



In focus: Food price volatility

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Editorial: What development goals next?

Real progress has been achieved in development: the percentage of absolute poor has been halved since 1990, from 43 to 21 percent. Now the world is debating about future development goals, post 2015. Poverty reduction should remain at the top of the agenda. Ending the extreme poverty of one euro (1.25\$) a day and ending hunger are now realistic goals for 2030. But tackling the remaining half - that is to say, bringing the above mentioned 21 percent close to zero - will require bigger and smarter development actions. The UN has launched the debate around the next Millennium Development Goals (MDGs). The Rio+20 Conference in 2012 initiated a debate on a set of sustainable development goals (SDGs). One coherence-seeking debate is needed, not two. Sustainability requires a long term perspective without neglecting the poor's livelihood constraints of today. The main forces for achieving sustainability are science and technology, and change in consumption on

the part of the richer sections of world society. The larger contexts around the goals also need to be considered: for example, the goal of access to clean drinking water for all requires consideration of the sustainability of larger water systems, and access to healthy and sufficient food for all requires consideration of markets that are not too volatile. This time, an implementation concept has to be tabled together with the goals, and the accountability of all actors needs to be made clear.



Joachim von Braun
ZEF executive director

Rebalancing the negative impacts of food price volatility

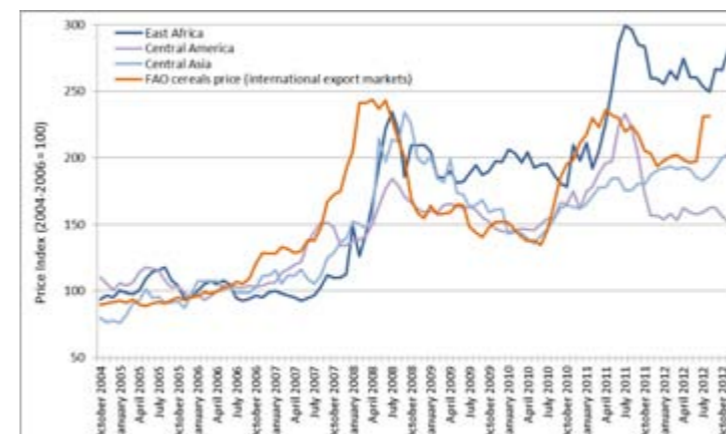
The world market prices for wheat, rice, corn, and soybeans, which together provide about three quarters of the world population's calorie requirements, have risen rapidly since 2007. Additionally, the volatility of market prices increased, i.e. in terms of fluctuations around their long-run trend. Global price changes also affect local prices since trade links local markets in developing countries to the world market (see figure 1). These global price changes have various consequences for food production, nutrition security, and therefore political stability in developing countries.

What are the impacts of price fluctuations?

The goal of ZEF's research project on "Volatility in commodity markets, trade policy and the poor" is to investigate the causes and impacts of increasingly volatile prices. Research results so far suggest that volatility has negative effects on both producers and consumers. Global investigations reveal lower production and investments by

farmers if prices at harvest time are difficult to estimate during the planting season. But, in spite of high prices, production is not keeping up with increasing demand. As a result, nutrition insecurity is increasing. The various impacts of volatility on the production decisions of small scale farmers in developing countries are currently part of a field study in Ethiopia, a country which has experienced high price volatility over the last years.

Apart from farmers, consumers too suffer from price risks: A permanent risk of strong price increases leads to decreasing shares in their expenditures on long-term investments such as education, health, livestock, and machines, which would help to increase production capabilities. Households often suffer from malnourishment if they are unable to protect themselves from volatile prices due to a lack of financial resources and external aid. This leads to a higher mortality rate and has irreversible effects on the physical



Cereal and staple price in different regions. All prices are nominal. Source: FAOSTAT, FEWS.NET.

and intellectual development of children. The assessment of cross-national data shows that in addition to women's education, stable food prices play a crucial role in reducing malnutrition among children.

Is speculation a root cause of volatile prices?

Currently, there is a big debate about whether speculation by financial investors and banks might be a driver of price volatility. The results of several investigations within the ZEF project show manifold linkages between food price dynamics and speculation. This outcome was confirmed by international experts at a workshop held at ZEF at the end of January 2013. However, trading of futures contracts and the associated speculation do not always have negative impacts on nutrition security. They also help to increase planning reliability, to reduce volatility, and to balance demand and supply in the future. Therefore, we need to differentiate between times of price disturbing speculation which pose a danger to nutrition security, and times in which speculation is useful. At ZEF, we are in the process of developing an early warning system which is able to provide indicators for extreme price increases due to speculation as well as to indicate which countries might be affected and to what extent.

