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Center for Development Research
University of Bonn

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ZEFnews

in focus: Africa's development dynamics

LEAD ARTICLE

WASCAL – A MILESTONE FOR CLIMATE-CHANGE-RELATED RESEARCH IN AND WITH WEST AFRICA

WASCAL Competence Centre in Ouagadougou, Burkina Faso.

Evidence that climate change and climate variability will affect our planet and Africa in particular is growing alarmingly. Higher temperatures, increases in the frequency of extreme events (e.g. floods, droughts), changes in natural ecosystems, loss of biodiversity and spreading of diseases are expected to impact livelihoods dramatically and will pose huge challenges to development in West Africa. Given the region's heavy dependence on natural resources and rainfed agriculture together with an already critical level of food security and widespread poverty it has been consistently demonstrated that changes in the climate system due to global warming will continue despite the (global) efforts to mitigate greenhouse gas emissions.

The approach: WASCAL

The West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) was masterminded in 2009 by the German Federal Ministry of Education and Research (BMBF) to support West African governments and stakeholders to effectively prepare for the anticipated impacts from climate and land use changes in the region. The concept of WASCAL builds on following major features: establishing (i) the headquarters in Accra and the Competence Center in Ougadougou, (ii) a research program, and (iii) Graduate Studies Programs at 10 universities in the region. Furthermore, WASCAL and its subsequent programs partner with universities and organizations in the region and in Germany.

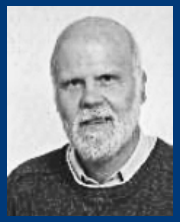
WASCAL's achievements

Research activities conducted jointly by the Competence Center in Ougadougou and the consortium partners cover an extremely wide range of topics including high-resolution climate change projections and hydrological and meteorological models covering regional and local water cycles. Further, satellite-based detecting of land use changes, databases on biodiversity and its changes due to climate and land use dynamics, crop simulation models and tools on irrigation management are among the directly resulting tools and products. Additionally, approaches on assessing forage quality, economic models to simulate agricultural supply, a climate risk assessment and insights into environmental as well as social drivers triggering migration in several WASCAL countries have been developed.

The findings, tools, and with research facilities established in three field research stations in southwest Burkina Faso, northern Ghana and northern Benin as well as data infrastructure are essential assets for the Competence Center.

Following a consultation process with regional scientists and education policy makers, ten doctoral/master research and education programs have been established at West African universities. WASCALs activities include improvement of infrastructure, capacity development measures and collaboration with German universities (visiting lecturers, joint mentoring and co-supervision

About the authors



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arrangements of graduate students, opportunities to doctoral students and staff for conducting research in Germany). The ten programs focus on climate change and (i) the West African Climate System, (ii) water, (iii) economics, (iv) land use, (v) agriculture, (vi) biodiversity, (vii) human security, (viii) adapted land use, (ix) energy, and (x) education.

Outlook

The Competence Centre is becoming an important hub in the West African research landscape evidenced by successful applications in research calls of several donors. Further efforts target to strengthen the capacity for demand-driven service provision to stakeholders in the entire region at local and regional scale. Based on a comprehensive process of consultations at national and regional level aiming at refining research priorities utilizing experience gained during the past years, a new round of research is under preparation funded by BMBF and driven by the Competence Centre taking the African perspective. ZEF is ready to support this process.

Watch the film about the WASCAL project in ZEF's Media Center on www.zef.de

Within WASCAL, representatives from ten West African countries and eleven partners from Germany were collaborating:

