



Zentrum für Entwicklungsforschung  
Center for Development Research  
University of Bonn

# Annual Report 2010/2011

Focus: Science Policy for Development



Cover Photo:

View on Madrushkat village, Tajikistan.

Photo by Andreas Mandler, ZEF junior researcher.

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# 1 Introduction

by ZEF's Directors

Stagnation in climate change related policy, another world food price crisis and a dramatic famine in East Africa were features of the past two years. But there was at the same time high economic growth in large parts of the developing world, and suitably increased attention to sustainable development with increased focus on “green growth” in international forums. While the Center’s research agenda is not driven by short-term issues, we feel challenged and accordingly have addressed some of these hot issues in the past year in the context of our long term research, partnerships, and capacity building. At the local level, the Center has intensified cooperation with Bonn-based international and UN organizations such as the UNCCD and the United Nations University (UNU). This cooperation gets an international dimension when research findings are shared at international meetings, or joint lecture series are organized with the UNU on Risk and Uncertainty for Sustainable Development with internationally renowned experts presenting their latest work.

The Center has initiated significant new research initiatives such as its research on marginality and extreme poverty (funded by the Bill & Melinda Gates Foundation); Volatility of markets and food security (funded by the German Federal Ministry of Economic Cooperation

and Development BMZ); the competence network on conflict, migration and mobility *Crossroads Asia* (funded by BMBF); and the West African Science Service Center on Climate Change and Adapted Land Use (WASCAL, also funded by BMBF). ZEF sees a key role for science policy to foster development. In 2010 ZEF has been listed again among the top 10 international science policy think tanks. We call for new research initiatives in science policy for development, as outlined in a lead article below.

In terms of output, ZEF researchers have published a considerable number of peer-reviewed articles as well as ZEF working and discussion papers (see [www.zef.de/publications](http://www.zef.de/publications)). Besides, drawing on its long-term experience in Central Asia, ZEF has come out with a Research Strategy Paper for that region. It includes a set of recommendations for future involvement and strategies in the region, which has been received well by international development experts and policy makers.

ZEF is especially proud of its human “capital” and capacity development efforts: More than 500 doctoral students from around 80 countries have participated in our ZEF Doctoral Studies Program since its inception in 1999. In the past year alone, 35 students from 17 countries received their doctoral degree. Most of our students return

to their home countries or end up in development organizations and research institutes all over the world, thereby forming an alumni-network of scientists, decision-makers and future leaders in their countries and in international organizations.

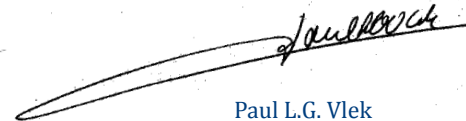
We would like to express our gratitude to all our donors who have made these achievements possible: the German Federal Ministry of Education and Research (BMBF), the German Federal Ministry for Economic Cooperation and Development (BMZ), GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), the German Academic Exchange Service (DAAD), the Robert Bosch Foundation as well as the Volkswagen Foundation, and to new donors, such as the Bill and Melinda Gates Foundation, the Foundation *fiat panis*, Bayer, the Dreyer Foundation as well as the many organizations and governments which support our doctoral students financially.



Joachim von Braun



Solvay Gerke



Paul L.G. Vlek

# 2

Lead article

## Science Policy for Development – more and better

by Joachim von Braun, Manfred Denich and Solvay Gerke

**S**cience is central to development and this is increasingly the case in the fast changing emerging economies. A science base is particularly relevant for defining strategic directions at different stages of development. Increased environmental risks facing populations already vulnerable due to their restricted set of livelihood options, and the increasing complexity in the interrelationships between actors in value chains of food, energy and industrial products are compounding factors magnifying the importance of science for development. However, the tremendous role that science can play in reducing societal risks remains undervalued.

**Science policy itself needs to be researched** for enhanced impact and ZEF and its partners are taking new initiatives in that respect. Science policy is understood here as the *design of science landscapes, institutional arrangements for science funding and partnerships, and the setting of goals and allocation of resources to science priorities*. Given the complex dimensions of these issues, such science policy research needs to take systems perspectives and is to be interdisciplinary.

ZEF is well recognized internationally in the field of development research: in the ranking of leading world think tanks of the University of Pennsylvania, ZEF was ranked 5th of the top science and technology think tanks world-

wide in 2010. The Center has gained strong experiences in knowledge and innovation system research for the enhanced production and utilization of scientific knowledge for development, for instance in Central Asia, South East Asia and in Africa. Research work on science policy in agriculture, ICT, and in water and public health have been on the ZEF agenda for some time. Building on these experiences, ZEF proposes to now rapidly expand investments that are fundamental for innovation that fosters sustain-



Science policy is increasingly considered as instrumental for development and growth.

nable development and economic growth in low income and emerging economies.

**Strategy and sound policy for domestic and international science policy** is needed, and especially so in emerging economies and in institutions that aim to support their development. National science policy, as well as international science policy for global public goods, are both of great importance and are increasingly linked. More work, however, is especially needed on national science policy. Current science policy strategies are often not well informed by evidence in emerging economies. To take advantage of innovation opportunities that are arising, emerging economies need to invest in building their analytical strength to prioritize science and research investments. They also need to have access to basic science—which, being a classical non-tradable, is hard to buy from abroad—and connect to international science and knowledge-sharing systems.

**The research questions** are not “if” and “if more science for development”, but “what” and “how” science policy shall be enhanced for development, thus: *What science policy enhances sustainable development and economic growth in emerging economies at different stages of development and how can science investors enhance their impact? And more specific questions to be addressed include:*

1. What has been the role of scientific advancements for development and economic growth in (each of) the countries studied, and investments in what science domains may promise large developmental, growth and poverty reduction effects in the future?
2. What type of social and political processes have been most conducive for strengthening science policy and knowledge systems in the different country contexts and what are or have been major barriers to strengthening systems?
3. At a more generalized level: how should emerging economies at different stages of development ap-



Funding for research and development remains low in Central Asia.

proach science policy in terms of design of science systems landscapes, allocation of resources and related priority setting, and,

4. What roles can development cooperation, incl. by foundations and the private sector, play in terms of national science policy cooperation for development?

**Countries and regions** have vastly different experiences. Science policy entered the development discourse and was linked by many governments to attempts of strengthening the respective systems. The following initiatives and efforts in three very different regions are indicative:

- Science policy in Southeast Asia has – in the past two decades – been characterised by a more focused integration of science and technology (S&T) policies with innovation and industry policies, particularly in terms of patent registration. This resulted in significant increases in science output production.
- In Central Asia, despite increased interest in science-policy for development, R&D funding remains very low. Furthermore two-thirds of the R&D is conducted by government institutes that continue to rely on an increasingly outdated Soviet era science infrastructure. The Eurasian Economic Community (EAEC) offers a platform for regional cooperation on science, technology and science policy related issues.
- In Africa, science policy is increasingly considered as instrumental for development and growth. The Africa’s Science and Technology Consolidated Action Plan – CPA of 2007 and the African Regional Action Plan on the Knowledge Economy – ARAPKE of 2005, both devised by the African Union and its New Partnership for Africa’s Development (NEPAD) program, hold potential to help Africa advance in science, technology and innovation production.

**Is there scope for accelerated learning among countries and regions** as for example those three mentioned above and how about comparative advantages? Consideration of comparative advantage matters for national science policy and is a complex long-run and dynamic issue: The current science policy-making and the existing local landscapes can result in neglecting the existing comparative advantages of countries while instead investing into areas of knowledge production in which international competitors are often far more advanced.

**Improving quality of science policy** needs an expanded and strengthened tool box that can assist in building an evidence base for science policy making. First, we need more comprehensive assessment of the state of affairs of

science policy in the selected countries and regions, and that entails

- Comprehensive description of the science landscapes of countries and capacity and strength and weaknesses of the national science systems, (incl. spatial and organizational dimensions of the national science system and knowledge systems)
- Identification of the level and allocation of resources and institutional mechanisms of current priority setting (incl. by innovative accounting of science spending in GDP generation).