Investigations carried out by ZEF showed that speculation on corn, wheat and soybeans contributed to the severe price increases in the years 2007 and 2008, which cannot be explained solely by global demand and supply mechanisms. However, other factors such as storage and trade also contribute to price volatility and nutrition security. These impacts are not to be underestimated and are currently being investigated in global models as well as in a number of field studies in Ethiopia, Ghana, India and Indonesia.

How can volatility and its impacts be reduced?

Grain storage is a traditional way to reduce price volatility. However, public storage facilities are often expensive to set up and main-

tain and suffer from high financial as well as grain losses due to mismanagement. Private storage rarely appears in countries that either show serious political and economic uncertainties or where governments are likely to intervene by imposing export bans or setting fixed prices – such as is the case, for example, in India. Furthermore, there is little knowledge about inventories, resulting in increasing speculation and a lack of knowledge about total supply. Compared to storage, international trade is usually a cheaper way to deal with fluctuations in demand and supply since crop shortages rarely occur in different regions simultaneously. However, strong linkages to the world market make prices in developing countries more dependent on the economic situation in other countries. Therefore, demand and supply shocks in other countries such as a change in biofuel policies or increasing meat consumption are transmitted to local markets. Hence, finding an optimal relationship between stocks and trade policies is a major research question of the project at ZEF. These strategies might vary, depending on the specific country's situation.



Local food prices are strongly connected to global prices.

Besides imposing actions to reduce volatility, it is important to develop and promote better instruments for dealing with price volatility. Smallholder farmers can protect themselves by contract farming and governments can introduce safety nets to help vulnerable households in times of crises. All in all, only a comprehensive risk management which is adjusted to the specific circumstances within a region is able to effectively reduce food price volatility and its negative impacts on the poor.



Matthias Kalkuhl

The author is a senior researcher at ZEF. This research is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ).
Contact: mkalkuhl@uni-bonn.de
Website: www.zef.de/volatility.html

Back to the roots: towards integrated urban planning in Leh Town, India

The rapid pace of urban transformation in developing country contexts such as in India makes access to safe drinking water and sanitation more difficult. This is causing a fast spread of water-related diseases, which is also exacerbated by climate change-induced water scarcity. ZEF is conducting research on these issues in Leh Town, Ladakh, India, a green oasis in a high-altitude, semi-arid region in the Himalayas. Leh's cultural landscape is the result of centuries of irrigation agriculture. Secluded until 1974 for geographical and political reasons, tourist numbers have risen sharply over the past few decades. In 2012, 179,000 tourists visited Leh, which has only 17,500 inhabitants. As a result, around 500 hotels and guesthouses have been built, mainly in its lush agricultural rural area.



Touristic infrastructure is growing in Ladakh, India, while basic sanitation is lacking.

In parallel, environmental and health impacts have become a serious reason for concern. The town has no sanitation system and struggles to provide its inhabitants with adequate supplies of drinking water. Health issues linked to water pollution have been reported for over a decade, but there has been no systematic research. The aim of the ZEF study is therefore to highlight complex water and health inter-linkages that are to be used for a Geographic Information Systems (GIS)-based alternative future development scenario visualization as a basis for participatory discussion.

Methodology

The various data sources being used for this purpose include a questionnaire survey which was held among 200 households and 70 hotels and guesthouses, health data, mapping of sources of water pollution, and satellite imagery. Traditionally, Leh has been an extremely water-efficient irrigation society relying on spring and surface water. However, the uncontrolled extraction of groundwater caters for over ninety percent of the quickly rising demand for water today. Furthermore, many hotels and guesthouses in Leh only use soak pits and not septic tanks to deal with wastewater. Thus it is assumed that the groundwater in Leh is being severely polluted.

First conclusions

Thirty-one percent of the households think that the lack of an adequate sanitation system is the main source of groundwater pollution. Government health data also shows that the incidence of acute diarrhoea in Leh has risen over the past decade. Water-related environmental issues are already serious in Leh and may increase dramatically unless adequate steps in terms of sanitation infrastructure are taken soon. This study advocates an integrated urban planning approach and a decentralized or hybrid sanitation system rather than a centralized sanitation system for water resources conservation.

