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Editorial

How mobile is humankind? This question goes beyond the usual discourse about global networks and the fast developing cyber space. The question of mobility is pivotal with regard to development processes and the implementation of development policy since it relates to how mobile people are, and how much space the state allows its citizens for changing their social and spatial positions.

The combination of social and spatial mobility is an indication of the extent to which people are able to cope with the challenges of daily life and to develop themselves. Social inequalities, knowledge barriers and political marginalization pose barriers to mobility. Caste systems, gender barriers or class constraints, to name a few examples, not only impede access to infrastructure but also affect people's social mobility. Thus, mobility refers to a society's potential to change.

ZEF recognizes the important role mobility plays in contemporary development research. Mobility is one of the strategic themes on ZEF's research agenda and an issue in many ZEF projects, such as in 'Crossroads Asia: Conflict – Migration - Development', a project investigating the relationship between mobility and social change. The impact of climate change on migration is one of the research questions in the WASCAL project, and the MARGIP project is seeking solutions for overcoming marginalization and poverty.

A changing world can only be understood through enhanced study of the opportunities and constraints of mobility.

Schetter

Conrad Schetter
Deputy Director of ZEF's
Department of Political and
Cultural Change



Interdisciplinary research for sustainable development within a German-Uzbek partnership

Research, education and capacity building were the foci of a ZEF-led project carried out in the Aral Sea region from 2002 to 2012. The project was funded by the Federal Ministry of Research and Education (BMBF), conducted with the support of UNESCO, and in cooperation with the State University of Urgench and the German Aerospace Center (DLR) at the University of Würzburg. Around 100 international researchers from the natural, social and economic sciences have conducted interdisciplinary, implementation-oriented research in close cooperation with local partners and stakeholders over the past decade.



ZEF cooperated intensively with local partners in Uzbekistan.

The region of research is Khorezm – a province in northwest Uzbekistan, located approximately 250 km upstream of the present shores of the Aral Sea. Uzbekistan has a continental arid climate, making irrigation a necessity for agricultural production. Thus, an area of around 265,000 ha in Khorezm is equipped with irrigation and drainage infrastructures. The efficiency, appropriateness and productivity of

water and land resources in the region are poor. The governance system in Uzbekistan is still state-centric, and cotton and wheat production are under a state-quota system. Unemployment and poverty rates among the population are high.

Objectives and approach

Agriculture in Khorezm has been the main economic activity and provided a decent livelihood for the population for centuries – due to adequate irrigation. However, under Soviet rule the irrigation system was scaled-up to an extent that triggered the environmental and economic problems the region faces today. After obtaining national independence in 1991, Uzbekistan not only inherited these problems, but they have even intensified due to the side-effects of the economic transition process.

The overarching aim of the ZEF-led project in Khorezm was to devise sustainable development options for land and water use by generating ecologically and economically sound practices. The goal was to increase land and water use efficiency, combat land degradation, mitigate greenhouse gas emissions, and increase rural incomes.

It was clear from the beginning that an interdisciplinary concept combining natural and human sciences was needed to understand the multi-layered problems in the region, which are caused by a diverse and interdependent mix of technical, institutional and socio-economic issues. In addition, trans-disciplinarity was achieved by

- (i) involving local stakeholders from the early stages of the project,
- (ii) combining technical, economic and institutional

analyses on different levels (such as field and farm, organisations such as water consumers' and farmers' associations, and regional administration), and

- (iii) adopting a "Follow-the-Innovation (FTI)" approach to jointly select, test, analyze, evaluate and adapt innovations together with stakeholder

Selected findings

Project researchers had a closer look at the causes of ill-performing irrigation and drainage systems. Various drawbacks were identified through water and salt balancing from field to region level and integrating remote sensing tools. In addition, irrigation scheduling tools were tested to optimize the conjunctive use of surface and groundwater resources from field to Khorezm level. Remote sensing and GIS techniques were developed to provide up-to-date data (e.g. land use classification). When fed into irrigation scheduling models, these improved input data considerably enhanced the quality of the results achieved by water management tools (e.g. water distribution plans). New high-resolution satellite imagery (RapidEye), covering the whole of Khorezm, made it possible to accurately capture land use and forecast crop yields.

