



Slashing of capoeira.

Capoeira meets Tipitamba Multidisciplinary research project receives Brazilian environmental award

In the Brazilian Amazon, the livelihood of more than half a million small-farmer families relies on shifting cultivation that involves land clearing, usually with the use of fire, followed by cropping and a fallow period („slash-and-burn“ agriculture). In this system, the cropped fields shift from one place to another. At low population density and with long fallow periods, shifting cultivation is ecologically sound. In the Eastern Amazon, particularly in the Bragantina region close to the city of Belém, this is no longer the case: due to a population density 15 times higher than in the rest of the Amazon, farmers must intensify their land use to meet the rising market demand. Under these conditions, slash burning coupled with short fallow periods leads to the degradation of the natural resource base. Increased agricultural inputs are applied to compensate for the declining yields (also see ZEF News 9).

CAPOEIRA

In the Bragantina region, use of the slash-and-burn method for more than a century has com-

pletely replaced the rainforest with secondary forest, which is locally called „capoeira“ („a forest that used to be“ in the Tupi Indian language). „Capoeira“ plays a key role in the slash-and-burn system as it is crucial to maintaining the system's productivity. Since small farmers are largely dependent on this fallow system, ways have to be found to sustain its productivity whilst meeting the increased demands placed on it.

„Tipitamba“ („a field that used to be“ in the Tiryó Indian language) is the name of the research project that tackles the ecological and socio-economic questions related to sustainability of the small farmers' land use system in the Bragantina region. The project is being conducted jointly by ZEF and Embrapa Amazônia Oriental in Belém under the research program SHIFT, financed by the German Federal Ministry for Education and Research (BMBF) and the Brazilian Council for Scientific and Technological Development (CNPq).

In December 2002, the „Tipitamba“ project was awarded the „Chico Mendes Environment Prize“ by the Brazilian government in recognition of its

EDITORIAL

Lack of institutional design

Many of the current problems in developing countries are caused by institutions functioning insufficiently. This is due to a host of factors, an important one being the lack of institution building capacity in these countries. It is partly caused by decisions being made at an inappropriate level. According to the subsidiarity principle, decision-making units at local level should assume the tasks of institutional design. Often however, these units don't work adequately or don't even exist. In many cases, central administrations retain power and do not delegate decision-making to lower-level organizations such as local administrations, civil societies or NGOs which usually have a much better understanding of how to tackle the problems.

A second aspect of insufficient institution building capacity is the lack of understanding of the kind of institution required to solve problems at hand. Usually, this requires a very careful analysis of the impact of alternative institutions the optimal one(s) should be selected from. Quite often, markets do not work well, so that a search for improved institutional support for markets is also necessary.

Much of ZEF research is devoted to a better understanding of the institutional problems and suggesting ways for improvement. In this edition of ZEF news the reader will find a small sample of such research efforts and results achieved so far. ■ Klaus Froberg

The author is Director of ZEF.

importance and promising solutions for agricultural and environmental issues in the Eastern Amazon. The prize, which was awarded for the first time, is named after the Amazonian environmentalist Chico Mendes, who was murdered in 1988.

TIPITAMBA

One main pillar of „Tipitamba“ is the development of alternatives to the traditional slash-and-burn practice. This practice causes major ecological problems because biomass and nutrients are lost and soils degrade. Thus, the scientists of ZEF and Embrapa cultivate maize, rice, beans and cassava with the application of chop-and-mulch techniques that replace slash burning. Together with the Institute of Agricultural Engineering at the University of Göttingen, two different bush chopper concepts have been tested. The idea is to chop the bush fallow and spread the chips as mulch over the field in one go. The resulting mulch layer helps to conserve soil fertility. New fertilizer recommendations have been developed for the mulched fields, and new low-input crop varieties have been found. Furthermore, the technology allows to extend the cropping period, to switch the crop sequence, and to change the cropping calendar, since land preparation is now detached from the dry season. These modifications enable the farmers to manage their land more flexibly regarding agronomic optimization, labor distribution, and market prices.