Secondly, sound analyses of the societal and economic implications and impacts of national science policy are called for, and that requires

- Identification of the institutional and organizational arrangements and decision-making processes and decision powers that shape science policy,
- Study of impacts of science investments on growth and development, incl. total factor productivity analyses at whole economy level, and at the level of selected sectors that may be of particular relevance for poverty reduction (i.e. agriculture, public health, information and communications – ICT, energy)

Thirdly, we need to assist in outlining options and pathways toward adjustments and redesign of science policy for development and growth, and that can be assisted by

- Cross-country comparisons of national science policy effects for development (ex post analyses within and across countries and regions),
- Based on ex post analyses of science policy, building some ex ante scenarios for re-design options of science policy (in consultations with partners and policy bodies in the countries),



- Identification of points of entry for effective science policy support by development agencies and foundations in the context of national science policy strategies.

**A science policy with focus on the poor** needs to be explored. In recent decades, advancements in science and technology have created a vast array of opportunities to improve people's livelihoods. However, poor people have often failed to receive the benefits of science. The ability of the poor to take advantage of innovations to improve their well-being is linked to their education, skills, and access to assets, as well as to the existence of supporting institutions and the relevance and applicability of technologies to their needs. Science and technology will have an increasingly important role to play in mitigating the negative effects of rising and volatile food and energy prices, and climate change. New technology that is directly relevant to the needs of the poor is essential for improving their livelihoods. Targeted development enhancing science and research is for instance essential in the domains of food and agriculture; health and nutrition; water and climate change; energy; and infrastructure and communication. For each of these domains, international research organizations exist, but they vary a great deal in capacity and strength.

**New approaches to international science partnerships** need to be developed and expanded. Not only more investment resources are needed to make a bigger contribution of science for development, but institutional and organizational changes are also called for. To take advantage of the opportunities that are arising, developing countries need to invest in building their own science systems. Developed countries need to provide access to basic science—which is hard to buy from abroad—and access to international science and knowledge-sharing systems. The institutional arrangements are likely to be theme specific as they relate to the nature of the science and the capacities of research communities. The arrangements

can be different e.g. for food and agriculture, for health, etc. Co-funding and cooperation among public institutions, foundations, and private enterprises should play an important role in building and advancing science for development. Fundamental is to nurture young scientists in developing countries in an open environment that encourages international collaborations and a culture that insists on scientific integrity and honesty.

*ZEF calls on its partners and the wider development research community to engage in a bigger push for investment and innovation in science for development. The opportunities are large.*



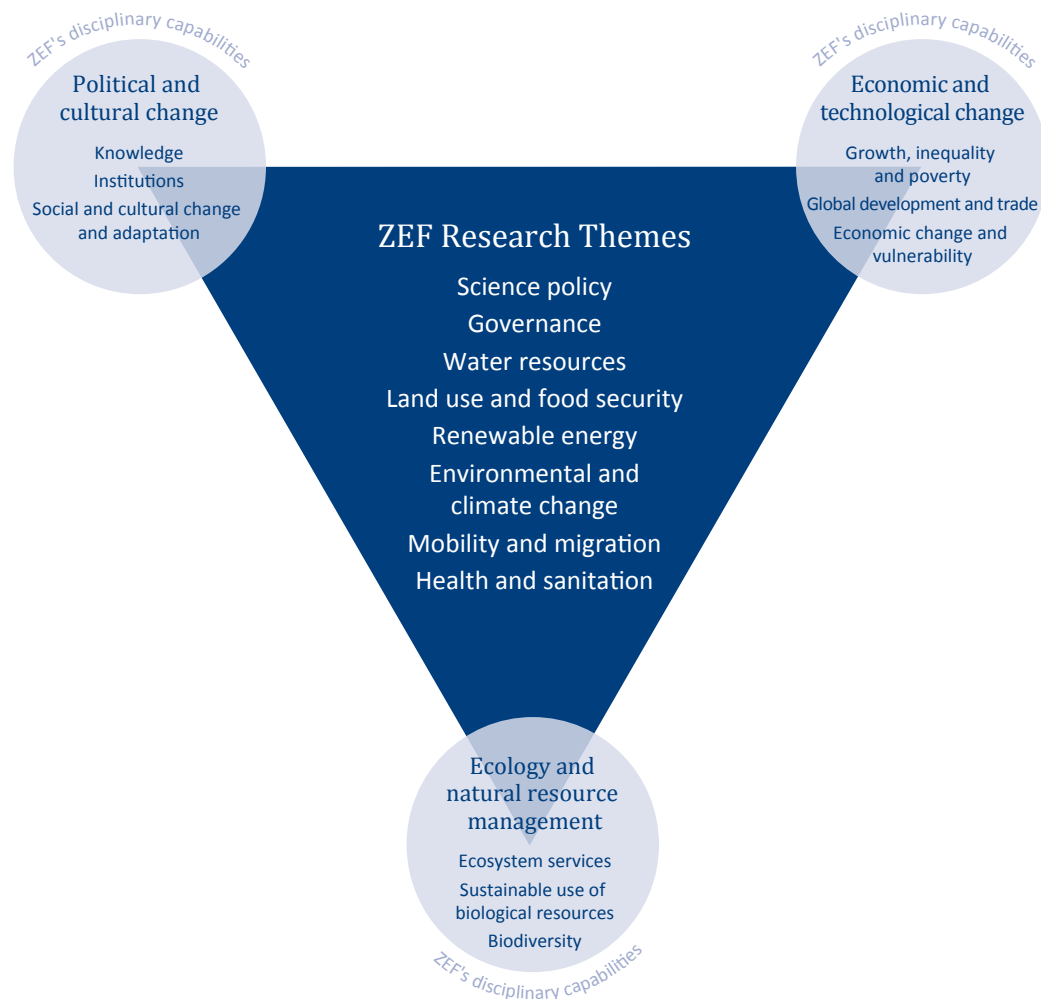
Science has to be relevant to the needs of the poor for improving their livelihoods.

# 3 ZEF's cross-cutting research strategy and agenda

ZEF aims at producing development research that contributes to reducing poverty, enhancing sustainable development and improving development-oriented policymaking. For achieving this, ZEF conducts research on a set of themes relevant to development, collaborates with scientists, in particular from and in developing countries, and educates a new generation of scientists for the developing world through its doctoral studies program. ZEF's research concept and set-up are trans-disciplinary, implying it bridges the gap(s) between scientific disciplines, between research and policy and between research and practice.

ZEF core research themes have been re-arranged and updated in consultation with its International Advisory Board members in October 2011 and can be found in the figure on this page. These themes are supported by ZEF's "disciplinary capabilities", contributing to core research program. ZEF's research projects and doctoral themes fit into this overall research framework.

This Annual Report covers a selection of themes.





# Briefing on selected ZEF research themes

## 3.1. Governance



Access and control of resources is crucial to the functioning of societies.

### Governance – a long-term item on ZEF's research agenda

ZEF's research on governance is focusing on the governance of social resources and resource transfer. Accordingly, ZEF's overall understanding of resources encompasses not only the economic or natural dimension, but includes also the social sphere. In every society the production, access and control of social resources (or of social capital) play a crucial role. As social resources, we understand knowledge, institutions (rules, norms), and networks of a society. The production, access and control of social resources are, in combination with economic

and natural resources, the driving forces for inclusion and exclusion processes and therewith a guiding principle in every society.

Additionally, research is focused on the transfer of social resources, which includes a vertical as well as a horizontal dimension. Horizontal transfer of social resources involves all kinds of population movements. Besides migration, forced by natural catastrophes or wars, there are networks of legal labor migration, networks enabling the flow of goods (trade) or of ideas (knowledge). In this context, ZEF's research addresses cross-boundary networks and migration, taking place in ecologically and politically vulnerable border regions. The vertical transfer of social resources deals with social stratification and chances for social mobility, e.g. in which context what kind of social resources enable people to improve their livelihoods.

### New research program at ZEF to reduce volatility and improve food security

The volatile and rapidly rising commodity prices of recent years are an expression of changes in global markets and of resource scarcity in our world of seven billion people with increased wealth. Although food grains are mainly viewed as commodities, they are also the basic food of the poor and the "currency" of the bottom two billion people, who spend large shares of their income on them. The high increase in food prices means particularly high inflation rates for the poor who are obliged to spend 60 percent of their income on food. Volatility means increased uncertainty, which is bad for investment, and again, it is worst of all for small businesses which lack access to finance. Moreover, commodity price volatility impairs the growth and development of import-dependent low income countries.

A new three-year research program at ZEF – funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) – will address these issues in new ways and will strengthen the evidence base for development policy and for public and private actors.