Another issue that was tackled by an interdisciplinary team of researchers was the current under-performance of the water management system – caused by technical, economic and institutional weaknesses. By understanding water infrastructure and management as social and technical systems, the researchers were able to identify formal and informal institutions and devise restructuring concepts. In addition, they developed water-saving technologies, economic incentive systems and options for strengthening institutions and decision-making processes to ensure more user accountability.

A further study focused on improving resource-use efficiency in terms of the diversity and sustainability of cropping systems. Researchers therefore improved fertilizer management for the state-order crops of cotton and wheat and decreased the loss of nitrogenous fertilizers due to volatilization and leaching. These procedures are beneficial to the environment as they reduce pollution, increase farmers' income, and save natural resources.

Another way to increase resource efficiency identified by researchers in the project was the assessment of land use alternatives. They found out, among other things, that establishing mixed-tree plantations on marginal, salt-affected cropland can render ecosystems



Uzbekistan's continental arid climate makes irrigation a necessity for agricultural production.

services and provide farmers with direct economic benefits without jeopardizing crop production on a regional level. However, the research outcome indicates that social and economic hurdles need to be lowered in order to make this happen on a large scale; for example, through legislation allowing faster decision-making for the conversion of degraded cropland into tree plantations; improved market conditions for tree products; and recognition of the fact that tree-based agricultural systems are under-appreciated.

Measures to develop and adapt a laser-guided land leveler within the project were particularly successful. This has now already been taken up by farmers and promoted by the national administration.

Economic research outcome included simulating the effects of changes in cotton policy, and adapting methodological tools such as the value chain and water footprint of various crops. This led to an in-depth understanding of resource use at different levels. An important finding was that the domestic processing of cotton products, for example, can maintain economic output – but requires less water input and therefore disburdens the environment.

Impact and outlook

The achievements of the project are reflected in human capacity-building efforts at individual, academic and institutional levels and will be multiplied as the graduates involved are expected to become future decision-makers. More than 50 PhD students conducted their research within the framework of the project. As of December 2011, 29 had successfully defended their dissertations, and 102 MSc studies had been completed. Results have been disseminated in refereed journals, books, book chapters and conference and symposia contributions, discussion

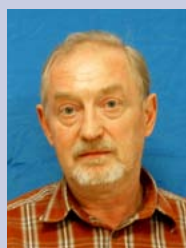


A crop harvester in Uzbekistan. The wheat production is controlled by a state-quota system.

papers and science briefs (for more details: <http://www.khorezm.zef.de/>). A UNESCO chair for sustainable research has been established at the University of Urgench.

A decade of research and education in Khorezm has demonstrated that sustained, interdisciplinary efforts bear fruit. The up-scaling and dissemination of research output are necessary and planned in order to harvest these fruits. Further activities will therefore focus on upgrading the human and institutional capacities of the local partners in Khorezm who are taking over the research and dissemination processes. Furthermore, the dissemination of selected innovations will introduce project findings into national agricultural policies. The final success of the project will also depend on an enabling legal environment and institutional framework. Once such conditions are in place, sustainable development will be possible to the benefit of man and nature in the Aral Sea region.

You can watch the movie about the project on www.youtube.com/zefbonn or order a copy on DVD from presse.zef@uni-bonn.de



Anik Bhaduri, Anna-Katharina Hornidge, John Lamers and Bernhard Tischbein

The authors are senior researchers at ZEF and have been working with the ZEF/UNESCO project in Uzbekistan.

Contact: abadhuri@uni-bonn.de, hornidge@uni-bonn.de, j.lamers@uni-bonn.de and tischbein@uni-bonn.de

Sharing WISDOM with Vietnam: Knowledge transfer as a project strategy

ZEF projects rarely focus on the production of knowledge alone. Instead, they also set out to ensure that upcoming young researchers are educated, partner organizations supported, exchange with stakeholders organized and qualification measures carried out. In some projects, the interface with development cooperation and policy advice is close and the implementation of outcome envisaged.

This is also the case in the WISDOM project (Water Related Information System for the Sustainable Development of the Mekong Delta, Vietnam), which aims at the establishment of a web-based water information system for the Mekong Delta. Besides developing technology, this interdisciplinary research initiative is also conducting extensive natural and social science research.



Sorting fish in a canal before selling to vendors in the Mekong Delta, Vietnam.

ZEF's research: approach and results

ZEF is contributing by analyzing the institutional framework of the water sector and the local implications of political and socio-economic transformation processes on the sector. Also different aspects of knowledge management at local and regional levels are analyzed.

