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Center for
Development Research
University of Bonn

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APRIL 2017

ZEFNEWS

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LEAD ARTICLE

BIOMASSWEB: FARMERS' INNOVATIONS IN ETHIOPIA



Food and nutrition insecurity remains a prevalent problem in sub-Saharan Africa. With high population growth and climate change, the situation may even deteriorate in the near future. Agricultural innovation is acknowledged worldwide as a means to mitigate food and nutrition insecurity. In this context, agricultural innovation refers to new technologies as well as to the improvement of agricultural practices and product marketing. For sub-Saharan Africa, it mainly concerns technological and knowledge inputs for smallholder farmers as they make up around 80% of the population and produce the bulk of agricultural commodities in most countries. Steps towards agricultural innovations must therefore take the real problems and risks of smallholder farmers into account.

Biomass-based value webs in Africa

The ZEF project BiomassWeb, (Improving food security in Africa through increased system productivity of biomass-based value webs), which is jointly implemented with partners in Africa and Germany, aims to understand the potentials and challenges of addressing food and nutrition insecurity through biomass-based value webs. Agricultural growth is critical for Africa's food and nutrition security, as well as for its economic and social development. The current rate of food productivity growth in sub-Saharan Africa means that only 12% of food demand will be met by 2030, the year in which the UN aim to achieve their Sustainable Development Goals. Sub-Saharan Africa depends on biomass resources for the production of food, energy and fiber. The rapidly evolving and growing global competition for land and agricultural outputs, i.e. food and non-food biomass, requires new initiatives to facilitate growth that improves food and nutrition security in Africa. Global cooperation on biomass production – especially between Africa and Europe – and value added from processing in Africa supported by European know-how and technology can be seen as important elements of a green growth strategy.

“Follow the Innovation” – about stakeholder participation

In Ethiopia, there appears to be a gap in understanding the needs of farmers and in trust building processes between extension agents and farmers. The Ethiopian agricultural extension system is still characterized by continuing expert-based recommendations of technologies and farming practices with very limited consideration of market structures, private incentives and demands. The BiomassWeb project work package “Follow the Innovation (FTI) - Collective learning, change adaptation and transition management” studies the processes of agricultural innovation flow and stakeholder participation. FTI aims at strengthening biomass-based value webs by increasing their local adaptability and productivity in systematically fostered transdisciplinary and participatory processes with local stakeholders. It is based on the premise that joint research and learning will provide empirical insights into value web-specific innovation potentials and their use to achieve food security. Agricultural innovation is a joint learning process. Farmers have accumulated knowledge about the challenges and problems in farming from their life experiences. Cropping calendars, land preparation, planting, managing the farm, harvesting the crops and marketing are based on knowledge transferred over generations. Farmers have experiential knowledge which can help researchers and extension workers adapt technologies to specific contexts. Crop pests and weeds as well as the impacts of fluctuations in rainfall patterns and adaptive mechanisms are also not new to them. Therefore, scientific knowledge should consider locally-specific knowledge and practices.

From theory to practice

To facilitate a joint learning process, the BiomassWeb FTI work package organized training workshops on tools and approaches to encouraging stakeholder participation. The conceptual and methodological trends developed and used by the FTI work package are geared towards identifying jointly defined problems and finding solutions. Lack of capacity for facilitating stakeholder participation remains a major challenge for researchers.

Example of Push and Pull Technology

FTI, in collaboration with the research work package of the International Insect Physiology and Ecology (*icipe*) (within the BiomassWeb project), established experimental farm plots for **Push-Pull Technology (PPT)** in the farmers' holdings to address the problems of stemborer insect pests and Striga weeds identified by farmers. The PPT plots consist of maize intercropped with a stemborer moth repellent fodder legume, Desmodium (the push), together with an attractant trap plant, Napier/Brachiaria grass (the pull), planted around a maize-legume intercrop. The Desmodium suppresses and eliminates Striga weeds and, at the same time, produces volatile chemicals which repel (push) the stemborer moth pests while Napier/Brachiaria grass attracts (pulls) them (and hence, push-pull). The grass (Napier grass or Brachiaria) does not support all stemborer larvae to develop and hence the majority of them die before reaching adulthood. Additional benefits from the PPT include animal feed, soil conservation and fertility improvement. PPT on the farmers' fields brought farmers closer to other stakeholders. The PPT served as a platform for discussion among the extension agents, researchers, farmers and government bodies to exchange knowledge and experiences and to think about up-scaling strategies. The work has been continued with the strong local presence of agricultural extension agents, local administration and *icipe*. Such joint experimentation with farmers has the potential to change expert-based traditions in agricultural innovation and to contribute to the efforts of food and nutrition security in Africa and in Ethiopia in particular. However, the commitment of the government to maintain the continuity of such endeavors remains crucial.

