



zef

Center for
Development Research
University of Bonn

Annual Report

Capacity Building in the Global South

2015 - 2016



Abbreviations

AGRODEP African Growth and Development Policy Modeling Consortium

ASARECA Association for Strengthening Agricultural Research in Eastern and Central Africa

AVRDC World Vegetable Center

BMBF German Federal Ministry of Education and Research

BMZ German Federal Ministry for Economic Cooperation and Development

BMUB German Federal Ministry of the Environment, Nature Conservation, Building and Nuclear Safety

BICC Bonn International Center for Conversion

BRAC Bangladesh Rural Advancement Committee

CAS Chinese Academy of Sciences

CIFOR Center for International Forestry Research

CCAP Chinese Center for Agricultural Policy

DAAD German Academic Exchange Service

DLR German Aerospace Center

EEA Ethiopian Economic Association

EC-JRC Joint Research Centre of the European Commission

ECFF Environment and Coffee Forest Forum

ECFS Eurasian Center for Food Security

ECOWAS Economic Commission of West African States

ENTRO Eastern Nile Technical Regional Office

FARA Forum for Agricultural Research in Africa

FAS Sustainable Amazonas Foundation

FANRPAN Food, Agriculture and Natural Resources Policy Analysis Network

FOFIFA National Center for Applied Research in Rural Development

FZJ Research Centre Jülich

GlobalHort Global Horticulture Initiative

GIZ German Federal Enterprise for International

Cooperation

HEALTHCAP Health Research Capacity and Water-Related Diseases

IFPRI International Food Policy Research Institute

ISSER Institute of statistical, social and economic research

ICARDA International Center for Agricultural Research in the Dry Areas

ICRAF World Agroforestry Centre

IHEID Graduate Institute of International and Development Studies

IIPHG Indian Institute of Public Health

IGIDR Indira Gandhi Institute of Development Research

IIASA International Institute for Applied Systems Analysis

INRA National Institute of Agronomic Research

IOA Institute of Oriental and Asian Studies

LMU Ludwig-Maximilians-University of Munich

IPAM International People's Agroecology Multiversity

ILR Institute for Food and Resource Economics, University of Bonn

IZNE International Center for Sustainable Development

KUL Catholic University of Leuven

KoGa Horticulture Competence Centre

MCC Mercator Research Institute on Global Commons and Climate Change

RWI Rhenish-Westphalian Institute for Economic Research

UAB Autonomous University of Barcelona

UDS University of Development Studies of Tamale

UNU-EHS United Nations University - Institute for Environmental and Human Security

UoA University of Antananarivo

LEI-WUR Wageningen Economic Research

WHH World Hunger Help

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1

STRENGTHENING INTERNATIONAL PARTNERSHIPS

Introduction by ZEF's directors

Since its foundation 19 years ago, one of ZEF's major focuses has been its engagement in capacity building at the highest academic level. ZEF's doctoral program, which has so far trained over 650 students from more than 120 countries, has become one of the Center's flagship activities, and recently became the 10th member of the Bonn International Graduate Schools initiative. Furthermore, ZEF has also contributed to the development and establishment of several graduate programs and research initiatives across the globe. Recently, this kind of cooperation has advanced even further to include close partnerships between ZEF/University of Bonn and its various partner universities, research institutions and their programs worldwide.

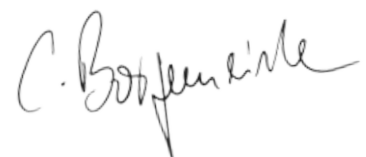
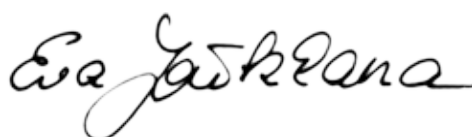
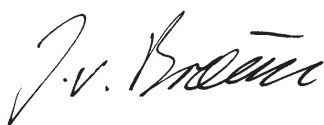
Examples are the Ghanaian-German Center for Development Studies, a University of Ghana and ZEF partnership; the German-Bolivian partnership for integrating biodiversity measures in environmental impact assessments involving the Catholic University of Cochabamba and ZEF; ZEF's partnership with the University of Tokyo's International Program in Agricultural Development Studies; and ZEF's engagement in the Graduate Studies Program of WASCAL (West African Science Service Centre on Climate Change and Adapted Land Use), for instance the Center's close cooperation with the doctoral program on climate change economics at

Senegal's University of Cheikh Anta Diop. Since 2011, ZEF has been hosting one of the eight campuses and the international coordination office of the Right Livelihood College, linking winners of the Right Livelihood Award, better known as the "Alternative Nobel Prize", with applied and interdisciplinary research and education. In November 2016, Cuba's Universidad Central 'Marta Abreu' de las Villas in Santa Clara and ZEF began developing a Cuban-German School for Interdisciplinary Development Studies, an initiative with a strong emphasis on e-learning and data management, among others.

One of the reasons for ZEF's considerable scientific output are its strong networks and the untiring commitment of its International Advisory Board, directors, junior and senior researchers, its alumni, senior fellows and its various international and national partners. ZEF remains successful in acquiring competitive grants from a variety of major donors and is deeply grateful for their continuous support, which contributes over 80% of the Center's overall budget and thus constitutes the backbone of ZEF's scientific success and outreach. Among the major donors are the German Federal Ministry of Education and Research (BMBF), the German Federal Ministry for Economic Cooperation and Development (BMZ), the German Federal Ministry for the Environment (BMUB), the German Federal Ministry of

Food and Agriculture (BMEL), the State of North-Rhine Westphalia, the German Academic Exchange Service (DAAD), the European Union, the Robert Bosch Foundation, the Foundation *fiat panis*, and the Volkswagen Foundation.

ZEF's capacity building partnerships have a strong research focus and are aligned with the Center's evolving research agenda on sustainability. They result from and further contribute to ZEF's extensive international networks by improving the education of students worldwide at Masters and doctoral levels. Moreover, capacity building itself is also an emerging research issue in some of ZEF's research that focusses on outcomes. Besides the strong ongoing initiatives such as WASCAL, BiomassWeb, NutriHAF, Volatility Project, PARI – see the following pages for more details – we are happy to welcome 'newcomers' such as the new graduate program on One Health and Urban Transformation, under which 13 new doctoral students will start to conduct their research in the metropolitan regions of Sao Paulo (Brazil), Accra (Ghana), Ahmedabad (India) and the German Rhine-Ruhr region in 2017. They will be supervised by a consortium of scientists from various faculties of the University of Bonn, the University of Applied Sciences Bonn-Rhein-Sieg and the United Nations University.



IF YOU WANT TO GO FAST, GO ALONE, IF YOU WANT TO GO FAR, GO TOGETHER (AFRICAN PROVERB)

By Jan-Henning Sommer and Christian Borgemeister

2

Collaboration and strong and inter-linked networks are promising instruments for sustained progress in a globalizing world that is characterized by inequality in regard to human development. Building such “capacity for development” generally means strengthening the ability of individuals, groups, institutions and organizations to identify and solve problems. Building science capacity is a key element in this context.

Capacity building is no unidirectional pathway

The discourse on capacity building has undergone a paradigm shift during the last decades and not without a reason. Originally, the term capacity building implied a clear role model with a “capacity provider” at one end and a “capacity receiving party” at the other. This approach implies a distinct hierarchy in the capacity building process, with the role of “provider” usually gaining more appreciation than that of “receiver”. In a development context, this is not only ethically problematic, it also potentially jeopardizes the success of capacity building initiatives, especially when the “capacity provider” originates from a developed and the “capacity receiver” from a developing country. In the past, such one directional capacity building approaches have been designed as “scientific development aid” with the intention of teaching development countries success stories from the developed world.

In fact, a party that possesses a capac-

ity that another does not have always holds an advantage. However, the relevant questions here are: “What is a capacity?” and “How is a capacity valued?” Evidently there are different ways of valuing and perceiving both success stories and capacities. For instance, many important capacities like indigenous and local knowledge have been neglected in the past. Hence, capacity building can only be a success if all the parties involved perceive each other as being equal partners, and if the knowledge and experiences of the different parties are equally appreciated. Mutual respect is thus a prerequisite for embracing new capacities and gaining the ownership on them. Moreover, the exchange of experiences and lessons learned from different perspectives also facilitates mutual learning.

Scientific capacity for development

Science capacity is much more than the accumulation of scientific knowledge. Science capacity means the ability to approach particular issues with scientific means. It is widely accepted that in our globalizing world the most pertinent challenges cannot be successfully addressed by approaches that derive from a single disciplinary angle alone. Innovative solutions require addressing the complex system in which challenges are embedded. In other words, an understanding of the context is required before appropriate solutions to any problem can be developed. It is no secret that interdisciplinary approaches

that address a topic from different angles and perceptions, although more labor-intensive, provide much more tailored solutions than any monodisciplinary approach can offer. In addition, there is a need to account for the context-specific nature of results, findings and insights, necessitating their adaptation before any successful transfer to a new context can be made.

Even more importantly, the perception of challenges often differs depending on the contexts they are situated in, i.e. the background, skills and experiences of the people facing them. Hence, defining the problem in an appropriate way is a prerequisite for providing tailored solutions. This requires the involvement of all the parties concerned and consideration of their views. This methodological approach is called transdisciplinary research and is usually dealt with by integrating the stakeholder community concerned in a participatory manner in order to broaden and enrich the scientific discourse. Moreover, participatory research is also a major prerequisite to ensuring that the envisaged findings are really needed and potentially contribute not only to the generation of new knowledge but also its uptake and implementation. By integrating the relevant actors from the beginning, scientific concepts can be constantly reviewed and adapted to actual needs in order to enable local partners to eventually become the multiplicative interface for knowledge dissemination.

Capacity development

As you will see on the following pages, capacity development initiatives that underscore the abovementioned lines of thought are playing an increasingly important role in ZEF's research and development portfolio, especially with respect to graduate programs. Here, the participatory principle plays a crucial role in order to generate strong, autonomous research institutions that target the relevant research needs in their particular environments. In such initiatives, all the partners benefit from mutual learning and an exchange of lessons learned regarding scientific success and the development of effective graduate programs. Moreover, the active role of local universities in curricula development and the establishment of joint programs ensures that national research demands in the partner countries are met, as local institutions and other stakeholder groups are actively involved in the design and implementation of such training initiatives. This ultimately also considerably improves the recruitment opportunities of the future graduates, and supports the paradigm shift towards more impact-oriented research that intends to not only contribute to new and better knowledge, but also to its translation from science to practice.

Existing graduate programs to which ZEF is actively contributing include several examples of good practice:

The Ghanaian-German Center for Development Studies (GGCDS) is jointly operated by ZEF and the Institute of Statistical Social and Economic Research (ISSER) at the University of Ghana. The Center has enhanced the research infrastructure in Ghana, engages in staff development, and runs a PhD program. Fifty PhD-students are being provided with theoretical and methodological training through the GGCDS interdisciplinary PhD course and the GGCDS summer school at ZEF. Academic networking and proposal development activities have resulted in a number of joint research projects.

The German-Bolivian Partnership for integrating biodiversity measures in environmental impact assessments, a partnership between the Catholic University of Cochabamba and ZEF.

Emerging from an initiative of Bolivian researchers, the major focus of this program is the establishment of a long-term relationship between science, policy makers and NGOs to build local capacities to conduct Environmental Impact Assessments considering local specific impacts on biodiversity and pooling a large group of Bolivian and international experts. The active participation of Bolivian government representatives in particular is a strong plus point in favor of the implementation of better Environmental Impact Assessments standards.

ZEF's partnership with the International Program in Agricultural Development Studies (IPADS). ZEF and IPADS agreed to exchange faculty staff and students as well as to carry out joint education and research programs as part of the academic collaboration between the University of Bonn and the University of Tokyo. ZEF and IPADS are both interested in inter- and transdisciplinary approaches to tackling agricultural and environmental problems in developing regions around the world, as well as in a lively exchange of lecturers and students. The next step will be the establishment of a joint graduate school working in the field of a developmental issue.

WASCAL's Graduate Studies Program on climate change economics at Senegal's University of Cheikh Anta Diop was supported by ZEF through lecturing activities and the co-supervision of all 20 doctoral students from two batches and serves as a good role model for participatory capacity development programs. Most of the students have successfully graduated and now hold teaching and research positions at universities in their home countries, where they are contributing to climate change education and research.