Center for Development Research (ZEF),
Department of Geography, University of Bonn
Faculty of Agriculture, University of Bonn,
Department of Geography, University of Augsburg
Institute of Biological Sciences/Botany, University of Rostock
Faculty of Biology, University of Würzburg
Department of Geography and Geology, University of Würzburg
Deutsches Klimarechenzentrum (DKRZ), Hamburg
Deutsches Zentrum für Luft- und Raumfahrt (DLR)
Deutsches Fernerkundungsdatenzentrum (DFD)
Forschungszentrum Jülich (FZI)
Karlsruher Institut für Technologie (KIT) – IMK-IFU, Garmisch-Partenkirchen
Université d'Abomey Calavi (Bénin)
Université de Ouagadougou (Burkina Faso)
University of the Gambia (The Gambia)
Kwame Nkrumah University of Science and Technology (KNUST)
Université Abobo-Adjamé
Université de Cocody-Abidjan (Côte d'Ivoire)
Université de Bamako (Mali)
Université Abdou Moumouni de Niamey (Niger)
Ahmadu Bello University
The Federal University of Technology, Akure
The Federal University of Technology, Minna
Obafemi Awolowo University
University of Calabar (Nigeria)
Université Cheikh Anta Diop de Dakar
Université Gaston Berger (Sénégal)
Université de Kara
Université de Lomé (Togo)

EDITORIAL: CLIMATE CHANGE ADAPTATION IN WEST AFRICA

With yet another hot European summer and its record-breaking temperatures and sweltering heat, forest fires devastating vast regions in Scandinavia and causing human tragedies in the Mediterranean and cereal harvest yields in some regions down by 50-75%, climate change is back in the public discourse.

However, largely forgotten here is that the most serious impacts of climate change are expected not in the Global North, where most of the greenhouse gas emissions originate, but in the Global South.

Christian Borgemeister is Director of ZEF's Department of Ecology and Natural Resources Management

An area that is forecasted to be particularly hit hard is West Africa. However, climate change in the region will most likely exacerbate the already serious shortfalls in agricultural productivity, further constrained by one of the world's highest demographic growth rates. Since West Africa's greenhouse gas emissions are in comparison with the Global North rather negligible, the focus is more on adaptation rather than mitigation efforts. Despite the great need for effective adaptation strategies at regional and local scale, there is little climate change related capacity in West Africa.

The West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) is one of the few such organizations that can fill the void. Based on an initiative spearheaded by the German Federal Ministry of Education and Research (BMBF) and supported by a consortium of German science partners, the latter coordinated by ZEF, since 2009 WASCAL has managed to implement an impressive research program, established one of the largest climate change related capacity building programs involving 10 West African universities and is in the process of developing a portfolio of climate service related tools for its regional stakeholder community.

CIREG: GENERATING RENEWABLE ELECTRICITY IN WEST AFRICA

Electricity for all is a key element for the economic development of West Africa. However, electricity demand in most countries is rising faster than electricity generation.

Today, there is an opportunity for West African countries to leapfrog on new energy technologies and to "skip" the fossil fuel era. The Climate information for Integrated Renewable Electricity Generation (CIREG) Project will strengthen renewable energy networks between European and African partners by co-producing a sociotechnical shared vision. The aim of the project is the co-development of climate-resilient and sustainable renewable systems. For this purpose, the project will provide model-based support for decision-makers, including governments as well as the private sector. In particular, water planning will be integrated, as a basis for climate-resilient and sustainable deployment of renewables. The project members will establish demand-driven, context-specific climate services for West Africa at various spatiotemporal scales (seasonal, short- and long-term). In collaboration with regional actors, and focusing on the Volta and Niger River basins, the project members will investigate the regional potential for renewables to identify possible transition pathways towards renewable systems. A scientific basis for climate information and services will be developed by climate-focused institutes that are part of the CIREG consortium. A hybrid renewable demonstrator will generate data for a critical scientific model evaluation, and for the development and adaptation of climate services. It will also serve as a demonstration site that can be visited by regional scholars and decision-makers. This local demonstrator study will be fully embedded in the wider project context at a later stage.

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EDUCATION FOR SUSTAINABLE DEVELOPMENT: THE UNESCO CHAIR AT THE URGENCH STATE UNIVERSITY IN UZBEKISTAN

Human-induced land degradation in the Aral Sea Basin threatens both the ecological sustainability and economic viability of local rural livelihood systems. For this, the Khorezm region in northwest Uzbekistan, at ca. 220 km from the present shores of the Aral Sea in Central Asia, is a clear example of the ecological problems typical for the young transformation countries in Central Asia: Aiming for welfare creation through exploiting their natural resources many countries utilize unsustainable natural resource management practices.