PPT implementation in Ethiopia is studied by Isaac Mbeche Nyangau, a doctoral student in the BiomassWeb project.

BiomassWeb is supported by the Federal Ministry of Education and Research (BMBF) and the Federal Ministry of Development Cooperation (BMZ).

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EDITORIAL: HIGHER EDUCATION AND THE SDGS

The Agenda 2030 needs science and higher education if it wants to put its key messages on people, the planet, prosperity, peace and partnership into action. Ultimately, every development initiative is based on scientific knowledge which is jointly produced by international partners and communicated to the spheres of politics, as well as civil and corporate society.

German universities are therefore aiming their internationalization strategies towards more shared knowledge, joint perspectives and engagement in transformative action in order to improve the contribution of higher education to reaching the SDGs.

ZEF too has broadened its engagement in higher education in its partner countries. Besides its International Graduate School it currently coordinates eight Right Livelihood Campuses worldwide and runs the Ghanaian-German Centre for Development Studies in Ghana, and the Cuban-German School for Interdisciplinary Development Studies – funded by the DAAD. Nonetheless, there are still key challenges to undertaking collective action on equal terms.

These are mainly related to the marginalization of universities in developing countries, a topic that was discussed at an international conference on Higher Education in Berlin in March 2017. Apart from establishing new alliances, higher education has to be rethought by addressing the terms, conditions and processes of knowledge production. Innovative instruments must be explored such as digital technologies including data management and e-learning tools, more inclusive research and teaching opportunities that allow for producing and providing free access to knowledge production. The digitalization of higher education requires further elaboration and first of all needs to be put to the test by committed partners.



Eva Youkhana
is Director of ZEF's
Department
for Political and Cultural
Change

FIELD RESEARCH: WILLIS OKUMU, ZEF DOCTORAL STUDENT AND RIGHT LIVELIHOOD SCHOLARSHIPHOLDER ABOUT FAILING PEACEBUILDING INITIATIVES IN NORTHERN KENYA

Could you tell us something about your research topic and questions?

I started my PhD research at ZEF in October 2013. My research dealt with violence among pastoralist groups in Northern Kenya. The study sought to add to the anthropological conceptualization of violence, by looking into how local Turkana and Samburu communities use violence to gain power at both the individual and collective levels. Furthermore, my study sought to understand the role of violence as a tool for boundary demarcation in a historically contested area such as Baragoi. The study therefore aimed at establishing the history of violence among the Samburu and Turkana of Baragoi. It further sought to comprehend how a particular culture assigns specific locations and spaces such as grazing lands as avenues for socialization and practice of violent behavior among warrior-age groups. I also wanted to understand how and why traditional conflicts such as cattle raids increasingly have turned into massacres in recent times. Finally, I wanted to identify the key actors in violence among the Samburu and Turkana of Baragoi.

You have been conducting research over the past years on violent conflicts among marginalized nomadic groups in remote areas of Northern Kenya. Why did you choose this topic for your doctoral thesis?

I chose this topic because violence among pastoralists in Northern Kenya and, in fact, in the larger Eastern Africa region has been an issue of great concern to me as a Kenyan

and as an anthropologist. Having worked in Northern Kenya since 2010, I have seen many peace initiatives. Some were led by civil society and others by the government. What is common to all these initiatives is that they never bring sustainable peace. As a researcher, I wanted to understand why peacebuilding initiatives have not been successful in many areas of Northern Kenya. I felt that violence has been beneficial to some groups of people. I felt that a better understanding of the changing meanings, purposes and parameters of violence could be useful in designing new peacebuilding measures to effectively re-engage communities in Northern Kenya.

Tell us something about the what were probably very adventurous circumstances of your field research. What was your most striking experience?

One day I was interviewing the head of local police in his office in Baragoi when he was called via radio call and informed that Samburu warriors were targeting the local bus, which was owned by a Turkana businessman. The information was that if the police did not travel all the way to Morijo (a distance of 80km) to meet the bus and escort it back to Baragoi, there were high chances that the bus would be ambushed and all the passengers killed. On receiving the information, the police chief asked me if I wanted to accompany his force. I had something like half a minute to make a very bold decision. He called his officers and asked them to wear bullet proof vests and jump into the police van. I made the decision to go with them. It was a scary journey. We didn't know if we would be ambushed



on the road. As I sat with the police officers in the back of the van, they told me about their own experiences, the number of colleagues they had lost in various incidences of confrontations between the police and local herders. They discussed their own challenges in dealing with violence among pastoralists, how unequipped and under-staffed they were. We reached Morijo without any incident and met the bus parked by the road side, waiting for us. You could see the fear in the eyes of the passengers. It dawned on me that while Kenyans from 'down Kenya' took simple things like going to the market for granted, in Northern Kenya insecurity has made it extremely difficult for people to have access to basic services. The use or threat of violence has contributed in a big way to restricting people's ability to move and trade across communities.