Sound policy requires a clear understanding of the causes and impacts of volatility. Related research for evidence-based policy advice is needed and ZEF will focus on:

- Improved monitoring of information and development of sound short-term global food models linked with other commodities and economic domains: such models are missing and could be used to provide alerts on spikes and hunger, assisting governments and business.
- International policy coordination on physical and virtual food reserve policies and on trade: There is intense debate on the relative importance and feasibility of proposed instruments to reduce volatility – including the debate by the G20 group this year.
- Analysis of commodity future markets: Food security is increasingly linked with derivative markets. Understanding these inter-linkages needs to become part of sound, market-oriented development economics.
- Improved competitiveness of local food and resource markets: Developing countries not only face fundamental changes and volatility from international markets, but also imperfections in local markets.
- Effectiveness and constraints of safety net programs that protect the poor: Many food security programs have been implemented. However, still too little is known about their efficiency in coping with price volatility.

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## 3.2. Land use and food security

### ZEF's research on land use, land degradation and food security

Land degradation, desertification and drought pose a global problem for a growing number of people in all climate zones. According to data of the United Nations Convention to Combat Desertification (UNCCD) over 250 million people are directly affected by desertification and around 40 percent of global agricultural land has been degraded in the past half-century by erosion, salinization, compaction, nutrient depletion, pollution and urbanization. Land degradation in a context of continuing population growth has also far-reaching consequences for food security worldwide.

ZEF has gained experience with this problem in its research initiatives in South America, Central Asia, and sub-Saharan Africa. It has been investigating bio-physical as well as socio-economic drivers of these processes. Recent research programs have tackled issues such as the potential of dryland afforestation for climate change mitigation, the economic implications of inaction in addressing Land degradation and Climate change and adapted land use in West Africa (WASCAL).

### ELD: The costs of inaction

A joint research team of ZEF and IFPRI (International Food Policy Research Institute) have conducted a study about the state of knowledge on the economics of Land degradation (ELD). In this project on: "The economics of land degradation: Toward an integrated global assessment" they analyzed how the effects of land and soil degradation and drought can be assessed in terms of human costs. They also delivered an overview of actions that can be taken against land degradation and their respective

The final version of the report was released as a joint IFPRI and ZEF Discussion Paper in May 2011. (No. 150, see <http://www.zef.de/discussionpapers.html>) and a book: Nkonya, Ephraim / Gerber, Nicolas / Baumgartner, Philipp / Braun, Joachim von / De Pinto, Alex / Graw, Valerie / Kato, Edward / Kloos, Julia / Walter, Teresa. 2011. The Economics of Land Degradation. Toward an Integrated Global Assessment. Series: Development Economics and Policy - Volume 66. Peter Lang. ISBN 978-3-631-63082-2 pb.

costs and benefits. A number of country studies clearly show sustainable land management practices to be cost-effective and which institutional and policy actions are required to support such practices.

The results of this joint IFPRI-ZEF project were presented at a side event to the UN-General Assembly in New York in September 2011, hosted by the BMZ, EC and UNCCD. This research initiative on the economics of land and soils is intended as a parallel to the recent global economic assessments on climate change (Stern Review, 2006) and ecosystems and biodiversity (TEEB, 2010) and is highly



From left to right: UNCCD Executive Secretary Luc Gnacadja, the German State Secretary for Economic Cooperation and Development, Hans-Jürgen Beerfeltz, and the European Union's Development Commissioner, Andris Piebalgs (Source: <http://newsbox.unccd.int/#Anchor-10214>).

significant for policymakers. The next UNCCD Scientific Conference on "Economic assessment of desertification, sustainable land management and resilience of arid, semi-arid and dry sub-humid areas" in 2012 will be able to draw on these new insights from the IFPRI-ZEF study.

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Main partners: International Food Policy Research Institute (IFPRI)

Main funder: Federal Ministry for Economic Cooperation and Development (BMZ)

### Marginality: ZEF starts new research initiative to address extreme poverty and marginality

Global efforts to reduce poverty have shown significant effect since the Millennium Development Goals have been declared and set into action in 2000: The number of people living on less than 1\$ a day and suffering from hunger worldwide has decreased from 29% in 1990 to 18% in 2004. However, the extreme poor, who live on less than 0.5 \$ per day, are mostly excluded from this progress. Millions of people, especially in sub-Saharan Africa and South Asia are currently being marginalized and therefore, the poorest are left behind.

ZEF has set up a research program that focuses on marginality and extreme poverty in developing countries. By approaching the persistent problems of extreme poverty through the lens of marginality, features and causes of extreme poverty are put up front, rather than as a secondary step to define potential investment actions.



Research with the poor can make a difference.

### Project funded by the Bill & Melinda Gates Foundation

ZEF received a grant from the Bill & Melinda Gates Foundation to study the root causes of extreme poverty and develop new approaches for addressing this problem. The project, called “MARGIP” (*Marginality Reduction for Enhanced Investments for and with the Poorest*) initially focuses on rural areas in Ethiopia and Bangladesh since marginality is most prevalent there and often relates to agricultural conditions in small farms.

The project was designed as a planning project to prepare for a wider research and action program on marginality in developing countries. The aim of the project is to identify opportunities to help people improve their lives and overcome obstacles by examining how and why poor populations are marginalized—many of whom live in rural areas and work as small scale farmers. One possible way is to attract development investors. If they under-

stand marginality better, poverty reducing investments will be more successful.

### International conference on “Marginality and extreme poverty – towards inclusive development for and with the poor”

Around 50 experts from research, business and non-profit organizations met at ZEF in June 2011 to discuss and develop solutions to the issue of marginality and extreme poverty. The central question was how to combat extreme poverty and to include marginalized people more effectively in development endeavors.

The conference offered opportunities for unusual partnerships among development agencies, business and NGOs and new initiatives by the private sector with social business initiatives and “shared value – approaches”. Partners at the conference came, among others, from Bangladesh, India, China, Ethiopia, and Germany.

For more conference information, videos and interviews have a look at: [http://www.zef.de/margip\\_conference.html](http://www.zef.de/margip_conference.html)



Marginality conference in Bonn, June 2011.

### For further reading:

ZEF Working Paper No. 80, 2011. Innovative business approaches for the reduction of extreme poverty and marginality? Heike Baumüller, Christine Ladenburger, Joachim von Braun.

ZEF Working Paper No. 77, 2011. Marginality: Addressing the root causes of extreme poverty. Franz W. Gatzweiler, Heike Baumüller, Christine Ladenburger, Joachim von Braun.

**Ongoing doctoral research** is currently being conducted on Marginality as a driver of ultra-poverty; Ultra poverty and marginality in Ethiopia; Growth, inequality and poverty in Afghanistan.

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Main partners: BRAC in Bangladesh, Bangladesh Institute for Development Studies (BIDS), Ethiopian Economic Association (EEA), Environment and Coffee Forest Forum (ECFF, Ethiopia)

Main funding partner: Bill & Melinda Gates Foundation, and Volkswagen Foundation



### 3.3. Mobility and migration



Children in a school in Pakistan.

#### Crossroads Asia

Building on its long-year research experience in governance, especially in the Central Asia region, ZEF has now embarked on a major research project and competence network called “Crossroads Asia”. In geographical terms Crossroads Asia comprises the region extending from eastern Iran to western China and from the Aral Sea to northern India. This space is characterized by a high mobility of people, ideas and goods crossing territorial and social boundaries. Whereas the usual area studies approach focuses on a clearly defined geographic area, this project focuses on the actions, perceptions and social networks of its inhabitants which can even transcend the region of Crossroads Asia.

The project was officially launched with a large opening ceremony in the premises of the Parliamentary Association in Berlin on April 7, 2011. About 150 scientists, politicians, journalists and media representatives attended. In his welcome address, Dietrich Nelle of the Federal Ministry of Education and Research (BMBF) called the competence network Crossroads Asia the „flagship“ of the Ministry’s funding program for enhancing area studies. The BMBF has allocated four million Euros to Crossroads Asia, which is the largest and most ambitious project in this program. Within the four years, its members – seven German universities and research institutions – aim to develop a novel post-area studies approach. ZEF is providing conceptual and administrative oversight to the project, including hosting the project office.

The network consists of around twenty-five researchers organized within three working groups – development, migration, conflict – that will undertake empirical research within the project’s over-arching paradigm of mobility. Hereby the researchers will intensify their collaboration cutting across institutional and disciplinary boundaries.

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Main funder: Federal Ministry of Education and Research (BMBF)

### 3.4. Environmental and climate change

#### Climate Change and Adapted Land Use in West Africa (WASCAL)

With climate change being one of the most severe challenges to rural Africa in the 21st century West Africa is facing an urgent need to develop effective adaptation and mitigation measures.

