has pushed small farmers in this Chinese valley to the margins.

Photo: Hanspeter Liniger, CDE

Does poverty reduction accelerate climate change?

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The eradication of extreme poverty, which affects 21 per cent of the world population, would theoretically cost as little as 0.2 per cent of global income, and the impact on the environment would be correspondingly low. Furthermore, calculations by the International Energy Agency have shown that supplying 1.3 billion people who currently have no power access with basic electricity by 2030 would increase global CO₂ emissions by less than 1 per cent. This shows that eradicating extreme poverty does not jeopardize the achievement of targets on climate protection. Instead, the real challenge is for business and industry in industrialized and transition countries to start decoupling their activities from fossil fuels.

Do climate policies have adverse impacts on vulnerable populations?

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If the international community adopts a consistent course on climate change, how will this affect the poor? Studies have shown that climate protection measures and climate adaptation strategies can have positive as well as negative effects on poor people. The promotion of biofuels, for example, can lead to “land grabbing” and thus endanger the livelihoods of local populations. Wind parks, solar farms, and hydropower plants can displace or adversely affect land users if they are not implemented in a socially acceptable way.



Villagers insulating a family home in Kyrgyzstan. In a better-insulated home, people use less firewood for heating; this has positive effects on their health, their household budget, and the environment. Photo: CAMP Alatau/CDE

By contrast, investments in the insulation of buildings or in more efficient energy production methods often benefit vulnerable populations in particular. Such investments create jobs and reduce pollution. In the field of agriculture and forestry, measures to store carbon in the soil can strengthen soil fertility and long-term productivity of the agricultural system. Such measures, however, must be implemented in a way that enables the rural population to benefit.

Many countries are considering the abolition of subsidies for fossil fuels, as they lead to fuel wastage and inhibit investment in renewable energy sources. In 2014, USD 493 billion were spent on such subsidies worldwide, much of it in developing countries. The poor population benefitted from this money through lower costs for food, transport, and cooking energy. But in return this meant that money was missing in state coffers for important social programmes and productive investments. A reform of these subsidies requires careful and long-term planning to ensure that the poorest do not bear the consequences of a move away from decades of false incentives.

Strengthening governance in dealing with conflicting objectives

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These examples show that measures to reduce greenhouse gas emissions and adapt to climate change are not a priori “good” for vulnerable parts of the population. This is why they must be carefully negotiated and planned, with the involvement of those affected. In doing so it is important to make sure that adaptation strategies and projects take into account the interests of the poorest.

In order for climate protection and poverty reduction to complement and advance one another, governance and capacity must be strengthened at international and national levels. Possible conflicting objectives must be recognized and negotiated with the local and global actors affected. Research can support these processes by creating and analysing relevant evidence bases.

Policy coherence for sustainable development: commodity trading in Switzerland

Elisabeth Bürgi Bonanomi, Stephan Rist

Achieving the new United Nations Sustainable Development Goals (SDGs) will require different policy fields at the national and international levels to be considered in relation to one another as well as to the SDGs. The corresponding new buzzword is PCSD: policy coherence for sustainable development. But how can this be carried out in concrete terms? CDE tackled this question on a number of occasions in 2015. At the University of Bern's Sustainability Day, for example, CDE researchers discussed with legal experts and policy officials whether a "Sustainability Law" is needed in Switzerland to promote coherent implementation of the 2030 Agenda for Sustainable Development. In addition, and as described below, CDE together with partners from the universities of Bern and St. Gallen formulated relevant research questions on policy coherence in the area of commodity trading.



Swiss-based commodity-trading firms control at least one third of the worldwide transit trade in important commodities such as oil, metals, and agricultural goods. Freight terminal, Germany.
Photo: © M. Johannsen / Fotolia

Commodity trading and Switzerland: the need for science

Switzerland has become one of the most important centres for commodity trading in recent years. Swiss-based commodity firms control at least one third of the worldwide transit trade in important commodities such as oil, metals, and agricultural goods. But how does commodity trading affect the Swiss economy? What impacts does the extraction of raw materials have on people and the environment in commodity-producing countries? What coordinated action on sectoral policies in the global North and South is needed for the resource sector to become more sustainable? So far, science has answered many of these questions only partially. CDE, the University of St. Gallen's Institute of Business Ethics, and the University of Bern's World Trade Institute have analysed relevant research questions on this topic (see p. 13). Their results showed that attention should be given in particular to the links between policies and practices of commodity-trading hubs, as well as to events in the commodity-producing countries.

Policy coherence for sustainable development

PCSD is relevant to any question that concerns links between the global North and South. Research for sustainable development today recognizes that the goals of Agenda 2030 can only be successfully implemented if they are related to one another, synergies are identified, and contradictions are revealed. For example, poverty can only be sustainably reduced if the goals on both climate and resources are reached as well. The question of “relating things to one another” also applies to sustainable economic growth. It implicitly calls for economic policies that succeed in shaping economic processes to ensure their consistent environmental and social compatibility. To make sure



A coherent Swiss policy on the commodities trade will contribute not only to economic prosperity, but also to the reduction of poverty and environmental problems in commodity-producing countries. Miners in Sierra Leone. Photo: © nathanan / Fotolia

that the various SDGs and their targets are considered in relation to one another, SDG 17 – “Partnerships for the goals” – requires PCSD. PCSD is not just about conventional “policy coherence” or a “whole of government” policy which supports the government in speaking with one voice. It is much more about ensuring that all policies – local, national, and international – are checked for their compliance with the SDGs, and are designed such that they effectively promote Agenda 2030. While the concept of policy coherence for development (PCD) has been known for some time and is strongly promoted by the Organisation for Economic Co-operation and Development



(OECD), the new concept goes further. By incorporating the word “sustainable”, PCSD addresses not only the development perspective, but also other perspectives linked to sustainability, such as those of the environment and of justice.

The need for empirical, interdisciplinary, and transdisciplinary research

Coherence for sustainable development focuses on the substantive coherence of law and politics. It is not only about the question of whether policies are formally contradictory, but about their actual impact on the ground. Various instruments of analysis are available to detect these effects and related conflicts of interest. The focus is on impact analyses, which are developed together with the relevant stakeholders. If a trade policy, for example, is to be investigated for its effects, this requires a range of researchers from different disciplines. Some will be working in the field, others at their desk; some to trace economic links, others to analyse the rules and design options; and yet others to develop transdisciplinary methods. The public is needed as well, to help answer the questions that arise. Such knowledge processes help to weigh up interests and, based on the outcomes, develop policy options that ideally lie somewhere between the well-established positions. In addition, such knowledge processes are also about identifying the drivers of developments that advance or hamper achievement of the SDGs, and to set in motion the central levers for change.

Research for a sustainable commodities sector

Swiss commodity-trading firms are a part of the whole value chain. Accordingly, policies on the commodities trade in Switzerland will always contribute to shaping the situation in commodity-producing countries. The question of coherence arises in that Switzerland is committed by its constitution to contribute to the reduction of poverty and global environmental problems, also beyond its national borders. The focus in the field of commodities – also in view of Switzerland’s European neighbours – is on questions of corporate regulation; access to Swiss courts of justice; tax and investment protection; and trade policy. But the availability of data on these linkages is still scarce today. More research is needed, and the coherence perspective helps to formulate research questions in a targeted way. With its in-depth knowledge of local contexts, its focus on the winners and losers of globalization processes (or the trade-offs of globalization), and its experience in the design of transdisciplinary learning processes, CDE together with competent partners can contribute a great deal to such targeted research.

Research–policy partnerships in Southeast Asia

Michael Epprecht

For the past 25 years, CDE has been actively engaged in research and development cooperation in Southeast Asia. The emphasis in this region is on supporting government institutions across different sectors in evidence-informed planning and decision-making. To this end, CDE has continuously spearheaded work on fostering information sharing among institutions and enhancing cross-sectoral integration of data and information. CDE was always committed to engaging in long-term partnerships with key government institutions in the region, and now has a well-established presence. CDE runs two permanent offices in Laos and Myanmar with a total of over ten international and national researchers who work with numerous members of our broad, trust-based network of government and academic partners.

Pioneering socio-economic atlases in Vietnam and Laos

The groundwork for the current collaboration with Laos was laid with the publication of a pioneering product in neighbouring Vietnam in 2004. The comprehensive “Socio-economic Atlas of Vietnam”, unique at the time, was the most detailed geographic analysis of the country’s very rich national data sets. It was the result of CDE’s close collaboration with the Vietnamese General Statistics Office (GSO) and a network of other government institutions, using the nearly eighty million data records of the 1999 national population census. The atlas, along with the newly developed detailed poverty maps, was widely used and valued for supporting evidence-informed planning and decision-making processes across government institutions and international agencies alike.

In Laos, access to existing national data sets had long been difficult for both government and international development partners. Seeing the attractive and highly useful national atlas for Vietnam, far-sighted leaders at the Ministry of Planning and Investment were keen to develop a similar product for Laos. In a collaborative effort, CDE engaged with the Ministry’s Lao Statistics Bureau (LSB) to develop the most detailed statistics on poverty and human well-being in Laos to date, and translated the wealth of statistical data of the national population census into a knowledge-laden comprehensive publication, the “Socio-economic Atlas of the Lao PDR”, published in 2008.

In a next bold step, the Government of Laos agreed to make the highly detailed statistical and geographic data publicly available on the internet. With CDE’s technical support, the national spatial data portal, www.decide.la, was created. While releasing such valuable data to other government institutions and even to the wider public was globally unique at that time, the success and overwhelmingly positive feedback from diverse users prompted other government institutions to seek assistance from CDE in joining the initiative. This ripple effect within the Government of Laos is continuing, as more and more institutions with which CDE has worked over the years are keen on integrating and sharing their sector-specific information on that national information and knowledge platform of Laos.



Production of rice in the valley bottom and maize on the footslopes in Xayaboury Province, Laos. Photo: Puwadej Meknapapong



The team in Laos: Rasso Bernhard, Inthaneth Norasing, Vincent Roth, Cornelia Hett, Vong Nanhthavong, Patrizia Vollmar, Stéphanie Jaquet, Manila Vorasarn, Anne-Kathrin Weber, Michael Epprecht, Supaphone Phathitmyxay.

Fostering data exchange and analytical capacities

Most Southeast Asian nations have featured state-run economies since at least the mid-1970s. Data sharing within and beyond government institutions was not part of the administrative process, and analytical use of information to support evidence-informed decision-making has rarely been part of development planning.

While the available information in the region is astonishingly rich, there is a widespread lack of capacity and knowledge for making the best use of it. CDE found that the readiness to share such data was largely hampered by inadequate analysis capacities resulting in limited knowledge about the information content of one's own data sets. Thus, the aim of this cooperation continues to be to develop capacity in information analysis, and also to translate the newly gained knowledge in attractive formats for policy engagement. In addition, CDE has supported numerous master's and PhD students from Laos, Vietnam, and Thailand, as well as from the University of Bern, in conducting and completing their research in the region.