The Right Livelihood College (RLC) is a global education and research initiative of university-based development institutes and the Right Livelihood Award Foundation in Stockholm. The RLC follows transdisciplinary and participatory approaches by working closely together with the "Alternative Nobel Prize" Laureates, their civil society organizations and NGO networks in the Global South. The RLC Campus Bonn was established

at ZEF in 2011; other RLC Campuses are based at universities in Ethiopia, Argentina, India, Sweden, Nigeria, USA, and Chile. The Global Secretariat of the RLC moved to ZEF in 2014.

One Health and Urban Transformation graduate program. Structural change processes in four metropolitan areas (Sao Paulo/Brazil, Accra/Ghana, Ahmedabad/India and the German Rhine-Ruhr region) are to be described together with the local players using a transdisciplinary, application-oriented approach and recommendations are to be made on how interventions can lead to concrete, positive changes on the ground using innovative approaches. The views and needs of the stakeholders involved are taken into account from the outset in order to define the exact research questions.

Cuban-German School for Interdisciplinary Development Studies (CG-SIDS). This is part of a program promoting bilateral partnerships between higher education institutions in Germany and developing countries with a focus on the UN Sustainable Development Goals. The project will provide relevant, high-quality and interdisciplinary content to students at Masters, doctorate, and postdoc level. It places a strong emphasis on e-learning and data management and will contribute to a broader research program for Cuba, in particular in regard to developing innovative solutions to central sustainable development goals.

Lessons learned on the road to capacity development

Building capacities for development is no small task and requires appropriate tools as well as the commitment of all the parties involved. Participatory planning and implementation approaches need to emerge in cooperation with local actors and incorporate their ideas. Capacity building initiatives have a role to play as providers of demand-driven and context-oriented skills and tools to local actors. The key to the long-term sustainability of capacity development activities, however, is to provide appropriate solutions for evident challenges and to translate science capacity into societal capacity that is accepted and implemented.

RESEARCH AGENDA

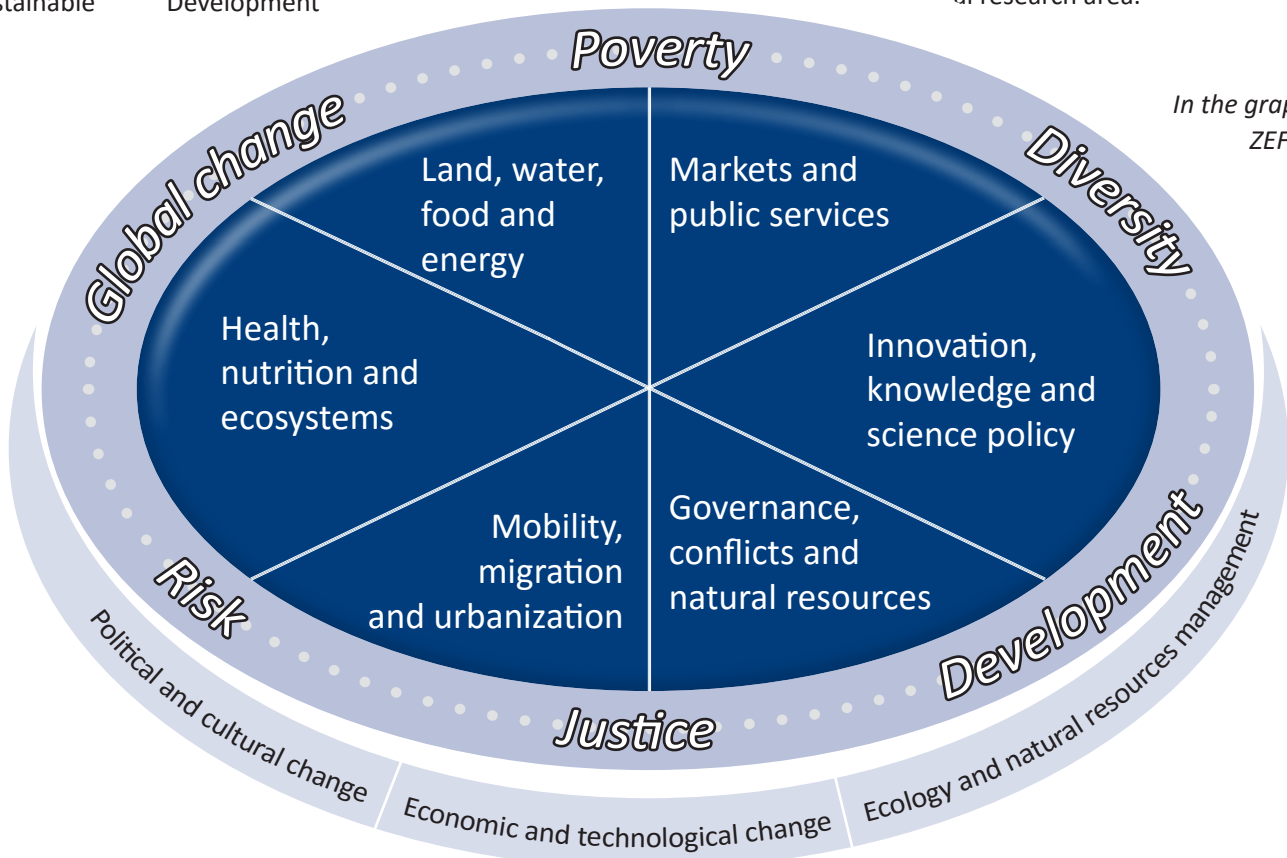
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ZEF's work is dedicated to development research in its different and interlinked components. The Center's core research areas are based on the disciplinary strengths of our three departments, as well as on our interdisciplinary expertise. In addition, we aim to ensure transdisciplinary stakeholder involvement across all research activities, i.e. in the definition of research topics and the perception of scientific findings at different levels with a view to their technical, political and societal implementation.

ZEF's six core research areas take the Sustainable Development

Goals into account which are succeeding the 2000-2015 Millennium Development Goals. In this regard, the six core research areas ensure the full thematic integration of ZEF's science program and contribute in a sustainable way to the Center's global research and development objectives which focus on global change, poverty reduction, justice, maintaining diversity, and risk management. ZEF's development objectives are to be implemented via inter- and transdisciplinary research, emphasizing gender issues.

The manifold aspects of global change such as continued human population growth, climate change and geopolitical developments build an overarching frame under which the research agenda has been developed. As such, each of the six core research areas relates to the overall sustainable development goals, while accentuating a specific bundle of topics on which a particular focus is set. All areas are closely interlinked and sometimes overlap thematically, also allowing for the continuous amplification of thematic arrangements beyond the given frame of the individual research area.



In the graph below:
ZEF's science program.

3.1

INNOVATION KNOWLEDGE SCIENCE POLICY

West African Science Service Center on Climate Change and Adapted Land Use (WASCAL)

Improving the adaptive capacity of ecological and socio-economic systems in the face of climate change

The WASCAL Core Research Program is a consortium of German research institutions, coordinated by ZEF, that implements a joint research program on adapted land use and management under changing climatic conditions in West Africa.

The program aims at:

- improving the adaptive capacity of ecological and socio-economic systems in the face of climate change
- securing the flows of key ecosystem services like food production, provision of clean water, soil productivity, carbon sequestration, and services related to biodiversity
- improving human livelihoods.

Research activities

The Core Research Program (CRP) supported WASCAL in establishing a first-class research and climate service infrastructure. Therefore, field laboratories and hydro-meteorological testbeds were equipped for measuring standard climate and sophisticated water and energy fluxes. Access to international literature and resources and earth observation centers was facilitated. A central data management infrastructure called WADI has been established permitting the collection of and access to all levels of research data, satellite information and model results. Observation networks will be set up for land use, biodiversity, and socioeconomic factors. Wrapping up research findings for con-

tributing to a bridging proposal for CRP WASCAL was in the focus as well.

Events

- July 20-22, 2015 at the Karlsruhe Institute of Technology. Exchange of information and experiences discussion of viable strategies for the WASCAL research program until 2020.
- April 2016 introduction to the new research coordinator of the WASCAL Competence Center in Burkina Faso.

Publications

wascal.org/publications/journal-articles

Website

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Improved implementation of biodiversity accounting in Bolivian Environmental Impact Assessments

German-Bolivian Partnership for integrating biodiversity measures in environmental impact assessments

Within this project, a long-term partnership between the Universidad Católica Boliviana in Cochabamba/Bolivia and has been established.

The overall aim was to jointly work on an improved implementation of biodiversity accounting in Bolivian Environmental Impact Assessments (EIA).

Research activities

Evaluation of challenges and opportunities to improve Bolivian EIAs with regard to biodiversity.

- new standards for the consideration of biodiversity in Bolivian EIAs have been jointly discussed with Bolivian stakeholders from science, policy, and society.

- A curriculum and a webinar for the integration of biodiversity-related EIAs were set up as part of the environmental engineering curriculum at Universidad Católica Boliviana in Cochabamba.
- Junior researchers from Bolivia and Germany took part in the doctoral program at ZEF.

Events

Every year, two workshops are conducted, one in Bolivia and one in Germany. The first three workshops took place in Cochabamba (June 8-12 2015), Bonn (September 28-October 2, 2015) and La Paz/Cochabamba (July 11-17, 2016).

Doctoral research

Candan Ergeneman. Biodiversity, Ecosystem Services and Resilience Thinking: An Impact Assessment Framework for Bolivia.

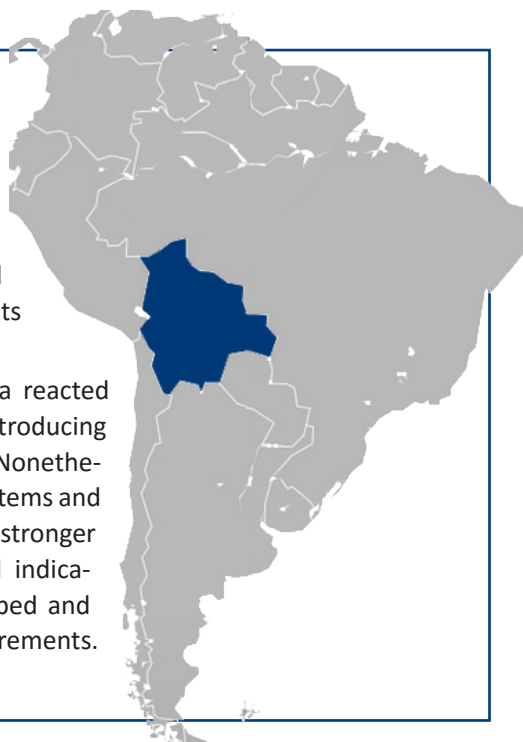
Website

zef.de/biodiv-eia.html

In focus: Bolivia

Despite its abundant natural resources Bolivia remains one of the poorest countries in South America. A strong political focus on economic growth has led to pressure on natural ecosystems and other serious threats to the environment and biodiversity.

Like in many other countries, Bolivia reacted to this environmental pressure by introducing environmental impact assessments. Nonetheless, Bolivia's great diversity of ecosystems and outstanding natural capital calls for a stronger consideration of biodiversity-related indicators in EIAs that need to be developed and adapted to local conditions and requirements.



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Main cooperation:
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Program of Accompanying Research for Agricultural Innovation (PARI)

PARI brings together partners from Africa, India and Germany to contribute to sustainable agricultural growth and food and nutrition security in Africa and India.

PARI offers independent scientific advice to the German government's "One World, No Hunger"-Initiative (SEWOH) which is one of the most significant initiatives to improve food and nutrition security in Africa by stimulating the generation and implementation of innovations in agriculture and the food sector. Among other activities, SEWOH seeks to achieve its objectives by establishing Green Innovation Centres in 12 African countries and India. Countries covered by PARI include: Benin, Burkina Faso, Cameroon, Ethiopia, Ghana, Kenya, Mali, Malawi, Nigeria, Togo, Tunisia, Zambia and India.