A new strategy for a sustainable development of the region needs to be based on sound, long-term development plans where human and institutional capacity development are incoorporated and implemented. A good educational system producing well-trained and skilled human resources is elementary for successfully dealing with such daunting challenges.

Sustainable development cannot be achieved solely through the help of new technologies, political regulation and financial mechanisms. At least equally important are paradigmshifts in the region's way of thinking and behavior, which necessitates having participation on all levels of the society, regardless of social conditions, quality education and teaching on sustainable development. Therefore, the United Nations Educational, Scientific and Cultural Organization (UNESCO) has designed and implemented a special program called "Education for Sustainable Development (ESD)", where ZEF is taking an active role.

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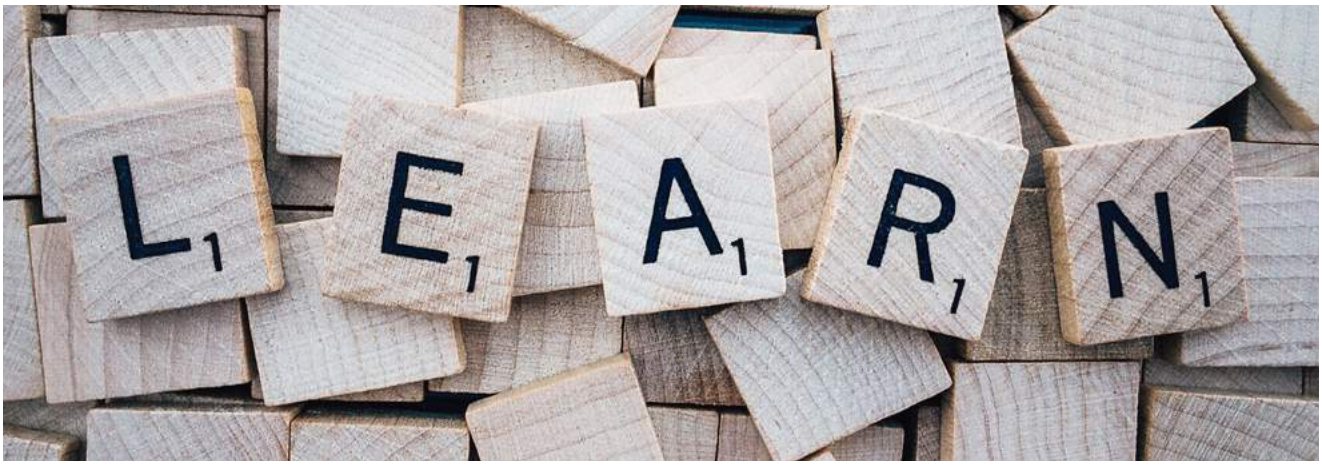
UNESCO chair in education for sustainable development

To promote the introduction of education for sustainable development methods in teaching, UNESCO encourages the reorientation of teacher education through, for example, e-learning courses for secondary school teachers in the field of education on climate change. The positive experience of schools and the numerous projects of the UNESCO Associated Schools Network are other examples of how education for sustainable development is applied around the world including Central Asia.

AGRICULTURAL TECHNICAL VOCATIONAL EDUCATION AND TRAINING IN AFRICA



Agricultural Technical Vocational Education and Training (ATVET) can be defined as the educational process involving the study of technologies and related sciences and the acquisition of practical skills, attitudes, understanding and knowledge related to occupations in agriculture. Vocational training in agriculture and the food system can help farmers and other actors to become skilled entrepreneurs. It will thus be essential for farms and companies to sustainably increase the level of productivity, their competitiveness on domestic and international markets and consequently increase their income.