Knowledge-driven policy advice

Drawing on its rich and diverse partner network, CDE has been instrumental in initiating and organizing high-level dialogue platforms in Laos, enabling researchers and policymakers to discuss burning development issues. With the strong support and ownership of one of CDE's strategic partners, the National University of Laos (NUOL), this important dialogue has now been formally established as a major annual forum involving several hundred national and sub-national representatives from science and policy to discuss and seek solutions for knowledge gaps in development planning.

With a substantial research output in the region, CDE has become a trusted source of knowledge for government partners on key topics such as foreign direct investments in land, national land policies and land use planning, and socio-economic disparities. This knowledge has significantly guided new national programmes and policies in the respective fields.

This remarkable success of CDE's work in Vietnam and Laos with a wide range of partners has already spilled over into East Africa, where similar work has been initiated in Kenya. Most recently, it has reached Myanmar, where CDE has been mandated to lead the development of a national information platform on land-related issues, involving a wide range of partners from the public and private sectors.



Farmer at a market on Inle Lake, Myanmar. Photo: Christoph Oberlack, CDE

Peer-reviewed articles in journals

- Alaoui A. 2015. Modelling susceptibility of grassland soil to macropore flow. *Journal of Hydrology* 25:536–546.
- Alder S, Prasuhn V, Liniger H, Herweg K, Hurni H, Candinas A, Gujer HU. 2015. A high-resolution map of direct and indirect connectivity of erosion risk areas to surface waters in Switzerland: A risk assessment tool for planning and policy-making. *Land Use Policy* 48:236–249.
- Amin A, Zaehrer J, Schwilch G, Koné I. 2015. People, protected areas and ecosystem services: A qualitative and quantitative analysis of local people's perception and preferences in Côte d'Ivoire. *Natural Resources Forum* 39:97–109.
- Bader C, Bieri S, Wiesmann U, Heinemann A. 2015. A different perspective on poverty in Lao PDR: Multidimensional poverty in Lao PDR for the years 2002/2003 and 2007/2008. *Social Indicators Research*. Online first.
- Battiatto A, Alaoui A, Diserens E. 2015. Impact of normal and shear stresses due to wheel slip on hydrological properties of an agricultural clay loam: Experimental and new computerized approach. *Journal of Agricultural Science* 47(4):1–19.
- Boillat S, Dao H, Bottazzi P, Sandoval Y, Luna A, Thongmanivong S, Lerch L, Bastide J, Heinemann A, Giraut F. 2015. Integrating forest cover change with census data: Drivers and contexts from Bolivia and the Lao PDR. *Land* 4:45–82.
- Boillat S, Stich C, Bastide J, Epprecht M, Thongmanivong S, Heinemann A. 2015. Do relocated villages experience more forest cover change? Resettlements, shifting cultivation and forests in the Lao PDR. *Environments* 2:250–279.
- Bürgi Bonanomi E. 2015. Sustainable investment in land in the Global South: What would it require from a coherence perspective? The case of Sierra Leone. *Questions of International Law* 21:17–37.
- Eckert S, Hüsler F, Liniger H, Hodel E. 2015. Trend analysis of MODIS NDVI time series for detecting land degradation and regeneration in Mongolia. *Journal of Arid Environments* 113:16–28.
- Ehrensperger A, Randriamalala JR, Raoliarivelo LIB, Husi JM. 2015. *Jatropha mahafalensis* for rural energy supply in south-western Madagascar? *Energy for Sustainable Development* 28:60–67.
- Eisenack K, Moser SC, Hoffmann E, Klein RJT, Oberlack C, Pechan A, Rotter M, Termmer CJAM. 2015. Reply to 'Opening up the black box of adaptation decision-making'. *Nature Climate Change* 5:494–495.
- Fessehaye M, Abdul-Wahab S, Savage M, Kohler T, Tesfay M. 2015. The potential for scaling up a fog collection system on the eastern escarpment of Eritrea. *Mountain Research and Development* 35(4):365–373.
- Giger M, Liniger H, Sauter C, Schwilch G. 2015. Economic benefits and costs of sustainable land management technologies: An analysis of WOCAT's global data. *Land Degradation & Development*. Online first.
- Haller T, Acciaioli G, Rist S. 2015. Constitutionality: Conditions for crafting local ownership of institution-building processes. *Society & Natural Resources* 29:68–87.
- Hering JG, Sedlak DL, Tortajada C, Biswas AK, Niwagaba C, Breu T. 2015. Local perspectives on water. *Science* 349(6247):479–480.
- Hurni H, Giger M, Liniger H, Mekdaschi Studer R, Messerli P, Portner B, Schwilch G, Wolfgramm B, Breu T. 2015. Soils, agriculture and food security: The interplay between ecosystem functioning and human well-being. *Current Opinion in Environmental Sustainability* 15:25–34.
- Jacobi J, Schneider M, Pillco Mariscal M, Huber S, Weidmann S, Bottazzi P, Rist S. 2015. Farm resilience in organic and nonorganic cocoa farming systems in Alto Beni, Bolivia. *Agroecology and Sustainable Food Systems* 39(7):798–823.
- Jaquet S, Schwilch G, Hartung-Hofmann F, Adhikari A, Sudmeier-Rieux K, Shrestha G, Liniger H, Kohler T. 2015. Does outmigration lead to land degradation? Labour shortage and land management in a western Nepal watershed. *Applied Geography* 62:157–170.
- Jean-Richard V, Crump L, Abicho AA, Abakar AA, Mahamat A, Bechir M, Eckert S, Engesser M, Schelling E, Zinsstag J. 2015. Estimating population and livestock density of mobile pastoralists and sedentary settlements in the southeastern Lake Chad area. *Geospatial Health* 10(307):6–12.
- Jendoubi D, Gara A, Schwilch G, Liniger H, Hurni H, Ouassar M, Moussa M, Hamrouni H. 2015. Decision-support tools for assessing land degradation and realising sustainable land management, Study case of El Mkhachbiya catchment, Northwest of Tunisia. *Journal of Mediterranean Ecology* 13:47–56.
- Kläy A, Schneider F. 2015. Zwischen Wettbewerbsfähigkeit und nachhaltiger Entwicklung: Forschungsförderung braucht Politikkohärenz. Reaktion auf vier Beiträge zu transformativer Wissenschaft in GAIA (2015): A. Grunwald, U. Schneidewind, C. von Wissel, W. Rohe. *GAIA* 24(4):224–227.
- Kläy A, Zimmermann A, Schneider F. 2015. Rethinking science for sustainable development: Reflexive interaction for a paradigm transformation. *Futures* 65:72–85.

- Lauper E, Moser S, Fischer M, Matthies E. 2015. Explaining car drivers' intention to prevent road-traffic noise: An application of the Norm Activation Model. *Environment and Behavior*. Online first.
- Lauper E, Moser S, Fischer M, Matthies E, Kaufmann-Hayoz R. 2015. Psychological predictors of eco-driving: A longitudinal study. *Transportation Research Part F: Traffic Psychology and Behaviour* 33:27–37.
- Mekuriaw A, Hurni H. 2015. Analysing factors determining the adoption of environmental management measures on the highlands of Ethiopia. *Civil and Environmental Research* 7(12):61–72.
- Messerli P, Bader C, Hett C, Epprecht M, Heinemann A. 2015. Towards a spatial understanding of trade-offs in sustainable development: A meso-scale analysis of the nexus between land use, poverty, and environment in the Lao PDR. *PLOS ONE* 10(7):e0133418.
- Messerli P, Peeters A, Schönweger O, Nanhthavong V, Heinemann A. 2015. Marginal lands or marginal people? Analysing key processes determining the outcomes of large-scale land acquisitions in Lao PDR and Cambodia. *International Development Policy* 6(1).
- Oberlack C, LaHaela WP, Schmerbeck J, Tiwari B. 2015. Institutions for sustainable governance of forests: Equity, robustness and cross-level interactions in Mawlyngbna, Meghalaya, India. *International Journal of the Commons* 9(2):670–697.
- Satdichanh M, Millet J, Heinemann A, Nanthavong K, Harrison RD. 2015. Using plant functional traits and phylogenies to understand patterns of plant community assembly in a seasonal tropical forest in Lao PDR. *PLOS ONE* 10(6):e0130151.
- Schneider F. 2015. Exploring sustainability through stakeholders' perspectives and hybrid water in the Swiss Alps. *Water Alternatives* 8(2):280–296.
- Schönweger O, Messerli P. 2015. Land acquisition, investment, and development in the Lao coffee sector: Successes and failures. *Critical Asian Studies*. Online first.
- Urech ZL, Zaehring J, Rickenbach O, Sorg J-P, Felber HR. 2005. Understanding deforestation and forest fragmentation from a livelihood perspective. *Madagascar Conservation & Development* 10(2):67–76.
- Valente S, Coelho C, Ribeiro C, Liniger H, Schwilch G, Figueiredo E, Bachmann F. 2015. How much management is enough? Stakeholder views on forest management in fire-prone areas in central Portugal. *Forest Policy and Economics* 53:1–11.
- Van Vliet J, Magliocca NR, Büchner B, Cook E, Rey Benayas JM, Ellis EC, Heinemann A, Keys E, Lee TM, Liu J, Mertz O, Meyfroidt P, Moritz M, Poelau C, Robinson BE, Seppelt R, Seto KC, Verburg PH. 2015. Meta-studies in land use science: Current coverage and prospects. *Ambio*. Online first.
- Verburg PH, Crossman N, Ellis EC, Heinemann A, Hostert P, Mertz O, Nagendra H, Sikor T, Erb K-H, Golubiewski N, Grau R, Grove M, Konaté S, Meyfroidt P, Parker DC, Chowdhury RR, Shibata H, Thomson A, Zhen L. 2015. Land system science and sustainable development of the earth system: A global land project perspective. *Anthropocene*. Online first.
- Wolfgramm B, Shigaeva J, Dear C. 2015. The research–action interface in sustainable land management in Kyrgyzstan and Tajikistan: Challenges and recommendations. *Land Degradation & Development* 26(5):480–490.
- Zaehring J, Eckert S, Messerli P. 2015. Revealing regional deforestation dynamics in north-eastern Madagascar: Insights from multi-temporal land cover change analysis. *Land* 4(2):454–474.
- Zanella MA, Rahmanian M, Perch LN, Callenius C, Rubio JL, Vuningoma F, Rist S, Mapfumo P. 2015. Discussion – Food security and sustainable food systems: The role of soil. *International Soil and Water Conservation Research*. Online first.