Research activities

An Africa-wide study and 12 country dossiers were completed to identify strategic directions for development investment in the agriculture and food sector in Africa. This research shows that the overall picture of the agricultural sector's performance in Africa is

Contribute to sustainable agricultural growth, food and nutrition security in Africa and India.

encouraging. Yet, in many countries substantial efforts are needed to sustain and accelerate agricultural development for reducing poverty and hunger. PARI has launched a number of activities to identify opportunities for stepping up and channeling these efforts:

- Three national studies undertaken by each African partner to analyze the current state of the agricultural innovation system in their country, including a review of available innovations, innovation investments and innovation platforms
- A GIS-based typology tool (eAtlas) to map out agricultural productivity and efficiency gaps and thereby prioritize investments for Ghana and Malawi which will later be expanded to other PARI countries
- Modelling the impact and cost-effectiveness of innovation packages at the production level for different commodities in Africa
- An online Innovation Database to collect and share agricultural innovations that have the potential to be scaled up in tropical and sub-tropical countries (database.research4agrinnovation.org).

- Farmers' innovation contests in Kenya, Ethiopia, Malawi and Zambia to identify innovations from the "bottom up" and thereby complement innovations coming out of formal research systems (further contests will follow in 2017).

Events

- August 12, 2015: PARI side-event at the 29th International Conference of Agricultural Economists, Milan/ Italy
- November 10-12, 2015: PARI Modelling Workshop and Annual Research and Planning Meeting, Bonn/Germany
- January 16-18, 2016: PARI at the International Green Week, Berlin/ Germany
- June 14, 2016: PARI side-event at the 7th Africa Agriculture Science Week, Kigali/Rwanda
- September 25, 2016: PARI side-event at the 5th African Association of Agricultural Economists Conference, Addis Ababa/Ethiopia

Publications

research4agrinnovation.org/publication

Website

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MOBILITY MIGRATION URBANIZATION

3.2

Generate novel perspectives in Area Studies research

The competence network aims to generate novel perspectives in Area Studies research by using interdisciplinary theories and methods.

Comprised of half a dozen research institutions with regional expertise of among others Afghanistan, Iran, Kazakhstan, Nepal, the network researches the epistemic regimes, power relations, and the relationship between space and human interaction across different scales.

The network uses Norbert Elia's concept of 'figurations' as a main which are understood as specific causal and functional connections between humans. During the first funding phase (2011-2014), micro-level empirical research focused on figurations related to three thematic concepts: conflict, migration and development. Since early 2015, the network has begun synthesizing earlier research into an in-depth analysis of how spatial realities are constructed precisely by the movement of people, goods and ideas, as well as how these constructions enable and constrain mobility – both physical and social mobility within and across limiting factors such as geographic but also political, socio-cultural and ethnic borders and boundaries.

Research activities

Crossroads researchers gave talks at

- Februar 2015: Orientalism, Colonial Thinking, and the Former Soviet Periphery, Vilnius/Lithuania

- April 2016: British Association for Slavonic and East European Studies, Cambridge/UK
- November 2016: Central Eurasian Studies Society, Princeton/USA
- August 2016: Post Disciplinary Science Futures: (Un)Thinking Research, Praxes for a Pluriversal World, XVI World Congress of Comparative Education Societies, Beijing/China

Events

September 22-23, 2016: 5th International Crossroads Asia Conference: Area Studies' Futures at ZEF

Crossroads Asia

Publications

rossroads-asia.de/en/publications.html

Website

crossroads-asia.de

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3.3

LAND, WATER, FOOD AND ENERGY

BiomassWeb

Improve food security in Africa through harnessing productivity and efficiency gains in the whole biomass-producing, processing and trading system

BiomassWeb has the overall goal to improve food security in Africa through harnessing productivity and efficiency gains in the whole biomass-producing, processing and trading system.

Research activities

The BiomassWeb project has been evaluated successfully and extended until June 2018. The evaluation process of the BMBF-funded GlobE program entailed a detailed report and a presentation of research results to representatives of BMBF, BMZ and PTJ as well as five external evaluators. In 2015 BiomassWeb launched a competitive application process for Demand Driven Research and Development activities which was designed by stakeholders in the focus countries Ghana, Nigeria and Ethiopia. Meanwhile, six projects were selected and will start their activities with additional funding from BMBF in mid-2016.

Events

February 23-26, 2016: BiomassWeb Science Meeting. The first BiomassWeb Science Meeting was held at the University of Ibadan in Nigeria. Project members from all three partner countries and comprising ten different nationalities participated in the meeting and presented their research. The goal of the meeting was to intensify the collaboration and exchange between different BiomassWeb work packages.

Follow the Innovation Workshop:

June 22-23, 2016: Girma Kelboro Mensuro and his team organized a workshop on Stakeholder Interaction and Participatory Research in the BiomassWeb project: Lessons learned at ZEF. Junior and senior researchers who applied stakeholder participatory approaches in their BiomassWeb research shared experiences and carried out joint analyses. The overall goal was to broaden the knowledge base on participatory research methodology and process documentation as applied in different contexts in the BiomassWeb project research countries.

iModeler Workshop:

February 29 to March 01, 2016: A two-day workshop on Qualitative Modeling was held at the University of Ibadan in Nigeria. Members of BiomassWeb presented the development of descriptive and explorative models of biomass-based value webs of different crops with the software iMODELER. The workshop's goal was to find potential measures for explorative modeling and reflect on how to initiate change as well as identify obstacles to learn the systemic methodology of Explorative Qualitative Modeling.



BiomassWeb

Research in the spotlight: Nutritious food from local trees

In Ethiopia, coffee is produced in diverse multi-species agroforestry systems, which are very beneficial from both an economic as well as an ecological perspective. But the side effect of non-commercial trees to people's food and nutrition is yet unknown and unaccounted. Hence, it is important to study the role that agro-forestry systems play to strengthen the food and nutritional security of small farm households.

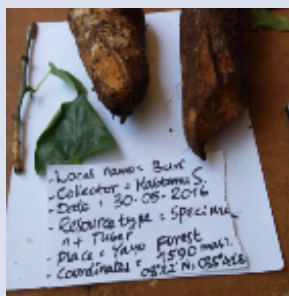
A team of ZEF researchers (Daniel Callo-Concha, Omarsher-

if Mohamed and Habtamu Seyoum) determines the species composition and structure of the agroforestry systems in Southwest Ethiopia and identifies, together with the farmers, the nutritionally valuable trees. Furthermore, the nutritional status of local households has been evaluated, and their nutritional demands been matched with the nutrients available in the multi-purpose trees. So far, 300 households participated in the study and 15 promising tree species have been identified.



1. Households' nutritional stand is assessed by members profiling, dietary assessments and children anthropometric measurements

2. Promising nutritious tree species are identified through botanical surveys and interviews with local experts



3. Promising plant species and their edible parts are identified by botanists at the Addis Ababa University

4. Selected species are analyzed in the laboratory for the micronutrients content



Doctoral research

Getachew Legese Feye. Family Farming and Food Insecurity in Ethiopia: The Role of Risk Perceptions of Family Farmers in Maize Biomass-Based Value Webs in Jimma area.

Omarsherif Mohammed Jemal. The Role of Agroforestry Systems to Enhance Household's Food Security: a Case Study in Yayu area, South West Ethiopia.

Marcos Jimenez. Temporal Dynamics of Biomass Provision from Agricultural and Agro-Forest Land Use Types at Landscape Scale.

Francis Mwambo. Energy Efficiency Analysis of Biomass Production. Considering African land use schemes, human labor and draft animals.

Isaac Mbeche Nyang'au. Boundary Work and Agricultural Innovation Systems: Developing a Conceptual and Methodological Framework for Science-Practice Interaction and Knowledge Generation using an example of Push-pull Technology in Ethiopia.

Daniel Akoto-Sarfo. Bamboo agroforestry for household energy and food security in Ghana: An exploratory study.

Gerba Leta Dufera. The Ethiopian Agricultural Extension System and its role as a "Development Actor": the case of Bako and Yem Woredas, South-western Ethiopia.

Website

biomassweb.org

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Main funder: BMBF, BMZ

ZEF is part of the 18-member international consortium FOODSECURE which aims to design effective and sustainable strategies for assessing and addressing the challenges of global food and nutrition security. FOODSECURE develops a knowledge base to support policy makers of the European Union and other stakeholders in the design of consistent, coherent, long-term policy strat-

egies for improving food and nutrition security. The impacts of specific local national policies as well as the consistency of various European policies (e.g. trade, agricultural, aid, etc.) are analyzed. To that effect, the project provides a set of analytical instruments to understand, analyze or experiment with the effects of short and long-term policies related to achieving food security. These instruments can take the form of compiled and compressed analytical research papers, made approachable to a general audience through an innovative tape of online library, but also of new datasets and models. Specific findings of general and current interest in this project include the impacts of the Paris climate change agreement to limit global warming. This agreement will have profound impacts on the agricultural sector, as a key emitter of greenhouse gases as well as a key potential mitigator of climate change. These impacts on various sectors of the agricultural system are modeled and predicted into the long term, together with the evolution of global trade, demographics, technological change and the global economic system. Such predictions to the long term (2050) necessarily entail the analysis of various scenarios of the state of the world in the future, which were developed in a participatory process involving various stakeholders of the global food system. These scenarios have challenged the foodsecure scientists to reflect on various levels of global sustainable development in their models. Hence, both the issues of environmental sustainability and economic equality are strongly reflected in the model predictions.

Research agenda

In this project ZEF has two streams of research: investigating the determinants of food commodity price volatility and its impacts on food and nutrition





FOODSECURE

FOR POLICIES THAT MATTER

security, as well as the determinants of agricultural innovations (systems) and science policy and their impacts on food and nutrition security.

In both cases the research is based on and divided into micro-level household data analysis as well as empirical investigations of international, secondary data.

Research findings

Some of the key findings of the ZEF team point in particular at the role and costs of regional and national public food reserves. While they can mitigate volatile food commodity prices, their efficiency in doing so crucially differ depending on the actual setting (e.g. collaborative regional systems, or single national policies from large or small countries). The ZEF team is also delivering various elements of an early-warning system to preempt periods of (excessive) food price volatility. One of these elements is the analysis of the transmission of international food commodity markets to the national food commodity and even food prices.

At the micro-economic level of the farmer and the farm household, one of ZEF's contribution is to highlight the effects of the farmers' psychological and social drivers on his or her innovation behavior. Even as more traditional barriers to innovation are considered (e.g. access to inputs, information, finance, or markets), this work shows that farmers with low aspirations innovate less and enjoy less food and nutrition security in their household.

Research activities

- Compilation of a new international data set on the elements of agricultural innovation systems: The data is the basis of a new agricultural technological capacity index and will serve as the basis for further work

trying to decompose agricultural total factor productivity growth at the national level across a wide sent of countries and over time. This work is not yet published.

- Analysis of national policies and their effect on price volatility and their food security impacts in India. In particular, the costs of the national grain procurement system and of the public food reserves are assessed. Three papers have been produced. A review of the existing evidence on the potential complementarity and synergy of the two main Indian (and the world's) social safety nets (the grain public distribution system and the rural employment guarantee) on food security has also been published, with more analysis in progress.
- Analysis of the interaction of systems of belief and their determinants in the adoption of agricultural innovations for the achievement of food security in rural Ethiopia. Three research papers have been produced, all published as ZEF and FOODSECURE working papers, or in various stages of review with academic journals.

Events

- July 2015: EcoMod2015. Marta Kozicka, oral presentation on Food Grain Policies in India and their Implications for Stocks and Fiscal Costs: A Partial Equilibrium Analysis, Boston/USA.
- August 2015: Milan ICAE, Symposium on: Agricultural innovations for food and health - creation, diffusion, adoption and behavioral aspects. Presenters (among others): Daniel Mekonnen on The Effect of Aspirations on Agricultural Innovations in Rural Ethiopia and Charles Yaw Okyere on Strengthening the Capac-

ity of Households and Communities for Improved Water, Sanitation and Hygiene: Water Testing Experiments with School Children and Adult Household Members in Ghana, Milan/Italy.

- June 2016: Brussels FOODSECURE Stakeholder workshop - Nicolas Gerber: Playing agricultural innovation for win-win: inclusive innovation systems for farmer resilience, Brussels/Belgium

Doctoral research

Marta Kozicka. Policies for Food Security in India: An Assessment of Current Policies and Reform Options.

Daniel A. Mekonnen. Social Interactions, Aspirations, and Agricultural Innovations: Linkages with Income and Food Security in Rural Ethiopia.