Current Vocational Education and Training system in Africa

In most sub-Saharan African countries, ATVET programs are formally school-based. In some countries like Kenya, ATVET training is incorporated into the school syllabus. In general, however, students either enter the vocational education track after six to eight years at the end of primary school (e.g. in Burkina Faso and Kenya) or after nine to twelve years of education or at the end of junior secondary school (e.g. in Ghana, Nigeria, Mali and Swaziland). The duration of school-based technical and vocational education is between three and six years, depending on the country and the model, but agriculture is generally not taught as a separate subject at the secondary school.

Despite their potential to significantly expand rural employment opportunities, there are very limited ATVET programs that could open up labor market opportunities for the rural communities. ATVET is widely considered a second-class career choice for those who have missed all other non-technical educational options. Moreover, the private sector involvement in ATVET with formal work contracts remains at an infant stage.

Learning from the German Vocational Education Training system

The German Vocational Education and Training system is widely known, notably for its dual aspect, and respected internationally for its combination of practical and theoretical knowledge allowing students to acquire knowledge and skills at the workplace and at a vocational school. The following core aspects of the German vocational and educational training could serve as a blueprint for Africa:

- A broad qualification structure: Youth with lower school qualifications have access to a high quality vocational and tertiary education, which improves their chances on the labor market
- Variety: The German system offers a broad spectrum of professions and a great variety of educational promotion prospects
- High stakeholder engagement: The dual approach has a high degree of engagement and ownership by employers and other social partners
- Bilateral financing: The system combines public and private funding which makes it financially secure even in times of crisis
- Supporting research institutions: research capacities are well-developed and institutionalized.

The way forward

The success of the German dual system is attributed to its broad qualification structure, which offers high quality education and viable employment prospects for youth, coupled with a high degree of engagement of all stakeholders, a well-financed and balanced structure via the private and public sectors, and well-developed and institutionalized capacities.

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INTEGRATED PEST MANAGEMENT WITH FUNGI: AN OPTION FOR SMALLHOLDER FARMERS

Pest outbreaks and extreme events intensified by climate change are a major cause of large crop losses and hunger crises today and will be in the coming decades. Chemical pesticides are known for their negative impacts on biodiversity and the health of farm workers in developing countries, who often do not wear any protective clothing. Additionally, pesticides are often not affordable for poor smallholder farmers, who are in desperate need of effective alternatives.

An international team of researchers is evaluating the efficiency of integrated pest management in a research project funded by the Volkswagen Foundation. Specific types of endopathogenic fungi, which use pests as hosts and kill them a few days after infection, can be transmitted from one individual to the next one and thereby be used as a natural auto-disseminating pest control mechanism. The success of this strategy, however, depends on the climatic conditions such as temperature and humidity. Henri Zefack Tonnang from the International Institute for Tropical Agriculture (IITA) and Lisa Biber-Freudenberger, senior researcher at ZEF, are therefore modelling the efficiency of this approach under current and future climatic conditions. In addition, they developed different tools and software products to design effective application and dissemination strategies of endopathogenic fungi for smallholder farmers. In May 2018 a group of PhD and master students from Kenya and Cameroon were trained to use these tools and methods in a three-day workshop in Buea, Cameroon. Finding new ways of fighting pests in a sustainable way without harming the environment and the health of the farmers is of immediate relevance to produce yields sufficient to feed the growing sub-Saharan population, minimize risks to the health of farmers and protect biodiversity. This is why the Volkswagen foundation agreed to fund the next phase of the project for the next two years focusing on the further development and dissemination of the tool as a mobile phone app.

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MAKING AGRICULTURE MORE NUTRITION-SENSITIVE: THE NUTRIHAF AFRICA PROJECT IN ETHIOPIA

Food prepared at nutrition training in Ethiopia.

The current global agro-food systems are predominantly based on grain production. They can therefore not fulfil the increasing demand for more and qualitative better highly-nutritious foods such as vitamin-rich fruits and vegetables. The idea behind the concept of nutrition-sensitive agriculture is to narrow the gap between available, accessible food and the food actually needed for a healthy and balanced diet for all people.