In line with its long-term experience in West Africa in research and capacity development, ZEF has embarked on a major initiative targeting this challenge. The “West African Science Service Center on Climate Change and Adapted Land Use” (WASCAL) is a large-scale program designed to address the challenge of climate change by enhancing the resilience of human and environmental systems to climate change and increased climate variability. It does so by strengthening the research infrastructure and expertise in West Africa related to climate change and by pooling the expertise of ten West African countries and Germany.

Funded by the German Federal Ministry of Education and Research (BMBF), WASCAL is coordinated by ZEF and is implemented in a collaborative effort by West African and German partners. WASCAL is organized around three principle components: a Competence Center, a Core Research Program and a Graduate Research Program.

The Competence Center, a newly established institute in Ouagadougou, the capital of Burkina Faso, West Africa, carries out research and provides science-based advice to policymakers and stakeholders on climate change impact, mitigation, and adaptation measures. The Core Research Program complements the scientific activities of the Competence Center, and is implemented by a consortium of German and West African research institutes. The Graduate Research Program, involving the creation of seven graduate schools in West Africa, will contribute to



The WASCAL program aims to address the challenge of climate change in West Africa.

the education of the next generation of African scientists and policy makers in the field of climate change and land management.

The WASCAL planning phase was launched in 2010. Subject to approval of the final program design, the implementation phase will start in 2012.

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 Main funder: Federal Ministry of Education and Research (BMBF)

### Potential of afforestation in Central Asian drylands

The importance of carbon sequestration via afforestation as a climate change mitigation strategy has been formally recognized by the world community through the Clean Development Mechanism (CDM) of the Kyoto Protocol. Due to their presumed lower carbon uptake rates, dry-

land forestry projects have been underrepresented on the CDM agenda and in published research on global climate change as compared to projects in humid regions.

A ZEF project launched in 2009 with the support of the Robert Bosch Foundation investigates the potential of afforestation of drylands as a climate change mitigation strategy in Central Asia. The project now aims to identify the environmental, institutional, economic, and informational conditions under

which such forestry projects are likely to be realized based on information gathered from ongoing field work in irrigated drylands in Central Asia.

The ZEF project focuses on the role of small-scale plantation forestry for ecological restoration and rural livelihoods in response to environmental changes such as growing water scarcity and cropland degradation. To this end, the project addresses (i) the bio-physical potential for carbon sequestration such as availability and suitability of land, appropriate tree species and silvicultural techniques, and (ii) the socio-economic incentives of afforestation, including those provided by the CDM. The final outcome will consist of science-based recommendations for land-use policies that support both local and global public goods in this geo-strategically and politically important region.

Five doctoral students and two MSc students are involved in the project and conduct studies on, for example, remote sensing of land-use change; Tree growth modeling; Agroforestry economic; and agent-based modeling of afforestation projects.

### Ongoing doctoral research on land use and degradation

Fourteen PhD students currently work on research related to land use and degradation. Doctoral theses tackle issues such as: Sustainable biofuel production in Burkina Faso; Agent-based modeling of land use and land change in Burkina Faso; Afforestation on marginal croplands in Uzbekistan; Climate change in Central Asia: Economic impacts and adaptation options in irrigated agriculture; Environmental impacts of biofuel production in Mexico; Soil organic carbon in central Namibia; Impact of bushfires in Ghana and Kenya; and Modeling human landscape dynamics for agro-biodiversity conservation in Indonesia and the Philippines.

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 Main funder: Robert Bosch Foundation



The Robert Bosch funded project at ZEF aims at delivering science-based recommendations for land-use policies.



## 3.5. Water resources

Trans-disciplinary research on water in its physical, ecological, socio-economic, political, and legal contexts is integral to ZEF's research agenda. The broad objective of ZEF's water management research agenda is to arrive at integrated approaches, in partnership and collaboration with actors in the regions. The role of water in contributing to sustainable livelihoods cannot be evaluated without considering the environmental and social conditions. Water-related research experience has been gathered and current research projects are running in South, West and East Africa, Central Asia and Asia.

### Water-related research in Vietnam

ZEF has been involved in the project "Water related information system for the sustainable development of the Mekong Delta" (WISDOM) in Vietnam since its start in 2007. The project has completed its first research phase



ZEF has been involved in the WISDOM project since its start in 2007.

and started into the second one as of October 2010. The main objective of this multidisciplinary project with 19 partners in Germany and Vietnam is the development of a water-related information system for the Mekong Delta in Vietnam.

The project develops technical equipment consisting of a user-friendly web-based set of tools adapted to the Vietnamese environment and capacities. To make these tools actually work, the researchers need qualitative and quantitative data on the Mekong Delta, which they collect from existing data sets and their own research. To be able to implement and effectively run the water-related information system in Vietnam, a comprehensive understanding of the national institutional framework is crucial too. This is where ZEF's research contribution has been focusing on: to provide knowledge on the institutional framework and water management practices and to contribute data from social science research to the information system developed by the project. ZEF's research is being coordinated from an office at Can Tho City.

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Main funder: Federal Ministry of Education and Research (BMBF)



In this picture, from left to right: Judith Ehlert, Nadine Reis and Tatjana Bauer.

### ZEF-graduates add WISDOM to development research

Four doctoral students from the WISDOM project defended their theses successfully between April and June 2011. The four ZEF students belong to the first batch of 14 PhD students who started their research during the first phase of the WISDOM project (2007–2010) and were the first students to finish their theses. Nadine Reis's dissertation topic was "Tracing and making the state. Policy practices and domestic water supply in the rural areas of the Mekong Delta, Vietnam", Judith Ehlert wrote her thesis on "Living with the flood – local knowledge in the Mekong Delta, Vietnam", whereas Tatjana Bauer did her doctoral research on "The challenge of knowledge sharing – practices of the Vietnamese science community in Ho Chi Minh City and the Mekong Delta". Huu Pham Cong wrote his thesis on "Planning and Implementation of the Dyke Systems in the Mekong Delta in Vietnam".



## Central Asia

In its recently published “ZEF Strategic Research Agenda for Central Asia” the Center for Development Research has analyzed and summarized its research endeavors in the region over the past decade. Based on their experience in the region, ZEF researchers from all disciplines have come up with a set of recommendations for a future policy and research agenda. Referring to water, the report concludes:

“The strategic resource water plays a key role in economic growth, food and fibre production, environmental sustainability, social development, and human security in Central Asia. Considering that over 90% of the surface water flow is used for irrigation, enhancing the efficiency of irrigation schemes is of paramount importance. ZEF and its partners



ZEF published its research endeavors and recommendations in a “Central Asia Strategy” paper in 2011.

The ZEF-led project in Uzbekistan has been supported by UNESCO over the past decade.



have carried out extensive research on integrated water resource management (IWRM) and improving the water productivity of irrigation systems in the region. Rehabilitation and modernization of irrigation and drainage infrastructure will improve the efficiency of water use. Technical improvements are, however, costly and the benefits may not be significant. In addition, the lack of clearly-defined responsibilities for operation, maintenance, and rehabilitation of irrigation systems at local, national, and regional scales makes significant technical investments less likely. Strengthening and empowering the institutions involved in water distribution and allocation are equally if not more important to improving water productivity in Central Asia” (page 7).

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## Uzbekistan

The ZEF/UNESCO project, which started with the support of BMBF and UNESCO in 2001, has been developing ecologically sustainable and economically efficient concepts for an improved management of land and water resources in the region of Khorezm. Around 70 international scientists have been working in this interdisciplinary project – in close cooperation with Uzbek partners.

The project has so far developed a number of technological, institutional and agro-political concepts and innovations for local implementation. The latter is realized by developing local academic and human capacities, and



ZEF has conducted research on IWRM in the Middle Olifants river basin in South Africa.