Publications

foodsecure.eu/Publications.aspx

Website

foodsecure.eu

Contact

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Main funder: EU Commission, Framework Program7
Main Cooperation: LEI-WUR, IFPRI, KUL, INRA, IHEID, IIASA, EC-JRC

Diversifying agriculture for balanced nutrition through fruits and vegetables in multi-storey cropping system

The research and capacity building project explores how to integrate appropriate vegetable crops into multi-storey cropping systems. The goal is to increase nutrition security as well as diversify and intensify agriculture and thus to reduce pressure on natural habitats in biodiversity hotspots.

Research activities

Four villages in the Yayu Biosphere Reserve in Ethiopia were selected as research sites

- Multi-disciplinary teams conducted a gender-disaggregated, qualitative survey of the situation in the villages.
- The following factors were investigated: The farming systems, livelihood profiles and institutional networking of villages and households, the food culture, diets, consumer behavior and health, gender relations, division of labor and decision-making mechanisms within households.

- An extensive database with information about edible plants growing in the Yayu Biosphere Reserve was set up.
- Picture cards of the plants were designed and discussed with farmers.
- Collection of farmers' criteria for plant selection.
- Based on these and other criteria such as seasonality and nutrient content, a shortlist of ten suitable plants was created.

Events

- July 2015: Kick-off Workshop, Addis Ababa/Ethiopia
- April 2016: Workshop, Yayu/Ethiopia
- June 2016: Workshop, Farafangana/Madagascar

Website

zef.de/project/NutriHAF-Africa

Contact

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Main Cooperation:
AVRDC, FOFIFA, KoGa,
IZNE, UoA, ASARECA,
FANRAP, GlobalHort,
ECFF, WHH



Global, basin, and local case studies of resource use efficiency under growing natural resource scarcity

The project aims to conduct an assessment of tradeoffs and synergies across the water, energy and food sectors in the Nile Basin (covering Ethiopia, Sudan and Egypt).

This includes an evaluation of the opportunities for a decentralized energy production and use, as well as of entry points for a more efficient resource use.

Research activities

During the reporting period, the project has completed a review of key challenges and opportunities within the Water-Energy-Foodsecurity Nexus in Ethiopia and in the Eastern Nile river basin. Based

on that, conceptual and empirical approaches have been developed for the Eastern Nile river basin. For the analyses, agent-based and agricultural household models were used. Finally, the necessary datasets have been compiled.

Events

April, 2015: Project launch workshop was held in Addis Ababa/Ethiopia

Doctoral research

Helen Berga. Modeling the Nexus between Water, Energy and Food in the Eastern Nile Basin.

The Water-Energy-Food Nexus

Rahel Bekele. Essays on Irrigation Systems of Ethiopia: Institutional and Technological Performance Analysis.

Website

water-energy-food.org

Contact

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Main funder: BMZ
Main Cooperation: IFPRI, ENTRO,
Addis Ababa University

A global review of the current status and analyses of future trends of bioenergy and bio-economy

The project conducted research related to the Water-Energy-Food Security Nexus at global and local levels (India, Ethiopia, China, Rwanda, Senegal).

The overall goal was to provide evidence-based analytical support for national and international policies that promote technological and institutional innovations in the bio-economy, especially in developing countries.

Research activities

The project completed a Global Review of the current status and analyses of future trends of bioenergy and bio-economy. Secondly, a thematic cross-country technical study on the impacts of decentralized energy access along the Nexus components was completed. The paper analyzed five case studies from China, Ecuador, Ethiopia, India and Nepal through the lenses of the Water-Energy-Food Security nexus in order to identify

the underlying factors behind the successes and failures of household- and community-based decentralized energy technologies. Thirdly, in-depth country case studies were conducted in Ethiopia, India and China by three ZEF junior researchers, and in Senegal and Rwanda in collaboration with partners.

Events

The findings of the project were presented at:

- March 2015: Nexus Conference on Global change, SDGs, and Nexus approach, Dresden/Germany
- June 2015: International energy workshop hosted by the International Renewable Energy Agency, Abu Dhabi/UAE
- July 2015: Global LEAP (Lighting and Energy Access Partnership) Off-Grid electricity event, Dhaka/Bangladesh

Bioenergy, Bio-economy and Food Security Project

- Senegal and Rwanda case studies were presented during seminars at the German Institute of Global and Area Studies (GIGA) and the World Bank, respectively

Doctoral research

Varun Gaur. Decentralized bioenergy in India and its synergies with water-energy-food security nexus.

Qui Chen. The impacts of biomass energy on rural livelihood in China.

Contact

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Main funder: BMZ
Main Cooperation: RWI, University of Passau

The Economics of Land Degradation

The Economics of Land Degradation (ELD) project assessed the extent and severity of land degradation as well as its impacts on human and social welfare both globally and in 12 selected case study regions and countries in sub-Saharan Africa, Asia, Latin America and Europe. It emphasized the need to initiate investments to combat land degradation for sustainable development and poverty reduction by conducting a global assessment of the costs of action and inaction against land degradation.

The results of the ELD research were compiled in a freely downloadable open access book published together with Springer International.

Research activities

The ELD research developed a conceptual framework for a more comprehensive assessment of the costs of land degradation by including the value of land ecosystem services, provided analytical methods for determining the costs and drivers of land degradation at various scales, and demonstrated the application of these concepts and methods at the national level through 12 country case studies in sub-Saharan Africa, Asia, Latin America and Europe. These 12 carefully selected national case studies provide rich information about various local contexts of costs of land degradation, drivers of land degradation, and amenable strategies for sustainable land management. Moreover, focus group discussions were held in more than 40 rural communities in six case study countries to ground-truth the results of the ELD research on land degradation mapping. These trans-disciplinary exchanges also enabled to gain intimate ground-level knowledge on challenges and

Initiate investments to combat land degradation for sustainable development and poverty reduction

opportunities for addressing land degradation in diverse contexts of developing countries. The ELD project catalyzed extensive scientific partnerships for land degradation research. It was conducted in cooperation with more than 20 national and international research groups, institutions and development partners, forming multi-disciplinary teams of more than 50 researchers from around the world. These partnerships have led to continued research and development collaborations and initiatives on ELD topics beyond the project period.

Events

The policy outreach activities were conducted through national ELD workshops and conference sessions in Kenya (2013), Ethiopia (2014), Italy (2015), Senegal (2016), Niger (2016).

The results of the ELD research were also communicated to policy makers, civil society and general public through ELD events in Kenya, Niger, Senegal, and USA, as well as a press conference in Berlin, Germany, and numerous press, radio and TV interviews, not only in English, but also in French, German, Russian, and Swahili.

The quality of ELD research was also internationally recognized by such awards as Nils Westermarck Prize for Best Visual Paper (poster) by the International Association of Agricultural Economists during its 29th Triennial Conference in Milan, Italy 2015 (Kirui and Mirzabaev. Costs of land degradation in Eastern Africa), and the best paper award in Sustainable Land Use by the Indo-German Centre for Sustainability during its conference in Madras, India 2016 (Kirui. Economics of Land Degradation and Sustainable Land Management in Eastern Africa).

Major research findings

The results of the ELD research show that land degradation is occurring in almost all terrestrial biomes and agro-ecologies, in both low and high income countries and is stretching to about 30% of the total global land area. About three billion people reside in these degraded lands. However, the impact of land degradation is especially severe on



livelihoods of the poor who heavily depend on natural resources. The annual global cost of land degradation due to land use and cover change and lower cropland and rangeland productivity is estimated to be about 300 billion US dollars. Sub-Saharan Africa accounts for the largest share (22%) of the total global cost of land degradation. Only about 46% of the cost of land degradation due to land use and cover change are private costs and are borne by immediate land users and the remaining share (54%) represents the social costs of land degradation borne by the entire global community. Reversing land degradation trends makes both economic sense, and has multiple social and environmental benefits. On average, one US dollar invested into restoration of degraded land returns five US dollars globally. The findings of the country case studies call for increased investments into the rehabilitation and restoration of degraded lands, including through such institutional and policy measures as strengthening community participation for sustainable land management, enhancing government effectiveness and rule of law, improving access to markets and rural services, and securing land tenure. The results of this research can contribute significantly to the ongoing policy debate and efforts to design strategies for achieving sustainable development goals and related efforts to address land degradation and halt biodiversity loss.

Capacity building

In addition to joint research together with partners, which provided numerous opportunities for mutual knowledge exchanges, the ELD project carried out several capacity building activities for training young researchers in conducting high quality research on the economics of land degradation, such as:

- Training of two doctoral students at ZEF: Oliver Kirui and Evelyne Kihui (both from Kenya). Presently both of them have successfully completed their doctoral theses.
- Research support and field training for four Master students, who wrote their Master theses with the ELD project. This was made possible through the cooperation between the ELD project and GIZ-BEAF program.

Policy advocacy

Throughout the ELD project period, significant efforts were made for communicating with national and international policymakers for providing evidence-based advice on sustainable land management. The policy outreach activities were conducted through national ELD workshops and conference sessions through ELD sessions during the Global Soil Weeks (2012-2015), as well as through numerous face-to-face engagements with policymakers. The findings of the ELD research and national case studies were summarized as policy briefs and distributed among national and international policymakers and practitioners.

Doctoral research

Oliver Kirui. Economics of Land Degradation, Sustainable Land Management and Poverty.

Evelyne Kihui. Pastoral Practices, Economics, and Institutions of Sustainable Rangeland Management in Kenya.

Publications

eld-initiative.org/index.php?id=111

Website

eld-initiative.org

Contact

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Main funder: BMZ
Main Cooperations: IFPRI, IGIDR,
ICARDA, CCAP, CAS, ECFS

3.4

HEALTH, NUTRITION AND ECOSYSTEMS

WATSAN-Agriculture

Guiding pro-poor investments in the nexus among domestic water quality and quantity, sanitation and hygiene, and agriculture

Unsafe drinking water and inadequate sanitation are known as major drivers of health and nutrition deficiencies. The goal of the WATSAN-Agriculture project is to identify trade-offs, synergies, and thresholds among water quality and quantity, sanitation and hygiene, and agriculture as well as their implications for investment priorities.

The project also aims at strengthening the capacity of households and communities to monitor and manage their own WATSAN environment. Research activities are carried out Ethiopia, Ghana, Bangladesh and India.

Research activities

Wrap-up of research activities, Data evaluation, presentation and publication of results at selected conferences/ in selected journals, Finalization of doctoral dissertations.

Events

- August 17-18, 2015: von Braun J., Multiple sustainability challenges in multi-use water systems: drinking water, sanitation, health and irrigation, Presentation at the Sustainable Development Goals: A Water Perspective conference, Bonn/Germany
- October 1-6, 2015: Falkenberg T., Gesundheitsimplikationen der WASH-Nexus in der Urbanen Landwirtschaft von Ahmedabad/Indien, Presentation at the Deutscher Kongress für Geographie, Berlin/Germany

- December 01, 2015: Okyere C.Y., Pangaribowo E.H., Asante F.A., von Braun J., The Impacts of Household Water Quality Testing and Information on Safe Water Behaviors: Evidence from Randomized Experiment in Ghana, Presentation at the „Better Policies: Better Lives“ Conference, London/UK

Doctoral research

Muhammed Abdella Usman. Leveraging Water, Sanitation, and Hygiene (WATSAN) Nexus: Synergies, Thresholds, and Trade-offs for a Better Nutrition and Health Outcome in Ethiopia.

Charles Okyere. Strengthening the Capacity of Households and Communities for an Improved Monitoring of Water and Sanitation (WATSAN) Environment: Experiments with School Children in Ghana.

Ruchi Vangani. Exploring the links and dynamics therein for WATSAN and irrigation agriculture (AG-WATSAN Nexus) for a better nutrition and health outcome.

Florence McBain. Can improved water-sanitation conditions together with health insurance effectively reduce poverty?.

Timo Falkenberg. Health Dimensions of Wastewater-Irrigated Urban Agriculture in Ahmedabad, India.

Mohammad Monirul Hasan. Investment in health within Agriculture-Water-Sanitation-Hygiene (AG-WATSAN) nexus for the rural households in Bangladesh.

Website

zef.de/watsan.html

Contact

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Main funder: Bill and Melinda Gates Foundation

Main Cooperations: EEA, ISSER, IIPHG, BRAC

Health Research Capacity and Water-Related Diseases: Improving Risk Assessment Strategies for Public Health Care in Uzbekistan

HEALTHCAP

HEALTHCAP is a science-based capacity building project that aims at improving risk assessment strategies to address the growing threat from water-related diseases in Uzbekistan.