How difficult was it to build trust so you could get access to relevant information?

Building trust was a big challenge. Security is a very sensitive issue and people were not very open at the beginning. Being a stranger in Baragoi, many people thought that I was a government spy. I entered the field as a volunteer of the Catholic Diocese of Maralal because the Catholic Church has been providing social services to locals since the early 1950s. Through the church, I was able to establish contacts among chiefs who later introduced me to their villages. After that, I was able to collect data mostly among men. Even while collecting data in the communities, I was not entirely trusted. When I held a Focused Group Discussion with the Turkana and wanted to do the same with the Samburu, I often faced accusations of 'selling communal secrets'. In other words, the mistrust between the two groups meant that it took a while for the communities to understand my role as a researcher. Building trust among security personnel was equally hard; it took me about four months to interview my first respondent from the security personnel.

What was the main outcome of your research? What will happen to your results in terms of policy advice or recommendations?

My study puts a new perspective on the role of the so-called new elites especially at the County levels and how these new elites use state resources to mobilize pastoralist groups for violence in order to attain a political gain. It shows that even though devolution as a concept has helped in redistributing state resources at the local levels, it has also contributed inadvertently to more violence as competition for power and other resources has increased. The study further points out the role of the state as a central actor in violence among pastoralists through the Kenya Police Reservists. Whereas past studies have focused on non-state actors as the main source of illegal weapons in Northern Kenya, this study shows that the government of Kenya has been actively distributing arms and ammunition to local communities since 1980. This study is therefore

vital in understanding the role of local politics especially in the newly devolved units as well as the role of political competition among communities and how it is conducted in a very lethal way among pastoralists groups. Political leaders in Northern Kenya subscribe to 'politics of protection'. This means that people who campaign for political office do not do so because they are striving to serve the community per se but rather because they are seeking an ethno-nationalistic platform to protect their community against its 'traditional enemies'. The increasing numbers of massacres in recent times have been politically organized - mostly to disenfranchise communities and prevent them from participating in events such as voter registration or voting itself. Violence is thus seen as a means of capturing and preserving political power.

What are your plans for the future?

I am heading back to Kenya to start my work as a researcher and a coordinator of the Peacebuilding Intervention Project at the Anglican Development Services. This is a three-year project funded by *Brot für die Welt* aimed at establishing local peacebuilding mechanisms in several conflict hotspots in Kenya. Having worked with communities across Kenya since 2007, I believe my experience and expertise will contribute to a better comprehension of these conflicts so that we can work with communities towards peacebuilding. I intend to continue to work with partner research institutions and universities in Kenya to further my work as an ethnographer.

How did you benefit from being a member of the Right Livelihood Campus?

The RLC provided my PhD scholarship, so it was perhaps the biggest contributor to my success here. My work with communities also mirrors the work that the Laureates of the Right Livelihood Award have been doing since 1980. In Kenya my work is much closer to that of Dekha Ibrahim Abdi who led many peacebuilding initiatives among pastoralists in Northern Kenya. As a member of the RLC, I benefited from the many training courses held by the RLC office and the logistical support that was offered to me.

The interview was conducted by Alma van der Veen.

About the interviewpartner



Willis Okumu

is a former ZEF junior researcher. His research was funded by the Right Livelihood College via DAAD. Contact: willokumu@gmail.com

POLICY MAKING ON CLIMATE CHANGE AND LAND DEGRADATION

Climate change, desertification and land degradation interact through complex feedback loops. On the one hand, land degradation contributes to climatic changes through losses in land carbon sinks and changes in land surface albedo. On the other hand, changes in temperatures and precipitation and the increasing frequency and magnitudes of droughts and dust storms due to climatic changes exacerbate land degradation processes.

Coupled with the socio-economic, institutional and policy drivers of land degradation, these processes amplify negative impacts of both land degradation and climate change on food security, poverty and other aspects of sustainable development. **Research and policy interventions** that address land degradation and increase adaptive capacities and resilience against climatic and weather shocks would need to take these interlinkages into account. Moreover, research shows that socio-economic and policy responses to land degradation may also help strengthen resilience against the impacts of climate change.

For these reasons, the Intergovernmental Panel on Climate Change (IPCC) presented a special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems during its 43rd session in Nairobi, Kenya in April 2016. The Expert Meeting to prepare the Special Report's outline was held in Dublin, Ireland on February 13-17, 2017. ZEF senior researcher Alisher Mirzabaev was invited to participate in the Scoping Meeting with a presentation on "Desertification and climate change: socio-economic and policy aspects".