Books

- Bürgi Bonanomi E. 2015. *Sustainable Development in International Law Making and Trade: International Food Governance and Trade in Agriculture*. Cheltenham, UK: Edward Elgar. 464 pp. ISBN 978-1-78471-726-1.
- Ehrensperger A, Ott C, Wiesmann U, editors. 2015. *Eastern and Southern Africa Partnership Programme: Highlights from 15 Years of Joint Action for Sustainable Development*. Bern, Switzerland: Centre for Development and Environment (CDE) and Bern Open Publishing (BOP). 134 pp. ISBN 978-3-906813-04-2.
- Gironde C, Golay C, Messerli P, editors. 2015. *Large-Scale Land Acquisitions: Focus on South-East Asia*. International Development Policy Series 6. Leiden, The Netherlands: Brill Nijhoff. xx + 300 pp. ISBN 978-90-04-30474-1.
- Hurni K, Zeleke G, Kassie M, Tegegne B, Kassawmar T, Teferi E, Moges A, Tadesse D, Ahmed M, Degu Y, Kebebew Z, Hodel E, Amdihun A, Mekuriaw A, Debele B, Deichert G, Hurni H. 2015. *Soil Degradation and Sustainable Land Management in the Rainfed Agricultural Areas of Ethiopia: An Assessment of the Economic Implications*. *Economics of Land Degradation (ELD) Ethiopia Case Study*. Bonn, Germany: Water and Land Resource Centre (WLRC), Centre for Development and Environment (CDE), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). 94 pp. ISBN 978-92-808-6056-6.

Kohler T, Balsiger J, Rudaz G, Debarbieux B, Pratt DJ, Maselli D. 2015. *Green Economy and Institutions for Sustainable Mountain Development: From Rio 1992 to Rio 2012 and Beyond*. Bern, Switzerland: Geographica Bernensia. 144 pp. ISBN 978-3-905835-40-3.

Edited journal

Hurni H, Molden D, Zimmermann A, Wymann von Dach S, Kohler T, Price M, Thibault M, Mosher D, editors. 2015. *Mountain Research and Development*. Vol. 35, Nos. 1–4. Bern, Switzerland: International Mountain Society (IMS). 430 pp. ISSN 1994-7151.

Chapters in books

Bürgi Bonanomi E. 2015. Eckpfeiler eines nachhaltigen Agrarhandelssystems. In: Borsani F, Gröbly T, editors. *Zwischen Fairtrade und Profit*. Bern, Switzerland: Stämpfli, pp. 125–141.

Bürgi Bonanomi E. 2015. Trade and sustainable development: The role of impact assessments. In: De Schutter O, editor. *Trade in the Service of Sustainable Development*. Oxford, UK: Hart Publishing, pp. 41–44.

Ehrensperger A, Wymann von Dach S. 2015. Scaling-up sustainable pro-poor energy. In: Hostettler S, Gadgil A, Hazboun E, editors. *Sustainable Access to Energy in the Global South*. Cham, Switzerland: Springer, pp. 81–86.

Hammer T, Leng M. 2015. Linking landscape protection and nature conservation: Switzerland's experience with protected mire landscapes. In: Gambino R, Peano A, editors. *Nature Policies and Landscape Policies: Towards an Alliance*. Cham, Switzerland: Springer, pp. 173–179.

Hammer T, Leng M. 2015. Natur erhalten durch Gestalten – Institutionelle Entwicklungen, Herausforderungen und Lösungsansätze im Natur- und Landschaftsschutz in der Schweiz. In: Erdmann K-H, Bork H-R, Job H, editors. *Naturschutz in geographischer Perspektive*. Bonn, Germany: Bundesamt für Naturschutz, pp. 67–80.

Hurni H. 2015. Paleoglaciated landscapes in Simen and other high-mountain areas of Ethiopia. In: Billi P, editor. *Landscapes and Landforms of Ethiopia*. Dordrecht, The Netherlands: Springer, pp. 139–146.

Jacobi J, Zanella MA, Pillco Mariscal MI, Lucana AC, Rist S. 2015. Alternatives for the sustainable development of Alto Beni, Bolivia. In: Zanella MA, Rosendahl J, Weigelt J, editors. *Pro-Poor Resource Governance Under Changing Climates*. Potsdam, Germany: Institute for Advanced Sustainability Studies (IASS), pp. 71–85.

Kläy A, Ott C. 2015. Erkenntnissysteme, Humanökologie und Ethik: C. West Churchmans Impuls zu Nachhaltiger Entwicklung am Beispiel der Klimaverhandlungen. In: Simon K-H, Tretter F, editors. *Systemtheorien und Humanökologie*. Munich, Germany: oekom, pp. 181–214.

Liechti K. 2015. Gebietsmonitoring – von der Systemebene zur Wertediskussion. In: Backhaus N, Cherix D, Scheurer T, Wallner A, editors. *Jusqu'où doit-on protéger la nature? / Wie viel Schutz(gebiete) braucht die Natur?* Bern, Switzerland: Haupt, pp. 99–102.

Nazarmavloev F, Nekushoeva G, Sosin PM, Wolfgramm B. 2015. Alpine soils and forests: Securing ecosystem services in the mountains of Tajikistan. In: Food and Agriculture Organization of the United Nations, editor. *Understanding Mountain Soils*. Rome, Italy: Food and Agriculture Organization of the United Nations (FAO), pp. 16–18.

Rist S. 2015. Klar, ohne Befreiung geht das nicht – Gedanken zur „grossen Transformation“ in der Nachhaltigkeitsdebatte. In: Stöckli B, editor. *Questioning Development*. Bern, Switzerland: dialogue4change, pp. 100–119.

Weixlbaumer N, Siegrist D, Mose I, Hammer T. 2015. Grossschutzgebiete als Instrumente für zukunftsorientierte Regionalentwicklung in Europa – die Sicht der Schutzgebietsverantwortlichen und Forscher am Beispiel von Partizipation und Regional Governance. In: Erdmann K-H, Bork H-R, Job H, editors. *Naturschutz in geographischer Perspektive*. Bonn, Germany: Bundesamt für Naturschutz, pp. 81–88.

Weixlbaumer N, Siegrist D, Mose I, Hammer T. 2015. Participation and Regional Governance: A Crucial Research Perspective on Protected Areas Policies in Austria and Switzerland. In: Gambino R, Peano A, editors. *Nature Policies and Landscape Policies: Towards an Alliance*. Cham, Switzerland: Springer, pp. 207–215.

CDE Series

Centre for Development and Environment. 2015. *Spotlight on the Role of Soils in Sustainable Development: Annual Report 2014*. Bern, Switzerland: Centre for Development and Environment (CDE). 56 pp.

Breu T, Höggel F, Rueff H. 2015. *Sustainable Livestock Production? Industrial Agriculture Versus Pastoralism*. CDE Policy Brief No. 7. Bern, Switzerland: Centre for Development and Environment (CDE). 6 pp.

- Bürgi Bonanomi E, Lannen A. 2015. *Shaping EU Trade Agreements to Support Human Rights*. CDE Policy Brief No. 6. Bern, Switzerland: Centre for Development and Environment (CDE). 5 pp.
- Bürgi Bonanomi E, Wehrli J, Bucher D, Rist S, Giger M, Espa I, Franzi S, Elsig M, Gelb SR, Holzgang M, Dey P, Wettstein F. 2015. *The Commodity Sector and Related Governance Challenges From a Sustainable Development Perspective: The Example of Switzerland. Current Research Gaps*. CDE WTI IWE Joint Working Paper No. 1. Bern, Switzerland: Centre for Development and Environment (CDE) and World Trade Institute (WTI), University of Bern; Institute for Business Ethics, University of St. Gallen. 92 pp.
- Dwyer MB. 2015. *The Formalization Fix? Land Titling and Land Concessions in Cambodia*. CDE Policy Brief No. 4. Bern, Switzerland: Centre for Development and Environment (CDE). 6 pp.
- Moser S, Fischer M, Lauper E, Hammer T, Kaufmann-Hayoz R. 2015. *Mit Eco-Drive gegen Strassenlärm: Evaluation eines Interventionsprogramms zur Förderung eines leisen Fahrstils*. CDE Working Paper No. 2. Bern, Switzerland: Centre for Development and Environment (CDE). 84 pp.
- Schwilch G, Liniger H. 2015. *Saving Soils at Degradation Frontlines: Sustainable Land Management in Drylands*. CDE Policy Brief No. 5. Bern, Switzerland: Centre for Development and Environment (CDE). 5 pp.

Conference contributions (full papers, abstracts, posters, oral presentations)

- Anarbekov O, Jumaboev K. 2015. Development of irrigation extension for improving water productivity at plot level in the Ferghana Valley. *Academic Workshop for Young Researchers*, Tashkent, Uzbekistan, 20 May 2015.
- Anarbekov O, Mukhamedova N. 2015. Water users' associations in Central Asia: Opportunities and challenges for development. *IAMO Forum Agriculture and Climate Change*, Halle (Saale), Germany, 17–19 June 2015.
- Buser T, Schneider F. 2015. Guiding questions to help design sustainability research projects at the science–policy interface. *International Transdisciplinarity Conference*, Basel, Switzerland, 8–10 September 2015.
- Chabrilat S, Hanegraaf M, Sommer R, van den Bosch R, Montanarella L, van Wesemael B, Schwilch G, Harthoorn J, Skalsky R, Braslow J, Mills J, Verzaandvoort S, Obersteiner M. 2015. Soil and land information: How to support decision-making? *Global Soil Week*, Berlin, Germany, 19–23 April 2015.
- Eckert S, Giger M, Kohler T, Messerli P. 2015. Large-scale land acquisitions in mountain areas: Analysis of Land Matrix data. *Perth III: Mountains of Our Future Earth*, Perth, Scotland, 4–8 October 2015.
- Gambon H. 2015. Fixation or dynamics? Governance of an indigenous territory and biosphere reserve in the Bolivian Amazon. *IASC 2015 Biennial International Conference on Complexity and Change*, Edmonton, Canada, 25–29 May 2015.
- Gara A, Gader K, Jendoubi D, Bouvier C, Bergaoui M, Mahjoub MR. 2015. Comprehension of the hydrological model answer of the Medjerda Basin for the physical spatialized event model MERCEDES: Application in the Raghay catchment. *International Congress on Landscape Ecology*, Antalya, Turkey, 23–25 October 2015.
- Herweg K, Zimmermann A. 2015. Integrative training in inter- and transdisciplinary research settings. *Education for Sustainability in Higher Education: Achievements and Prospects*, Plymouth, UK, 8 January 2015.
- Jaquet S. 2015. Does migration lead to land degradation? How a labour shortage is affecting land management in two selected watersheds in Nepal. *Perth III: Mountains of Our Future Earth*, Perth, Scotland, 4–8 October 2015.
- Jendoubi D, Schwilch G, Liniger H, Hurni H, Ouassar M, Hamrouni H. 2015. Decision-support tools for assessing land degradation and realising sustainable land management in Tunisia. *UNCCD 3rd Scientific Conference*, Cancún, Mexico, 9–12 March 2015.
- Jendoubi D, Schwilch G, Liniger H, Hurni H, Ouassar M, Moussa M, Hamrouni H. 2015. Assessment of land degradation in the Cereal land use and options for sustainable land management: Study case from Northwest Tunisia. *Congress on Landscape Ecology: Understanding Mediterranean Landscapes*, Antalya, Turkey, 23–25 October 2015.
- Jendoubi D, Schwilch G, Liniger H, Hurni H, Ouassar M, Moussa M, Hamrouni H. 2015. WOCAT tools as decision-support tools for assessing land degradation and realising sustainable land management, Study case of El Mkhachbiya catchment, Northwest of Tunisia. *International Conference on Integrated Land and Water Resources Management in the Dry Areas under Climate Change (ILDAC 2015)*, Djerba, Tunisia, 11–14 May 2015.
- Jucker Riva M, Liniger H, Schwilch G. 2015. Analysis of NDVI variance across landscapes and seasons allows assessment of degradation and resilience to shocks in Mediterranean dry ecosystems. *Desert Land Conference*, Ghent, Belgium, 16–17 June 2015.
- Jucker Riva M, Schwilch G, Liniger H. 2015. Challenges in the participatory assessment of sustainable management practices in dryland ecosystems under regime shifts. *EGU General Assembly*, Vienna, Austria, 12–17 April 2015.
- Lauper E, Moser S, Fischer M. 2015. Promoting a low-noise driving style: An eco-driving intervention study. *11th Biennial Conference on Environmental Psychology (BCEP)*, Groningen, The Netherlands, 24–26 August 2015.