### Optimizing water allocation by modeling: Integrated Water Resources Management (IWRM) in South Africa

ZEF has been involved in this IWRM project aiming at optimizing water use in the Middle Olifants river basin in South Africa. The project comprised German and local partners. The ZEF project-team has been analyzing the existing water allocation situations and applies a non-linear optimization model to investigate the optimal intra and inter-regional allocation regimes in the Middle Olifants sub-basin. The project was finished in December 2010. The main conclusions are:

Following the political changes in the early 1990s, the South African government introduced a comprehensive reform process for the water sector with the goal of achieving an enhanced and more equitable water management system. Economic issues such as efficiency gains related to water transfers are discussed and calculated water price elasticities and estimated water demand functions provide necessary fundamentals for further modeling work. Social and environmental aspects are accounted for by including constant water demands in the model. Results show higher benefits from inter-regional water allocation. Reducing water supply levels to conform to the sustainable water supply policy, it can be shown that although water supply is reduced by approximately 50%, total benefits from water use are only reduced by 5%

by involving local farmers and their associations, water management and irrigation institutions as well as policy makers at all levels. The project outcome, tools and infrastructure are going to be passed over to local partners and Uzbek authorities, so they can be put into practice beyond Khorezm on a larger scale.

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Main funder: Federal Ministry of Education and Research (BMBF)

and 11% for inter- and intra-regional allocation regimes, respectively. These results indicate that alternative water allocation mechanisms can serve as policy instruments to offset the effects of water scarcity.

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Main funder: Federal Ministry of Education and Research (BMBF)

### Climate change adaptation by water storage in sub-Saharan Africa

ZEF has been a partner in the research project “Re-thinking water storage for climate change adaptation in sub-Saharan Africa” since 2008. It is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ). Its overall aim is to increase resilience of the rural poor who are vulnerable to climate change related risks in sub-Saharan Africa, through better water storage mechanisms, improved investment strategies and institutional support. It examines the need for various storage options, their technical and economic effectiveness, and social-economic suitability in various physiographic and sociopolitical conditions, their distributional outcomes and impact on local livelihoods, environmental consequences, adoption potential and resilience under different climate change scenarios. Case studies have been carried out in three watersheds each of the Volta River basin in Ghana and the Blue Nile River basin in Ethiopia, as these two countries are predicted to be affected differently by climate change.

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#### Output:

ZEF working paper No 83: Rebuilding livelihoods after dam-induced relocation in Koga, Blue Nile basin (by Irit Eguavoen and Weyni Tesfai) and ZEF Policy Brief 9: Pro-active farmers and supporting municipalities in Ethiopian dam projects (by Irit Eguavoen).

### Ongoing doctoral research on water

Around 11 PhD students are currently conducting research on water-related topics such as:

Integrated river basin management in Indonesia; Evaluation of water budgets in Gumara, Ethiopia; Boundary work for sustainable water resources management in South Africa; Assessing soil-borne CO<sub>2</sub> exchange in irrigated croplands of the Aral Sea basin; Modeling soil dynamics of rice-wheat cropping systems in Khorzem, Uzbeki-

stan; Sustainable management of groundwater resources in Kharun, India; Policy practices and domestic water supply in the Mekong Delta of Vietnam; Simulating soil and groundwater contamination under irrigated agriculture in the Nile Delta in Egypt; Agricultural policies and the demand for water resources in the Volta basin in Ghana.

For more information on water-related doctoral research at ZEF see [www.zef.de/1652.html](http://www.zef.de/1652.html).



Policy practices and domestic water supply in the Mekong Delta of Vietnam is part of doctoral research at ZEF.

## 3.6. Health and sanitation

### ZEF's strategy on health



Poor people are often excluded from basic health care.

ZEF's research in (public) health focuses on two major areas: On the one hand, the link between diseases and environmental change and, on the other, public health. The latter comprises issues such as access to health care facilities and medical treatment as well as the role of the public sector. The issue of health is also related to marginality and exclusion, since poor people tend to be excluded from health care: Either because facilities are not available or because treatment cannot be afforded. Reducing poverty is thus an important driver for the reduction of vulnerability to illness.

### Focal point Central Asia

Based on its expertise and experience in the region, one of ZEF's geographical foci regarding health-related research is Central Asia. More than one-third of the population in this region does not have access to good quality





An international ZEF-workshop on health in Tashkent brought together people from science, practice and policy.

drinking water and less than 30 percent of the population in rural areas is served by piped water networks. In Uzbekistan, about five million people do not have access to safe drinking water, and only about half of the population has access to sewage treatment facilities.

### International workshop

To strengthen cross-regional collaboration and partnerships in the field of health ZEF initiated a workshop funded by the Volkswagen Foundation on 'Global Environmental Change and Water-related Diseases: Improving Risk Assessment Strategies for Public Health Care in

Uzbekistan' taking place in Tashkent, Uzbekistan, in May, 2011. More than 40 European and Uzbek experts representing a wide range of organizations and disciplines in the fields of public health, water resources management and risk management participated in this workshop. One of the core aims of the collaboration partners was to engage in a long-term commitment to the development and capacity building of partner countries. The workshop was organized in collaboration with the World Health Organization (WHO Country Office Uzbekistan) and the Ministry of Health of the Republic of Uzbekistan.

### Ongoing doctoral research

Currently, around eight doctoral students conduct research on health-related issues, such as:

Water resources institutions and human health in a peri-urban region, (Surat City, India); Determinants and policy for optimal resource allocation for health in Tanzania; Sustainability of community health insurance in China; Environmental management to reduce Malaria in Uganda; Water quality and health in the City of Can Tho, Mekong Delta in Vietnam; and Health impact of water access in urban Tibet.

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Main partner: State University in Urgench, Uzbekistan

# 4 Capacity development

## 4.1. ZEF Doctoral Studies Program

The ZEF Doctoral Studies Program at the University of Bonn was founded in 1999. It is unique in Germany and Europe in terms of interdisciplinary set up, internationality (students from more than 80 countries), and size (around 120 students enrolled with an annual intake of 20–30 students).

### Program set-up

The ZEF Doctoral Studies Program offers a broad and interdisciplinary approach to development research, in addition to a sound training in theories and methods of



ZEF doctoral students of batch 2011.

selected disciplines. Practice-oriented field research is to be carried out in developing countries or development related institutions. Combining theories, methods, and practical experience in the areas of social, economic, and ecological change enables students to explore new fields and be competitive on an international job market.

### Target group

The program aims at educating highly qualified scientific staff, advisers, and managers for both the private and the public sector in a development-oriented context. Therefore, the main target group of the doctoral program consists of young scientists from all over the world with an outstanding master's or equivalent degree in economics, political science, agricultural and resource economics, engineering, geography, mathematics, natural science or agriculture. Preferably, candidates have work experience in national or international research institutions, governments, or the private sector. Interest in interdisciplinary research is a prerequisite.

### Time frame

The time frame of the ZEF Doctoral Studies Program is three years. During the first 9 to 12 months the students participate in a course program at ZEF and work with their supervisors on their research plan. After their research plan has been approved by their supervisors the students travel abroad to carry out their field research, which takes

one to two years. Subsequently, the students return to ZEF to write their doctoral theses, taking six to 12 months.

### Degree

After completing the doctorate program at ZEF the students obtain a doctoral degree granted by the respective university faculty cooperating with ZEF. Students may pursue their doctoral study under direct supervision of ZEF professors but can also be associated with ZEF while being supervised by a professor from another university.

### Donors

The main donors of the ZEF Doctoral Studies Program are: the German Federal Ministry of Economic Cooperation and Development (BMZ) via the German Academic Exchange Service (DAAD) and the German Federal Ministry of Education and Research (BMBF), State funds of North Rhine-Westphalia, the Robert Bosch Foundation, the Volkswagen Foundation and Foundation fiat panis. In addition, many organizations and governments support our doctoral students financially.