The substantial **costs of land degradation** amount to almost 300 billion US Dollars every year. On the bright side, the returns from investments in land restoration and rehabilitation are also high: every dollar invested in land restoration was found to yield an average 5 dollars of return globally. But there is still potential: there are numerous sustainable and climate-smart land management technologies available, but their adoption rates often remain low. More research is needed to improve the understanding of the various factors behind this situation, as well as of the **trade-offs and synergies between addressing land degradation, mitigating and adapting to climate change, eradicating hunger and enhancing food security**. Integrative responses are required to optimize these interlinkages.

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The impact of drought in rural Niger.



CHILD LABOR: A GLOBAL DEVELOPMENT ISSUE FROM AN ETHIOPIAN PERSPECTIVE



Children herding cattle in Milki village, Ethiopia.

Child labor and its dimensions are a major long-standing global development issue and one of the main areas of empirical investigations in Economics. Child labor related to poverty remains a critical issue and continues to be debated. Various studies argue that child labor may jeopardize the physical development, health, and human capital formation of the child laborers. This may lead to the cycle of poverty and precarious employment conditions later in life. Other studies claim, on the contrary, that child labor might bring more resources to the family and thus improve child nutrition and schooling.

In this study, we examined the effects of childhood work among children in rural Ethiopia aged 4-14 years between 1999-2000 on their earnings 15 years later, in

2015-2016. The results shed light on a couple of points. Childhood work is likely to affect both children's human capital formation and their adult earnings, despite differences in the intensities at which working becomes detrimental. We found that childhood work, in general, could boost adulthood earnings by about 4-8%. However, while the trade-off between working and early human capital formation was likely to be observed at about 25-26 hours of work per week, the positive effects of childhood work on earnings could sustain up to about 31 hours of work per week. More specifically, the results showed that an extra hour of childhood work in domestic chores as well as in productive activities such as in family farming was likely to increase earnings as adults by about 5% and 6%, respectively.

How does childhood work effect working children?

We addressed this question by identifying the pathways through which the effects of childhood work contribute to earnings over time. Childhood work may affect earnings through its effects on the children's cognitive skills formation: children who combined work with schooling were able to raise their adulthood earnings compared to their peers who were exclusively working or attending school. We, thus, argued that the combination of work with school, might help children to develop entrepreneurial and occupation-specific skills and augment their abilities to easily shift to productive jobs as adults. Nevertheless, we found that childhood work experiences were negatively associated with earnings for girls in adulthood. This is possibly due to the nature of their current occupations, since most of them became housewives, and partly due to a lack of transferable and marketable skills achieved during childhood work. However, the weak effects of schooling on earnings, in general, and the negative effects for childhood family farmers and herders in particular, show the poor quality of the education system in rural Ethiopia. This is a critical policy issue for a country that is striving to achieve structural transformation in its economy, reduce poverty through better household income, and achieve food security through increasing productivity.

Conclusions

Our findings suggest that developing countries need to incorporate an appropriate policy mix in their human capital development strategies and should link early human capital policies with youth and adult-targeted policies. Compulsory child education could be combined with conditional cash transfer and school feeding programs, and with positive incentives such as the parents' recognition of a child's specific skill achievements. These interventions, however, have to be accompanied and sustained by consistent youth and adult-targeted human capital policies including technical and skills training to keep up with technical changes in the economy and the expansion of employment for low-skilled adults.

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ROADS SHATTER EARTH IN 600 THOUSAND PIECES



Road in the boreal forest near Beresniki, Russia.

Roads have made it possible for humans to access almost every region in the world. In developing countries in particular, infrastructure development is often perceived as crucial to fostering economic development. But this comes at a very high cost to the planet's natural world. Roads severely reduce the ability of ecosystems to function effectively and to provide us with vital services for our survival. Furthermore, large tracts of valuable roadless areas remain unprotected and the United Nations' sustainability and conservation agenda fails to recognize the relevance of roadless areas.

ZEF Senior Researcher Lisa Biber-Freudenberger was part of an international team of ten scientists from six countries who published a new study in *Science* (December 16, 2016, see <http://science.sciencemag.org/content/354/6318/1423>). The researchers used a dataset of 36 million kilometres of roads across the landscapes of the earth. The new global map shows that the Earth's surface is shattered by roads into more than 600,000 fragments with more than half of them being smaller than 1 km². Only 7% of these remaining roadless areas are larger than 100 km². The largest tracts are to be found in the tundra and the boreal forests of North America and Eurasia, as well as in some tropical areas of Africa, South America and Southeast Asia.