- Leimer S, Willmann E, Alaoui A, Trachte K, Wilcke W. 2015. Element export from a small catchment in the tropical montane forest of Ecuador responds to climate change. *EGU General Assembly*, Vienna, Austria, 12–17 April 2015.
- Lemann T, Roth V, Zeleke G. 2015. Assessing the impact of precipitation and temperature on hydrological responses in three small-scale catchments in the Ethiopian Highlands. *International Soil and Water Assessment Tool Conference*, Pula, Sardinia, Italy, 24–26 April 2015.
- Leng M, Hofmann H, Schild K. 2015. Vom Glück des Genug – Visionen einer suffizienten Gesellschaft. *eco.naturkongress 2015*, Basel, Switzerland, 27 March 2015.
- Liniger H, Bunning S, Harari N, Mekdaschi Studer R, Nachtergaele F. 2015. Decision support framework for mainstreaming and scaling-up sustainable land management. *UNCCD 3rd Scientific Conference*, Cancún, Mexico, 9–12 March 2015.
- Liniger H, Harari N. 2015. Innovations in using documented knowledge on SLM best practices for various stakeholders at different levels. *UNCCD 3rd Scientific Conference*, Cancún, Mexico, 9–12 March 2015.
- Liniger H, Mekdaschi Studer R, Providoli I, Gurtner M. 2015. Recent advances in the development and application of tools to share and use local and scientific knowledge related to sustainable land management – the WOCAT network. *UNCCD 3rd Scientific Conference*, Cancún, Mexico, 9–12 March 2015.
- Mathez-Stiefel S-L. 2015. Gendered perceptions and valuation of natural resources in Andean landscapes: A methodological contribution from agroforestry research. *Land System Science in Latin America: Achievements and Perspectives*, São José dos Campos, Brazil, 9–11 November 2015.
- Mathez-Stiefel S-L. 2015. Narratives of change and visions for the future among smallholders in the Peruvian and Bolivian Andes. *Perth III: Mountains of Our Future Earth*, Perth, Scotland, 4–8 October 2015.
- Mathez-Stiefel S-L. 2015. Tapping into local knowledge for climate change adaptation: A methodological contribution from agroforestry research in the Peruvian Andes. *Perth III: Mountains of Our Future Earth*, Perth, Scotland, 4–8 October 2015.
- Mathez-Stiefel S-L, Rist S. 2015. Ciencias de la sostenibilidad y sistemas socio-ecológicos: Un marco conceptual para la investigación sobre bosques andinos. *Retos de Investigación para la Conservación y Manejo Sostenible de los Bosques Andinos*, Lima, Peru, 14 October 2015.
- Moser S, Kleinhüchelkotten S, Neitzke HP. 2015. Good intents but low impacts: Various determinants for different indicators of overall energy use. *11th Biennial Conference on Environmental Psychology (BCEP)*, Groningen, The Netherlands, 24–26 August 2015.
- Ochoa-García H, Rist S. 2015. Hydraulic projects, State and Society: Water conflicts and sustainable governance in Western Mexico. *Floods, State, Dams and Dykes in Modern Times: Ecological and Socio-Economic Transformations of the Rural World*, Bucharest, Romania, 18–20 June 2015.
- Ochoa-García H, Rist S. 2015. La emancipación como posibilidad para transitar hacia una gobernanza sustentable del agua: El caso del proyecto El Zapotillo, México. *WATERLAT-GOBACIT VII International Meeting*, Guadalajara, Mexico, 18–23 October 2015.
- Ott C. 2015. Reflections on the democratization of knowledge generation in research partnerships for sustainable development. *Annual Conference of the Eu-SPRI Forum: Innovation Policies for Economic and Social Transitions – Developing Strategies for Knowledge, Practices and Organizations*, Espoo, Finland, 10–12 June 2015.
- Panagea I, Daliakopoulos I, Tsanis I, Schwilch G. 2015. Evaluation of soil salinity amelioration technologies in Timpaki, Crete. *EGU General Assembly*, Vienna, Austria, 12–17 April 2015.
- Prasuhn V, Alder S, Liniger H, Herweg K. 2015. Gewässeranschluss erosionsgefährdeter Flächen. *Jahrestagung der DBG, Kommission VI: Unsere Böden – Unser Leben*, Munich, Germany, 5–10 September 2015.
- Roth V, Lemann T. 2015. Assessment of uncertainty in SWAT using variable spatial data resolution and sensitivity calibration in a meso-scale watershed in the Blue Nile Basin, Ethiopia. *International Soil and Water Assessment Tool Conference*, Pula, Sardinia, Italy, 24–26 June 2015.
- Schneider F. 2015. Justice, scale frames, and the water–energy nexus in the American Southwest. *XXVI ESRS Congress*, Aberdeen, UK, 18–21 August 2015.
- Schneider F. 2015. Nachhaltige Ressourcennutzung – von der Evidenz zur Intervention. *SAGW Tagung*, Basel, Switzerland, 29 January 2015.
- Schneider F. 2015. Sustainability wheel: Tool for facilitating transdisciplinary sustainability assessments. *International Transdisciplinarity Conference*, Basel, Switzerland, 8–10 September 2015.
- Schneider F, Buser T. 2015. Begleitforschungsprojekt I: Integration der Praxis in die 16 Forschungsprojekte des NFP 61: Potenzial und Limitation. *Workshop zur Begleitforschung des NFP 61*, Bern, Switzerland, 2 February 2015.
- Schneider F, Krysiak F, Stephan G, Graefe O, Bichsel C. 2015. Suffizienz in der Schweiz – Impulse durch Sozial- und Geisteswissenschaften. *eco.naturkongress 2015*, Basel, Switzerland, 27 March 2015.

Schwilch G. 2015. Sustainable land management in the drylands of the Mediterranean. *Flavours From Our Soils*, Bern, Switzerland, 17 June 2015.

Schwilch G, Bernet L, Fleskens L, Mills J, Stolte J, van Delden H, Verzandvoort S. 2015. A proposed framework to operationalize ESS for the mitigation of soil threats. *EGU General Assembly*, Vienna, Austria, 12–17 April 2015.

Schwilch G, Mekdaschi Studer R, Providoli I, Liniger H. 2015. Sharing evidence of sustainable land management impacts. *EGU General Assembly*, Vienna, Austria, 12–17 April 2015.

Tejada L. 2015. Large-scale land acquisitions in Peru: Land (re)-concentration, agrarian change and reactions from rural communities. *Congreso Internacional de Americanistas 'Conflicto, paz y construcción de identidades en las Américas'*, San Salvador, El Salvador, 12–17 July 2015.

Tschopp M, Romero Romay D, Zamora E, Bieri S. 2015. Quinoa production in the Nor Lipez province (Bolivia): Gender roles in export-led agriculture and challenges for research on rural employment. *Fourth Global Conference on Economic Geography*, Oxford, UK, 19–23 August 2015.

Wolfgramm B, Shigaeva J, Dear C. 2015. The research–action interface in sustainable land management in Kyrgyzstan and Tajikistan: Challenges and recommendations. *International Geographical Union Regional Conference*, Moscow, Russia, 17–21 August 2015.

Wymann von Dach S. 2015. Linking TIS analysis with adoption and social practice research to address challenges of “Sustainable Energy for All” in East Africa. *The International Sustainability Transitions Conference (IST 2015)*, Brighton, UK, 24–28 August 2015.

Wymann von Dach S, Zimmermann A, Hurni H, Molden D. 2015. MRD's approach: Ideally suited to support Future Earth research agenda in mountains. *Perth III: Mountains of Our Future Earth*, Perth, Scotland, 4–8 October 2015.

Zaehring JG, Eckert S, Hett C, Ramamonjisoa B, Messerli P. 2015. A novel approach for assessing shifting cultivation dynamics in a regional conservation hotspot – insights from north-eastern Madagascar. *27th International Congress for Conservation Biology*, Montpellier, France, 2–6 August 2015.

Zaehring JG, Hett C, Messerli P. 2015. Landscape mosaics to map shifting cultivation dynamics in a global biodiversity hotspot – insights from north-eastern Madagascar. *Annual Conference of the Society for Tropical Ecology*, Zurich, Switzerland, 7–10 April 2015.

Zaehring JG, Ramamonjisoa B, Messerli P. 2015. Linking livelihood strategies with a regional level landscape mosaic to explore trade-offs between forest conservation and human wellbeing in a Madagascar biodiversity hotspot. *First Annual FLARE Network Conference*, Paris, France, 27–30 November 2015.

Non-peer-reviewed articles in journals

Jumaboev K, Anarbekov O, Mohan Reddy J, Mukhammedjanov S, Eshmuratov D. 2015. Irrigation extension development for improving water productivity in Fergana Valley of Central Asia. *InDeCA Paper Series* 6:9–14.

Kohler T, Wymann von Dach S. 2015. CDE links regional research and global efforts for sustainable mountain development. *Mountain Research and Development* 35(2):203–207.

Kruse S, Förster R, Fry P, Kläy A, Kueffer C, Moschitz H, Wolf P, Zingerli C. 2015. Prinzipien, Kompetenzen und Rahmenbedingungen für einen erfolgreichen Wissensaustausch zwischen Forschung und Praxis. *GAIA*. Online first.

Ochoa-García H, Rist S. 2015. La emancipación como posibilidad para transitar hacia una gobernanza sostenible del agua. *WATERLAT-GOBACIT Network Working Papers* 2(1):12–45.

Rist S. 2015. Ist genug für alle da? *Doppelunkt* 34:24–26.

Schneider F. 2015. Nachhaltige Nutzung natürlicher Ressourcen: Der Beitrag der Sozial- und Geisteswissenschaften. *GAIA* 24(3):214–216.

Audiovisual material

.....
Krauer J, Gaemperli U, Hodel E, Curtis I. 2015. *River Basins of Northern Bahr El Ghazal State, South Sudan*. Map. Bern, Switzerland: Geographica Bernensia. ISBN 978-3-905835-41-0.