This is where the NutriHAF Africa research project comes in, of which ZEF is a partner: The project partners investigate options to integrate vegetables into multi-storey cropping systems in the Yayu Biosphere reserve in Ethiopia. The aim is to increase nutrition security, to intensify agriculture and thus reducing pressure on natural habitats in the long-term.

Findings show that only few households in the Yayu Biosphere reserve consume vegetables and fruits on a daily basis. This means that the World Health Organization's recommendation of 400g of fruits and vegetables consumption per person per day is not complied with at all. While fruits are sourced in equal shares from market and own production, vegetables such as tomatoes and onions are rather bought from the market. Leafy vegetables such as kale are sourced by more than 60% from own production by farmers. Several nutritious vegetables and fruits often termed "traditional African" were less prevalent in production and consumption in Yayu. They were available, yet, their potential was not exhausted and knowledge about their handling was scarce. The NutriHAF Africa project, therefore, worked in three areas to make the local agricultural system more nutrition-sensitive while focusing on the integration of selected vegetables:

1. In agronomic trials the leafy vegetables amaranth (Amaranthus cruentus), jute mallow (Corchorus olitorius), Ethiopian kale (Brassica carinata), cowpea (Vigna unguiculata), pigeon pea (Cajanus cajan), and pumpkin (Cucurbita sp.) were sown on demonstration plots for their leaf yield performance under shaded, semi shaded and sunny cropping conditions. Cowpea and pumpkin showed promising leaf growth performance under shade. While different cropping densities and various harvesting methods were assessed, the gained knowledge is now shared with farmers and extension workers through a **vegetable booklet** about the "new" vegetable species explaining about production issues and at the same time giving nutrition information such as nutrient content and recipes.

2. The same vegetables except pigeon pea were used for **recipe development and participatory cooking demonstrations.** Of 102 panellists nobody disliked the vegetables so that farmers could be convinced of the value and good taste of these vegetables which were formerly partly regarded as weed or fodder. Further cooking demonstrations and nutrition training for farmers and female and male agriculture extension workers were carried out twice in order to increase participants' nutrition knowledge in the context of agricultural training.

3. The introduction of nutrition-sensitive agriculture, here increase in vegetable production and processing, may pose a risk to further increase the workload of women, as women are primarily responsible for home gardens, vegetable production and family nutrition. Therefore, increased involvement of men in vegetable production can be a solution to alleviate women's workload and was discussed in gender role playing games in Yayu.

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DOCTORAL THESES @ ZEF

HOW SUSTAINABLE IS ECOLOGICAL ORGANIC AGRICULTURE IN KENYA?

INTERVIEW WITH JULIET WANJIKU KAMAU

Juliet Wanjiku Kamau (on the left).

You conducted research on organic farming in two regions in Kenya. Why did you choose this topic?

I chose my topic because of the rapid increase in organic agriculture, especially in East Africa. It is driven by local and international demand for organic produce in recent years. In addition, the African Union endorsed it as a major pathway to more sustainable development on the continent, and is promoting it through the "Ecological Organic Agriculture" initiative. However, organic agriculture is still in its infancy on the continent, and a lot of research is needed on its performance in comparison to other farming systems.

Based on your research outcome, is organic farming an attractive option for small-scale farmers in Africa and if yes, under which conditions?

Organic agriculture is an attractive option for smallholder farmers. However, they need to be empowered and encouraged to make long-term farm investments and carry out farming as a business. Especially, an enabling macroeconomic environment with properly functioning financial and product markets is needed.

What were your main conclusions and recommendations at the end of your doctoral research?

Organic agriculture can improve the sustainability of smallholder farms in Kenya: Wealth creation is important for the adoption of organic agriculture. However, agricultural practices of organic agriculture farms need to go beyond not using agrochemicals towards adopting more practices that can help with building and maintaining soil health.

Interventions aimed at improving the welfare of smallholders, who are the main food producers globally, need to target systematically specific requirements of different smallholder farm types. Building the total stock of physical, financial, human, social and natural capital is vital for sustainable smallholder farming systems in Kenya and beyond, which will aid in achieving the sustainable development goals.