Today, chop-and-mulch and the attached technologies have matured sufficiently to be implemented on a large scale within the framework of technical cooperation agreements between Germany and Brazil.

LIVESTOCK

„Many small farmers in the Bragantina region are keen to have their own cattle“, says Barbara Rischkowsky, livestock expert of Tipitamba at the University of Göttingen. In the Bragantina, livestock husbandry can make up for about 12% of the small farmers' annual income. Cattle are regarded as excellent long-term investments, providing reserve funds for financing other farm investments and emer-

gency needs. However, one fifth of the farmers interviewed had already experienced financial losses due to cattle keeping, because land and labor productivity had dropped far beyond that of cassava or passion fruit.

Amazonian pastures are known for their gradual loss of productivity. Investment in cattle and pastures can thus adversely affect small farms. To minimize this risk, the integration of pastures into the crop-fallow cycle has been tested. This would allow the farmers to return to cropping as soon as livestock husbandry is no longer sufficiently rewarding. To achieve this, pastures were enriched with leguminous shrubs or with capoeira species. The latter turned out to be more effective in terms of



Chopper in action.

pasture performance while at the same time representing the best option to return to cropping. Furthermore, common forage grass and legume species establish very well in mechanically mulched areas, which is why this organic matter and nutrient preserving technology is recommendable for pasture establishment, too.

ECONOMY

In order to assess the economic impact of implementing mulch technologies, small farmers' production, consumption and marketing decisions as well as feedback from local markets and society are being analyzed. The project started off with a private cost-benefit analysis of different small farmer systems with and without technology utilization. The relatively high costs of the mulch technology suggest limited potential for adoption by small farmers. Yet adoption depends on smallhold-

ers' perception of costs and benefits, their access to capital, labor and product markets as well as their risk behavior. In a preliminary assessment, land and labor productivity under chop-and-mulch were well above the ones for slash-and-burn. But higher yields required higher labor inputs and fertilizer applications. However, in cases where private profitability is not given, the adoption of mulch technologies by small farmers could offer social benefits. A social cost benefit analysis will include an estimation of costs incurred by the adverse effects of accidental fires, people's health affected by smoke, air traffic often ceasing due to the closure of airports, or the benefits that result from reduced carbon emissions. Various components of the private and social cost benefit analysis will be modeled at farm-household and regional level, including bio-physical and socio-economic factors.

FARMERS' PARTICIPATION

Regular field days brought about an overwhelming cross-regional interest among cooperatives, extension workers, politicians, credit providers and NGOs. Most importantly, however, „Tipitamba“ maintains close contact to many farmers in the Bragantina region, and these are the ones who test the mulch technology on-farm. Socorro Kato from Embrapa, who is conducting this participatory approach of the project, says: „To assess farmers' reactions to mechanized mulching, we are working together with 30 farmers. Initially, we provided the chop-and-mulch field preparation and fertilizers, while the farmers provided land and labor. What is most exciting for them is the fact that the back-breaking work of slashing the fallow vegetation is no longer necessary. Formerly, it took one man 15 days to slash one hectare before it was burned. Now, the tractor does the work in five hours without burning. This leaves time for more valuable work. Also, hoe-weeding is reduced, because the mulch layer does not permit the emergence of weeds. In future, the farmers will successively take over all the costs and risks, which will improve our judgment on their willingness to accept our approach as a long-term alternative.“

Manfred Denich, Konrad Vielhauer, and Bettina Hedden-Dunkhorst

The authors are senior fellows at ZEF.

Peripheral Islam of Southeast Asia - a track record?

Malaysia and Indonesia, two predominantly Muslim countries in the periphery of the Islamic world, were considered as 'success stories' in different respects. First, the assessment referred to the relatively successful economic and technical modernization. Secondly, for a long time, these countries seemed to have succeeded in cushioning social and political pluralization which usually goes along with modernization.

Prior to the Asian crisis of 1997, Malaysia presented itself as a model for authentic political and cultural development which did not seek to imitate western political models. So-called 'Asian values', allegedly in contrast to the 'Western-individualistic' way of life, had supposedly enabled the rapid economic advancement by channeling social differentiation and hence political plurality.