Roads pose many problems to nature. For instance, they interrupt gene flow in animal populations; facilitate the spread of pests and diseases, increase soil erosion and boost the contamination of rivers and wetlands. Road development in previously remote areas enables the free movement of large numbers of people, making these areas vulnerable to severe problems such as illegal logging, poaching and deforestation. Most importantly, roads trigger the construction

of further roads and the subsequent conversion of natural landscapes, a phenomenon the study labels "contagious development". However, only 9% of the areas undisturbed by roads are currently protected.

As roads continue to expand, there is an urgent need for a **global strategy for the effective conservation**, restoration and monitoring of roadless areas and the ecosystems they comprise. The study shows that the United Nations' agenda for sustainable development, referred to as the Sustainable Development Goals, presents conflicts of interest between generating economic growth and safeguarding biodiversity. Some goals even threaten the remaining roadless areas. However, limiting road expansion into roadless areas could be the most cost-effective way to achieve those Sustainable Development Goals that relate to preserving the world's natural heritage.

The data base was generated through crowd-sourcing, the **OpenStreetMap platform**. Nevertheless, given the high dynamics in road development, the data remains incomplete and the figures overestimate roadless areas. So, many of the areas considered as roadless have actually already been lost.

[Maps and information on the Roadless Initiative at roadless.online](#)

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ONE HEALTH AND URBAN TRANSFORMATION NRW FORTSCHRITTSKOLLEG

The Ministry of Innovation, Science and Research of the State Government of North-Rhine Westphalia is financing 12 Doctoral Graduate Schools, coined 'NRW Fortschrittsskollegs', as part of its 'Fortschritt' (progress) strategy. These Graduate Schools apply inter- and transdisciplinary approaches in order to develop solutions to the complex societal, economic and environmental challenges of the 21st Century.

Bonn synergies

The Fortschrittsskolleg "One Health and Urban Transformation" Graduate School is jointly run by ZEF, the University of Applied Sciences Bonn-Rhein-Sieg (Hochschule Bonn-Rhein-Sieg) and the United Nations University – Institute for Environment and Human Security Bonn. The Ministry will provide funds of 2.3 million euros to the ZEF-led Graduate School, whereas the University of Bonn is providing another 250,000 euros. Additionally, the Graduate School closely collaborates with various faculties and institutions of the University of Bonn, primarily the agricultural, natural science and medical faculties as well as the Geographical Institute, the Institute for Hygiene and Public Health and the Bonn International Center for Conversion (BICC).



A global perspective

The Graduate School was launched in July 2016 and will investigate the various dimensions and transformations of the urban systems and their impact on human, animal and environmental health. The historical development and current challenges facing North-Rhine Westphalia – in particular the Ruhrmetropolis – will be contrasted with those of three urban metropolitan areas in other countries: São Paulo (Brazil), Accra (Ghana) and Ahmedabad (India). The ZEF-led Graduate School is building on ZEF's established collaborations in the research regions, partnering with the University of São Paulo (USP), the



Water and health are closely connected as here in India.

Institute for Statistical, Social and Economic Research – University of Ghana (ISSER), and the Indian Institute of Public Health – Gandhinagar (IIPH-G). Statistical, Social and Economic Research – University of Ghana (ISSER), and the Indian Institute of Public Health – Gandhinagar (IIPH-G).

Research design

The 'One Health' concept takes an integrative approach to health, recognizing the intrinsic interconnections between human, animal and environmental health. Consequently, the environmental, social and economic systems interact with each other and shape One Health. Investigating these interactions in the context of urban transformation forms the basis for developing sustainable solutions that maximize synergetic effects, minimize trade-offs and mitigate health risks.

Themes of doctoral research

Thirteen doctoral students will join the Graduate School, and conduct research within three thematic clusters: 1) How to ensure health-sensitive food systems; 2) How to develop One Health governance systems; 3) How to promote health through management of water systems. Additionally, each study will address the five cross-cutting themes: Water, Food Security, Society, Healthcare, Hygiene and Public Health. The 13 selected candidates will join ZEF in September 2017 and participate in the disciplinary and interdisciplinary courses of ZEF's Doctoral Program.

About the author



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Viewpoint

INTERVIEW WITH PROFESSOR KENSUKE OKADA FROM THE UNIVERSITY OF TOKYO
ZEF AND IPADS GO FOR JOINT GERMAN-JAPANESE RESEARCH



Prof. Okada (left) with students in the field near Tokyo.

Professor Okada, cooperation between the International Program in Agricultural Development Studies (IPADS) of the University of Tokyo and ZEF at the University of Bonn has been running since 2015. What have been the main achievements so far?