The project is exploratory, attempting to explain health risk through a combination of disciplinary and interdisciplinary research. The overall purpose is to close the gap between 'research and practice'.

Research

- Identifying opportunities for strengthening health research capacity building in Uzbekistan for improved surveillance and monitoring of water-related diseases.
- Understanding the intrinsic and extrinsic global environmental change factors influencing water-related diseases in the Tashkent Province of Uzbekistan.
- Identifying tools and policies to improve risk assessment strategies for public health policies and programs on water-related diseases in the Tashkent Province.
- HEALTHCAP operates in two case study districts: Olmalik and Kibray in the Tashkent Province. Besides, relevant policy assessments, institutional arrangements and socio-ecological conditions at the national level will be considered. HEALTHCAP will strengthen health data base management in the selected districts,

and its research findings will offer insights for improving surveillance and monitoring of water-related diseases and strengthening Uzbekistan's water safety plan.

Activities

- Household survey was conducted using open-data kit through master's students from the Tashkent Medical Academy, Tashkent.
- The survey covered socio-economic status, hygiene, health history of the members, and their health care practices. The survey covered about 400 households.
- Short-term courses were provided to Master's students of the Tashkent Medical Academy, which will be expanded in 2016 and integrated in the existing masters course on public health.
- Tashkent Medical Academy is formally associated with HEALTHCAP for teaching environmental health courses. Possibilities of establishing a Center for Environmental Health in the institute are currently explored.

Doctoral research

Minjung Cho. Assessing the Health Research Capacity in water and health sector - Case study in Tashkent province Uzbekistan

Website

zef.de/project/healthcap

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Volkswagen Foundation

3.5

GOVERNANCE, CONFLICTS AND NATURAL RESOURCES

Shaping Environmental Policies for Sustainable Tropical Forest Bio-economies

Formulation and implementation of environmental policies that contribute to the sustainable use of forest resources and related locally and globally valued ecosystem services

This research project aims at understanding how and to what extent countries (case studies to be conducted in Brazil, Peru, and Ecuador) can influence tropical forest bio-economy pathways through the integration and informed design of environmental policy instruments. Its ultimate objective is to facilitate the formulation and implementation of environmental policies that contribute to the sustainable use of forest resources and related locally and globally valued ecosystem services.

Research activities

- A paper led by Rosa da Conceição published late in 2015 documents the role political and institutional factors have played in the adoption of incentive-based forest conservation policies in Brazil, Ecuador and Peru.

- Team members Börner and Giudice co-authored a paper published early in 2016 assessing the cost-effectiveness, income effects and distributional (equity) outcomes of a conservation payments program in the Peruvian Amazon.
- A recent publication led by Fogliano (ZEF guest researcher from Brazil in 2015) and Börner estimates the implementation costs of Brazilian anti-deforestation policies between 2000 and 2012.
- Starting in 2016, the research group received recurrent visits from the ZEF-nominated Alexander von Humboldt Foundation's Georg Forster Award recipient Prof. Britaldo Soares Filho (University of Minas Gerais, Brazil) to collaborate on economic and environmental modelling activities.





Events

- November 2015: Conference of the Verein für Socialpolitik. Jan Börner hosted a session on tropical forest conservation policies, Münster/Germany
- June 26-29, 2016: International Society for Ecological Economics. Oral presentation of two papers by Elías Cisneros and Renzo Guidice. Cisneros also presented this paper at the World Bank Headquarters, Washington/USA
- June 2016: Workshop at the Sheffield Institute for International Development. Presentation on Evaluating Socioeconomic and Environmental

Outcomes of Social Processes and Sustainable Development Interventions by Elías Cisneros, Sheffield/UK

Doctoral research

Elías Cisneros Tersitsch. Impact evaluation of tropical forest conservation policies in the Brazilian Amazon.

Hugo Rosa da Conceição. Determinants of incentive-based forest governance in the Amazon: Evidence from Ecuador, Peru and Brazil.

Johannes Schielein. Land-use forest policy and economic development in the Brazilian Amazon region.

Javier Miranda. Modelling tropical conservation policy mixes in the Amazon region.

Renzo Guidice Granados. Measuring the effectiveness of incentive-based conservation.

Website:

zef.de/envpol.html

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Main funder:

Robert Bosch Foundation

Main Cooperation: CIFOR, GIZ, FAS,

IPAM, UAB, BIK-F

3.6

MARKETS AND PUBLIC SERVICES

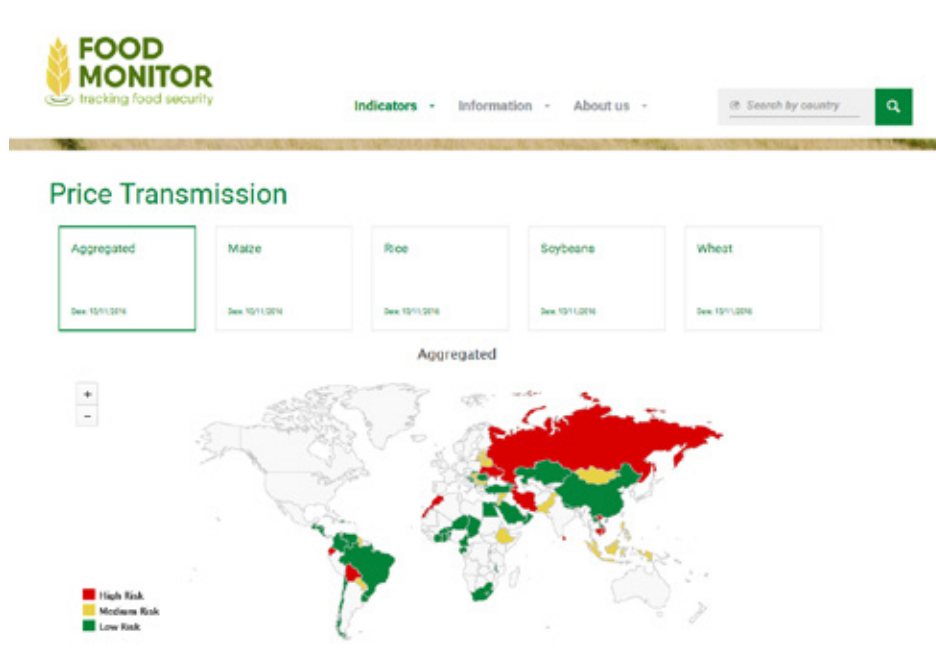
Food Price Volatility Project

Analysis and Implementation of measures to reduce price volatility in national and international markets for improved food security in developing countries

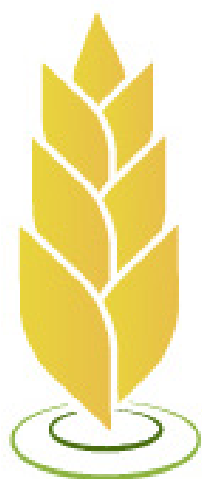
Large price fluctuations are highly problematic for small-scale farmers as well as for consumers. Therefore, our project looks at different ways to stabilize food prices and to contribute to a resilient food system that can continuously feed its population. One focus consists of research activities based on the question how to improve the functioning of markets. Furthermore, we develop tools for early warning of risks for food security. This includes research as well as the implementation of a website which collects information on early warning and related indicators. Finally, our research activities also involve social safety networks and how these can contribute to increase the resilience against shocks.

Research activities

- Jan Brockhaus found that storage policies in India are largely missing one of their purposes: the protection of consumers from high prices. He furthermore discussed his work on global supply and demand estimates with representatives from the Food and Agriculture Organization and the G20 at the 2015 meeting of the Agriculture Market Information System.
- Mekbib Haile explored the impacts of climate change and weather and price risks on agricultural production. He furthermore analyzed the transmission of price shocks along the Ethiopian wheat value chain.



The new
food monitor website



FOOD MONITOR

tracking food security

- Marta Kozicka has been analyzing the food consumption through India's public distribution system for different consumer groups.
- Irfan Mujahid has been working on trade and food security issues in developing countries with a special focus on Indonesia. Specifically, he analyzed the role of trade and reserve cooperation.
- The potential of using online generated content for early warning has been explored by Regine Weber for her PhD studies.
- Till Ludwig started his analysis on determinants of food and nutrition security of smallholder farmers in risky environments over time.
- Fuad Hassan has been working on the relationship between rural wages and food prices in Bangladesh, thereby connecting food security with farm mechanization and farm wages.

Events

- July 2015: Annual Meeting of the Agricultural Applied Economics Association. Jan Brockhaus presented on Rice, wheat, and corn supply response in China, San Francisco/USA
- July 2015: Regine Weber gave a talk on Crowdsourcing Food Prices in Africa at the Technical Inception Workshop, European Commission, Brussels/Belgium
- August 2015: Several ZEF re-

searchers presented at the International Conference of Agricultural Economists, including: Irfan Mujahid on Do the World Trade Organization and Regional Trade Agreement Promote Food Trade? and Regine Weber on Welfare Impacts of Rising Food Prices: Evidence from India, Milan/Italy

- August 2015: Matthias Kalkuhl organized a symposium on storage and trade policy, including a presentation by Jan Brockhaus on Emergency reserves, private storage, or trade? How to prevent extreme grain prices in a two country setting, Milan/Italy
- September 2015: Marta Kozicka presented on Public Distribution System vs. Market: Analysis of Staple Food Consumption in India Using QUAIDS with Rationing and Jan Brockhaus on Emergency reserves, private storage, or trade? How to prevent extreme grain prices in a two country setting at the Gewisola, Gießen/Germany
- September 2016: Mekbib Haile talked on Analysis of Price Shock Transmission: Case of the Wheat-Bread Market Value Chain at the Annual Conference on the Ethiopian Economy. Addis Ababa/Ethiopia

Doctoral research

Till Ludwig. Determining the dietary quality of vulnerable groups in risky environments.

Regine Weber. New Indicators for Food Crises Monitoring in Developing Countries.

Fuad Hassan. Interlinkages between food prices and agricultural wages and impact on farm mechanization: Evidence from Bangladesh.

Contact

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Main funder: BMZ, EU Commission
Main Cooperation: IFPRI, MCC, EEA, ILR, CCA, Bernardina Algeri

4

CAPACITY DEVELOPMENT



ZEF'S DOCTORAL STUDIES PROGRAM

4.1

ZEF's doctoral studies program offers an interdisciplinary and international three-year doctoral education. Since its inception in 1999 around 650 ZEF junior researchers from 90 countries have participated in the program.

Highlights

Abu Hayat Md. Saiful Islam

from Bangladesh is one of the winners of the Josef G. Knoll European Science Award-2016 granted by the Stiftung fiat panis. Dr. Saiful Islam receives the award of 10,000 Euro for his dissertation on "Impact of technological innovation on the poor: integrated aquaculture-agriculture in Bangladesh".

Elias Cisneros and Oliver Kirui

are ZEF junior researchers from Germany and Kenya and won awards for their papers presented at the 29th International Conference for Agricultural Economics in Milan, Italy. About 1,200 scientists from more than 70 countries participated. The jury awarded Mr. Cisneros Tersitsch together with co-authors Sophie Zhou and Jan Börner the TW Schultz Prize for the best presentation and Mr. Kirui with Alisher Mirza-baev as co-author won the N. Westermarck Award for the best paper in the visual category.

Oliver Kirui

received also an award for his work on Economics of Land Degradation at the Indo-German Conference on Sustainability (IGCS) held at the India Institute of Technology, Madras, India, on February 27-28, 2016. His presentation titled 'Economics of Land Degradation and Sustainable Land Management in Eastern Africa' was rated best paper presented at the conference.

Vincent Kyere

the junior researcher from Ghana, was appointed member of the African Good Governance Network from DAAD.

Interdisciplinary training

Tackling development issues requires crossing the boundaries of individual disciplines. Therefore, development research is to be based on integrative thinking among a variety of disciplines. The doctoral education and research in ZEF's program therefore bridges and combines interdisciplinarity skills and disciplinary expertise. The interdisciplinary training at ZEF prepares the doctoral graduates to work in interdisciplinary teams and cooperate with partners from various professional and cultural backgrounds in an international partnership effort for sustainable development. This enables participants to explore new academic fields and be competitive on an international job market.