About the project

This project is being carried out in collaboration with the Ladakh Ecological Development Group (LEDeG), a local non-governmental organization. The research is supported by a Marie Curie International Reintegration Grant within the 7th European Community Framework Programme (PIRG06-GA-2009-256555) and the German Research Foundation (DFG) (KE 1710/1-1). The research in India is being conducted in collaboration with the International Centre for Integrated Mountain Development (ICIMOD).



Daphne Gondhalekar

The author is an urban planner, ZEF senior researcher, and coordinator of the project in Leh Town (see www.zef.de/1804.html).
Contact: daphnegondhalekar@gmail.com

A systematic and integrated answer to water and human health issues in Ahmedabad, India

Urbanization is causing growing public health issues in developing countries. On the one hand, urban regions offer opportunities. On the other hand, high density, high mobility, and high inequalities are increasingly making cities an incubator for disease outbreaks. National and international agencies are undertaking efforts to address this problem, e.g. by focusing on improving water supply and sanitation – which are directly linked to health issues. However, their approach is mostly short-sighted since they do not take an integrated perspective on water supply, sanitation, and sewerage systems.

Background information

ZEF has been conducting research on these issues in India since January 2012. In a project on "Urbanization, water management and human health in Ahmedabad city", ZEF researchers aim to understand the role urbanization plays in water resources management and its implications on human health from an integrated perspective. The research takes a systems view to understand the impact of urban water management on human health, using a combination of research methods and geospatial analytical tools. So far, the project has (i) examined the urbanization process and distribution of water-borne and vector-borne diseases from a historical angle, (ii) conducted case studies in two administrative wards in the city to understand the quality of water infrastructure and socio-economic characteristics of households, and (iii) conducted a prospective study among sampled households to understand the diseases and their potential causes.

Preliminary findings

The project findings so far reveal that the current problems regarding drinking water and sanitation are rooted in the historical predominance of the textile industry in the region. This is further complicated by urban planning legislations that have hardly changed since independence, ignoring urban diversity to a large extent. This has led to poor water infrastructure and chaotic settlement patterns in urban regions increasing public health concerns in the city.

The ZEF study has found a significant correlation between poor water infrastructure and water-borne diseases (see map). For this, the researchers plotted water leakages, checked water quality complaints collected by the City Engineering Office, and mapped the actual occurrence of water-borne diseases in 2011/12. This map shows a number of hot-spots in the ward. Further analyses will



Quality of water infrastructure and distribution of water-borne diseases in Behrampur Ward, Ahmedabad (2011/12).

be conducted in these hot-spots to understand the socio-economic, health, demographic and hygiene behavior of the households. This could be useful for identifying the potential causes of diseases and enhancing the surveillance and monitoring of the diseases

Further activities

The project is collaborating with the Indian Institute of Public Health, Gandhinagar and the Ahmedabad Municipal Corporation on follow-up activities such as (i) hot-spot mapping of wards and the causes of the diseases; (ii) integrating ward-level information on water and health for the effective surveillance and monitoring of health, and (iii) identifying measures and opportunities for mapping and rehabilitating the aging water infrastructure in the ward. These activities will enhance public health decision-making at the city level.

V.S.Saravanan

The author is a senior researcher at ZEF. This research is funded by the German Research Association (DFG), Germany.
Contact: s.saravanan@uni-bonn.de



The Guinea Savannah of West Africa: "Bread" or empty basket?

Rainy-season farming is a major source of income for the rural population in the Guinea Savannah zone of West Africa (see map). Farming systems in the region are dominated by rain-fed production of cereals, but also include leguminous crops and oilseeds. A recent World Bank study has identified high potentials for competitive agricultural production and agriculture-led growth in the Guinea Savannah zones of sub-Saharan Africa - to an extent that the associated farming systems may become a 'bread basket' for Africa as a whole. However, this optimistic outlook is conditional on appropriate investment strategies, policy reforms, and institutional changes. Furthermore, the World Bank warns that global climate change could pose a potential constraint on agricultural growth due to likely reductions in rainfall levels in Guinea Savannah zones in West Africa and significant increases in rainfall variability across the African continent.