### Contact

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Doctoral theses and degrees, July 2010–July 2011

Title	First name	Family name	Date PhD exam	Country of origin	Title of doctoral thesis	Faculty
Mr.	Faisal	Abbas	11/29/2010	Pakistan	Public Health Sector Expenditures, Health Status and their Role in Development of Pakistan	Faculty of Agriculture, University of Bonn
Mr.	Abdeljalil Elsageer	Ahmed	7/22/2010	Libya	The extent of farm credit in the Libyan agricultural sector	Faculty of Agriculture, University of Bonn
Ms.	Sri Haryani	Anwar	3/24/2011	Indonesia	Microencapsulation of fish oil by using spray granulation, spray drying and freeze drying	Faculty of Agriculture, University of Bonn
Ms.	Martha Adimabuno	Awo	9/26/2010	Ghana	Marketing and market queens: a case of tomato farmers in the Upper East Region of Ghana	Faculty of Philosophy, University of Bonn
Mr.	Ermias	Aynekulu Betemariam	9/30/2010	Ethiopia	Forest Diversity in Fragmented Landscapes of Northern Ethiopia and Implications for Conservation	Faculty of Agriculture, University of Bonn
Ms.	Tatjana	Bauer	5/16/2011	Germany	The Challenge of Knowledge Sharing - Practices of the Vietnamese Science Community in Ho Chi Minh City and the Mekong Delta	Faculty of Philosophy, University of Bonn
Ms.	Stephanie	Cassilde	12/14/2010	France	How does the Perception of Skin Color, which is Intersubjective, Daily and Multidimensional, influence the Persistence of Racist Discrimination in Contemporary Brazil?	Faculty of Philosophy, University of Bonn
Mr.	Emmanuel Kanchebe	Derbile	9/25/2010	Ghana	Local Knowledge and Livelihood Sustainability under Environmental Change in Northern Ghana	Faculty of Philosophy, University of Bonn
Mr.	Krishna Prasad	Devkota	7/12/2011	Nepal	Resource utilization and sustainability of conservation based rice - wheat cropping systems in Central Asia	Faculty of Agriculture, University of Bonn
Ms.	Mina Kumari	Devkota-Wasti	7/23/2011	Nepal	Nitrogen management in irrigated cotton based systems under conservation agriculture on salt-affected lands of Uzbekistan	Faculty of Agriculture, University of Bonn
Ms.	Dilfuza	Djumaeva Muratberdievna	7/12/2011	Uzbekistan	The effect of phosphorus amendments on nitrogen fixation and growth of trees on salt-affected croplands in the lower reaches of Amu Darya, Uzbekistan	Faculty of Agriculture, University of Bonn
Ms.	Judith	Ehlert	5/27/2011	Germany	Local Knowledge on Flood Season Management in the Mekong Delta, Vietnam.	Faculty of Philosophy, University of Bonn

Title	First name	Family name	Date PhD exam	Country of origin	Title of doctoral thesis	Faculty
Ms.	Benedicta Yayra	Fosu-Mensah	4/12/2011	Ghana	Modelling maize productivity and impact of climate change on yield and nutrient utilization in sub-humid Ghana	Faculty of Agriculture, University of Bonn
Mr.	Tyler J.	Frazier	3/2/2011	USA	Powering Accra: Projecting electricity demand for Ghana's capital city	Faculty of Mathematics and Natural Science, University of Bonn
Ms.	Jaqueline	Garcia-Yi	9/2/2010	Peru	Coca Cultivation and Organic Coffee Certification: Heterogeneous Household-Level Determinants and Effects in an Indigenous Community in Peru	Faculty of Agriculture, University of Bonn
Mr.	Marcus	Kaplan	3/3/2011	Germany	Agent-Based Modeling of Land-Use Changes and Vulnerability Assessment in a Coupled Socio-Ecological System in the Coastal Zone of Sri Lanka	Faculty of Mathematics and Natural Science, University of Bonn
Ms.	Julia-Roswitha	Kloos	4/15/2011	Germany	Valuation of domestic water use in the Middle Olifants sub-bassin of South-Africa	Faculty of Agriculture, University of Bonn
Mr.	Jonatan	Lassa	2/28/2011	Indonesia	Institutional Vulnerability and the Governance of Disaster Risk Reduction: Macro, Meso and Micro Analysis	Faculty of Agriculture, University of Bonn
Mr.	Côme Agossa	Linsoussi	1/28/2011	Benin	Regionalization of a remote sensing based spatial decision support system for bush fire management in Benin	Faculty of Mathematics and Natural Science, University of Bonn
Ms.	Patricia	Masikati	3/10/2011	Zimbabwe	Improving the water productivity of integrated crop-livestock systems in the semi-arid tropics of Zimbabwe (An ex-ante analysis using simulation modeling)	Faculty of Agriculture, University of Bonn
Ms	Sarah	Meinert	7/14/2011	Germany	Corporate Diversity Management in Multinational Companies in Singapore. Lost in Translation?	Faculty of Philosophy, University of Bonn
Mr.	Yitayal Anley	Mengistu	12/28/2010	Ethiopia	The Effect of Policy Incentives and Technology on Sustainable Land Management and Income of Small Farm Households: A Bioeconomic Model for Anjeni Area, North-Western Ethiopia	Faculty of Agriculture, University of Bonn
Mr.	Md. Alam Hossain	Mondal	10/4/2010	Bangladesh	Implications of renewable energy technologies in the Bangladesh power sector: Long-term planning strategies	Faculty of Agriculture, University of Bonn
Ms.	Farhat	Naz	7/20/2011	India	Socio-Cultural Implications of the Community-Based Water Management: A Case Study of Gujarat, India	Faculty of Philosophy, University of Bonn



Title	First name	Family name	Date PhD exam	Country of origin	Title of doctoral thesis	Faculty
Ms.	Lisa	Oberkircher	2/4/2011	Germany	Water-Saving in the Landscapes and Lifeworlds of Khorezmian Farmers, Uzbekistan	Faculty of Mathematics and Natural Science, University of Bonn
Mr.	Huu	Pham Cong	3/25/2011	Vietnam	Planning and Implementation of the Dyke Systems in the Mekong Delta, Vietnam	Faculty of Mathematics and Natural Science, University of Bonn
Ms.	Nadine	Reis	6/17/2011	Germany	Tracing and making the state. Policy practices and domestic water supply in the Mekong Delta, Vietnam	Faculty of Philosophy, University of Bonn
Ms.	Tina-Maria	Schieder	3/16/2011	Germany	Analysis of water use and crop allocation for the Khorezm region in Uzbekistan using an integrated hydrologic-economic water management model	Faculty of Agriculture, University of Bonn
Ms.	Almut Carola	Schmengler	3/2/2011	Germany	Modeling Soil Erosion and Reservoir Sedimentation at Hillslope and Catchment Scale in Semi-Arid Burkina Faso	Faculty of Mathematics and Natural Science, University of Bonn
Mr.	Benjamin	Schraven	9/29/2010	Germany	Irrigate or migrate? Local livelihood adaptation in Northern Ghana in response to ecological changes and economic challenges	Faculty of Philosophy, University of Bonn
Ms	Kathrin	Situmorang	7/14/2011	Germany	The Organisation of Trade in North Sumatra Batak Traders and Trading Networks	Faculty of Philosophy, University of Bonn
Mr.	Komsan	Suriya	4/11/2011	Thailand	An Economic Analysis of Community-based Tourism in Thailand	Faculty of Economics, University of Göttingen
Ms.	Teresa	Walter	11/3/2010	Germany	Inter-sectoral water allocation in the Middle Olifants of South Africa: Challenges and Opportunities	Faculty of Agriculture, University of Bonn
Ms.	Patricia	Woedem Aidam	3/30/2011	Ghana	The Impacts of Agricultural Sector Policies on the Demand for Water Resources within the Volta Basin in Ghana, West Africa	Faculty of Agriculture, University of Bonn

## 4.3. Capacity development in Central Asia

Over the past years, national and international institutions in Uzbekistan have become increasingly aware and interested in the set-up, concepts and output of ZEF's research in the region. Especially the research conducted in the context of the ZEF/UNESCO project, which has been supported by the BMBF since 2002, has shown high impact in the region. The research activities are coordinated from a project office based in Urgench, the capital of the region Khorezm.

The research conducted over the past decade in Uzbekistan has a strong emphasis on the actual implementation of research, collaboration with and participation of local stakeholders, and capacity development of local scientists. Examples of the outcome of these research efforts and set-up are: The project's scientists have tested and calibrated innovative concepts and technologies for land and water use, from the field level up to the regional scale of Khorezm. By means of GIS, remote sensing, and model-based planning tools, they can be transferred to and applied in similar irrigation areas in Central Asia, especially in the realms of agriculture, afforestation, irri-

gation and drainage management as well as environmental monitoring. Moreover, the project's databank, containing data collected by remote sensing technology and processed with Geographic Information System (GIS) tools, is not only used by scientists, but also by local administration units and ministries.

A major achievement of the project has been the education of an upcoming generation of young scientists in the region: More than 100 Master and Bachelor students and 25 PhD students, mostly from the region, have accomplished their studies in the context of the project. Scientific output from the ZEF/UNESCO project includes: 70 peer-reviewed articles, four books, more than 100 international conference papers, 70 publications in Uzbek scientific journals, 12 ZEF work papers, 22 doctoral theses, 81 master theses and 17 science briefs.



The ZEF/UNESCO project in Uzbekistan has been educating an upcoming generation of young scientists in the region.