You have spent quite some time "in the field". What were your most interesting or intensive experiences? What were the main challenges you had to deal with?

Some farmers refused to be interviewed, some wanted compensation and others felt that researchers just collected data without any results. I had very Interesting debates with farmers and tried to convince them that research benefits take time and although some were asking about immediate benefits from the data being collected, I explained that the impact of academic research, particularly of individual PhD research, could take longer.

Movement was sometimes difficult due to poor conditions on roads, extreme weather conditions such as El Niño rains as well as some households being located in very hilly areas inaccessible by car. Some respondents could only speak the local language, so translation was needed which was time-consuming. Gender inequity sometimes was an issue: Women failed to speak for fear of being reprimanded by their husbands. Despite this, most farmers were very willing and committed to support my research efforts and were even going out of their way to help with logistics, as well as offering a cup of tea and food many times.

You are part of the Right Livelihood College ("Alternative Nobel Prize") program. What benefits did it bring to you and your research?

My research is closely aligned with areas of work of Laureate Hans Herren who received the "Alternative Nobel Prize" in 2013. During my field work, I was strongly supported by Hans Herren's organization BIOVISION Africa Trust. I was allowed to use its contacts and infrastructure in Kenya. Particularly, the advice by David Amudavi, Director of BIOVISION Africa Trust in Nairobi was extremely helpful.

What are your professional plans for the future?

To continue engaging in scientific research and in initiatives that seek to address the challenges being faced by developing countries.

About the interviewpartner

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THE GAINS OF COORDINATION - WHEN DOES REGIONAL COOPERATION FOR FOOD SECURITY MAKE SENSE?

Rice sacks in Ghana.

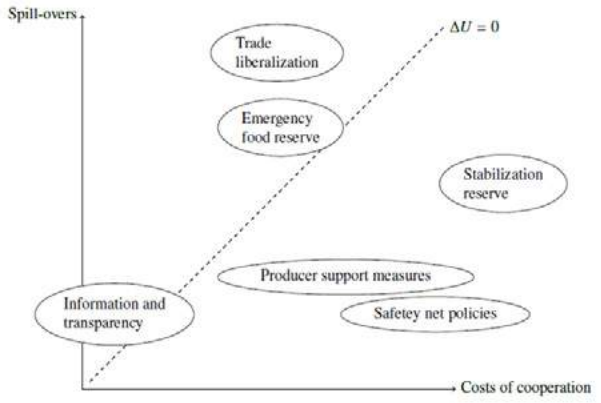
Regional policy coordination is an essential component of the EU. In agriculture, both the common market and the Common Agricultural Policy (CAP) largely shape the policy environment and agricultural markets. Despite the existence of regional economic zones, such as ECOWAS, SADEC, COMESA, ECCAS, and AMU in Africa, food security policies are not coordinated. This research looks at the potential benefits of regional coordination in the implementation of food security policies providing a conceptual framework that allows the evaluation of the welfare effects of regional policy coordination.

When does cooperation help and when does it harm?

In regional policy integration, states hand over decision-making power voluntarily to supernational entities and create a political power that overrules national policies. A country tolerates the withdrawal of decision-making power in the hope to receive benefits of cooperation in the form of spill-overs in exchange. Cooperation curbs such spill-overs as it utilizes economies of scale in policy implementation. On the other side, the specifics of the policy will no longer be determined by the individual country, but rather it is a joint decision among all member countries. Difficulties in decision making, as they happen for instance in the EU, occur due to heterogeneous preference among regional partners. For instance, some countries prefer fertilizer subsidies and others price discounts for consumers or free provision of extension services. In addition, harmonization brings about additional costs arising from the negotiations among the regional partners.

Where should West African countries cooperate?