What we want to find out

Researchers at ZEF and the West African Science Service Center on Climate Change and Adapted Land Use (WASCAL) in Ouagadougou, Burkina Faso, are currently investigating such potential constraints on agricultural production in the Guinea Savannah zones of three West African countries. Our study regions are: the département Atakora in Benin, the région Sud-Ouest in Burkina Faso, and the Upper East Region in Ghana. Climate projections and trend estimates for these regions show very heterogeneous results for the level and variability of monthly rainfall patterns. Therefore, we want to investigate which potential future development scenarios pose the greater threat for agricultural production in the study regions: Is it the variability of the onset of the rainy season or are dry-spells during the rainy season more dangerous for the farming sector? Which crops are most affected? How can and do farmers adapt?

Sector and regional perspectives

Given our interest in the impact of climate change on regional crop production and supply, we are concentrating our research on the entire farming sector in the case study regions. For the impact assessment of climate scenarios, we developed a set of computational models, each representing 10-12 cropping activities and roughly



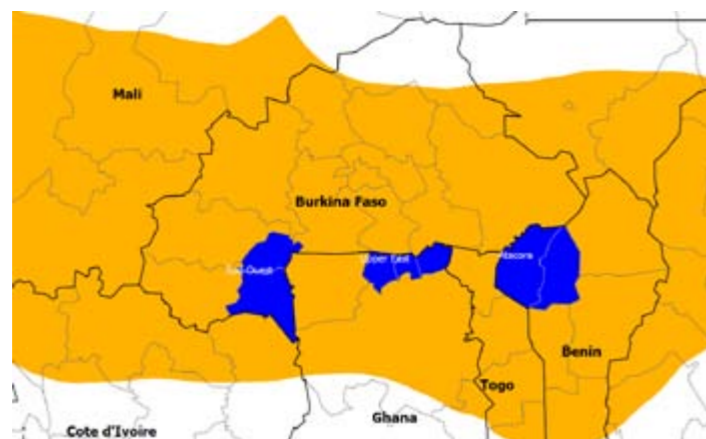
Small scale agriculture in West Africa.

150,000 ha of agricultural area. We analyzed two stages of crop production: the planting stage (April - June) and the yield formation stage (June - November).

Outcome

Preliminary results suggest that drought events during the planting stage have a more severe impact on the output of individual crops than drought events during the second stage. In contrast, the impact on total farm revenues appears to be more prominent during the second stage, when farmers have a limited capability to adjust their production plan. A clear, if not surprising result, is the larger vulnerability of crops with growth cycles ranging from the very beginning to the very end of the rainy season. The diversity of cropping activities observed in the region

aims at reducing vulnerability to adverse rainfall events within a certain range. However, some extreme events are associated with very poor harvests of specific cash crops, thus severely affecting the income of the farming sector. A comprehensive picture will be obtained once the climate change scenarios have been completed and the model results tested and validated for various settings. This step is still ongoing.



Study areas in Burkina Faso, Ghana and Benin.



Marc Müller

The author is a ZEF senior researcher and economist working with the WASCAL project (www.wascal.org).

Contact: marc.mueller.zef@uni-bonn.de

Untangling the puzzle of local conflict dynamics in the Fergana Valley

Post-Soviet Central Asia has been characterized by interstate and domestic disputes over the past twenty years. At the local level, inter-communal conflicts have continued to take place especially in areas such as the Fergana valley. This particular part of the region belongs to three countries from a geographical point of view: Kyrgyzstan, Tajikistan and Uzbekistan. Consequently, unresolved border issues have been simmering and leading to tensions. The most recent conflict in the region that made its way into the Western news was the violence that erupted in the south of Kyrgyzstan in June 2010 between members of the Uzbek and Kyrgyz population, resulting in more than 400 casualties. These clashes were followed by a wave of small-scale tensions and conflicts in other valley parts.

Comparative analysis

This ZEF doctoral research is investigating how inter-communal conflicts can develop either towards escalation or mitigation by comparing two districts: one in Kyrgyzstan and one in Tajikistan. The aim is to compare the institutions and mobilization strategies (i.e. the mechanisms and practices through which people are mobilized) which prevent local conflicts from escalating into violence with places where such conflicts do actually escalate. Insights from this research can contribute to designing and achieving sustainable conflict prevention for the region.

The comparative doctoral research began by investigating the puzzle of variation in the Fergana valley. All three national territories that make up the Fergana valley share common features: they have densely populated and heterogeneous societies, poor socio-economic conditions and high rates of unemployment. These form similarities for local inhabitants irrespective of their country affiliation and thus "specific features" characterizing the Fergana valley. Even conflicts arising in this area show common features: actors of different national and ethnic affiliation are involved, and conflicts occur mainly over issues of resources distribution - often deriving from unresolved state border issues. However, while inter-communal conflicts show enduring patterns of violence and tensions in one part of the valley, social relations manage to remain peaceful and conflicts are contained in others.