### Precious Resources for Uzbekistan: Watch the movie

This video shows a range of research activities carried out in the context of the ZEF/UNESCO project on the improved management of natural resources in Uzbekistan. You can watch the 20-minute movie in English, Russian and German on our website via youtube: [www.youtube.com/user/zefbonn](http://www.youtube.com/user/zefbonn).

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Website: [www.khorezm.zef.de](http://www.khorezm.zef.de)  
Main partners: State University in Urgench, UNESCO  
Main funder: Federal Ministry of Education and Research (BMBF)



### ZEF-Director to hold new UNESCO chair on “Education for sustainable development”

ZEF-Director Paul Vlek was officially inaugurated as a UNESCO chair-holder in Urgench, Uzbekistan, on July 15, 2011. This chair on “Education for sustainable development” is one of 15 UNESCO chairs worldwide and the first one to be established in Central Asia. It will be supported for a five-year period.



## 4.4. Capacity development in Africa

Capacity development is one of ZEF's major items on its agenda. ZEF's long-term commitment to Africa is shown in the number of research projects it has conducted over the years, involving a large number of African scientists. With this approach, the institute has been contributing substantially to academic and institutional capacity building in the region. Around two-thirds of the PhD students in ZEF's Doctoral Studies Program come from Africa. After finishing their studies, the majority returns to the continent to follow-up on their careers, therewith forming a network of upcoming leaders and decision makers working with universities and international development organizations.

ZEF has also been involved in establishing Graduate Programs in Africa such as:

### The Center of Excellence in Development Studies, Accra, Ghana

This Center of Excellence was jointly set up by the Institute for Statistical and Economic Research (ISSER), University of Ghana, and ZEF in 2009. It is part of the DAAD (German Academic Exchange Service) network of Centers of Excellence in Africa.

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### ZEF at network meeting of the DAAD Centers of African Excellence:

ZEF-Director Solvay Gerke represented ZEF at the network meeting of the DAAD Centers of African Excellence taking place in Cape Town, South Africa, at the end of January, 2011.

### Capacity development partnership with Addis Ababa University

Since 2010, ZEF has cooperated with Addis Ababa University to develop and implement the first PhD Program for Environmental Planning in Ethiopia. The 4-year pilot phase is funded by the German Academic Exchange Service (DAAD) and Addis Ababa University and implemented together with the Institute for Environmental Planning at the University of Hannover. It is part of an official partnership between University of Bonn, Addis Ababa University and University of Hannover, signed on April 7, 2010.

The main goal of the newly established PhD Program is to contribute to more sustainable use and conservation of natural resources in Ethiopia by strengthening applied and interdisciplinary research and teaching capacities in environmental planning and natural resource management in the country. Meanwhile the second batch of students has started their courses.

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Main partners: German Academic Exchange Service (DAAD), Ministry of Education of the Federal Democratic Republic of Ethiopia



A workshop at Addis Ababa University, 2011.

# 5 Selected output and outreach

## News

- ZEF ranks again among global most important Think Tanks In the 2010 'To Go To Think Tanks' ranking, ZEF is – for the second year in a row – among the top 5% of all worldwide evaluated Think Tanks (more than 6,000 in 120 countries). It holds position 5 among the Top 10 of Science and Technology Think Tanks, and position 14 among the Best University affiliated Think Tank.
- ZEF-alumnus Sayan Chakrabarty has been honored with award in Social Sciences by the University Grants Commission (UGC) of Bangladesh ZEF-alumnus Dr. Sayan Chakrabarty of Shahjalal University of Science & Technology, Sylhet in Bangladesh has been honored with the award in Social Sciences by the University Grants Commission (UGC) of Bangladesh in Dhaka, Bangladesh on April 27, 2011.
- Opening of international Campus of „Alternative Nobel Prize“ in Bonn, May 30, 2011. The new international Campus of the Right Livelihood Award in Bonn, based at ZEF, has been inaugurated officially. Bonns Lord Mayor Jürgen Nimptsch and the Rector of the University of Bonn, Jürgen Fohrmann welcomed the audience, among them “Alternative Nobel Prize” laureates such as Raul Montenegro from Argentina, Hanumappa Sudarshan from India, Shrikrishna Upadhyay from Nepal und Wes Jackson from the U.S.A.

- Svenja Schulze, Minister of Innovation, Science and Research of the State North Rhine Westphalia (NRW) appointed ZEF a „Location of Progress“ (Ort des Fortschritts) in the context of its initiative “Progress NRW” (Fortschritt.NRW) on October 17.



In this picture: Minister Svenja Schulze with ZEF Directors and Jürgen Fohrmann, Rector of Bonn University.

## Lectures

### “Risk and Uncertainty for Sustainable Development” lectures series

In this seminar series, opportunities, risks and uncertainties for development are being addressed. The seminar series provides a forum for agenda setting and discussion on related themes in cooperation with leading experts in the fields of research and policy. It is organized in cooperation with the United Nations University (UNU) in Bonn.



Hansjoerg Strohmeyer at a “Risk and Uncertainty for Sustainable Development” lecture at ZEF.

- Prof. Ortwin Renn: „Coping with complexity, uncertainty and ambiguity: New approaches towards risk governance“ on July 4, 2011
- Dr. Saleemul Huq: „Evolution of climate change, adaptation and development science and policy: Some experiences from least developed countries, and Bangladesh“ , June 6, 2011
- Finn Tarp: „Aid, growth, and development: Have we come full circle“, June 7, 2011
- Hansjoerg Strohmeyer: „Responding to vulnerability from the perspective of a global Humanitarian Organization“, February 25, 2011
- Prof. Frances J. Stewart: „Marginalization of the People“, October 29, 2010

## Water Lecture series

The Water Lecture series is a joint series organized by the Center for Development Research (ZEF), the UN-Water Decade Programme on Capacity Development (UNW-DPC), the United Nations University (UNU) in Bonn, and the Global Water System Project (GWSP).



- „Water, Culture and Development: Perspectives from West Africa“, July 13, 2011. With Emmanuel Akpabio, Wolfram Laube, and Irit Eguavoen (ZEF)
- “Transforming water management: The promise of integrated Earth Observations”, May 24, 2011 with Richard Lawford, former executive director of the Global Energy and Water Experiment Project (GEWEX) of the World Climate Research Programme
- „Sustaining growth via water productivity: 2030/2050 Scenarios“ , April 19, 2011, by Claudia Ringler, Senior Research Fellow at the International Food Policy Research Institute (IFPRI)
- „No end of the dam debate in sight“, October 27, 2011. Debate with Waltina Scheumann (German Development Institute, DIE), Reza Ardakanian (UN-Water Decade Programme on Capacity Development, UNW-DPC) and Nirmalya Choudhury (TU Berlin)

For more information on the ZEF lectures please look at:  
See [www.zef.de/events](http://www.zef.de/events)

## Press Coverage

Please have a look at [www.zef.de/press coverage](http://www.zef.de/press%20coverage).

## Publications

ZEF publications are listed at [www.zef.de](http://www.zef.de) (Publications). Peer reviewed publications by ZEF researchers are at their respective web links, see [www.zef.de/staff1.html](http://www.zef.de/staff1.html).



# 6

## Budget 2011 /Funding Partners of ZEF

Indirect Support*)	in Euro	in %
German Academic Exchange Service (DAAD) / German Federal Ministry of Economic Cooperation and Development (BMZ)	345.378	48,3
German Academic Exchange Service (DAAD) Regional Program / German Foreign Office (AA)	49.775	7,0
Own funds of students	43.000	6,0
China Scholarship Council	38.050	5,3
Katholischer Akademischer Ausländer-Dienst (KAAD)	31.600	4,4
Ministry of Higher Education, Malaysia	31.050	4,3
Jack Kent Cooke Foundation	28.000	3,9
IFEU/GTZ, DAAD	21.600	3,0
Government of Indonesia	13.300	1,9
Evangelischer Entwicklungsdienst (EED)	12.645	1,8
Evangelisches Studienwerk e.V. Villigst	12.300	1,7
Volkswagen Stiftung	12.300	1,7
Ministry of Education, Taiwan	12.000	1,7
National Council of Research, Science and Technology, Chile (CONICYT)	11.525	1,6
Ministry of Agriculture and Rural Development of Vietnam	11.080	1,5
Government of Malaysia	10.800	1,5
Higher Education Commission Pakistan (HEC)	10.800	1,5
Ministry of Education, Indonesia	10.800	1,5
Stiftung der Deutschen Wirtschaft (SDW)	7.175	1,0
Universiti Brunei Darussalam	2.000	0,3
<b>Total</b>	<b>715.178</b>	<b>100</b>

\*) Scholarships directly funded by the donors.