Contrary to the Western societal model, based on striving for individual welfare, the Asian model of development was said to be centered on the well-being of the collective - be it the family, enterprise, or nation.

However, triggered to some extent by the Asian economic crisis, the crises of the political systems of Malaysia and Indonesia demonstrated the limits to rule in a patriarchal-authoritarian style - in particular with reference to the containment of plurality.

Social and political plurality denotes the variety of political, religious and ethnic groups or movements, their respective interrelations and their relation to the state. Normative plurality refers to the various concepts of dealing with diverging ways of life, expectations and values with respect to one's own group but also with respect to society as a whole. These concepts have only been in competition with each other for a few years. Against the background of the governance crisis of secular political systems and their poor record of modernizing the economy, groups and concepts advocating a more prominent role for religion in the state and in the public sphere are now on the rise in the Southeast Asian periphery of the Muslim world.

In the Arab-Iranian core region of the Muslim world, a similar crisis of development and of governance plus an ensuing reformist debate set in three decades ago. There, a comparison of nominally secular political systems (e.g. Tunisia, Turkey) with a traditional religious system (Moroc-

co) and with a religious-modernistic system (Iran) of political rule provides evidence that secular systems do not perform worse than religious ones. But contrary to the expectations of political and development theorists, the first did not fare better than the latter, either. This holds particularly true if successes in technical and economic advancement are weighed against the deficits in coping with plurality.

The problem of coping with plurality in the Arab-Iranian core area of the Muslim world differs from that in the Southeast-Asian periphery. However, the contemporary reformist discourses of both regions refer to the same pivotal concepts of state and political theory, like 'ijtihad' (individual judicial reasoning) or 'shura' (consultation of the rulers by the ruled). Such concepts are strongly embodied in Islamic tradition and thus enjoy a high degree of religious legitimacy. In the Arab and in the Iranian discourse, however, reformist concepts often remain at a high level of abstraction. The large lack of the negative legacy of Islamic fundamentalism known from the Middle East and the relatively free climate of political expression (particularly in Indonesia, after the fall of the Suharto regime) give rise to expectations that the reformist approaches emanating from the periphery may be more concrete than the ones emanating from the core area of the Muslim world. This is enhanced by the fact that Malaysia and Indonesia differ considerably in comparison to most Middle Eastern countries by their high degree of ethnic and religious heterogeneity.

A current research project at ZEF is analyzing the typical problems of accommodating plurality in the Southeast-Asian periphery of the Muslim world. The project is also conducting a survey of contemporary reformist discourses there and comparing them to relevant discourses in the Arab-Iranian core area. The overall aim of the research is to sketch a concept of political modernity for both the core and the periphery of the Muslim world - a modernity which aspires the attribute of 'Islamic'. The research is being funded by Deutsche Forschungsgemeinschaft (DFG) up to the end of 2004. ■ Bernhard Trautner

The author is fellow at ZEF and works on the politics and sociology of Muslim peoples. During the summer term 2003 he holds the chair of Political Science and Political Management at the University of Applied Sciences, Bremen.

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Resource use and conservation: harmonious co-existence?

The protection of natural habitats is an essential mechanism to conserve biodiversity. Unfortunately, the view of nature conservation that has tended to dominate international thinking over the past century sees humans as intruders into nature, valuing „pristine nature“ as the ideal to be retained. While this conservation concept may be appropriate in the developed countries it originated in, its implementation in developing countries poses major problems, as a high proportion of the local population continues to be dependent on natural resources for its livelihood. How can the objective of conservation be achieved without compromising the livelihoods of these people?