Field research

The ZEF researcher took a closer look at this puzzle by conducting field research in two districts in the valley: one a Kyrgyz district, the other Tajik. Data was collected

through participant observation and narrative interviews with community leaders, activists, local elders, minority groups and young people during a 10-month field research.

Observations made during the field research suggest that traditional institutions (e.g. elders, community leaders), local social structures (such as local "elite") as well as local networks play a decisive role in changing conflict dynamics and processes of both escalation and containment. Conflicts are often related to issues of access to resources (including social ones) in one way or another and people are mostly mobilized in inter-communal conflicts through local networks of kinsmen and mates. In the context of minority-majority coexistence, this practice often results in the relatively quick mobilization of the communities framed by their kin, group or ethnic affiliation. This puts the issue of construction of identities at the core of understanding conflict dynamics.



ZEF research on conflict dynamics compares two regions in Central Asia.

Local conflict dynamics resolution

One example of such an inter-communal conflict is what happened in a village in Kyrgyzstan in 2011 when tensions between Kyrgyz and Tajik residents resulted in the looting and arson of three shops and a few residential houses. While the conflict escalated with increasing crowds of mostly young men of Kyrgyz and Tajik origin, conflict mediation was initiated and continued by local elders and community leaders (such as head of diaspora, community leader *mingbashi*) on both sides. An arrangement between elders and community leaders from both communities (divided by ethnic affiliation in this case) enabled them to influence the conflict dynamics and prevent violent clashes. The role of local government in conflict mediation and resolution was limited in this process: Local authorities seemed rather to be relying on the elders and local elite as a relevant institution for conflict mediation processes instead of being involved directly in the process themselves.

Khushbakht Hojiev

The author is a junior researcher at ZEF.

Contact: khojiev@uni-bonn.de



Viewpoint

"Interdisciplinary research needs an understanding of common questions"

Interview with Detlef Müller-Mahn, newly appointed professor for development geography at the University of Bonn

Your academic interest focuses on issues of development geography in many regions of the world and a broad variety of subjects. How do you bring all this together?

It might seem that I'm covering too many diverse topics. But it's not the material objects that are essential in my research but rather the concepts I apply. These concepts are focused on how people in different developmental settings cope with changing environments and how they try to negotiate change and make sense of what we call development. So the underlying questions in East Africa and Korea are basically the same. What I gain from this diversity of regional and topical interests is that I'm able to make comparisons, and to learn from the differences and similarities that we discover both in East Africa and South Korea.

Your new book "The spatial dimension of risk. How geography shapes the emergence of riskscapes" coins the term "riskscapes". What does this mean exactly?

The term "riskscapes" is coined as an analogy to landscape. In a similar way, Arjun Appadurai uses the idea of "scapes" in terms of mediascapes or ethnoscapes, for example. There are two aspects that I find interesting about the concept of riskscapes. The first is that it combines the materiality of a physical landscape of risk with the subjective perspective of the people who live in and move through this landscape. Secondly, I use the concept of riskscapes as a way to visualize risk perspectives. A riskscape can be seen as a mental map of a risky territory through which people find their way by avoiding or taking particular risks. In that way, a riskscape is a concept that combines different perspectives and makes it possible

to put the spatial dimension of risk at the center of my research.

Ulrich Beck postulates a "world risk society". In contrast, you focus on the regionalization of risk. Is this a contradiction?

Indeed, I do contradict Ulrich Beck's hypothesis of a world risk society in some respects. If you look at Beck's hypothesis, it basically has two arguments. Firstly, he assumes that the anticipation of disasters is politically more influential than the disaster as such. I think he is partly wrong. This is understandable given the time when he wrote his book – a couple of years ago. What we know now is that the financial crisis of the euro does have a strong effect. It is no longer just anticipation; it is real. The same is true of climate change: It is real and we are increasingly experiencing its effects. Beck's second argument is that because the anticipation is more influential than the disaster



itself, the risk is ubiquitous and cannot be located. But the impact of climate change and the financial crisis do clearly have a location. As geographers, we are particularly interested in the way in which the localization of these risks is becoming real.

At ZEF economists, natural and social scientists are working together. From your perspective as a social geographer, what are the challenges of interdisciplinary research?