Research results so far indicate that there are various barriers impeding the flow of data and information. Historical and political factors play a role, of course – Vietnam has only started to open up for international cooperation since the 1990s. The political heritage of the communist one-party system still shows its restrictive influence. This is also reflected in international research cooperation, where language issues and different research traditions affect the way cooperation takes place.

In this setting, researchers often face the question of how outcomes of research and knowledge cooperation can be conveyed in a

sensible way to decision-makers, stakeholders and project partners, and how local demand for this outcome can be addressed adequately.

Communication and information strategy

Providing expert literature is not sufficient – instead, intensive relations and a dialogue are to be established based on the target group-specific generation of collected data and analyses. The project has developed a dissemination strategy with various tools:

- Setting-up a bilingual project homepage, with e.g., bilingual summaries of research outcome;
- Publication of all doctoral theses as books with free access on the Internet (read only version) two years after publication;
- Translation of a large number of publications into Vietnamese;
- Publication of social science ZEF-articles in the science journal *Tap chi khoa hoc xa hoi* of the Vietnamese Academy of Social Sciences (VASS);
- Co-authoring publications with project partners;
- Distribution of all Vietnamese publications and ZEF Working Papers to relevant institutions such as (university) libraries, research institutes and development organizations in Vietnam;
- Dissemination of the bilingual “Social Science Briefs of the WISDOM Project”;
- Distribution of research outcome to local authorities in the project region;
- Publishing training material on knowledge management in Vietnamese on a CD.

Central information system

Last but not least, the information system itself forms the future central platform that will deliver products and tools as well as collected data to Vietnamese research and planning institutions. To carry out these measures, it is necessary to provide the necessary financial and human resources. A look at the positive feedback so far shows that investments have paid off in many respects. Research outcome has not only been well received by Vietnamese researchers, but materials have also been applied in teaching. Project partners are very content with the high level of output in their country. Standard instruments such as “publications, workshops and conferences” would not have been sufficient for the dissemination of research outcome in this project.

Gabi Waibel und Judith Ehlert

Both authors are ZEF senior researchers working with the WISDOM project.

Internet: www.wisdom.caf.dlr.de/
Contact: gwaibel@uni-bonn.de and judith.ehlert@uni-bonn.de



From paper parks to local perks: Governance of protected areas in Eastern Africa

ZEF researchers investigate to what extent and under what conditions protected areas in Eastern Africa can become more than 'paper parks'.

The importance of environmentally protected areas has been increasingly recognized worldwide in recent years. Accordingly, in most countries the number and size of protected areas as defined by the International Union for Conservation of Nature (IUCN) have increased considerably also in Africa. For several years, ZEF has been conducting research on protected areas in Eastern Africa, most notably in Ethiopia and Tanzania. The work has been carried out in cooperation with the Institute for Environmental Economics and World Trade, University of Hannover, and African partner institutes. ZEF has analyzed in particular socio-economic and institutional problems and solutions related to the practical implementation of different protection concepts in Eastern Africa.

Eastern Africa hosts an abundance and variety of the world's biological and natural resources, including three global biodiversity hotspots with exceptionally high levels of endemism. Extensive national protected area systems have been established in the past. Tanzania, for example, has designated a total of 792 protected areas, accounting for more than 38 % of the country's total terrestrial area.

Governing paper parks?

In practice, however, the ZEF researchers concluded that most of the protected areas in Eastern Africa are 'paper parks': They offer de facto little protection for the biological and natural resources they contain and are eminently threatened by human overuse and habitat destruction. Questions of governance loom large when analyzing the underlying reasons. It appears to be crucial for achieving objectives such as the effective management and sharing of monetary and non-monetary costs and benefits (shared responsibility). Governance strongly affects the support and commitment of stakeholders, most notably political decision-makers, public and private donors and local communities.

ZEF's research focus is on the alignment between institutional, political and economic constraints that local and national governance levels are facing and the possibilities of implementing innovative, internationally-developed protection concepts under these circumstances.



New and international concepts for protected areas have to consider local conditions.

International concepts...

A variety of new concepts are being applied in protected areas in Eastern Africa; for example, Reducing Emissions from Deforestation and Degradation (REDD) or ecosystem certification according to the standards of the Climate, Community and Biodiversity Alliance (CCBA). Protected areas increasingly have to fulfill different purposes. The different services they provide, like carbon sequestration, smallholders' income generation, biodiversity conservation or tourism have to be evaluated and combined. This requires more complex and more dynamic governance structures involving more stakeholders.