We started with the exchange of scientific staff in 2015. Two Memoranda of Understanding were signed in March 2016: One between the Universities of Bonn and Tokyo and one between IPADS and ZEF. This is a significant accomplishment for a collaboration compared to other collaborations we run. In 2016, we had reciprocal visits by students and professors. In March 2016 and March 2017 ZEF doctoral students visited us for joint lectures, field training and exchanges with around 20 international IPADS students. I have taught twice at ZEF in Bonn, with students from IPADS linked by video to the lecture room. Moreover, ZEF-Director Christian Borgemeister has lectured and taught at our institute and faculty, among others at the joint ZEF-IPADS symposium on "One Health" held at the University of Tokyo in March 2017.

Why was IPADS so interested in cooperating with ZEF?

ZEF has a track record in running international research projects, and in interdisciplinary research and education. These are the fields we want to move forward in. The University of Tokyo has embarked on a large number of international strategic partnerships (at the moment there are 22 partnerships with universities in 14 different countries) to strive for mobility, excellence and diversity. However, we are the only department working in the field of development research.

Is IPADS a kind of flagship program for the University of Tokyo?

Well, study programs in English, which attract international students and boost international cooperation, are part of the University's internationalization strategy. We are the only international program within the Graduate School of Agricultural and Life Sciences but, of course, other faculties have such programs too. We have achieved a great deal in a very short time and have attracted many students from all over the world from Indonesia, Taiwan, China, Bangladesh, Sri Lanka, India, Pakistan, Mexico, Colombia, Bolivia, USA.

One crucial part of the collaborative education program is teaching. You have been teaching doctoral students here at ZEF over the past two years. IPADS students in Japan were linked by video to the course room. What were your impressions?

I really enjoyed this experience. At the beginning of each session, the students were rather quiet, but in the end the teaching became lively and inspiring, and the two groups of students interacted in a very cooperative and fruitful way. On IPADS' side, we had more students than expected. The groups were both very heterogeneous in terms of academic and geographic background. This meant that the task of transferring knowledge, for example on details of soil and crop nutrition, was not easy, but it was certainly an inspiring experience. I think we will get used to this kind of teaching.

What are the plans for the future?

IPADS is part of the Department of Global Agricultural Sciences but we want to reach out to other university departments to make this cooperation truly interdisciplinary. Furthermore, a major focus will be on raising funds for joint research proposals. Whereas joint education initiatives have been at the core of our cooperation to date, we now want to intensify joint research.

Website: zef.ipads.jp

About Professor Kensuke Okada

Kensuke Okada is a Professor at the Department of Global Agricultural Science, Graduate School of Agricultural and Life Sciences at the University of Tokyo, Japan. He has long years of international professional experience in research on soil science, plant nutrition, crop science, tropical agriculture and the environment and has held several management positions in these fields.

Facts & news



ZEF delegation in Cuba.

Cooperation with Cuba

February 06, 2017. Cuba's Universities want to embark on international cooperation and networking. In addition, they want to contribute their research to achieving the UN's Sustainable Development Goals. The German Academic Exchange Service (DAAD) is therefore providing funding of 2.2 million euros over the next four years for an academic cooperation scheme between ZEF and the "Las Villas" University in Santa Clara, Cuba.

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Book launch and public seminar on "Food Price Risks, Food Security, and G20"

The book "Food Price Volatility and its Implications for Food Security and Policy" provides a comprehensive analysis of the underlying drivers and consequences of instabilities in the food market and the role of policy as a tool to reduce volatility, or to increase the capacity to cope with volatility.

Food Price Volatility and Its Implications for Food Security and Policy, Eds.: Matthias Kalkuhl, Joachim von Braun, Maximo Torero, Springer Publ. 2016. Download: <http://link.springer.com/book/10.1007%2F978-3-319-28201-5>

ZEF contributes to IPCC policy making process

The Intergovernmental Panel on Climate Change (IPCC) presented a special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems during its 43rd session in Nairobi, Kenya in April 2016. The Expert Meeting to prepare the Special Report's outline was held in Dublin, Ireland, on February 13-17, 2017. ZEF senior researcher Alisher Mirzabaev was invited to participate in the Scoping Meeting with a presentation on "Desertification and climate change: socio-economic and policy aspects".

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ZEF again ranked among the world's leading Think Tanks

ZEF was once again ranked by the University of Pennsylvania as one of the top think tanks worldwide. ZEF was ranked in the following categories in the University's 2016 report:

Rank 3: Top Science and Technology Think Tanks

Rank 22: Best University Affiliated Think Tank

Rank 24: Top Energy and Resource Policy Think Tanks

The University of Pennsylvania publishes its Global Go To Think Tank Index Report annually. Over 2,500 journalists, policy makers, scholars and faculty members from all over the world participated in the 2016 report.