The structured course program

The teaching program includes two blocks of courses spread over the first and third year of the program,

(1) an interdisciplinary course which provides a sound theoretical background, including knowledge and skills to address the complex and interlinked problems of development, and

(2) courses structured along disciplinary lines in economics, social sciences, and ecology, with a special emphasis on theory and methodology of each field. ZEF also offers special short courses in topics such as GIS, remote sensing, mathematics and statistics etc. Individual students may visit laboratories at the University of Bonn or other cooperating institutes in Germany or abroad. Key skills are trained in workshops on

intercultural competence, research ethics and leadership development.

Besides the course work, the doctoral students have to spend time preparing and finalizing their research proposals during the first phase. After their supervisors have approved the research plans, the students travel abroad to conduct field research in a developing country, which takes one to two years. Subsequently, the students return to ZEF to write up their doctoral theses during the last six to twelve months of the program.

Welcome to new doctoral students at ZEF

In 2016, ZEF welcomes a batch of 20 new doctoral students from 15 countries.

For general information on the ZEF doctoral program and the application and registration procedure please look at www.zef.de/application_doc.html

4.2

DOCTORAL DEGREES MID 2015 - MID 2016

06 November 2015

Philipp Baumgartner (Germany)

The impact of large-scale land-acquisition in East Africa on poverty reduction and rural economy: Studies from Ethiopia and Uganda.

16 December 2015

Siti Rahyla Rahmat (Malaysia)

Global value chains and the role of innovation for sustainable palm oil: An international bioeconomy analysis for Malaysia.

15 January 2016

Jan-Niklas Bamler (Germany)

Value for the Vulnerable? Sustainable Smallholder Development in Northern Ghana and the Value Chains of Rice (Tomato and Chili).

21 March 2016

Evelyne Nyathira Kihiu (Kenya)

Pastoral Practices, Economics, and Institutions of Sustainable Rangeland Management in Kenya.

31 March 2016

Vincent Nartey Kyere (Ghana)

GIS as an evidence based decision making tool or E-waste management.

15 April 2016

Rythia Afkar (Indonesia)

Public Services, Social Protection and Poverty: Evidence from Indonesia.

15 April 2016

Irfan Mujahid (Indonesia)

Assessing the Role of Trade and Reserve Cooperation in the Food Price Dynamics: Indonesia in the Regional and Global Economic Architecture.

15 April 2016

Sophoanrith Ro (Cambodia)

Potential of organic manures in rainfed lowland rice-based production systems on sandy soils of Cambodia.

25 April 2016

Oliver Kiptoo Kirui (Kenya)

Economics of Land Degradation, Sustainable Land Management and Poverty in Eastern Africa - The Extent, Drivers, Costs and Impacts.

01 June 2016

Georgina Wambui Njiraini (Kenya)

Water Policy in South Africa: Effects, Impacts, and the associated transaction costs in the Olifants basin.

01 July 2016

Jiixin Tan (China)

Industrial Water Pollution in Dongying City, the Yellow River Delta of China: Communication Interfaces between Government Agencies and the Local Population.

05 July 2016

Tigist Araya Gessesse (Ethiopia)

Above- and belowground carbon stocks in semi-arid land use systems under integrated Watershed Management in Gergera watershed, Ethiopia.

08 July 2016

Jan Brockhaus (Germany)

The Role of Storage and Information in Stabilizing Food Prices and Supplies.

26-August-2016

Divya Swaminathan (India)

Agricultural transformation and indigenous communities: Case studies from Southern India.

31 August 2016

Marta Kozicka (Poland)

Policies for Food Security in India: An Assessment of Current Policies and Reform Options.

4.3

Support and facilitate academic education amongst West African universities in association with German counterpart institutions

The WASCAL Graduate Studies Program

The WASCAL Graduate Studies Program supports and facilitates academic education amongst West African universities in association with German counterpart institutions. The Program focuses on educating Doctoral and Master's students.

Highlights

In March 2016, a new batch of 100 West African students started the WASCAL Graduate Studies Program. Sixty doctoral and 40 master's students from the 10 WASCAL member countries (Benin, Burkina Faso, Cote d'Ivoire, The Gambia, Ghana, Mali, Niger, Nigeria, Senegal, Togo) receive a scholarship and research funds. They join a two to three-year program at one of the 10 graduate schools hosted by West African partner universities, each with

a different thematic focus on climate change.

In the course of their studies, WASCAL students will benefit from the close collaboration with German partner institutions that support the African lead universities by providing scientific backstopping, lecturing and student mentoring.

Research activities

By the end of June 2016, 133 WASCAL students had successfully defended their Doctoral and Master theses. Another 25 doctoral students will have defended their thesis by the end of 2016.

Events

- March 09-11, 2016: Introductory Seminar for the new batch of students in Accra/Ghana

- March – June 2016: 3 months Language and Common Courses in Kumasi/Ghana and Lomé/Togo

Website

wascal.org/graduate-programmes/graduate-studies-programme/

Contact

Maria Ullrich and Urs Charpa
gspadmin@uni-bonn.de
Main funder: BMBF



Ghanaian-German Centre for Development Studies

ZEF established the Ghanaian-German Centre for Development Studies (GGCDS) in collaboration with the Institute of Statistical Social and Economic Research (ISSER) at the University of Ghana in 2008.

The GGCDS runs a doctoral program in development studies, engages in staff capacity building, funds research and conference travels of lecturers, students and alumni, and facilitates joint workshops and research projects.

Since 2008, 56 doctoral students have been admitted and 19 have graduated. In 2015/16, the GGCDS completed the construction of a post-graduate resource center at the University for Development Studies in Northern Ghana and hosted the 6th DAAD Network Meeting of African Centers of

Excellence. During the conference, which was addressed by the Ghanaian ministers for communication and higher education, more than 80 participants from Germany, Ghana, Kenya, Namibia, South Africa, and Tanzania discussed the role research plays in development issues and processes.

Website

zef.de/project/ggcds

Contact

Wolfram Laube
[wlaube@uni-bonn.de]
Main funder: DAAD
Main Cooperations: ISSER, FPLM,
UDS



Opportunity to develop expertise across disciplines and country boundaries to tackle agricultural and environmental problems in developing countries around the world

IPADS

The partnership between ZEF and the Graduate School of Agricultural and Life Sciences has been concluded in January 2016 by signing a Memorandum of Understanding. In this partnership, the Graduate School of Agricultural and Life Sciences of the University of Tokyo is represented by the International Program in Agricultural Development Studies (IPADS). IPADS is an international English-language program at Master's and doctoral level that offers its candidates the opportunity to develop expertise across disciplines and country boundaries to tackle agricultural and environmental problems in developing countries around the world. The partnership includes exchange of staff and students as well as joint research and lectures.

- March 2016: Six doctoral students of ZEF (accompanied by Dr. Günther Manske and Alma van der Veen) have visited IPADS and participated in an international program on the application of crop growth models and sensing technologies for crop productivity assessments.
- Winter semester 2015/2016: Four representatives of IPADS (Prof. Kensuke Okada, director of IPADS; Dr. Taro Takahashi, Prof. Kazuhiko Kobayashi, Prof. Seishi Ninomiya) gave lectures at ZEF on soil and plant science, agricultural economics and agroinformatics.

Websites

zef.ipads.jp

ipads.a.u-tokyo.ac.jp

Activities

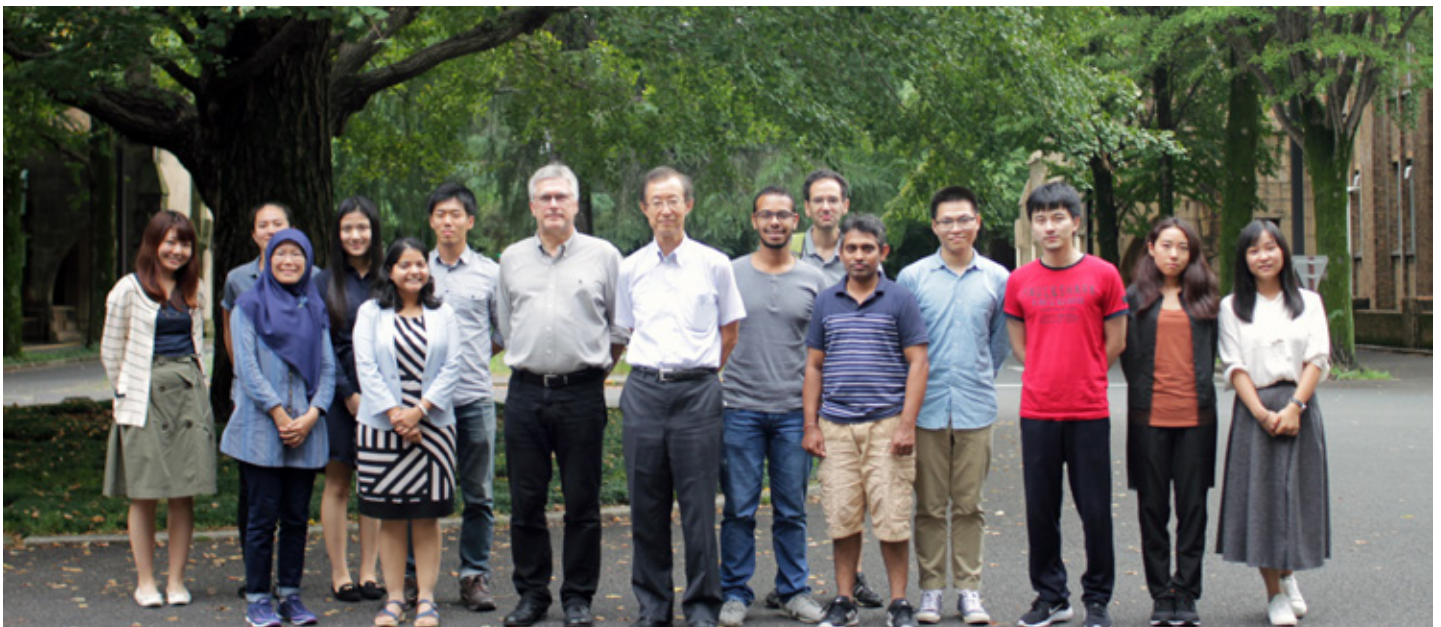
- September 2016: ZEF researcher Manfred Denich made his contribution to the introductory part of the IPADS course in Tokyo focused on development research and north-south collaboration with case studies from South America and East Africa.

Contact

Manfred Denich

[m.denich@uni-bonn.de]

Main Cooperations: University of Tokyo, IPADS



4.4

THE RIGHT LIVELIHOOD COLLEGE



The Right Livelihood College (RLC) is a global capacity building initiative of universities and the Right Livelihood Award (also known as the “Alternative Nobel Prize”) Foundation. RLC provides inter- and transdisciplinary education and research on sustainable development in the Global South. There are RLC Campuses at eight universities worldwide. The RLC Campus at ZEF was established in 2011 as an integrated capacity building program supported by the DAAD. In 2014, the Global Secretariat of the RLC moved from Malaysia to ZEF. In 2015, the RLC Global Secretariat at ZEF started the new Global RLC Network Project supported by the Robert Bosch Foundation to coordinate and promote international RLC education and research activities.

Activities

- Inter- and transdisciplinary education and training of international doctoral students
- Conferences, workshops and public events with Right Livelihood Award Laureates

- Empirical research projects of doctoral students in Kenya, India, Malaysia and Chile on aspects of environmental sustainability and social justice in cooperation with Laureates and other partners

Events

- September 26 - October 1, 2015: Workshop on Human rights and the empowerment of the marginalized at ZEF, including a Public Talk at the Old City Hall of Bonn with Right Livelihood Award Laureates from Afghanistan and India
- June 4-9, 2016: Workshop on Sustainable agriculture and economic growth: smallholder farmers between markets, policies and environmental change at ZEF and other venues in Bonn/Germany
- June 13-15, 2016: RLC Campus Bonn partnership with the Deutsche Welle at the Global Media Forum Conference. RLC Campus Bonn invited Laureate Kasha Nabagesera from Uganda to the Global Media Forum, organized a public panel discussion

and had an information booth at the World Conference Center Bonn

Doctoral research

Lai Wan Teng. Crossing and re-crossing of domestic workers across the Straits of Malacca: an analysis of migratory pathways against the context of Malaysia’s New Economic Model.