We use a graphical representation to show the desirability frontier of regional coordination (dashed line). Whenever net gains are positive, the policy is placed in the left of the line. This is the case for regional trade integration, an emergency food reserve, and coordination of information and transparency initiatives. Since the net gains are greatest for trade integration, which is caused by a moderate independence of production shocks among the West African countries, the respective ellipsis is farther to the left of the line than the other policies. The costs of cooperation for a regional emergency food reserve are



similar to the costs for trade integration, but spill-overs are not equally distributed across all countries; e.g. a country with relatively stable production patterns gains less than a country with highly variable annual production. We also ascertain net gains for regional cooperation to enhance transparency in agricultural markets, which comes at almost zero additional costs, though, spill-overs are minimal.

And where they shouldn't

The regional coordination in a stabilization food reserve as well as producer and consumer support is harmful. The large spill-overs of the stabilization reserve emerge from trade integration, which will be a requirement of the policy. On the other hand, the standard of living, price level, and the agricultural productivity across the countries in the region are too diverse and create large costs of coordination and harmonization.

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DOCTORAL THESES @ ZEF

MARGINALITY IN URBAN INDIA

INTERVIEW WITH AMIT KUMAR, JUNIOR RESEARCHER @ ZEF

For your doctoral research on "Marginality at the interface of contemporary development processes in urban India" you have been conducting field research in the slums of Mumbai. Why did you choose this research topic?

In 2004, the Indian government started an initiative to shape Mumbai as a "world-class city", basically by pushing its poor out. This evoked resistance among the massive numbers of slum dwellers in the city, who gathered under the banner of Ghar Banao Ghar Bachao Aandolan led by Right Livelihood Laureate Medha Patkar. This movement, aiming to protect the rights of the urban poor living in precarious conditions, successfully prevented the eviction of people living in slums. Moreover, it succeeded to reorganize them on the same land through negotiations with the Municipal Corporation of Greater Mumbai (MCGM). This way, I came across the issue of evicting slum dwellers from Mumbai and their resistance against being evicted from the city. I was then appointed as a student social worker with MCGM in 2014. There, I had to work on several issues in slums of Mumbai. The multiple problems in these slums and the various ways they were addressed by different departments of MCGM attracted my attention. And while I was conducting my Master's research, I got a clearer picture of how complex it is to work in and with slums.

What are your main research objectives?

I want to investigate the temporality of demolition and reassembling of actors around it, to trace how slum dwellers mobilize to resist their eviction and negotiate to be in the city of Mumbai; and to study the associations they form to remain in the city of Mumbai being at the anti-footings with the state.

You are also a Right Livelihood College (RLC) student. How did the cooperation with the RLC take shape on the ground?

The Right Livelihood College functions as a space for interaction between Right Livelihood Laureates and students. In the case of Mumbai, activists and students have always been close to each other when it comes to stand against the eviction of urban poor. Some of them are students turned into activists and some are activists then turned into students.

How did people respond to a young researcher conducting research on their daily lives?

The people are used to young researchers so it is not so much the age of the researcher that people respond to as much as the kinds of networks the researcher is immersed in, meaning the researcher's caste and class or his place in the extant hierarchy. Needless to say, I am easily recognizable by them as someone who doesn't usually belong to their space. Yet, my going there, with no obvious mandate against them, already makes them well-disposed towards me as they think I am there to help them; though, I know that nothing could be further from the truth. The people responded to me exactly like a group of desperate people would, when they see a glimmer of hope, no matter how young or how small.

What are the main results of your research work?

This research will present how the demolition as an event of high intensity flows into several directions: a new set of young people are becoming experts in planning, activists and non-governmental organizations workers. This way the city-based movements not only push the agenda against eviction of the poor but open new options for them to remain in the city.

Read the full interview on www.zef.de

About the interviewpartner

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HOW FOOD SECURITY CRITERIA CAN BE IMPLEMENTED IN PALM OIL PRODUCTION IN MALAYSIA

Rural area in Sabah, Malaysia.

Team members of the "Food Security Standard (FSS I)" project traveled to Malaysia to learn how food security aspects can be addressed within sustainably certified oil palm production.