Krauer J, Singo P, Tudev E, Hodel E, Fries M, Gaemperli U. 2015. *Artisanal and Small Scale Mining in Mongolia: Statistical Overview Based on Survey Data by SUOM 2012*. Map. Scale: 1:1,500,000. Ulaanbaatar, Mongolia: Centre for Development and Environment (CDE), Bern Open Publishing (BOP) and Swiss Agency for Development and Cooperation (SDC). ISBN 978-3-906813-07-3.

Reports, discussion papers, background papers, other grey literature

.....
Ehrensperger A, Bär R. 2015. *Report II: Sustainable Biomass Supply: Tanzania: Coordinated Advocacy for Biomass Friendly Governance of the Energy Sector in Tanzania: Mandate 1: Potentials, Limitations & Impacts of Biomass Energy in Tanzania*. Bern, Switzerland: Centre for Development and Environment (CDE). 38 pp.

Gattlen N, Moser S, Fischer M, Lauper E, Hammer T, Kaufmann-Hayoz R. 2015. *Lärmarmes Verhalten fördern: Empfehlungen der Forschungsprojekte „Bewusstsein und Handeln in der Lärmbekämpfung“ und „Interventionsgestaltung zur Verminderung von Geräte- und Maschinenlärm“*. Bern, Switzerland: Bundesamt für Umwelt (BAFU). 18 pp.

Guinand Y, Demenge J, Giger M, Gämperli U, Mekdaschi R. 2015. *Fighting Desertification, Supporting Healthy and Productive Land: Opportunities for Greener Land – Time to Act*. Flyer. Bern, Switzerland: Swiss Agency for Development and Cooperation (SDC). 6 pp.

Höggel U, Leonhard C, Emil E. 2015. *Social and Environmental Impact Assessment: Transforming Tanzania's Charcoal Sector: A Project of the Swiss Agency for Development and Cooperation*. Bern, Switzerland: Centre for Development and Environment (CDE). 36 pp.

Kindler L, Liechti K. 2015. *Wirtschaft und Gesellschaft – die Welterbe-Region im Wandel*. Naters, Switzerland: UNESCO-Welterbe Schweizer Alpen Jungfrau-Aletsch. 4 pp.

Krauer J, Engesser M. 2015. *ASM Formalisation Atlas and Map Mongolia: Final Project Report*. Bern, Switzerland: Centre for Development and Environment (CDE). 24 pp.

Ochoa-García H, editor. 2015. *Imposition, Resistance, and Alternatives in the Face of an Inter-Regional Water Crisis in Mexico: El Zapotillo Project* (in Spanish). Newcastle upon Tyne, UK: WATERLAT-GOBACIT Research Network. 278 pp.

Paulsson M, Liechti K. 2015. *Wald im Welterbe – Vielfältig, dynamisch und sehr wertvoll*. Naters, Switzerland: UNESCO-Welterbe Schweizer Alpen Jungfrau-Aletsch. 4 pp.

Wolfgramm B. 2015. *Pathways to Effective Integrated Watershed Management*. IWSM Policy Brief No. 2. Bern, Switzerland: Centre for Development and Environment (CDE). 4 pp.

Zah R, Ehrensperger A. 2015. *Report V: Synthesis: Tanzania: Coordinated Advocacy for Biomass Friendly Governance of the Energy Sector in Tanzania: Mandate 1: Potentials, Limitations & Impacts of Biomass Energy in Tanzania*. Bern, Switzerland: Centre for Development and Environment (CDE). 19 pp.

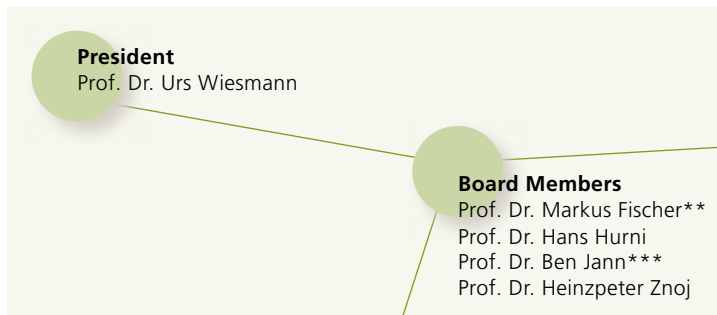
Zanella MA. 2015. *Pro-Poor Resource Governance under Changing Climates: Addressing Vulnerabilities in Rural Bangladesh, Bolivia, Brazil, Burkina Faso, Ecuador and India*. Potsdam, Germany: Institute for Advanced Sustainability Studies (IASS). 194 pp.



Fisherman on Inle Lake, Myanmar. Photo: Christoph Oberlack, CDE

Organization chart*

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- Biodiversity and Ecosystem Services, Institute of Plant Sciences, Prof. Dr. Eric Allen (affiliated professorship)
- Contemporary History, Institute of History, Prof. Dr. Christian Gerlach
- Institute of European and International Economic Law (IEW), Prof. Dr. Thomas Cottier*****

CDE Management



*As at 31 December 2015; **Institute of Plant Sciences; ***Institute of Sociology; ****officially retired on 31 October 2015; *****officially retired on 31 July 2015



Rice paddies at the foot of Mount Kenya. Photo: Christoon Oberlack, CDE

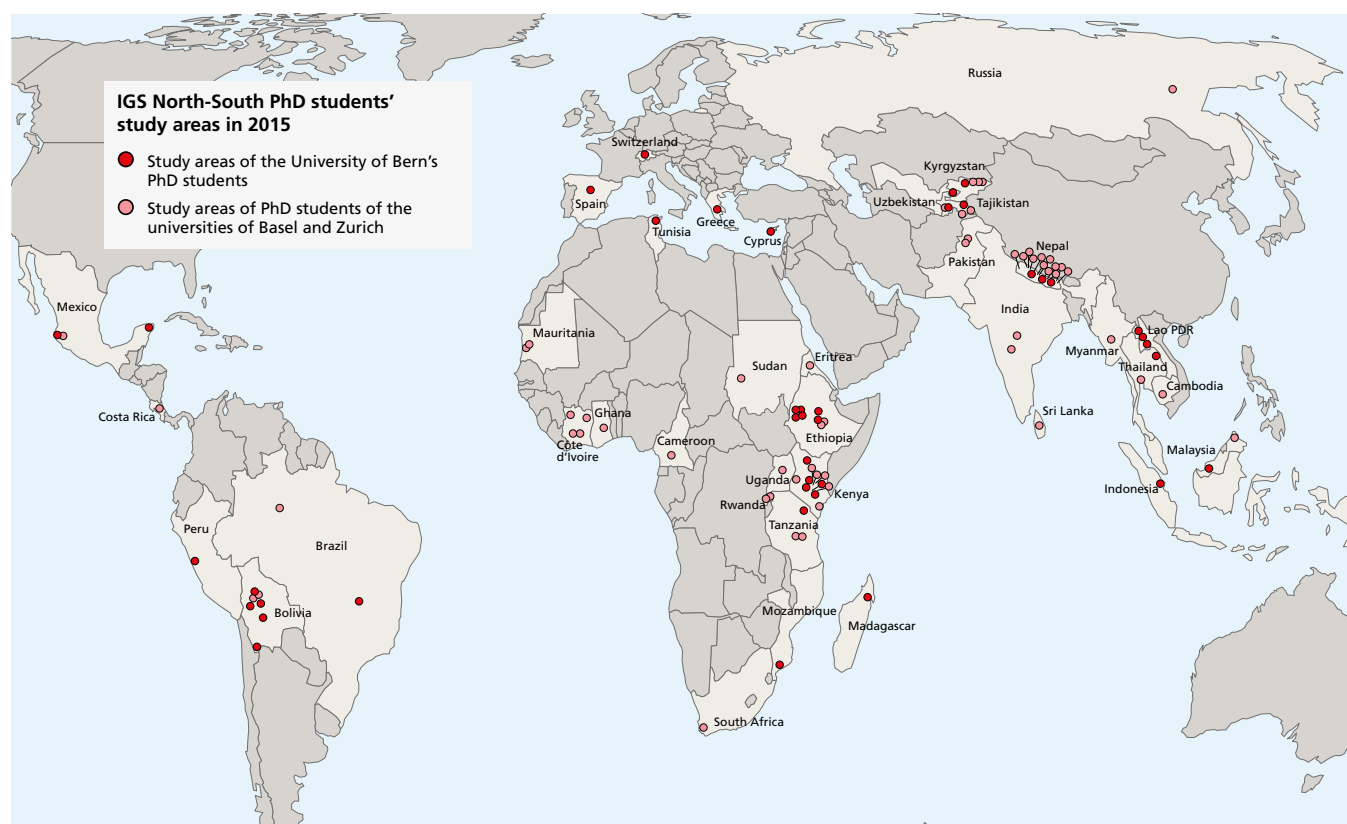
| Directors, CDE | |
|--------------------------------|--|
| Name | Professional background |
| Messerli, Peter | PhD, geography (100%) |
| Breu, Thomas | PhD, geography (100%) |
| Executive Committee | |
| Name | Professional background |
| Balsiger, Urs | MBA, economics (90%) |
| Kohler, Thomas | PhD, geography (80%; officially retired on 31 October 2015) |
| plus CDE Directors (see above) | |
| Heads of Cluster | |
| Name | Professional background |
| Bieri, Sabin | PhD, geography (80%) |
| Ehrensperger, Albrecht | PhD, geography (90%) |
| Giger, Markus | MSc, agricultural economics (100%) |
| Herweg, Karl | PhD, geography (100%) |
| Rist, Stephan | Prof., agronomy (100%) |
| Schwilch, Gudrun | PhD, geography (80%) |
| Programme Staff | |
| Name | Professional background |
| Abebe, Manuel | BSc student, geography (25%) |
| Alaoui, Abdallah | PD, geology (30%) |
| Augstburger, Horacio | MSc, environmental sciences (50%) |
| Bachmann, Felicitas | MA, social anthropology (40%) |
| Bader, Christoph | MSc, economics (75%) |
| Bär, Roger | MSc, environmental sciences (75%) |
| Bastide, Joan | MSc, geography and environment; MSc, Asian studies (100%) |
| Bircher, Pascal | MSc, geosciences (50%) |
| Bürgi Bonanomi, Elisabeth | PhD, law; Attorney at Law (70%) |
| Ebneter, Laura | BSc, geography (25%) |
| Eckert, Sandra | PhD, geography (80%) |
| Epprecht, Michael | PhD, geography (100%) |
| Fries, Matthias | MSc, geography (80%) |
| Gambon, Helen | MA, social anthropology (25%) |
| Gämperli Krauer, Ursula | MSc, geography (40%) |
| Gerber, Kurt | MSc, geography (80%) |
| Gurtner, Mats | MSc, geography (20%) |
| Hammer, Thomas | Prof., geography (90%) |
| Harari, Nicole | MSc, geography (80%) |
| Heinimann, Andreas | PhD, environmental sciences (50%) |
| Hergarten, Christian | MSc, geography (20%) |
| Hett, Cornelia | PhD, geography (80%) |
| Hodel, Elias | MSc, geography (80%) |
| Höggel, Udo | MSc, tropical animal production; MSc, environmental economics (100%) |
| Hofmann, Heidi | MA, English literature; MSc, environmental sciences (40%) |
| Hurni, Kaspar | PhD, geography (20%) |
| Ifejika Speranza, Chinwe | Prof., geography (25%) |
| Jacobi, Johanna | PhD, geography (80%) |
| Jaquet, Stéphanie | MSc, environmental sciences (25%) |
| Jucker, Matteo | MSc, environmental sciences (50%) |
| Keller, Rea | BSc student, geography (40%) |