...under local conditions

ZEF's research shows the need to adapt international protection concepts to local conditions. One of these conditions is local decision-making. Key decisions on protected areas are still largely made by project developers and implementers on the basis of international expertise and funding. A shift in paradigm from local participation to local decision-making is essential in order to gain the requisite support and commitment from local people who directly depend on the resources in the protected area.

There is definitely a need for innovative ways of protected area governance. However, more emphasis should be put on perking up and strengthening individual initiatives that evolve locally and nationally. The Yayu Coffee Forest Biosphere Reserve in Ethiopia and the Carbon Tanzania Project are two examples of this promising approach. Both are 'home-grown' projects working beyond fig leaf functions and in line with international protection concepts such as shared responsibilities. More steps have to be taken to perk up such local success stories.



Till Stellmacher

The author is a senior researcher at ZEF.

Internet: www.zef.de

Contact: till.stellmacher@uni-bonn.de

Viewpoint

"Flexible and motivated partners" – German-Pakistani project on track



Conrad Schetter and Joe Hill, both ZEF senior researchers in ZEF's department of political and cultural change, have been visiting their Pakistani cooperation partners of the recently started ZEF-DAAD project „After the Floods is before the Floods” in March 2012. ZEF news asked them about their impressions.

Mr. Schetter, the German-Pakistani project „After the Floods is before the Floods” has changed its focus. Can you tell us something about the reasons for this change? Due to security reasons we had to shift the focus from the Indus valley, which suffered a tremendous flood two years

Mr. Schetter, what is the focus of the project now? How many people and students (especially in Pakistan) are involved?

Our focus is on people who are marginalized or excluded from society for several reasons, such as cultural or economic. These people live on the margin of Pakistani society and are often eclipsed in development research. Our overall goal is to build capacities within the Government College University Lahore. We are going to coach six promising M-Phil students within a “spring school”. They will also carry out field research under ZEF-guidance during the next two months.

Mr. Schetter, you have been visiting Pakistan and your project partners recently. How have the partners reacted to the change of the project setting?

It was a great experience to see how flexible and also motivated our partners are. We managed to change the complete design of the field work and build up new logistics within a few days.

Mr. Hill, you were on the trip too. Can you tell us something about your most striking impressions of your (first) visit to Pakistan?

It dispelled all the negative connotations I had been exposed to about Pakistan! We were based in Lahore, and aside from travelling for one week to the village we selected for the field research, just outside of Lahore, I did not travel further in the country. Of Lahore and its residents, I can say that people from all walks of life are extremely hospitable and welcoming to outsiders, and that the rich tradition of classical and folk music is very much alive and well. Having spent about four years in India, I could find many similarities with Pakistan – or at least Lahore and the Punjab – such as much of the culture, language (Urdu is practically the same spoken language as Hindi), and the urban and rural landscapes. However there are subtle differences too. Society is differently structured, due in part to the predominance of Islam as well as to the biraderi (‘caste’) system. The biraderi system of Punjab seems to differ from the caste system of India, because it somehow distributes power more horizontally and therewith equally rather than vertically and therewith hierarchically and top-down.



Joe Hill discussing waste management with residents of Kot Pindi Das village.

ago, to the vicinity of Lahore. However, this didn't change our research focus dramatically. Our research assumption is that the Millennium flood two years ago made the vulnerability of the people in Pakistan visible – but it had been there all the time and all around Pakistan. So the core question deals with coping capacities of people across Pakistan.

Mr. Hill, you were also teaching at the partner institute, the Government College University (GCU) in Lahore. What were your experiences?

My colleagues from ZEF and I prepared and delivered lectures and seminars for the spring school, which we held in the first two weeks of the trip. We essentially delivered a slimmed down version of the ZEF doctoral program to the students, but with a focus on qualitative research, reading and writing skills, research design and case studies, research methods, and sampling and validity. We found the students very receptive and eager to learn, but also eager to participate. The students found our style of teaching, allowing them to comment throughout thus fostering discussion and real learning, a welcome innovation. Actually the course we presented was rather dense given the time constraints; however the students did well to digest the material. We have a dropbox in which all the material is available to the students and project participants.

Mr. Hill, the project involves field research. Can you tell us something about the field research?