A recent study at ZEF contributes to understanding the realities that often lie behind what seem to be promising formal policies. While official conservation and forest policy in India has increasingly adopted a rhetoric of recognizing the importance of involving local communities in natural resource management, actual efforts to do so have been largely limited to the area of degraded forest lands. The ZEF study highlights the fact that for more pristine areas, the conventional view of „protecting nature from the people“ and the inherent conflicts emerging from this idea still prevail. India, which presently has 586 protected areas, follows the International Union for the Conservation of Nature's (IUCN) definition, by which an area denoted as a „protected area“ (PA) is to be free of any human habitation or resource use. A survey conducted in 222 PAs in India in the 1980s revealed that three million people were living inside the PAs, and that conflicts between



Woman collecting wood in Badhavgarh Park.

people and the forest department existed in more than 20% of the PAs.

ZEF's research highlights the extent and nature of these conflicts through a detailed case study of one such PA, Bandhavgarh National Park (BNP), which has the highest density of tigers in the world. While official policy stipulates relocation of the seven communities located within BNP, 20 years after inclusion in the Park their relocation appears highly unlikely for political and economic reasons. The study reveals that people residing inside the Park continue to be highly dependent on Park resources for subsistence and income generation (Table), with more than 90% of their income being derived from the Park. Despite an explicit ban on resource extraction for income generation, sale of non-timber forest products (NTFP) constitutes the second

most important source of income for the households. In addition, Park resources are also used extensively by the people living in villages surrounding the Park. Among the various income-generating activities, livestock rearing in the Park and collection of NTFP cause the greatest damage to the Park.

On the other hand, the establishment of the Park has led to costs for the local population as well. Of the respondents, 56% of those owning livestock reported losses due to wildlife predation, while nine percent of the respondents reported injuries or death to household members, and 95% crop damage. Through interviews with local people and forest officials, the management problems resulting from these people-park conflicts are highlighted. Moreover it became evident that there are ambiguous official policies, contradictory regulations and weak monitoring and enforcement of existing rules. It is essentially a policy of „burying one's head in the sand“, which increases problems for both people and natural resources. For example, the constant threat of relocation imposed by current policy only increases the level of uncertainty for the local people. Therefore it is likely that they will increase their extraction of Park resources as they do not know whether they will still be there to suffer the consequences.

The study highlights the need for alternative approaches to conserva-

tion. A recent initiative in this direction is the Eco-Development program funded by the World Bank, which emphasises the role of awareness building and income generation in reducing people's dependence on the Park. ZEF's analysis shows that awareness building is indeed likely to improve people's attitudes towards the Park. However, the effect of more positive attitudes on the actual level of resource extraction is not clear. Similarly, it remains doubtful whether access to alternative income sources and/or higher living standards really reduce people's use of Park resources. A more detailed analysis of these issues is currently being conducted at ZEF as an extension of the study. Preliminary results suggest that it is unlikely that people will reduce their pressure on Park resources unless they are given a stake in the benefits of conservation. This could be achieved, for example, by increasing local people's involvement in eco-tourism activities or by employing them as forest guards. ■

Puja Sawhney and Stefanie Engel

Puja Sawhney recently completed her doctoral studies at ZEF. Stefanie Engel is research fellow at ZEF. Funding for this research is provided by DAAD and the Robert Bosch Foundation.

Survival of ethnonationalism in Serbia: ways out?

After the demise of Slobodan Milosevic's regime in October 2000 we find a paradoxical situation: according to various locally conducted surveys, greater openness to the West in Serbia is paralleled with the persistent negative ethnic stereotyping of non-Serbs (over 30% of Serbia's inhabitants), and the absence of public debates about the role of Serbia in the wars of the 1990s. The issues of war crimes are addressed by the dominant media and politicians solely as a question of fulfilling Serbia's obligations toward the International Criminal Tribunal for the Former Yugoslavia, which is often perceived as an instrument for punishing the Serbs.

A striking instance of the instrumentalization of ethnonationalist attitudes by the new ruling elites is the Commission for Truth and Reconciliation, appointed in 2001 by the Yugoslav president Vojislav Kostunica. The Commission has merely set as its primary tasks seeking out the historical reasons for Yugoslavia's collapse and who did what to whom during the wars of secession that followed. The Commission has also excluded experts from Croatia, Bosnia-Herzegovina and Kosovo from its staff.