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|---------------------------|---|
| Kläy, Andreas | MSc, forest science (80%) |
| Krauer, Jürg | MSc, geography (100%) |
| Lauterburg, Nina | MSc, geography (80%) |
| Lemann, Tatenda | MSc, geography (75%) |
| Leng, Marion | PhD, forest science (70%) |
| Liechti, Karina | PhD, geography (50%) |
| Liniger, Hanspeter | PhD, geography (100%) |
| Lundsgaard-Hansen, Lara | MSc, geography (70%) |
| Mathez-Stiefel, Sarah-Lan | PhD, ethnobotany (20%) |
| Meessen, Heino | PhD, landscape ecology (80%) |
| Mekdaschi Studer, Rima | PhD, agronomy (50%) |
| Moser, Stephanie | PhD, psychology (50%) |
| Nydegger, Katharina | BSc, geography (25%) |
| Oberlack, Christoph | PhD, economics (100%) |
| Oechslin, Lukas | BA, history (45%) |
| Ott, Cordula | MA, social anthropology (60%) |
| Paulsson, Maria | MSc, geography (20%) |
| Perlik, Manfred | Prof., geography (20%) |
| Providoli, Isabelle | PhD, geography (90%) |
| Reisinger, Tina | BSc student, geography (25%) |
| Roth, Vincent | MSc, geography (75%) |
| Ruppen, Sebastian | MSc, geography (30%) |
| Scharrer, Bettina | MA, history (35%) |
| Schild, Kirstin | MA, philosophy (40%) |
| Schmidt, Stephan | MA, political science (80%) |
| Schneider, Flurina | PhD, geography (80%) |
| Schober, Eva | BSc, geography (25%) |
| Steinböck, Camilla | BSc student, geography (25%) |
| Stöckli, Bernhard | BSc, geography (25%) |
| Tejada, Laura | MSc, geography (50%) |
| Trechsel, Lilian | MSc, geography (80%) |
| Tribaldos, Theresa | PhD, geography (20%) |
| Tschopp, Maurice | MSc, development studies (70%) |
| Vonlanthen, Lukas | MSc, geography (80%) |
| Weber, Adrian | MSc, geography (80%) |
| Weber, Anne-Kathrin | PhD, cartography and geoinformation (60%) |
| Wolfgramm, Bettina | PhD, environmental engineering (100%) |
| Wymann von Dach, Susanne | MSc, geography (60%) |
| Zähringer, Julie | MSc, environmental sciences (75%) |
| Zimmermann, Anne | PhD, English languages and literatures (100%) |

| Services Unit Staff | |
|-----------------------------------|--|
| Name | Fields of activity |
| Balsiger, Nicole | Accounting and financial administration (35%) |
| Da Silva-Trolliet, Tamara Rebecca | Event management and IGS North-South secretariat (60%) |
| Fedail, Ahmed | Web project management (60%) |
| Heierle, Emmanuel | ICT management (80%) |
| Hirschbuehl, Tina | Editing and translation (65%) |
| Hofstetter, Melissa | Publication management (20%) |
| Jöhr, Franziska | Secretariat (80%) |
| Kummer, Simone | Graphic design (70%) |
| Lannen, Anu | Editing and translation (50%) |
| Lardelli, Corina | Communications (80%) |
| Manger, Sebastian | Application development (80%) |
| Nussbaumer, Melchior | Secretariat (50%) |
| Thibault, Marlène | Editing and translation (100%) |
| Tresch, Jeannine | Secretariat and ICT management (60%) |
| Willi, Barbara | Human resources (60%) |

*As at 31 December 2015

The University of Bern's students at the International Graduate School (IGS) North-South in 2015*



| Name | Working title of thesis | Funded by | Start of PhD | End of PhD |
|------------------------------------|--|--|--------------|------------|
| Aeberli, Annina Rahel ¹ | Contesting the dominant understanding of forest in Sarwak, Malaysia | Self-funding; Institute of Social Anthropology, University of Bern | 2015 | 2019 |
| Anarbekov, Oytur ² | Analysing the sustainability of water commons governance through water user associations (WUAs) in semi-arid Ferghana Valley | Swiss Agency for Development and Cooperation; International Water Management Institute; CDE; United Nations Economic Commission for Europe | 2012 | 2016 |
| Augstburger, Horacio ² | Environmental impact assessment and the influence on socioecological resilience of three food systems in Bolivia and Kenya | Swiss National Science Foundation; Swiss Agency for Development and Cooperation | 2013 | 2016 |
| Bader, Christoph ² | Economic growth – increasing disparities? A multidimensional poverty approach for Lao PDR | CDE | 2013 | 2016 |
| Bär, Roger ² | The potential of sustainable biomass cooking fuel for supplying rural to urban areas of East Africa: Case study assessments of Moshi and Kitui | Swiss National Science Foundation; Swiss Agency for Development and Cooperation | 2013 | 2016 |
| Barrueto, Andrea ² | Towards climate-resilient development: The potential of cash crop trees towards sustainable livelihoods, women's empowerment, agricultural resilience, and economic development in Nepal | Helvetas Swiss Intercooperation; CDE | 2014 | 2017 |
| Bigler, Christine ² | Rural employment in export-led agricultural industries and its impacts on asset building and well-being in smallholder households: A comparative gender analysis | Swiss National Science Foundation; Swiss Agency for Development and Cooperation | 2014 | 2017 |
| Bircher, Pascal ² | Upgrading and optimizing the Erosion Risk Map (ERM2) of Switzerland | Swiss Federal Office for Agriculture | 2014 | 2017 |
| Dakka, Abebe ² | Assessing soil-based ecological services and opportunities to sequester soil organic carbon in selected watersheds of Ethiopia | Self-funding; CDE | 2010 | 2015 |

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|--------------------------------------|--|---|------|------|
| Faye, Papa ¹ | Managing the forest by the people: Constitutionality, citizenship, and representation in two decentralization initiatives in Senegal's forestry sector | CDE; Institute of Social Anthropology, University of Bern | 2011 | 2015 |
| Frey, Sara ² | Analysis of negotiation processes around "vivir bien/ buen vivir" linking state-based and grassroots development initiatives | Swiss National Science Foundation; self-funding | 2013 | 2016 |
| Fürst, Christiane ³ | Economic legal regimes from a policy coherence perspective | Swiss National Science Foundation | 2015 | 2017 |
| Gambon, Helen ² | Constitutionality processes and social-ecological outcomes in the Pilon Lajas Indigenous Territory and Biosphere Reserve, Bolivia | Swiss National Science Foundation | 2012 | 2016 |
| Gargule, Andrew Achiba ² | Better marginalized than incorporated: The origins of chronic vulnerabilities and poverty among pastoralist societies in northern Kenya | Swiss Government Excellence Scholarships for Foreign Scholars | 2014 | 2017 |
| Garrard, Rodney ² | Climate change and tourism in mountain protected areas: Impacts and implications in a developing country context (Sagarmatha, Mount Everest National Park, Khumbu, Nepal) | Commission for Research Partnerships with Developing Countries; CDE; European Outdoor Conservation Association; self-funding | 2009 | 2016 |
| Hergarten, Christian ² | Integrated assessment of land use systems' ecosystem services at the regional scale | Swiss National Science Foundation; Swiss Agency for Development and Cooperation; CDE | 2009 | 2016 |
| Jaquet, Stéphanie ² | Impacts of outmigration on land management in the mountain areas of Bolivia and Nepal | Swiss Network for International Studies; CDE | 2012 | 2016 |
| Jendoubi, Donia ² | Decision-support tool for assessing land degradation and realizing sustainable land management in the Watershed of Oued Madjerda, Tunisia | Swiss Government Excellence Scholarships for Foreign Scholars; Islamic Development Bank | 2014 | 2017 |
| Jucker, Matteo ² | The role of land management in preventing catastrophic shifts of dryland ecosystems | European Union Seventh Framework Programme | 2012 | 2016 |
| Käser, Fabian ¹ | Towards food sustainability: Ethnography of a local food system in the Mount Kenya Region, Kenya | Swiss National Science Foundation | 2015 | 2017 |
| Kassawmar, Tibebe ² | Landscape transformation in Ethiopia: Spatio-temporal dynamics and implications for transboundary runoff and sediment yield in the Blue Nile Basin, Ethiopia | Swiss National Science Foundation; Swiss Agency for Development and Cooperation; CDE; self-funding | 2012 | 2016 |
| Kongthong, Orasa ² | Interconnectedness between agrarian transformation and the water–energy–food security nexus in north-eastern Thailand: Case studies in Wieng Kao District, Khon Kaen Province, and Bueng Khong Long area, Bueng Kan Province | Swiss Government Excellence Scholarships for Foreign Scholars; self-funding | 2013 | 2016 |
| Lemann, Tatenda ² | Blue and green water modelling in the upper Blue Nile basin: Towards improved decision-making and transboundary negotiations regarding blue and green water uses | Swiss National Science Foundation; Swiss Agency for Development and Cooperation; CDE; Department of Integrative Geography, University of Bern | 2012 | 2016 |
| Linde, Lothar ² | The role of spatial decision support tools in advancing transparency and accountability of land management in the Greater Mekong Subregion | Self-funding; CDE | 2014 | 2016 |
| Nazarmavloev, Farrukh ² | Soil organic carbon management in agricultural land of Tajikistan | Swiss Government Excellence Scholarships for Foreign Scholars | 2012 | 2016 |
| Ochoa-García, Heliodoro ² | Geography of water, environmental conflicts, and social alternatives: The Santiago River watershed, Mexico | Jesuit University of Guadalajara, Mexico | 2013 | 2016 |
| Portner, Brigitte ² | The sustainability of biofuel production in Ethiopia: Framing a telecoupled issue | Swiss National Science Foundation | 2009 | 2015 |