The remarkable thing is, that for most students from GCU it was the first time that they went on “field research” in their own county. We visited several locations within and just outside Lahore in a quest for a suitable field research site. We settled on a village just outside of Lahore, named Kot Pindi Das. It’s the oldest village in its district, emptied of its Sikh and Hindu residents and filled with Muslim immigrants from India at the time of partition. In this town our students have found ample scope for their research topics, from child labourers in brick kilns at the outskirts, to farmers, a variety of schools and health clinics, and so on.

How did the villagers react to the researchers?

The villagers were welcoming to us. In the third week, we spent five days visiting the village to allow the students to experience being in a field site, and talking with potential respondents. The hospitality of locals is great: we went to a tea shop for the first time, and even as a large group, the owner refused payment for our tea, because we were guests. In the fourth week, the students were given time to redraft their research proposals, and at the end of that week, to present their plans to all project participants. In the coming six weeks the students will be going to the field five days per week, with their ZEF-supervisors accompanying them.



A seminar with students at GCU in Lahore.

Mr. Hill, this project is about partnership. What do your partners expect from you?

It is fundamentally about a partnership. While travelling to the field in the third week with Dr Khalid Butt, our counterpart from GCU, he stated that “it is a great job ZEF has done; a new beginning”. He thinks that this research collaboration will set a trend to bring students out from the University and to the field for their research projects. It is also about interdisciplinarity, and we have achieved this to a great extent in a short time, since interdisciplinarity is now on the lips of the professors in the social science faculty, and one hopes the vast scope for original field research in and around Lahore will be exploited in the coming years by students other than those involved in this project.

And what can we learn from our partners in Pakistan?

One of the greatest learnings that we can take from our partners likely relates to “cultural imperialism” and eurocentricity. The agendas of the traditional disciplines, and the dominant theories inhabiting them, do not fit well with the traditions and cultures of our partners, and so we are learning that we need to be sensitive to this, to allow the room for creativity and innovation by students within their respective disciplines. So a major learning for us, we can say, is that we need to work as partners on an equal basis, such that we are sensitive to one another’s cultures, such that we work together to take the best from both our academic worlds, to create a fusion that works for the Pakistani context, allowing the students to grow and develop confidently, with sufficient freedom for creativity, but maintaining academic rigor.

Mr. Schetter and Mr. Hill, thank you for this interview.

The interview was conducted by Alma van der Veen. For interviews with the Pakistani partners look at www.zef.de/news from the doctoral program.

Facts & news

ZEF researcher nominated for Good Governance Network

Girma Kelboro Mensuro, ZEF junior researcher, is nominated by the DAAD selection committee as a member of the African Good Governance Network (AGGN) in January 2012. The AGGN comprises a group of highly educated African academics who have either studied or are still studying in Germany. AGGN members actively promote the values of Good Governance and thus accompany the economic and political transformation process in sub-Saharan Africa. Further information about AGGN is available at: www.aggn.org

RLC-Workshop on "Mobilization for Change" at ZEF

The Right Livelihood College (RLC) Bonn will organize a workshop on "Mobilization for Change; Social movements in a developing World" at ZEF from June 2-10, 2012. Four winners of the "Alternative Nobel Prize", namely Nnimmo Bassey (Nigeria), Anwar Fazal (Malaysia), Alla Yaroshinskaya (Russia), and Zafrullah Chowdhury (Bangladesh), will participate together with scientists and PhD students from all over the world. The workshop will be accompanied by a series of public events, e.g. the inauguration of a photo exhibition about the work of the "Alternative Nobel Prize" winners at the Rheinische Landesmuseum Bonn. The workshop is kindly supported by DAAD. For further information see: www.rlc-bonn.de

Jan Börner new Robert Bosch Junior-Professor at ZEF



Junior-Professor
Jan Börner.

On March 22, Jan Börner, a former ZEF student, was inaugurated as a Robert Bosch Junior-Professor at the University of Bonn. He is going to start his five-year research on the sustainable use of tropical rain forests in Brazil at ZEF in August 2012. One of the speakers at the inauguration was former Bundesminister Heiner Geißler. The full event can be watched on our youtube channel (www.youtube.com/zefbonn).

ZEF again among global most important Think Tanks in 2011 ranking

ZEF has been listed for the third year in succession in the "Global Go To Think Tanks" report 2011. The Germany-based development research institute is ranked among the first 10 of the global Top Thirty Science and Technology Think Tanks and at place 15 of the global Best University Affiliated Think Tanks.