Think Tanks appeal to G20 Ministers of Agriculture for new action to end hunger and ensure sustainable agriculture

Bonn/Berlin January 2017. T20, a network of Think Tanks leaders from the G20 countries, called for new policies for sustainable water and land use in order to achieve food security for all. In a Policy Brief prepared for the gathering of G20 Agriculture Ministers during the Green Week in Berlin, January 20-22, 2017, they stressed that sustainable agriculture can only be achieved if policies consider land, water and energy jointly and not in isolation. Read the Policy Brief on Key Policy Actions for Sustainable Land and Water Use to Serve People: http://www.zef.de/uploads/tx_zefnews/T20_Policy_Brief_for_G20.pdf

IMPRINT

Publishers:

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University of Bonn
Walter-Flex-Str. 3 | 53113 Bonn | Germany
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e-mail: presse.zef@uni-bonn.de | www.zef.de

ISSN: 1438-0943

Editors: Mekbib Haile, Till Stellmacher, Bernhard Tischbein and Alma van der Veen (resp.); Lynn Benstead (language editing)

Layout: Tobias Gade and Yesim Pacal

Photos: ZEF

Printers: Druckerei Paffenholz, Bornheim

Number of copies: 1,200


ZEF news is published in English twice a year and can be ordered free of charge at presse.zef@uni-bonn.de

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WWW.FOODMONITOR.ORG AN EARLY WARNING SYSTEM FOR RISKS TO FOOD SECURITY

Although worldwide has decreased, the causes of hunger have become even more complex. Conflict and war, climate change and disturbed markets are some factors that, when combined with poverty and deficient production, become major causes of hunger. Extreme price movements for staple commodities have devastating consequences, particularly for poor people. In fact, over 40 countries worldwide experienced food shortages during the 2007/08 food crisis. That is why timely, accurate and transparent information is crucial when addressing emerging food price risks. Food Monitor, a newly developed early warning system for risks to food security, provides precisely this information. Food Monitor (www.foodmonitor.org) was launched during the 2017 International Green Week in Berlin, Germany.

Food Monitor takes an innovative approach to processing information. It ensures that food price risks are visible at an early stage and enables early interventions. Food Monitor is an essential supplement to existing early warning systems due to its ability to provide close to real-time assessments of global and local food market developments, the global food supply situation, international commodity price volatility and its transmission to local markets. This information is illustrated via an easy to understand traffic light system highlighting the level of risk for the world's key staple commodities, namely wheat, maize, rice and soybeans.

Food security risks are dynamic and can change over time. Food Monitor therefore provides close to real-time assessments. Since it is essential that this information is immediately available for stakeholders, a key feature of the website is the integration of Twitter. The Food Monitor

account has been specially integrated to ensure any changes in risk levels are communicated immediately via an automatic tweet.

This way, stakeholders remain informed about the risk situation and can take action accordingly.

Figure 1 demonstrates the visualization of the four indicators that Food Monitor observes and assesses food security situations in multiple countries.

The Price Transmission Indicator: Provides daily updated information on how international price movements are transmitted to local markets. Generally, it focuses on which countries may experience domestic price increases when global prices increase.

The Food Security News Hotspots Indicator: Reflects media activity related to global and regional price developments and food security. We presume that greater news coverage of these issues indicates a more problematic situation.

The Global Supply Indicator: Assesses whether forecasted production is sufficient to meet the forecasted demand, thus taking changes on both sides of the global food equation into account. It provides strong signals regarding potential changes in global food prices.

The Excessive Price Volatility Indicator: Provides a daily volatility status as well as a representation of historical periods of excessive global price volatility from 2000 to the present day. Price fluctuations on international exchange markets provide relevant information for local markets as global prices largely transmit to domestic markets.

The mission of Food Monitor is to be a dynamic and innovative early warning system to directly and automatically communicate an assessment of food security risk situations and to improve decision-making.

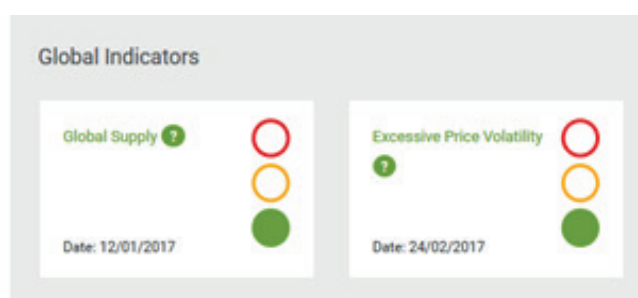


Figure 1: Four key food insecurity indicators displayed in Food Monitor.