External Funds**)	Projects	in Euro	in %
German Federal Ministry of Education and Research (BMBF) via		7.961.074	78,2
<ul style="list-style-type: none"> <li>German Aerospace Center (DLR), or</li> </ul>	Crossroads Asia project Forest Landscapes Institutions & Development project International Advanced Study Courses (IPSWaT) International Project Office (IPO), Global Water Systems Project (GWSP) WASCAL project, West Africa		
<ul style="list-style-type: none"> <li>Forschungszentrum Jülich</li> </ul>	Uzbekistan project Wisdom project, Vietnam		
German Federal Ministry of Economic Cooperation and Development (BMZ)		500.294	4,9
directly	Excessive Price Volatility project		
BMZ via			
<ul style="list-style-type: none"> <li>German Academic Exchange Service (DAAD)</li> </ul>	PhD Course at the University of Addis Ababa, Ethiopia		
<ul style="list-style-type: none"> <li>German Technical Cooperation (GTZ)</li> </ul>	Re-Thinking Water Storage project		
<ul style="list-style-type: none"> <li>International Water Management Institute (IWMI)</li> </ul>	Improving Water productivity in Crop Livestock Systems project		
<ul style="list-style-type: none"> <li>International Center for Agricultural Research in the Dry Areas (ICARDA)</li> </ul>	Wheat for Asia project		
German Academic Exchange Service (DAAD) / German Foreign Office (AA)	DAAD/ZEF Centre of Excellence, Ghana RLC Campus	363.894	3,6
Robert Bosch Foundation (RBS)	Junior Professorship	309.831	3,0
Bill and Melinda Gates Foundation	Marginality project	265.742	2,6
International Food Policy Research Institute (IFPRI)	Agriculture-environment-health Economics of Desertification, Land Degradation and Drought Enhancing Women's Assets to Manage Risk & Climate Change	140.202	1,4
Volkswagen Foundation (VW)	Forest Resource & Livelihood Management project, East Africa Conversion von Scientific Relations, Tadchikistan Local Governance & fragile Staatlichkeit Workshops	128.599	1,3
German Academic Exchange Service (DAAD)	International Doctoral Studies Intercultural Weekend Seminar	109.921	1,1
Fiat Panis Foundation	Dr. Hermann Eiselen Doctoral Program	100.000	1,0
German Research Foundation (DFG)	Health Impact of Water Access project Water Resources Institutions & Human Health in India project	82.965	0,8

\*\*) Third-party projects of ZEF. Funds budgeted i.a.w. annual financing plans.



European Commission (EU)	CODOC project URBEN project	58.067	0,6
Dreyer Foundation	Doctoral Scholarship	30.572	0,3
German Technical Cooperation (GIZ)	Cooperation Bonn Summer School	30.465	0,3
Bayer CropScience	International Price Effects on Land Use & Production	30.000	0,3
Deutsche Welthungerhilfe (DWHH)	Contextual Analysis, South Punjab	20.000	0,2
Kraft Foods Deutschland GmbH	Situation of Children and Adolescents in Ethiopia	18.384	0,2
IHDP	GWSP Partner Contributions	13.908	0,1
IGBP	GWSP Partner Contribution – Participant Fees for Workshop	9.471	0,1
Diversitas	GWSP Partner Contributions	7.630	0,1
International Water management Institute (IWMI)	Shallow Groundwater Project	694	0,0
<b>Total</b>		<b>10.181.712</b>	<b>100</b>

Core funds***)	in Euro	in %
Personnel Costs	1.277.587	
Administrative Costs	290.000	
University Bonus System including BMBF & DFG Overhead Shares****)	43.933	
<b>Total</b>	<b>1.611,520</b>	<b>100</b>

<b>Indirect Support &amp; External Funds &amp; Core Funds</b>	<b>12.508.410</b>	<b>Euro</b>
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\*) Scholarships directly funded by the donors.

\*\*) Third-Party Projects of ZEF. Funds budgeted i.a.w. annual financing plans.

\*\*\*) University of Bonn, State of North-Rhine Westphalia funds for ZEF.

\*\*\*\*) Bonus of up to 5% of annual external funds of ZEF paid by the University of Bonn; BMBF & DFG Overhead Shares.

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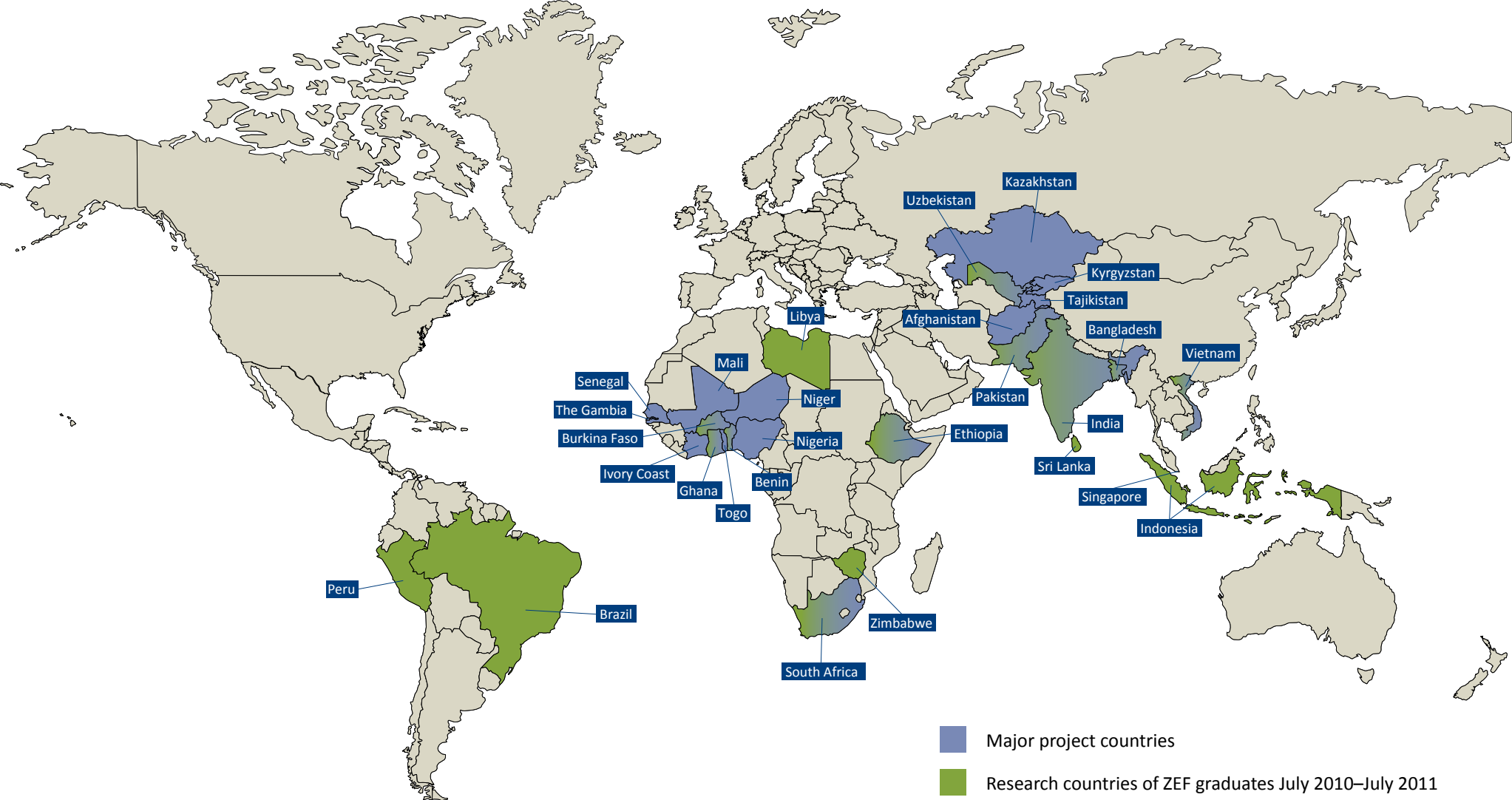
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Board meeting at ZEF, October 2011.

# A global view on ZEF's major trans-disciplinary research





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