First of all, I still believe in interdisciplinary cooperation – although I have wasted a lot of time practicing it. But I have learnt from negative experiences. I think the major challenge of interdisciplinary and transdisciplinary research is that it is not sufficient to do research on questions in one single discipline. Instead we have to formulate the guiding questions on the basis of a common understanding between disciplines. So we have to really study the same questions. Otherwise whatever is called interdisciplinary research is nothing but the same old stuff of multidisciplinary additive cooperation between different disciplines, which exchange data but don't work together on interesting scientific questions.

The term "development" is being criticized by many and often there is no simple definition. What is your understanding of the word?

There is no simple definition. You don't expect a one sentence definition of development because that wouldn't be possible. Development is increasingly becoming problematic in the scientific context. That is partly due to the fact that we are realizing that much of the conventional development studies don't really give us new insights into what is going on in the world. So for that reason I would take a pragmatic approach: the term and definitions are good in practice but I find it very difficult to use them for my own scientific purpose. What I am interested in is how people in different cultural, political and economic contexts are negotiating change and how they are trying to direct change so that it meets their interests. Whether you call that development or not is not really relevant to what I am studying.

What are the implications for your teaching and research?

What I try to do is to sensitize my students to the problems of the term "development" and to open their eyes to a new understanding between the global north and south

and the processes that are changing this relationship. We have to reflect on its background and we have to avoid all the unnecessary baggage that is transported with the term. Also, I would like to go beyond the division of the world into what we call the global south and the rest of the world. The theoretical approaches that we use should be applicable both in Africa and Germany. I would therefore like to intensify my scientific activities here in Germany in order to test my research approaches.

How can the interaction between scientists from abroad, especially PhD candidates, and the German research community be improved?

That is an important issue. One aspect is that development research has to be done together with people from the global south and not about them. People from Africa are not objects of my research; they are my equal partners. The people I am working with, especially the PhD students and my colleagues in Africa, deserve my respect. As a consequence, my African PhD students and my partners should show up in the publications and they should be here with me. I really look forward to inviting as many as possible to Bonn and to working with them both here and in their home countries. Another aspect is that we have started an abundance of structured PhD programs in Germany in recent years. But we have a bottleneck regarding opportunities for people to carry on afterwards as post docs. I would like to see more attention being paid to how to support people who have finished their PhDs in the first years of their post doc careers.

Let us talk about the ideas you are bringing to Bonn: What options do you see for cooperation with ZEF?

Personally, I am very interested in intensifying my contacts with ZEF and other institutes that are working on the global south and in the fields that we just talked about: the relationship between development, risk, and other issues that have to do with the interactions between nature, society and culture. I see that many people at ZEF are working on these issues and for that reason we should work closer together. I consider it absolutely necessary that we make use of the fact that Bonn is the center of north-south studies and political activities in Germany. And I see that we can really benefit from this and go beyond what we have already achieved.

The interview was conducted by Andreas Rüter.

Detlef Müller-Mahn has been holding the chair for social geography at the University of Bayreuth for 12 years before he moved to Bonn in April 2013 to become the successor of Hans-Georg Bohle.

 Watch the full interview on our youtube channel: <http://www.youtube.com/zefbonn>

Facts & news

ZEF wins National Energy Globe Award Uzbekistan 2013



The project "Economic and Ecological Restructuring of Land and Water Use in the Region Khorezm (Uzbekistan)" has won the National Energy Globe Award Uzbekistan 2013. The Energy Globe Award is one of the world's largest platforms for sustainability. Over 100 countries submitted a total of 1,051 entries to the competition.

International expert consultation on food price volatility and food security at ZEF

ZEF and IFPRI co-organized an international workshop on "Food price volatility and food security" at ZEF on January 31 - February 1, 2013. It brought together leading international researchers and policy advisors conducting innovative research on the much debated issues of volatility and speculation in food markets. [More information: www.zef.de](http://www.zef.de) and [read the lead article in this ZEF news \(page 2\)](#).