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BUSINESS AS UNUSUAL. ENTREPRENEURSHIP IN AFGHANISTAN

Entrepreneurship is a key driver of economic development. But does entrepreneurship under fire contribute to economic development and growth? A significant number of studies show that some entrepreneurial activities increase during violent conflicts. However, macro evidence consistently shows that a conflict is a critical obstacle to growth. Based on the evaluation of rich micro data that allows us to disentangle the heterogeneous effects of conflict on different types of private entrepreneurial activities, we suggest that entrepreneurship under fire does not contribute to economic development.

The complex interactions between conflict and entrepreneurial activity

To date, the microeconomic literature has reached the following, apparently contrasting, conclusions on the micro relations between conflict and private entrepreneurial activities: violent conflict reduces the incentives to invest; reduced investments and entrepreneurship, in turn, lower output and employment. Fragile and conflict-affected states thus enter a vicious cycle of decreasing private entrepreneurial activities, decreasing labor demand, increasing enrolment into conflict, decreasing labor supply, and the further contraction of entrepreneurial activities, which fuels conflict. However, substantial evidence shows that there are more people employed in conflict areas in conflict-affected countries than in non-conflict areas, and that in a number of these countries private entrepreneurial activities are resilient, and even increase with conflict.

Business and conflict

How does one reconcile the virtuous effects of private sector development with the negative relationship between growth and conflict at both macro and micro levels, along with the evidence of resilience and increased entrepreneurial activities in conflict situations? To answer this question, we identify the effect of specific conflict measures on distinct types of entrepreneurial activities. Exploiting the spatial and time variation of conflict and private entrepreneurial activity we tested the probability that an Afghan household in a given area is engaged in one type of entrepreneurial activity (from small businesses, low and high capital non-agricultural self-employment, sale of agricultural products, and subsistence agriculture) for different indicators of conflict in the same area. We also controlled for reverse causality by employing an instrumental variable shift share approach similar to what is commonly employed in the literature on the determinants of migration, using data on the 1979-1989 Soviet conflict.

Conclusion

Though some studies propose that entrepreneurial activity increases during conflicts, macro evidence shows that conflict is damaging to growth. Our study finds that the conflict in Afghanistan did not contribute to economic develop-

ment because it caused regressive structural changes at the micro level. It reduced employment opportunities and increased self-employment in activities that have low returns. That is, given a U-shaped relationship between the share of entrepreneurial activities and economic development, the conflict rewinds the process of structural change. Self-employment in activities that are less affected by conflict should be stimulated in order to improve the economic resilience.



Market scene in Afghanistan.

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In a broad sense, decentralization entails the transfer of some tasks and duties from the central government to a lower-level (regional or local) government level. In theory a better local knowledge regarding their constituencies' needs, means that local authorities can provide public goods and services more efficiently than the central government. This pre-conception has made decentralization a popular reform in the past years.

Side effects of decentralization

However, the empirical evidence shows that the impact of decentralization on welfare indicators is not conclusive. Although local provision most probably enhances access to local public goods, decentralization does not automatically imply that the poorest and most marginalized will get adequate access to services provided by the relevant level of government. This can be especially relevant if there is a lack of institutional capacity at the local level, or if the poorest groups in local communities do not have the ability or the incentives to demand better services from their local government.

Decentralization and nutrition

While the impact of decentralization has focused on traditional locally delivered services such as education, health, and waste collection, the relationship between decentralization and nutrition improvement as a key pro-poor intermediate outcome has received very little attention. This research aims to evaluate the impact of increased fiscal decentralization on the nourishment status in Bolivia, as well as on access to safe water and sanitation during the 2000s decade.

Results

The increase in fiscal decentralization, measured by the budget share transferred from the central government to municipal governments, does not seem to have improved access to safe water in the municipalities. However, the effect on sanitation and nourishment indicators is statistically significant and positive, although small in magnitude. In other words, decentralization leads to improved access to sanitation and a reduction in the probability of being underweight and stunted. In addition, the results suggest that the effects on sanitation are stronger in small and rural municipalities, probably because these locations lack sufficient initial conditions – such as infrastructure and, human resources – and hence there is a convergence effect in comparison with major urban districts.

Disappointing effects of decentralization

Despite the transfer of responsibilities and the remarkable flow of economic resources towards local governments, decentralization has had no impact on water provision in Bolivia. In addition, the impact on sanitation and nourishment indicators was limited



which could reflect the fact that decentralization was mainly conceived as a transfer of infrastructure. Indeed, the central government is in complete control of hiring doctors and teachers, thereby limiting the room for maneuver and weakening the accountability of the local governments. In addition, institutional capacity is low, especially in small municipalities. Future steps towards fixing this mismatch should focus on a complete transfer of competencies that align local citizens' expectations, local policymakers' actions, and the increase of institutional development at the local level.

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