Workshop at ZEF brought together experts on Cambodia and Vietnam

ZEF organized an international workshop on "Civil society in Vietnam and Cambodia: Concepts and discourses - diversity in practice" from January 18-20, 2012. Around 20 scholars from all over the world participated in the "write-shop", discussing current developments related to civil society in both countries and co-authoring a book comprising the latest insights and research on the region.



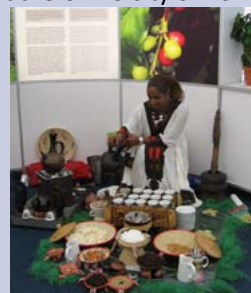
Participants of the "Civil society" workshop at ZEF.

Political agreement between African and German WASCAL partners signed in Lomé

West African Science Service Center on Climate Change and Adapted Land Use (WASCAL) project partners from 10 West African states and Germany have moved a crucial step forwards by signing a political agreement in Lomé, Togo, on February 12. The ceremony was attended by high-ranking West African ministers and government representatives, the German State Secretary at BMBF Georg Schütte and ZEF-Director Paul Vlek.

ZEF will participate in Science Night and Dies Academicus of the University of Bonn

During the famous Science Night at the University of Bonn on June 15, ZEF organizes an Ethiopian coffee ceremony. At the Dies Academicus, May 23, ZEF will present its research.



Ethiopian coffee ceremony.

ZEF on Facebook and Youtube!

ZEF is on Facebook and Youtube. Follow us, like, share and watch!



Preserving rubber agroforests, ecosystem services and biodiversity in the Indonesian jungle: How models can help

Payments for ecosystem services (PES) have been widely recognized as an important management instrument for the conservation and enhancement of ecosystem services and human well-being in recent years. However, there is no solid understanding of how PES can affect the synergies and trade-offs among ecosystem services such as carbon sequestration, crop production, and biodiversity conservation. ZEF researchers wanted to find out how management tools such as PES can be implemented in an optimal way and used agent-based modeling (ABM) as a method.

The advantage of agent-based modeling is that it can simulate processes. It can also integrate decisions made by different people and stakeholders (called “agents”). However, empirical ABM is also often criticized for being remote from real-world conditions and decision-making processes cannot be modeled adequately.

In this study, ZEF researchers investigated how flexible and suitable ABM can be in terms of functioning as a negotiation-support system tool for the design of appropriate management regimes such as PES. In the end, the tool could be used by local decision-makers in the field of agroforestry. At the same time, the researchers quantified the potential ecosystem services trade-offs such as carbon sequestration, crop production and biodiversity protection resulting from land-use cover change within a case study in Indonesia.

Jungle rubber – in danger

This case study was conducted in the rubber agroforests in the villages of Jambi Province (Sumatra), Indonesia. The rubber agroforest has been intensively studied by researchers because of its high conservation value. Moreover, rubber agroforests provide ecosystem services such as soil conservation, water quality maintenance, carbon sequestration and landscape beauty. However, the rubber agroforests are currently under pressure to be converted to more profitable types of land-use such as oil palm plantations and monoculture rubber.

One issue in rubber agroforestry e.g. is the low rubber latex yield. It is three times lower than the yield from monoculture rubber plantations. ZEF researchers used ABM to analyze and address these dynamics between the social and ecological factors of the rubber agroforest landscape: They adapted and modified the Land-Use DynAmic Simulation (LUDAS) model, so new sub-models



The study shows how rubber agroforestry can benefit from PES.

such as process-based decision-making, calculation of tree-species richness, and adoption of PES schemes can be integrated. These new sub-models try to capture the key processes and patterns of the rubber agroforest landscape in Indonesia.

LB-LUDAS: Simulations and scenarios

Like most of the ABMs, LB-LUDAS simplifies the complex nature of both social and ecological interactions such as spatially and decentralized decisions related to land use and land cover. One of the scenarios explored was to what extent rubber agroforest farmers are willing to participate in PES. Another scenario investigated the impact of offering financial investments to farmers as a development strategy in the study site. The third scenario is the current trend or the “business as usual” scenario.

To see how the (ecological) landscape system functions and interacts, the researchers integrated carbon sequestration, natural transition and biodiversity as sub-models in the LB-LUDAS model. Simulations showed that decisions and subsequent actions by household agents change the structure and functions of the landscape system and vice versa.