Divya Swaminathan: Agricultural transformation and indigenous communities: Case studies from Southern India.

Willis Okumu. Cattle raids, violence and institutional change among pastoralists in northern Kenya.

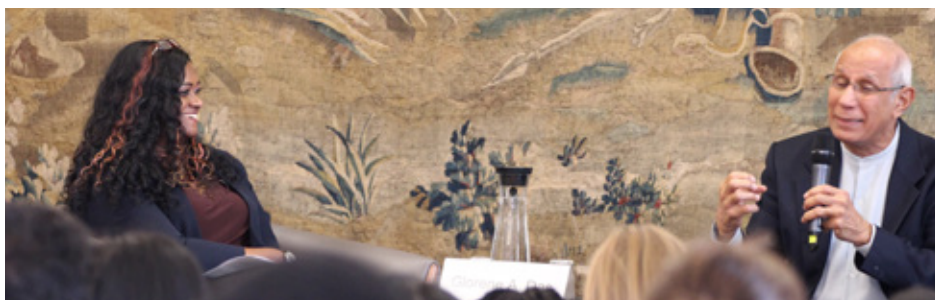
Juliet Wanjiku Kamau. Productivity and sustainability of ecological organic agriculture systems in Kenya.

Alejandro Mora Motta. Fundamental human needs in the context of large tree plantations in Los Ríos, Chile.

Websites:

rlc-bonn.de

rlc-blog.org



Contact

Till Stellmacher

[t.stellmacher@uni-bonn.de]

Main funders: DAAD, Robert Bosch Foundation

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SELECTED OUTREACH

STRIVE: New project on Bioeconomy. The project combines interdisciplinary research expertise to improve the knowledge base for the design of sustainable bioeconomy policies and investments with a focus on international regulatory frameworks.

ZEF in top positions of international Think Tanks ranking again. In the "Global GO TO Think Tank Index Report 2015", ZEF is listed **rank 3 in Top Science and Technology Think Tanks** and as the only German Think Tank top 21 of Best University Affiliated Think Tanks.

Translating science into action. Public lecture by ZEF Board member **Holm Tiessen**. September 14, 2016

Global impacts of grazing biomass degradation on livestock productivity. Public lecture by **Dr. Ephraim Nkonya**, International Food Policy Research Institute (**IFPRI**). August 29, 2016

Panel discussion on Sustainable solutions for global agriculture as part of the International Congress of the **International Federation of Agricultural Journalists**. July 13, 2016

Measuring the Sustainable Development Goals – Is Big Data the solution? Lecture by Johannes Jütting, Manager of the Partnership in Statistics for Development in the 21st Century (PARIS21). June 27, 2016

IF NOT NOW, WHEN? Planning for Urban Water-Energy-Food Nexus in Indian Himalaya. **Bonn Water Lecture (joint lecture series by UNCCD, DIE, University of Bonn and ZEF)**. By Dr. Daphne Gondhalekar. June 16, 2016

The Mission: Human Capital Transmission, Economic Persistence and Culture in South America. Lecture by Felipe Valencia Caicedo, University of Bonn, Department of Economics. June 10, 2016

ZEF-led study on bioenergy published in Elsevier receives **Elsevier's Atlas award April 2016**. The outcome of ZEF project **on certification of bioenergy** was published in an award-winning Elsevier article on "As Bioenergy Booms, Certification Schemes Must Consider Food Security". The awarded article is one of 12 articles selected out of 35,000.

How to achieve effective participation of communities in the **monitoring of REDD+ projects:** A case study of the Democratic Republic of Congo (DRC). Public lecture by Joelle Mukungu, Chair of Landscape Management, University of Freiburg. April 28, 2016

Time for Change: Breathing life back into the MENA region agricultural transformation. **Brown Bag Lecture with Dr. Andrew Noble, International Center for Agricultural Research**. April 5, 2016

Environmental modelling in support of sound policy development. **Public Lecture by Britaldo Silveira Soares Filho, Georg Forster Research Awardee 2016**. March 30, 2016

Bonn Water Lecture: **Solutions for a water secure and urbanizing world** by Jeremy Bird, IWMI. March 15, 2016

Irrigation, Gender and Nutrition linkages. Lecture by **Claudia Ringler, IFPRI**. February 22, 2016

Bonn Water Lecture on Payments for Hydrological Ecosystem Services in Integrated Water Resources Management. Dr. Jochen Hack, Technical University Darmstadt. February 2, 2016

Large farm establishments in Ethiopia – are there spillover effects? Public lecture with **Dr. Klaus Deininger, The World Bank**. January 29, 2016

For more events and news
please visit zef.de

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SELECTED PUBLICATIONS

For a detailed overview of all ZEF-publications please look at: zef.de/publications.html

Innovation, knowledge, science policy

von Braun, J. et al. (2015) Report on Potentials and Cooperation Opportunities in African Countries. PARI (available in English, French and German)

Husmann, C., von Braun, J., Badiane, O., Akinbamijo, Y, Fatunbi, O.A. and Virchow, D. (2015) Tapping Potentials of Innovation for Food Security and Sustainable Agricultural Growth – an Africa-wide Perspective. PARI.

ZEF, FARA and PARI national partners (2015) Potentials and Possibilities for German Collaboration in Agriculture – 12 Country Dossiers. PARI.

Maiorano, A. et al. (2016) Crop model improvement reduces the uncertainty of the response to temperature of multi-model ensembles, *Field Crops Research*

Rötter, R.P., Sehomi, F.L., Niemi, J.K. and van den Berg, M. (2016) On the use of agricultural system models for exploring technological innovations across scales in Africa: A critical review. PARI.

PARI Policy Brief No. 1 (2016) Strategic Directions for Development Collaboration for Food Security and Agricultural Growth in Sub-Saharan Africa

PARI Policy Brief No. 2 (2016) Farmer Innovation Contests – Tapping the Innovative Potential of Smallholder Farmers

Mobility, migration, urbanization

Bech Hansen, C. (2016) Transnational Practices and Post-Soviet Collective Identity, in: Schlee, Günther, *Difference and Sameness*, Berghahn, Oxford.

Bech Hansen, C. (2016) Power and Purification: Late Stalin Repression in the Uzbek SSR, *Central Asian Survey*.

Bier, M., Amoo-Adare, E. (2016) Not Quite Home or Alone: A Conversation on Belonging in a Digital Age, *Crossroads Asia Working Paper Series 31*.

Sow, P., Marmer, E., Scheffran, J. (2016) En Route to Hell: Dreams of Adventure and Traumatic Experiences Among West African "Boat People" to Europe. In: Lynda Mannik (eds.): *Migration by Boat. Discourses of Trauma, Exclusion and Survival*. Berghahn, pp. 235-252.

Youkhana, E. (2015) A Conceptual shift in Studies of Belonging and the Politics of Belonging. *Social Inclusion*, 3 (4): 10-24.

Land, water, food and energy

Amankwah, K., Shtaltovna, A., Kelboro, G. and A.-K. Hornidge (2016) A critical review of the follow-the-innovation approach: Stakeholder collaboration and agricultural innovation development. *African Journal of Rural Development*, 1: 35-49. (Open Access).

Beuchelt, T. (2016) Gender, Social Equity and Innovations in Smallholder Farming Systems: Pitfalls and Pathways. In: "Technological and Institutional Innovation for Marginalized Smallholders in Agricultural Development. F.W. Gatzweiler and J. von Braun (Eds.), Springer International Publishing, pp. 181-198.

Haile, M., Kalkuhl, M., Algieri, B., Gebreselasie, S. (2016) Analysis of Price Shock Transmission: Case of the Wheat-Bread Market Value Chain in Ethiopia. *FOODSECURE Working paper no. 50*.

Kalkuhl, M., J. von Braun, M. Torero (eds) (2016) *Food Price Volatility and its Implications for Food Security and Policy*. Springer.

Kihui, E.N. (2016) Basic capability effect: Collective management of pastoral resources in

southwestern Kenya. *Ecological Economics*, 123, 23-34.

Kirui O, Mirzabaev A, and von Braun J (forthcoming) Assessment of land degradation 'from above and below'. *Land Degradation and Development*.

Kornher, L., Kalkuhl, M. (2015) A Typology for Price-related Food and Nutrition Risks and Policy Responses. *FOODSECURE Technical paper no. 5*, based on Deliverable 8.2 paper and database

Kozicka, M., Kalkuhl, M., Brockhaus, J. (2016) Food Grain Policies in India and their Implications for Stocks and Fiscal Costs: A Dynamic Partial Equilibrium Analysis. *Journal of Agricultural Economics*. doi: 10.1111/1477-9552.12176

Kozicka, M., Kalkuhl, M., Saini, S., Brockhaus, J. (2015) Modelling Indian Wheat and Rice Sector Policies. *ZEF Discussion Papers 197*.

Kozicka, M., Weber, R., Kalkuhl, M. (2016) Public Distribution System vs. Market: Analysis of Wheat and Rice Consumption in India. *FOODSECURE Working Paper No 40*.

Mekonnen, D.A., Gerber, N (2016) The effect of aspirations on agricultural innovations in rural Ethiopia. (*ZEF Discussion Papers 214*).

Mekonnen, D.A., Gerber, N. (2016) Aspirations and income, food security and subjective well-being in rural Ethiopia. *ZEF Discussion Papers 212*.

Mekonnen, D.A., Gerber, N., Matz, J.A. (2016) Social networks, agricultural innovations and farm productivity in Ethiopia. *Working Paper Series No. 235*, African Development Bank Group.

Mirzabaev, A., Ahmed, M., Werner, J., Pender, J., Louhaichi, M. (2016) Rangelands of

Central Asia: challenges and opportunities. *Journal of Arid Land*, 8(1), 93-108.

Mirzabaev, A., Guta, D., Goedecke, J., Gaur, V., Börner, J., Virchow, D., Denich, M., von Braun, J. (2015) Bioenergy, food security and poverty reduction: trade-offs and synergies along the water–energy–food security nexus. *Water International*, 1:19.

Mirzabaev, A., Nkonya, E., von Braun, J. (2015) Economics of sustainable land management. *Current Opinion in Environmental Sustainability*, 15, 9-19.

Mohr, A., Beuchelt, T., Schneider, R., Virchow, D. (2016) Food security criteria for voluntary biomass sustainability standards and certifications. *Biomass and Bioenergy* 89, pp. 133–145.

Narayanan, S. and N. Gerber (2016) Social Safety Nets for Food and Nutritional Security in India. ZEF Working Papers 146.

Nkonya, E., Mirzabaev, A., von Braun, J. (2016) Economics of Land degradation and Improvement - A Global Assessment for Sustainable Development. Springer Open book.

Mwale, J. T., Mirzabaev, A. (2015) Agriculture, biofuels and watersheds in the water-energy-food nexus: governance challenges at local and global scales. *Change and Adaptation in Socio-Ecological Systems*, 2(1), 91-93.

Virchow, D., Beuchelt, T.D., Kuhn, A., Denich, M. (2016) Biomass-Based Value Webs: A Novel Perspective for Emerging Bioeconomies in Sub-Saharan Africa. In: *Technological and Institutional Innovation for Marginalized Smallholders in Agricultural Development*. F.W. Gatzweiler and J. von Braun (Eds.), Springer International Publishing, pp. 225-238.

Health, nutrition, ecosystem

Hasan, M.M., Gerber, N. (2016) The impacts of piped water on water quality, sanitation, hygiene and health in rural households of north-western Bangladesh - a quasi-experimental analysis. ZEF Discussion Papers 217.

Malek, M.A., Khan, T.N., Gerber, N., Saha, R. Mohammad, I. (2016) Can a specially designed information intervention around the WASH-agriculture linkages make any difference? Experimental evidence of behavioral changes and health impacts. ZEF Discussion Papers 213.

SaravananVS, M., Idenal, A., Saiyed,S., Saxena D., Gerke, S. (2016) Urbanization and Human Health in Urban India: Institutional Analysis of Water-borne diseases in Ahmedabad. *Health Policy and Planning*, doi: 010.1093/heapol/czw039.