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|-------------------------------------|--|---|------|------|
| Primasari, Nova ² | Dynamics of land use and stakes in Indonesia's peat lands and their impact on environmental services and local livelihoods: The case of Riau Province, Indonesia | Self-funding; CDE | 2011 | 2016 |
| Roth, Vincent ² | Discharge and erosion modelling in the upper Blue Nile basin: Towards improved decision-making and transboundary negotiations | Swiss National Science Foundation; Swiss Agency for Development and Cooperation; CDE; Department of Integrative Geography, University of Bern | 2012 | 2016 |
| Samoei, Paul ² | Child nutrition in Kenya: A high-resolution analysis of its spatial distribution and geographic determinants | Centre for Training and Integrated Research in ASAL Development | 2015 | 2017 |
| Schneider, Lysann ¹ | Why reforestation fails: Institutional change and migration in Colonia Yucatán, Mexico | Self-funding; Institute of Social Anthropology, University of Bern; CDE | 2013 | 2016 |
| Schönweger, Oliver ² | Key factors and processes shaping the implementation of large-scale land acquisitions | Swiss Network for International Studies; CDE | 2012 | 2015 |
| Shabdolov, Alisher ² | Analysis of potentials and constraints of common-pool resource management for sustainable water governance in a mountain irrigation system in the Tajik Pamirs | Swiss Government Excellence Scholarships for Foreign Scholars; University of Central Asia, Mountain Societies Research Institute | 2012 | 2016 |
| Siziba, Clarence ³ | The regulation of trade in goods from conflict zones | Swiss State Secretariat for Economic Affairs | 2014 | 2016 |
| Subhatu, Alemtehay ² | Long-term effects of soil and water conservation and potential impacts of integrated watershed management on ecosystem services in the Abbay (Blue Nile) basin of Ethiopia | Swiss Government Excellence Scholarships for Foreign Scholars | 2014 | 2018 |
| Tejada, Laura ² | Large-scale land acquisitions in Peru: Effects on households in rural communities concerning gender relations, decision-making, and food security | Swiss Network for International Studies; CDE | 2013 | 2016 |
| Thanichanon, Puwadej ² | Effects of market integration on land use and welfare in Xayaburi Province, Lao PDR | Swiss National Science Foundation; Swiss Agency for Development and Cooperation | 2009 | 2015 |
| Tschopp, Maurice ² | Quinoa production in the Lipez Region, Bolivia: Accumulation of assets and struggle for natural resources | Swiss National Science Foundation; Swiss Agency for Development and Cooperation | 2014 | 2017 |
| Zähringer, Julie ² | Cross-scale landscape service trade-offs in a conservation–development nexus along the north-eastern escarpment of Madagascar | CDE | 2012 | 2016 |
| Zanella, Matheus Alves ² | Brazil–Mozambique development cooperation on food security and natural resource governance | Swiss Government Excellence Scholarships for Foreign Scholars | 2014 | 2017 |

* CDE coordinates the International Graduate School North-South, provides teaching, and contributes to the supervision of students enrolled at the University of Bern.

¹ IGS North-South student enrolled at the Institute of Social Anthropology of the University of Bern in 2015

² IGS North-South student enrolled at the Institute of Geography of the University of Bern and/or engaged in preparatory work for their PhD at CDE in 2015

³ IGS North-South student enrolled at the World Trade Institute of the University of Bern in 2015

Programmes and mandates in 2015

| Programmes and mandates by cluster | Budget size in 2015 ¹ | Main donors in 2015 ² | Countries/regions |
|---|----------------------------------|----------------------------------|---|
| Natural Resources and Ecosystem Services | | | |
| World Overview of Conservation Approaches and Technologies (WOCAT) | large | SDC | Global |
| Managing Telecoupled Landscapes for the Sustainable Provision of Ecosystem Services and Poverty Alleviation | large | SNSF and SDC (r4d Programme) | Laos, Myanmar, Madagascar |
| Sustainable Land Management, Climate Change and Ecosystem Services (GLUES) | large | BMZ | Global |
| Decision Support for Mainstreaming and Scaling Out Sustainable Land Management | large | GEF, FAO | Global |
| Knowledge Management for Integrated Watershed Management and Disaster Risk Reduction | medium | SDC | Tajikistan |
| Integrated Watershed Management in Morocco | medium | SDC | Morocco |
| RECARE – Preventing and Remediating Degradation of Soils in Europe Through Land Care | medium | EU-FP7 | Switzerland |
| iSQAPER – Interactive Soil Quality Assessment in Europe and China for Agricultural Productivity and Environmental Resilience | medium | EU-Horizon 2020 | Europe (Estonia, France, Greece, Hungary, Poland, Portugal, Romania, Slovenia, Spain, The Netherlands), China |
| Support to WOCAT International Secretariat and WOCAT Database | medium | GIZ | Global |
| Supporting Countries in Recording Sustainable Land Management Best Practices | medium | UNCCD | Global |
| Cross-Scale Landscape Service Trade-Offs in a Conservation–Development Nexus | small | CDE | Madagascar |
| Impacts of Outmigration on Land Management in the Mountain Areas of Bolivia and Nepal | small | CDE | Bolivia, Nepal |
| Integrated Assessment of Land Use Systems’ Ecosystem Services at the Regional Scale | small | CDE | Tajikistan |
| Blue and Green Water Modelling in the Upper Blue Nile Basin | small | CDE, DIG | Ethiopia |
| Discharge and Erosion Modelling in the Upper Blue Nile Basin | small | CDE, DIG | Ethiopia |
| Risk and Coping Strategies in Forest–Agriculture Landscapes | small | CIFOR | Laos |
| CASCADE – Catastrophic Shifts in Drylands | small | EU-FP7 | Cyprus, Greece, Italy, Portugal, Spain |
| Soil Organic Carbon Management in Agricultural Land of Tajikistan | small | FCS | Tajikistan |
| Long-Term Effects of Soil and Water Conservation and Potential Impacts of Integrated Watershed Management on Ecosystem Services | small | FCS | Ethiopia |
| Decision-Support Tool for Assessing Land Degradation and Realizing Sustainable Land Management | small | FCS, Islamic Development Bank | Tunisia |
| Erosion Risk Monitoring in Switzerland | small | FOAG | Switzerland |
| Upgrading and Optimizing the Erosion Risk Map of Switzerland | small | FOAG | Switzerland |
| Climate Smart Agriculture | small | GIZ | Benin, Burkina Faso, Ethiopia, India, Kenya |
| Natural Resource Management in Rustaq, Afghanistan | small | SDC | Afghanistan |
| Production of Instructional Videos for WOCAT | small | Stiftung Fons Margarita | Global |
| Assessing Soil-Based Ecological Services and Opportunities to Sequester Soil Organic Carbon in Selected Watersheds of Ethiopia | small | Student self-funding, CDE | Ethiopia |

| Programmes and mandates by cluster | Budget size in 2015 ¹ | Main donors in 2015 ² | Countries/regions |
|---|----------------------------------|---|----------------------------------|
| Multidimensional Disparities | | | |
| Lao DECIDE Info (Phase III) | large | SDC | Laos |
| OneMap Myanmar (Inception and Phase I) | large | SDC | Myanmar |
| Feminization, Agricultural Transition, and Rural Employment (FATE) ³ | large | SNSF and SDC (r4d Programme) | Nepal, Laos, Rwanda, Bolivia |
| Adaptation to Climate Change in African Agriculture ⁴ | large | SNSF (Ambizione) | Tanzania, Kenya |
| Climate Mandates | medium | GIZ | India |
| A Multidimensional Poverty Approach for Lao PDR | small | CDE | Laos |
| Effects of Market Integration on Land Use and Welfare | small | Student self-funding, CDE | Laos |
| Governance of Land and Natural Resources | | | |
| Water and Land Resource Centre (Phase II) | large | SDC | Ethiopia, Kenya |
| Towards Food Sustainability: Reshaping the Coexistence of Different Food Systems in South America and Africa | large | SNSF and SDC (r4d Programme) | Kenya, Bolivia |
| Effects of Large-Scale Land Acquisitions on Households in Rural Communities of the Global South ⁵ | large | SNSF | Morocco, Ghana, Tanzania, Zambia |
| Education for Sustainable Development: World Nature Forum ⁴ | large | World Nature Forum AG | Switzerland |
| Sustainable Soil Governance and Large-Scale Land Acquisitions Originating in Switzerland | medium | SNSF (NRP 68) | Switzerland |
| ATLAS – Archetypes of Transnational Land Acquisitions ⁴ | medium | SNSF (NRP 68) | Global |
| Churches as Agents in Sustainable Development Projects: The Case of Indonesia ⁶ | medium | SNSF | Indonesia |
| Developments in the Swiss Alps UNESCO World Heritage Site | medium | SAJA UNESCO World Heritage | Switzerland |
| Large-Scale Land Acquisitions: Effects on Households in Rural Communities Concerning Gender Relations, Decision-Making, and Food Security | medium | SNIS | Peru |
| The Importance of Sufficient Lifestyles for a Good Life | medium | Stiftung Mercator | Switzerland |
| Managing the Forest by the People: Constitutionality, Citizenship, and Representation in Two Decentralization Initiatives | small | CDE, Institute of Social Anthropology, University of Bern | Senegal |
| Brazil–Mozambique Development Cooperation on Food Security and Natural Resource Governance | small | FCS | Brazil, Mozambique |
| The Origins of Chronic Vulnerabilities and Poverty Among Pastoralist Societies | small | FCS | Kenya, Tanzania |
| Common-Pool Resource Management for Sustainable Water Governance in a Mountain Irrigation System | small | FCS, UCA | Tajikistan |
| Geography of Water, Environmental Conflicts, and Social Alternatives | small | ITESO | Mexico |
| Second Science–Policy Exchange in Lao PDR | small | KFPE, CDE | Laos |
| Fact Sheet on Trade in Hard and Soft Commodities | small | KFPE | Global |
| Sense 21: Managing a Participatory Process for Local Inhabitants to Develop Their Vision of Future Use of the River Sense | small | RisikoWissen | Switzerland |
| Analysing the Sustainability of Water Commons Governance Through Water User Associations (WUAs) | small | SDC, IWMI, CDE, UNECE | Kyrgyzstan, Uzbekistan |
| The Cultural Dimension of Sustainable Regional and Landscape Development | small | SERI (COST Action IS1007) | Switzerland |
| The Regulation of Trade in Goods from Conflict Zones | small | SECO | Zimbabwe |
| Analysis of Negotiation Processes Around “Vivir Bien/Buen Vivir” Linking State-Based and Grassroots Development Initiatives | small | SNSF (ProDoc), student self-funding | Bolivia |
| Constitutionality Processes and Social-Ecological Outcomes in an Indigenous Territory in the Bolivian Lowlands | small | SNSF (ProDoc) | Bolivia |