One of the main results from the LB-LUDAS model simulations under different scenarios is that PES could enhance more synergies between carbon emission reduction, biodiversity conservation and livelihood in



Rubber forests in Indonesia are in danger of extinction.

rubber agroforests than under the current “business-as-usual” and the development scenario. These synergies can, for example, be generated by the eco-certification of rubber agroforests and by establishing a 70% protection zoning of the forest area.

Summary: Models can actually help

Since the results of the simulation revealed the effectiveness and design of the PES scenario, the ZEF researchers tested some important aspects of PES within their case study in Indonesia in cooperation with local stakeholders and researchers. They identified,

for example, the key factors influencing the adoption or scaling-up of PES, which appeared to be household income, education, age, and conservation awareness. In addition, the proposed criteria for eco-certification were simulated to assess whether this is an attractive measure to be taken in rubber agroforests. The results indicate that it is an effective measure to maintain rubber agroforests and improve the households' livelihoods at the same time.

Based on these findings, we can say that the multi-agent simulation model LB-LUDAS can function as a negotiation-support system tool and actually support the design of land-use policies or management regimes such as PES. The model can estimate the possible implications and trade-offs of envisaged conservation policy interventions.

The results are currently being disseminated to local partners. Some of the methodologies applied in this study are being replicated to neighboring villages. The research team also envisages transferring this kind of modeling to other regions in the world.



Grace B. Villamor

The author is a researcher at ZEF

Contact: grace.villamor@gmail.com

ZEF welcomes new batch of doctoral students



ZEF's new batch of doctoral students started their three-year doctoral studies program in autumn 2011. Thirty-one students from 16 countries will work on research topics such as "Food price volatility", "Wealth inequality and biodiversity conservation" and "Scientific cooperation as an instrument of development cooperation".

Conducting 6-12 months of field research in a developing country is part of the three-year doctoral program. After finishing their doctoral studies at ZEF, the majority of ZEF graduates start or continue their careers in an development-oriented work environment such as international organizations, research institutes and universities.

Contact: docp.zef@uni-bonn.de

Project updates

New project on Food and nutrition security at ZEF

A new high profile research project supported by the European Commission (FP7) has been initiated at ZEF and started in March 2012. Titled "Exploring the future of global food and nutrition security" (FoodSecure) the project has a time span of five years and unites 18 high-level research organizations in the EU, the US, China, Brazil and Ethiopia. Several research institutes with whom ZEF has worked successfully before are involved. ZEF is one of the leading research partners, whereas the overall leadership of the project rests with the University of Wageningen (Netherlands).

Food and nutrition security, now and in the future, are again major concerns across the world. Such concerns have risen sharply in recent times due to the increased estimates of undernourished people worldwide (figure below) and to strong upwards trends and increased variability in global food prices over the past years (ZEF news No. 24). The prevention and mitigation of food and nutrition insecurity requires a new mix of technological and institutional innovations, and direct actions. Policy makers must be provided with the relevant, science-based information and knowledge to evaluate the risks of global food crisis on their country, and of domestic food and nutrition problems to guide their actions and responses.

Project website: www.foodsecure.eu

New project on how the rural poor can effectively adopt agricultural technologies

The ZEF project "Technology (ex-ante) assessment and farm household segmentation for inclusive poverty reduction and sustainable growth in agriculture" (TIGA) started in November 2011 and is supported by the Bill and Melinda Gates foundation.

It aims at identifying the barriers which prevent the rural poor to gain access and adopt agricultural technologies for increasing productivity of main staple crops. The focus of the assessment will be in areas in which poverty and productivity gaps remain high and where returns on investments for overcoming the barriers are promising.

Research countries are Bangladesh, India (Orissa and Bihar), Ethiopia and Ghana, where the project will be partnering with Bangladesh Rural Advancement Committee (BRAC), the International Food Policy Research Institute (IFPRI) in New Delhi, the Ethiopian Economic Association in Addis Ababa and the Forum for Agricultural Research in Africa in Accra.

Project website: www.zef.de/project_tiga.html

The WASCAL Graduate Research Programs welcome their first doctoral students

Four West African universities started their doctoral training programs within the West African Science Service Center on Climate Change and Adapted Land Use (WASCAL) initiative in January 2012. WASCAL is a research and capacity development program sponsored by the German Federal Ministry of Education and Research (BMBF) and coordinated and implemented by ZEF. WASCAL envisages running graduate research programs at eight universities in West Africa, focusing on selected priority areas of the climate change - land use nexus.