Project Updates

Water as a strategic resource - results from the WISDOM project published in Vietnamese

The Vietnamese Academy of Social Sciences has published a book on "Water as a strategic resource: The Mekong Delta in Vietnam". The volume (eds.: Bui The Cuong und Solvay Gerke) evolved from the WISDOM project and comprises contributions reflecting state-of-the-art research on subjects such as water resource management, knowledge management, and strategic groups. The book was written by ZEF in cooperation with the Southern Institute of Social Sciences in Ho Chi Minh City. [Contact: Gabi Waibel, gwaibel@uni-bonn.de](mailto:gwaibel@uni-bonn.de)

Good news: 16 million euros for the WASCAL climate change initiative

The German Federal Ministry of Education and Research (BMBF) is continuing its support for the West African Science Service Center on Climate Change and Adapted Land Use (WASCAL) with 16 million euros for the coming three years. WASCAL explores the impacts of climate change for land and water use in order to develop strategies to meet climate-related risks in West Africa. [See www.wascal.org](http://www.wascal.org)

ZEF at UNCCD conference

ZEF participated in the 2nd Scientific Conference of the UNCCD (United Nations Convention to Combat Desertification) on the "Economic assessment of desertification, sustainable land management and resilience of arid, semi-arid and dry sub-humid areas", held in Bonn, April 9-12, 2013. [You can watch the videos on ZEF's youtube channel: www.youtube.com/user/zefbonn](http://www.youtube.com/user/zefbonn)

Upcoming events at ZEF:

May 25-30: Right Livelihood College Bonn organizes its fourth international workshop on "Mobilization for Change: Re-defining local decision-making and participation", at ZEF in Bonn. "Alternative Nobel Prize" winners Sima Samar (Afghanistan), Ruth Manorama (India) and Monika Hauser (Germany) will be participating. [Contact: Till Stellmacher, stellmacher@rlc-bonn.de](mailto:stellmacher@rlc-bonn.de). See also www.rlc-bonn.de

May 25: German Development Day. ZEF will be presenting its research, organize an expert talk on water and a "science slam" in the city center of Bonn. See www.zef.de and www.deutscherentwicklungstag.de. [Contact: Alma van der Veen, presse.zef@uni-bonn.de](mailto:presse.zef@uni-bonn.de)

June 13-15: Conference on interdisciplinary research in development studies: Associations of development sociology, social anthropology, development policy and geographical development theories meet at ZEF in Bonn. [Contact: Aram Ziai, ziai@uni-bonn.de](mailto:zai@uni-bonn.de)

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Climate change and rural livelihoods in Central Asia

Agriculture is an important source of rural incomes in Central Asia, especially for the poor. However, agricultural production in Central Asia depends on an intrinsically volatile and variable climate. Climate change is likely to further increase this variability, potentially leading to more frequent weather extremes and shocks.



Climate change may lead to more weather extremes in Central Asia.

This will reduce crop yields and ultimately affect the welfare and food security of both rural and urban households. The poorer agricultural households, especially those with lower access to goods and labor markets, are likely to be affected more negatively by such climate change impacts.

Research findings

The doctoral research conducted at ZEF evaluated the potential impacts of climate volatility and change on agriculture and rural livelihoods in Central Asia – specifically in Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. The results showed that poorer agricultural households are more vulnerable to the impacts of weather shocks and climate variability than richer rural households. This is the case because their food consumption depends to

a large extent on income that is derived from climate-sensitive agriculture. This still applied even after taking into account potentially positive effects of higher prices due to reduced agricultural supply after weather shocks. These price increases may alleviate the impacts of weather shocks and can even improve the livelihoods of some households.

Policy action and adaptation strategies

More and more farmers in Central Asia are taking adaptive actions to meet changing environmental conditions, mostly after the changes have already occurred. Thus, further government assistance is needed to support pro-active adaptation. A vital mechanism for achieving this aim in the region is to increase farmers' resilience and adaptive capacities to withstand current and future shocks, both expected and uncertain. The analysis shows that key policy actions could include: i) increasing awareness among agricultural producers about climate change impacts and adaptation technologies and ii) improving rural financial intermediation. The general message of the adaptation analysis in this study is that most institutional and technological options suggested as measures for climate change adaptation in the region are useful for regional agricultural development even with perfect climate change mitigation. These measures may include the adoption of resource-conserving technologies, new drought-resistant crop cultivars, and sustainable land management practices.

Research partners

This research was undertaken in close collaboration with numerous partners, including the International Center for Agricultural Research in the Dry Areas (ICARDA), the International Food Policy Research Institute (IFPRI), the International Postgraduate Studies in Water Technologies Program (IPSWAT) of the Federal Ministry of Education and Research (BMBF), the Asian Development Bank and national research institutions and universities in Central Asia.



Alisher Mirzabaev

The author conducted his doctoral research at ZEF. After graduating he has been involved as a ZEF senior researcher in research on "Economics of Land Degradation" (see www.zef.de/eld.html).