Tan, S. (2016) Space and Environment in the Industrialising Mekong Delta: A Socio-Spatial Analysis of Wastewater Management in Vietnam. ZEF Development Studies. Berlin. LIT Verlag

Usman, M.A, Gerber, N. and J. von Braun (2016) The Impact of Drinking Water Quality and Sanitation on Child Health: Evidence from Rural Ethiopia. ZEF Discussion Papers 221.

Usman, M.A., Gerber, N., Pangaribowo, E.H. (2016) Determinants of Household Drinking Water Quality in Rural Ethiopia. ZEF Discussion Papers 220.

Vangani, R., Saxena, D., Gerber, N., Mavalankar, D., von Braun, J (2016) Impact of different irrigation systems on water quality in peri-urban areas of Gujarat, India. ZEF Discussion Papers 219.

Governance, conflicts, natural resources

Baylis, K., Honey-Rosés, J., Börner, J., Corbera, E., Ferraro, P., Pfaff, A., Davies, P., Ezzine de Blas, D., Lapeyre, R., Pagiola, S., Persson, M., Wunder, S. (2016) Main-streaming impact evaluation in nature conservation. *Conservation Letters*, 9(1): 58-64.

Birner, R., von Braun, J. (2015) Decentralization and Poverty Reduction. In: Ahmad, E., Brosio, G. (Eds.). *Handbook of Multilevel Finance*. Edward Elgar Publishing.

Börner, J., Wunder, S., Gudice, R. (2016) Will up-scaled forest conservation incentives in the Peruvian Amazon produce cost-effective and equitable outcomes? *Environmental Conservation*, doi:10.1017/S0376892916000229.

Fogliano, F., Börner, J., Wunder, S., Nunes Consenza, C.A., Lucena, A.F.P. (2016) The implementation cost of forest conservation policies in Brazil. *Ecological Economics*, 130, 209:220.

Rosa da Conceição, H., Börner, J., Wunder, S. (2015) Why were upscaled incentive programs for forest conservation adopted? Comparing policy choices in Brazil, Ecuador, and Peru. *Ecosystem Services* 16, 243-252.

Kumaran, V., Swaminathan, D. (2015) Local Action Planning for Pro-Poor Urban Governance in the Southern Megacity of Chennai, India. In: R. B. Singh (ed.). *Urban Development Challenges, Risks and Resilience in Asian Mega Cities*. Advances in Geographical and Environmental Science. Springer. pp 175-19.

Lauer, H., Eguavoen, I. (2016) Mainstreaming climate change adaptation into development in the Gambia: A window of opportunity for transformative processes? In: W. Filho Leal (ed.) *Innovation in Climate Change Adaptation*. Springer, pp. 87-98.

Mora Motta, A., León Rodríguez, N. (2016) Cambiando de perspectiva en la economía de la mitigación del cambio climático. *Cuadernos de Economía* 36 (70):169.

von Braun, J., Birner, R. (2016) Designing Global Governance for Agricultural Development and Food and Nutrition Security. *Review of Development Economics*.

doi:10.1111/rode.12261.

von Braun, J., Kalkuhl, M. (2015) International Science and Policy Interaction for Improved Food and Nutrition Security: Toward an International Panel on Food and Nutrition (IPFN). ZEF Working Papers 142.

Markets and public services

Algieri, B. (2016) Conditional price volatility, speculation, and excessive speculation in commodity markets: sheep or shepherd behaviour? *International Review of Applied Economics* 30(2): 210–237.

Haile, M.G., Brockhaus, J., Kalkuhl, M. (2016) Short-term acreage forecasting and supply elasticities for staple food commodities in major producer countries, *Journal of Agricultural and Food Economics* 17(4): 1-23.

Haile, M.G., Kalkuhl, M., Usman, M. A. (2015) Market information and smallholder farmer price expectations, *African Journal of Agricultural and Resource Economics* 10 (4): 297-31.

Haile, M. G., Kalkuhl, M., von Braun, J. (2016) Worldwide acreage and yield response to international price change and volatility: A dynamic panel data analysis for wheat, rice, corn, and soybeans, *American Journal of Agricultural Economics* 98 (1): 172-190.

Kalkuhl, M. (2015) Spekulation mit Nahrungsmitteln, Regulierung und Selbstregulierung. In: Aufderheide, D., Dabrowski, M. (Eds.): *Markt und Verantwortung - Wirtschaftsethische und moralökonomische Perspektiven*. *Volkswirtschaftliche Schriften*, Band 567.

Kalkuhl, M., von Braun, J., Torero, M. (eds) (2016) *Food Price Volatility and its Implications for Food Security and Policy*. Springer. With book chapters by

- Brockhaus, J., Huang, J., Hu, J., Kalkuhl, M., von Braun, J., Yang, G. (2016) When Do Prices Matter Most? Rice, Wheat, and Corn Supply Response in China.
- Haile, M. G., Kalkuhl, M. (2016) Access to information and price expectation efficiency of smallholder farmers: Theory and empirics.
- Kalkuhl, M., von Braun, J., Torero, M. (2016) Volatile and Extreme Food Prices, *Food Security and Policy: an Overview*.
- Kalkuhl, M. (2016). How Strong Do Global Commodity Prices Influence Domestic Food Prices in Developing Countries? A Global Price Transmission and Vulnerability Mapping Analysis.
- Kornher, L., Kalkuhl, M. (2016) The Costs and Benefits of Regional Cooperation on Grain Reserves: The Case of ECOWAS.
- Mujahid, I., Kornher, L. (2016) ASEAN Food Reserve and Trade: Review and Prospect.

Mujahid, I., Kalkuhl, M. (2015) Do Trade Agreements Increase Food Trade? *The World Economy* (Early Online Access).

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BUDGET 2014/2015 ZEF'S FUNDING PARTNERS

Indirect Support*)	in Euro	in %
German Academic Exchange Service (DAAD) / German Federal Ministry of Economic Cooperation and Development (BMZ)	535,382	62.5
Own funds of students	90,300	10.5
German Academic Exchange Service (DAAD) Regional Program / German Foreign Office (AA)	49,120	5.7
SENESCYT, Panama	44,680	5.2
CONICYT, Chile	22,300	2.6
Katholischer Akademischer Ausländer-Dienst (KAAD)	18,250	2.1
CONACYT, Mexico	13,800	1.6
SENESCYT, Ecuador	12,500	1.5
AA via DAAD and La Caixa Foundation, Spain	12,460	1.5
Evangelisches Studienwerk e.V. Villigst	12,000	1.4
Friedrich-Ebert-Stiftung	12,000	1.4
Hanns-Seidel-Stiftung	12,000	1.4
Landesgraduiertenförderung Hamburg	11,400	1.3
Government of Iran	10,800	1.3
Total	856,992	100

External Funds**) Projects	in Euro	in %
German Federal Ministry of Economic Cooperation and Development (BMZ)	Excessive Price Volatility II Accompanying Research for Agricultural Innovation (PARI)	3,095,479 33.3
German Federal Ministry of Education and Research (BMBF) via		2,968,866 32.0
<ul style="list-style-type: none"> German Aerospace Center (DLR), or 	Analysis Uzbekistan Crossroads-Perspektive Innovative Technologies for Multidimensional Special Development Science and Technology Cooperation with Uzbekistan STRIVE WASCAL, West Africa	
<ul style="list-style-type: none"> Forschungszentrum Jülich (FZJ) 	GlobE: BiomassWeb; Olifants, South Africa	

*) Scholarships directly funded by the donors.

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

External Funds - cont.	Projects	in Euro	in %
German Academic Exchange Service (DAAD)		1,178,081	12.7
• German Academic Exchange Service (DAAD) / African Union	Cooperation Water-Energy (PAUWES-ZEF-UNU-ITT)	482,762	
• German Academic Exchange Service (DAAD) / German Foreign Office (AA)	DAAD/ZEF Centre of Excellence, Ghana RLC Campus II	482,144	
• German Academic Exchange Service (DAAD)	International Doctoral Studies Intercultural Weekend Seminar Leadership Development Seminar	164,599	
• German Academic Exchange Service (DAAD)	Greening Environmental Impact Assessments in Bolivia	48,576	
German Federal Ministry of Food and Agriculture (BMEL) via		462,434	5.0
• Federal Office for Agriculture and Food (BLE)	NutriHAF Africa		
Robert Bosch Foundation (RBS)	Junior Professorship, Prof. Börner RLC Network	332,411	3.6
European Commission (EU)	FoodSecure PROIntens	258,703	2.8
Volkswagen Foundation (VW)	Research funds Biber-Freudenberger (Fellowship) Research funds Laube (Fellowship) Healthcap	243,843	2.6
International Centre of Insect Physiology and Ecology (ICIPE)	Strengthening Citrus Production Systems in Kenya and Tanzania Ento NUTRI Development & Implementation	158,129	1.7
International Food Policy Research Institute (IFPRI)	Water-Energy-Food Nexus	117,322	1.3
CIFOR	Forests in the Global Bioeconomy	116,643	1.3
Fiat Panis Foundation	Dr. Hermann Eiselen Doctoral Program	99,791	1.1
ICRAF	Decision analysis workshops in West Africa	75,210	0.8
Northrhine Westfalia via		60,393	0.6
• BioSC, c/o FZ Jülich	Strategy project BioSC, Researcher Bruckner Strategy project Econ-BioSC, Researcher Cloutier	30,423	
• MIWF NRW	One Health and urban Transformation	29,970	
Third-Party Project Fund available after Project End	Third-Party Project Fund available after Project End	57,929	0.6
The World Vegetable Center (AVRDC)	GlobalHort Nutrition-Sensitive Promotion of Vegetables (NutriSenseProm)	40,628	0.4
Future Earth	Future Earth contributions to GWSP	13,860	0.1
Humboldt Foundation	Research Funds Börner	8,333	0.1
Participant Fees	Participant Fees for GWSP Conference	3,196	0.0
UNEP	UNEP contributions to GWSP	2,434	0.0
Total		9,293,685	100

Core Funds***)	in Euro	in %
Personnel Costs	1,436,514	70.9
Administrative Costs	283,530	14.0
BMBF & DFG Overhead Shares****)	305,161	15.1
Total	2,025,205	100
Indirect Support & External Funds & Core Funds	12,175,882 Euro	

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

****) Partial BMBF & DFG Overhead Shares.

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INTERNATIONAL ADVISORY BOARD



**Prof. Dr. Hans van Ginkel
(Chairman of the Board)**

Former Under-Secretary General of the UN and Rector of the United Nations University in Tokyo, Japan

Prof. Dr. Bina Agarwal

Professor of Development Economics and Environment at the University of Manchester, UK; former Director, Institute of Economic Growth, University of Delhi, India

Dr. Ernest Aryeetey

Vice Chancellor, University of Ghana, Legon

Dr. Florence Chenoweth

Former Agriculture Minister of Liberia

Dr. Marc Jan Eumann

State Secretary for Europe and the Media of the State of Northrhine-Westphalia in Düsseldorf, Germany

Mr. Hans-Joachim Fuchtel

Parliamentary State Secretary, Federal Ministry for Economic Cooperation and Development (BMZ), and member of the Federal Parliament, Germany

Prof. Dr. Mohamed H.A. Hassan

President of the African Academy of Sciences, Chair of UNU Council, Co-Chair of IAP, the Global Network of Science Academies; former Executive Director of the Academy of Sciences for the Developing World (TWAS), Sudan

Prof. Dr. Michael Hoch

Rector of the University of Bonn, Germany

Mr. Wilfried Kraus

Head of Cultural, Earth System and Environmental Research, Federal Ministry of Education and Research (BMBF), Germany

Dr. Michael Rabbow

Senior Advisor - E&P Focus Africa Consulting GmbH, Hamburg, Germany

Prof. Dr. Günther Schlee

Director at the Max Planck Institute of Social Anthropology in Halle, Germany

Prof. Dr. Lisa Sennerby Forsse

Rector of the Swedish University of Agricultural Sciences (SLU), Uppsala, Sweden

Professor Emeritus Frances Stewart

Centre for Research on Inequality, Human Security and Ethnicity (CRISE) University of Oxford, United Kingdom

Prof. Dr. Holm Tiessen

Director, Inter-American Institute for Global Change Research (IAI), Montevideo, Uruguay

Prof. Dr. Carolina Vera

Director of the Center for Atmospheric and Ocean Research (CIMA), Buenos Aires, Argentina

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REGIONS OF RESEARCH AND COLLABORATION ACTIVITIES