The first students from the WASCAL doctoral program.

Forty students from the ten WASCAL project countries (Benin, Burkina Faso, Cote d'Ivoire, Gambia, Ghana, Mali, Niger, Nigeria, Senegal, and Togo) were selected to constitute the first batch of students. The four graduate research programs that have started are hosted by: the Federal University of Technology, Akure (FUTA), Nigeria, for the West African Climate System; the University Abomey Calavi, Benin, for Climate Change and Water Resources; the University Cheikh Anta Diop, Senegal for Climate Change Economics and the Kwame Nkrumah University of Science and Technology (KNUST), Ghana for Climate Change and Land Use. WASCAL will provide, among others, funds for students' stipends and thesis research, laboratory and teaching equipment, refurbishment of infrastructure for classrooms and offices, and travel of lecturers from West Africa and Germany.

Project website: www.wascal.org

Crossroads Asia workshop on migration in Afghanistan

The competence network "Crossroads Asia" organizes a one-day workshop on "The nexus of conflict and migration in Afghanistan" at ZEF on May 24. The workshop aims to analyze the impacts of the long-standing war in Afghanistan on migration patterns, the emergence of diasporas and trans-local networks.

Project website: www.crossroads-asia.de

Food programs for the poor in Indonesia: Not one size fits all

A study conducted at ZEF addresses the issues of food consumption of the poor, its relationship to gender and to food policy in Indonesia.

First, the food consumption behavior of Indonesian households was analyzed. The researchers used a model, the "Quadratic Almost Ideal Demand System" (QUAIDS), which can elaborate household characteristics and geographical aspects such as urban and rural areas as well as main and non-main island locations. The results of the modeling exercise showed that Indonesian households were very responsive to changes in food prices and that food expenditure patterns varied across demographic and regional lines.

Generally, staple foods, oils, and other food items were considered necessities, whereas vegetables, meat and fish, dairy products, and adult goods (tobacco, alcohol) were luxuries. Disaggregating by income groups, the results show that the poorest households spent more on adult goods when their income increased than other income groups. Also, non-economic variables such as household size, education, and gender appeared to be relevant to their food demand. Above all, education plays a key role in human capital development in terms of improved consumption patterns: households with higher education levels spent relatively more on nutritious food items.

Does aid reach the poor?

The study also evaluated the impact of the Indonesian Social Safety Net Program – the 'Rice for the Poor' program, implemented in response to the economic crisis of the 1990s. The food security effort has provided poor households with rice at highly subsidized prices. The research results showed that households receiving aid were living in low quality housing in rural areas or on Java and had less education. It also appeared that the 'Rice for the Poor' program had performance issues related to the targeting of recipients: Some higher income households received benefits from the program. Geographical biases were also evident in the program's implementation. Nonetheless, the food security program had positive impacts. In particular, it enabled beneficiaries to increase expenditures on nutrient-rich, animal-source foods. The program also had a positive impact on health expenditures. However unintended aid impact was also evident: Extra income resulting from the program appears to have led to increased expenditures on alcohol and tobacco.

Gender matters

A third aspect examined in this research was the role that gender plays in the way household expenditures occur. The



Women play a key role in combating poverty in Indonesia.

women's share of household assets was found to have a positive and substantial association with expenditures on richer nutrient foods such as meat, fish, and dairy products and, moreover, on education. The effect of women's "social capital" in the form of women's participation in community organizations or social networks also proved an important factor for the allocation of household expenditure. They improved women's knowledge and the deliberate allocation of household resources according to their concerns and those of their families, and reduced expenditures on items associated with adult male entertainment.

Recommendations

Thus, resource distribution and power relations within households are important considerations for the design of policy interventions, particularly in terms of program targeting. The findings of this study highlight the important role that women play in households in Indonesia when it comes to combating poverty.

Data

The study is based on econometric analyses of a longitudinal dataset provided by the Indonesian Family Life Survey and conducted by the American think tank RAND in collaboration with several Indonesian research institutes. The data used were published between 1993 and 2007 (<http://www.rand.org/labor/FLS/IFLS.html>).

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Center for Development Research (ZEF)
University of Bonn | Walter-Flex-Straße 3
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e-mail: presse.zef@uni-bonn.de | www.zef.de
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Evita Hanie Pangaribowo

The author is a doctoral student at ZEF

Contact: evita.pangaribowo@uni-bonn.de