[Contact: almir@uni-bonn.de](mailto:almir@uni-bonn.de)

How fishing communities maintain a sense of everyday civility

Interview with Rapti Siriwardane

The title of your PhD research is “Contested legitimacies: conflict, cooperation and fishing livelihoods in postwar Sri Lanka”. What is your research about exactly?

The study investigates how communities that depend on fishing for a livelihood maintain a sense of everyday civility in spaces that are beset by political violence and where ethno-religious boundaries are continually re-enforced. It explores whether grassroots inter-communal cooperation does in fact occur, for example, through resource-sharing or dispute mediation. The focus rests on how these practices are incentivized, and the wider institutional contexts that influence their form and outcomes. Ultimately, tracing such processes lends an insight into how cooperative relations exist not merely as coping or adaptive strategies in response to everyday livelihood insecurities, but also go on to shape broader political dynamics that transcend the very domain of fishing livelihoods.

Cooperation partners

Village-based fisheries societies, Ministry of Cooperatives and Internal Trade, the Fisheries Ministry and their Extension Offices. Marine scientists from Wayamba and the Eastern Universities. Local NGO networks (RECD and Kinniya Vision), feedback workshops convened by the Asia Foundation. The Centre for Poverty Analysis (Colombo), and the CoCOON Network (via MARE, University of Amsterdam). Former colleagues at the CGIAR-World Fish Centre and the Wellcoast Network.

ultimately, tracing such processes lends an insight into how cooperative relations exist not merely as coping or adaptive strategies in response to everyday livelihood insecurities, but also go on to shape broader political dynamics that transcend the very domain of fishing livelihoods.

In what way are you challenging “mainstream notions around resource

conflict” such as stated in your research abstract?

Firstly, the research aims at adding value to ongoing debates concerning the resource-driven nature of communal conflicts. It does so by questioning the extent to which particular conflict scenarios are in fact primarily about resource access and use, although they may often be invoked or politicized during inter-communal clashes. Conflicts themselves are often intractable, in that the reasons for sustaining a conflict may change over time. Secondly, by paying closer attention to what is locally taken to mean “cooperation,” the seemingly tidy categorization of conflict and cooperation as bi-polar opposites are questioned. Cooperative relations can also turn out to be negative, insofar as they may result in very real material outcomes for social groups that have been historically marginalized, or may further thwart patterns of social co-existence. Likewise, conflicts can at times also be seen as productive, once they result in positive spin-offs. Therefore, it is the

inversion between these often slippery states of communal life that my study attempts to theorize.

Currently, you are conducting your field research in Sri Lanka. Can you tell us something more about it?

Given the paucity of official data in Sri Lanka’s northeast as a result of the armed conflict, I had to take a mixed-methods approach. For the most part, my fieldwork comprised ethnographic methods that included in-depth interviews, participant observation, focus group discussions and a select number of participatory mapping and visioning exercises. These qualitative findings were combined with district-level spatial/GIS data on diverse fishing settlements, together with a modest quantitative survey across 13 villages that focused on cross-ethnic networks, interdependencies and exchange flows. As a comparative case study approach was favored, my research became multi-sited, particularly as dense social networks and events often crosscut administrative and geographic scales. Also, given the dynamics resulting from seasonal migration, differences between cooperative links across coastlines had to be studied. Hence, the second half of my fieldwork saw me following migrant groups that I had met at host sites back to their villages of origin.

How do people react if you address them with academic questions?

Many of the groups that I worked with had had some prior engagement with media personnel, academics and aid workers, for example, as the north and the east were a theater of conflict for almost thirty years. They were also among the regions worst affected by the Asian tsunami. Of course, asking the right questions in the most appropriate way remains a challenge. My assistant and I tried redressing this by convening a series of workshops with smaller representative groups. Before piloting our interview and survey questions, we asked participants how we could best approach certain topics in ways that would resonate locally. So, in effect, they assisted in co-designing our research tools. This helped, not only to think in terms of how certain questions could be re-framed, but also served as an introduction to a suite of local meanings and argot that only fishing constituencies seemed to share. Finally, the elicitation of village and life history narratives was particularly useful in addressing more abstract ideas.



Rapti Siriwardane-de Zoysa

Rapti Siriwardane is a junior researcher in ZEF’s Department of Political and Cultural Change.

Contact: rapti.siriwardane@gmail.com