The oil palm sector has come under international criticism because of environmental concerns and labor conditions. To address these issues, voluntary sustainability certifications have been introduced. Malaysia even plans to implement its own obligatory sustainability standard for oil palm by 2019. However, food security is – typically - neglected. Therefore, ZEF had developed food security criteria, which can be integrated into sustainability standards for any crop. The FSS I Project tests the criteria in Asia, Africa and Latin-America and supports sustainability standards in the implementation.

The trip to Malaysia

The FFS team (ZEF, Welthungerhilfe, World Wildlife Fund) started with a stakeholder workshop with participants from governmental departments, oil palm producers and mills, NGOs and researchers. The stakeholders pointed out that palm oil production has brought income benefits for the communities and smallholders and set these in contrast to the persisting human and labor right abuses as well as environmental pollution.

Food security: The issue of (not) being an issue

The first reaction to raising the topic of food security was denial: "This is not an issue in Malaysia", the stakeholders said. When explaining the full concept of food and nutrition security as well as the human right to adequate food, the perception changed. The stakeholders pointed out that food insecurity persists, mainly among (illegal) workers on non-certified plantations, casual workers and their poor families.

When we visited certified smallholders (organized in a group certification scheme), we found that food insecurity is also a problem among very small farmers who only have one or two hectares of oil palm. These farmers were worried about not having enough food, depended on external support by relatives, ate less nutritious and diversified food or reduced the food quantity. They had low yields, lacked other income sources and had a low standard of living. In contrast, farmers with around seven hectares were food secure, had casual workers, lived in decent houses and owned cars, especially when they had additional income opportunities.

External support required

Sustainability certification was commonly mentioned by stakeholders as having contributed to improving the living and working conditions on plantations and among smallholders. However, external support to raise awareness and implement the certification requirements is needed. Trainings on good agricultural practices, safety, human and worker rights etc. are important as low levels of knowledge and little awareness of laws are common. Whether certification is really a way forward for food-insecure farmers as hoped by many or whether exit strategies from farming and other types of support are preferable needs to be much more discussed and researched.

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Facts & news

Germany's Federal President Frank-Walter Steinmeier talking with ZEF researcher Marwa Shumo.

Comedian Eckart von Hirschhausen is tasting a grasshopper offered by -Christian Borgemeister.

ZEF at open house day at Villa Hammerschmidt in Bonn June 24, 2018

ZEF presented its research in several tents at the "open house day" of Villa Hammerschmidt in Bonn on June 24. The University was at the heart of this year's outdoor exhibition due to its 200-year jubilee. ZEF presented its research on insects in collaboration with Katz Biotech, one of the world's leading companies in producing insects for fodder. ZEF also presented research on bio-economy in the tent of Bonn's Alliance for Sustainability Research. Among the many visitors was Germany's Federal President Frank-Walter Steinmeier who paid a visit and took a look at ZEF's exhibition site.

Have a look at our photo galleries!

New Features: Update of the BiomassNet platform www.biomassnet.org

BiomassNet is the first Pan-African expert network on food and non-food biomass and aims at bringing together experts from science, practice and policy. The online-platform offers a toolbox for knowledge exchange, where scientific publications, technical guidelines, policy briefs, videos as well as apps and online services can be shared. In our recent update, we have broadened the thematic scope of BiomassNet to include a wide variety of topics related to the production and storage of biomass, equipment and technology, markets and trade, institutions and policies, environment and conservation, bioenergy, health and nutrition, and education and capacity development. To become a member and share your articles and other resources, please register at www.biomassnet.org.
Contact: cschmitt@uni-bonn.de

The ProcINut project started its work on edible insects

The new ProcINut project, (Processing of edible insects for improved nutrition) is funded by the German Federal Ministry of Food and started in July 2018. It aims at better exploiting the nutritional and economic potentials of edible insects in Myanmar and Madagascar. It tests different processing techniques of local insect species (insect flours and dried insects) and expands commercial small-scale farm activities and processing to produce safe and nutritious end products.
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