| | | | |
|---|--------|---|--|
| The Sustainability of Biofuel Production in Ethiopia: Framing a Telecoupled Issue | small | SNSF (ProDoc) | Ethiopia |
| Increasing the Effectiveness of Transdisciplinary Research for Sustainable Development | small | SUC | Switzerland |
| Dynamics of Land Use and Stakes in Indonesia's Peat Lands and Their Impact on Environmental Services and Local Livelihoods | small | Student self-funding, CDE | Indonesia |
| Why Reforestation Fails: Institutional Change and Migration in Colonia Yucatán, Mexico | small | Student self-funding, Institute of Social Anthropology, University of Bern, CDE | Mexico |
| Global Change Impacts | | | |
| Backstopping Mandate on Environment and Development | large | SDC | Global |
| Sustainable Mountain Development for Global Change | large | SDC | Global |
| AFGROLAND – African Food, Agriculture, Land and Natural Resource Dynamics in the Context of Global Change | large | SNSF, Belmont Forum | Kenya, Madagascar, Mozambique |
| Knowledge Management for Sustainable Development in Mountain Areas | large | ADA | Global |
| <i>Mountain Research and Development</i> (MRD) International Scientific Journal | large | CDE, SDC, ICIMOD, ADA, IMS, others | Global |
| Development of Nature Conservation and of Protected Areas in the Slovak Carpathians | medium | SDC, Swiss EU Enlargement Contribution | Slovakia |
| Knowledge and Database for Impact Assessments of Kandaji Dam, Niger | medium | The World Bank | Niger |
| Land Matrix Global Observatory, Land Observatory Merging Phase II | small | BMZ, European Commission | Global |
| Support of Geodata Service for the Federal Department of Foreign Affairs | small | FDFA | Switzerland |
| Towards Climate Resilient Development: The Potential of Cash Crop Trees | small | Helvetas Swiss Intercooperation, CDE | Nepal |
| Climate Change and Tourism in Mountain Protected Areas: Impacts and Implications in a Developing Country Context | small | KFPE, CDE, EOCA, student self-funding | Nepal |
| Bahr el Ghazal River Basin Management Project | small | SDC | South Sudan |
| Sustainable Mountain Development in the Caucasus | small | SDC, SNSF (SCOPES) | Russia, Georgia, Armenia, Azerbaijan |
| Landscape Transformation in Ethiopia: Spatio-Temporal Dynamics and Implications for Transboundary Runoff and Sediment Yield | small | Student self-funding, CDE | Ethiopia |
| The Role of Spatial Decision Support Tools in Advancing Transparency and Accountability of Land Management | small | Student self-funding, CDE | Myanmar, Laos |
| Interconnectedness Between Agrarian Transformation and the Water–Energy–Food Security Nexus in North-Eastern Thailand | small | Student self-funding, FCS | Thailand |
| Innovations for Sustainable Development | | | |
| Eastern and Southern Africa Partnership Programme (ESAPP) | large | SDC | Ethiopia, Kenya, Tanzania, Madagascar, Mozambique, Eritrea |
| The Prospects of Pro-Poor Biomass Energy Value Chains in Rural–Urban Contexts in East Africa | large | SNSF and SDC (r4d Programme) | Kenya, Tanzania |
| The Agrobiodiversity Initiative (Phase II) | medium | SDC | Laos |
| Woody Invasive Alien Species in East Africa | medium | SNSF and SDC (r4d Programme) | Tanzania, Kenya, Ethiopia |
| Awareness and Action in the Fight Against Noise Pollution | small | FOEN | Switzerland |
| Nudging Approaches and Their Effectiveness ⁷ | small | FOEN | Switzerland |
| E-Scooters Research Project | small | SFOE, FEDRO | Switzerland |

| Programmes and mandates by cluster | Budget size in 2015 ¹ | Main donors in 2015 ² | Countries/regions |
|--|----------------------------------|---|-------------------|
| Education for Sustainable Development | | | |
| Certificate of Advanced Studies in Sustainable Development | medium | Course fees, others | Switzerland |
| International Graduate School (IGS) North-South | medium | University of Bern | Global |
| IGS North-South Summer School 2015 | medium | University of Bern, University of Basel, University of Zurich, KFPE | Nepal |
| Language Compass on Landscape and Environment: How Language Shapes Our Perception of Landscape and Nature | medium | Si Förderorganisation, Bristol-Stiftung | Switzerland |
| Faculty Training in Sustainable Development | small | SUC | Switzerland |
| Integration of Sustainable Development into Curricula | small | University of Bern, SUC | Switzerland |
| Bernese Award for Environmental Research | small | University of Bern, others | Switzerland |
| Various teaching mandates, e.g. Zurich University of Applied Sciences, NADEL/ETH Zurich, University of Lucerne | small | Academic institutions | Switzerland |

¹ Budget share managed by CDE: small = up to CHF 75,000; medium = CHF 75,001 to 150,000; large = CHF 150,001 and more

² Specific funding programmes are mentioned in brackets, if applicable

³ Project implemented jointly with the Interdisciplinary Centre for Gender Studies

⁴ Project implemented by the Department of Integrative Geography that is of strategic importance to CDE

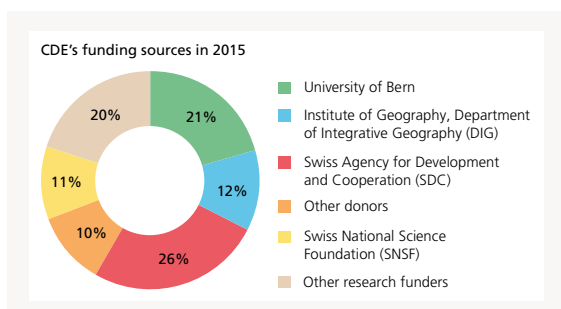
⁵ Project implemented by the Institute of Social Anthropology that is of strategic importance to CDE

⁶ Project implemented by the Institute of Social Anthropology and the Institute of History that is of strategic importance to CDE

⁷ Project implemented jointly with the Institute of Sociology

Acronyms and abbreviations: ADA = Austrian Development Agency; BMZ = German Federal Ministry for Economic Cooperation and Development; CDE = Centre for Development and Environment, University of Bern; CIFOR = Center for International Forestry Research; COST Action = European Cooperation in Science and Technology Action Programme; DIG = Department of Integrative Geography, University of Bern; EOCA = European Outdoor Conservation Association; EU = European Union; EU-FP7 = European Union Seventh Framework Programme; EU-Horizon 2020 = European Union Horizon 2020 Programme; FAO = Food and Agriculture Organization of the United Nations; FCS = Swiss Government Excellence Scholarships for Foreign Scholars; FDFA = Swiss Federal Department of Foreign Affairs; FEDRO = Swiss Federal Roads Office; FOAG = Swiss Federal Office for Agriculture; FOEN = Swiss Federal Office for the Environment; GEF = Global Environment Facility; GIZ = Deutsche Gesellschaft für Internationale Zusammenarbeit; ICIMOD = International Centre for Integrated Mountain Development; IMS = International Mountain Society; ITESO = Jesuit University of Guadalajara, Mexico; IWMI = International Water Management Institute; KFPE = Swiss Commission for Research Partnerships with Developing Countries; NRP = National Research Programme; ProDoc = Doctoral Programme; r4d Programme = Swiss Programme for Research on Global Issues for Development; SAJA UNESCO World Heritage = Swiss Alps Jungfrau-Aletsch UNESCO World Heritage Site; SCOPES = Scientific co-operation between Eastern Europe and Switzerland; SDC = Swiss Agency for Development and Cooperation; SECO = State Secretariat for Economic Affairs; SERI = State Secretariat for Education, Research and Innovation; SFOE = Swiss Federal Office of Energy; SNIS = Swiss Network for International Studies; SNSF = Swiss National Science Foundation; SUC = Swiss University Conference; UCA = University of Central Asia; UNCCD = United Nations Convention to Combat Desertification; UNECE = United Nations Economic Commission for Europe; UNESCO = United Nations Educational, Scientific and Cultural Organization.

Finances



Shares of funding sources for CDE's activities and services in 2015.

| Funding source | Amount (in CHF) |
|---|-------------------|
| University of Bern | 2,571,300 |
| Institute of Geography, Department of Integrative Geography (DIG) | 1,533,400 |
| Swiss Agency for Development and Cooperation (SDC) | 3,232,300 |
| Other donors | 1,282,400 |
| Swiss National Science Foundation (SNSF) | 1,382,800 |
| Other research funders | 2,504,500 |
| Total | 12,506,700 |

Sources of funding for CDE's activities and services in 2015, including CHF 3.9 million of funds entrusted to CDE for projects in its partner regions.

Financial account for 2015 (in CHF, rounded)

| INCOME | Total | CDE | DIG ¹ |
|--|------------------|------------------|------------------|
| External funds | | | |
| Programme income | 4,420,300 | 4,420,300 | |
| Other income (services) | 60,700 | 60,700 | |
| <i>Total external funds</i> | <i>4,481,000</i> | <i>4,481,000</i> | |
| University funds | | | |
| Contribution to office rent ² | 200,000 | 100,000 | 100,000 |
| Contribution to personnel expenditure | 3,235,000 | 1,842,800 | 1,392,200 |
| Contribution to operating expenses | 669,700 | 628,500 | 41,200 |
| <i>Total university funds</i> | <i>4,104,700</i> | <i>2,571,300</i> | <i>1,533,400</i> |
| Total income | 8,585,700 | 7,052,300 | 1,533,400 |
| EXPENDITURE | Total | CDE | DIG |
| Personnel | | | |
| Salaries | 6,230,700 | 5,096,060 | 1,134,640 |
| Social benefits | 1,441,300 | 1,183,740 | 257,560 |
| <i>Total personnel</i> | <i>7,672,000</i> | <i>6,279,800</i> | <i>1,392,200</i> |
| Other expenditure | | | |
| Office rent | 220,000 | 120,000 | 100,000 |
| Office operating expenses (including IT) | 644,400 | 613,600 | 30,800 |
| Travel | 91,400 | 81,000 | 10,400 |
| Miscellaneous | 36,900 | 36,900 | |
| <i>Total other expenditure</i> | <i>992,700</i> | <i>851,500</i> | <i>141,200</i> |
| Accruals | -79,000 | -79,000 | |
| Total expenditure | 8,585,700 | 7,052,300 | 1,533,400 |

All accounts were audited externally and internally and were approved.

¹ Department of Integrative Geography; the financial account of DIG is listed here because its accounting is done by CDE owing to the large number of jointly run projects and programmes

² Paid directly by the university administration

Balance sheet as at 31 December 2015 (in CHF, rounded)

| ASSETS | |
|----------------------------------|------------------|
| Current assets | |
| Liquid funds, CDE | 43,500 |
| Accounts, university | 567,600 |
| Accounts receivable | 1,328,100 |
| Advances | 8,500 |
| <i>Total current assets</i> | <i>1,947,700</i> |
| Fixed assets | |
| EDP equipment | 0 |
| <i>Total fixed assets</i> | <i>0</i> |
| Prepaid expenses | 337,400 |
| Total assets | 2,285,100 |
| LIABILITIES | |
| Current liabilities | |
| Accounts payable | 100,400 |
| Project funds | 304,700 |
| <i>Total current liabilities</i> | <i>405,100</i> |
| Equity capital | |
| Capital ¹ | 699,300 |
| General reserves ² | 822,700 |
| Tied reserves ³ | 358,000 |
| <i>Total equity capital</i> | <i>1,880,000</i> |
| Total liabilities | 2,285,100 |

¹ Equity capital at date of establishment of CDE as an interdisciplinary research centre in mid-2009² Accumulated gains and losses from previous years³ Reserved for severance payments and special research