The departure from the culture of ethnonationalism promoted by the previous regime seems to be too complex a task to be entrusted solely to the Serbian elites. There is a growing awareness in the circles of Serbian non-governmental associations that their efforts must

reach beyond the narrow intellectual forums. In the sphere of education, some results have been achieved by projects aiming at a revision of the elementary and high school history curricula.

A project recently launched by an NGO from the Serbian Province of Vojvodina, supported by the German Marshall Fund for the U.S., seeks to combine reform in history and social sciences curricula with the general supporting of civil society-building in the entire ex-Yugoslav region. The project's agenda includes a series of conferences that are to be held in different successor states of former Yugoslavia, which will bring together teams of experts on the issues of nationalism and violence in the region. A comprehensive media coverage of these cross-border events will also include a cross-border cooperation of journalists and related specialists. In this way, a project aiming at educational reform would also yield results in other segments of civil society. Since it has been initiated by civil society actors from Serbia, but has from the start involved participants from other ex-Yugoslav regions, it has a potential for pushing the Serbian public in the direction of problematizing the issues of collective responsibility for the success and survival of ethnonationalist politics. ■ Ana Devic

The author is the project's coordinator and worked at ZEF as a visiting research fellow in the group on state building and ethnic conflict from 2001 to 2002.

Average household income in Bandhavgarh National Park in 2000 (US \$)

| ACTIVITY | Income excl. self-use | Percentage (Rank) | Income incl. self-use | Percentage (Rank) |
|------------------------------------|-----------------------|-------------------|-----------------------|-------------------|
| Sale of agricultural produce | 1.9 | 1.1 (6) | 87.5 | 19.7 (2) |
| Sale of non timber forest products | 42.5 | 25.0 (2) | 54.2 | 12.2 (3) |
| Sale of fuelwood | 1.6 | 0.9 (7) | 7.0 | 1.5 (7) |
| Livestock rearing | 35.2 | 20.7 (3) | 206.6 | 46.5 (1) |
| Work for forest department | 44.1 | 26.0 (1) | 44.1 | 9.9 (4) |
| Work outside Park | 13.0 | 7.6 (5) | 13.0 | 2.9 (6) |
| Other sources of income | 31.5 | 18.6 (4) | 31.5 | 7.1 (5) |
| Total | 169.8 | | 443.9 | |

Source: Field survey, 2000-2001

FACTS & NEWS

■■■ New applicants for the International Doctoral Program for Development Studies should have the following profile: A successful application requires an excellent master or diploma degree in Economics, Political Science, Agricultural and Resource Economics, Engineering Degrees, Geography, Mathematics, Natural Science or Agriculture, and excellent proficiency in English. The applicant should be younger than 32. The application written in English must include: a letter of application, application forms from ZEF, an abstract of the master or diploma thesis, the plan of proposed research, two letters of recommendation, the curriculum vitae and certified copies of all relevant certificates. The deadlines for applications to the doctoral program and scholarships are: Sep-

tember 30, yearly, for non-EU citizens and DAAD scholarships (available only for applicants from developing countries), and May 31, yearly, for EU citizens and scholarships of the Robert Bosch Foundation. Information and contact: Günther Manske (docp.zef@uni-bonn.de) or from the ZEF homepage (www.zef.de).

■■■ A ZEF-led study on genetically modified cotton was published in „Science“ on February 7 2003 and received worldwide coverage by the media and scientific circles. Matin Qaim, the study's lead author, is researcher at ZEF and assistant professor of agriculture and development studies. With the aid of experiments in India, the study showed that not only do

transgenic crops reduce the use of chemical pesticides but that they also increase crop yields substantially in comparison to other yields. More information: www.zef.de/news or contact: Matin Qaim, mqaim@uni-bonn.de

■■■ ZEF is organizing an international conference on „State reconstruction and international engagement in Afghanistan“ in cooperation with the London School of Economics in Bonn from May 30 until June 1 2003. Information and contact: Conrad Schetter, c.schetter@uni-bonn.de, phone: # 49 0228 / 73 4906.

Water-use efficiency in irrigated rice

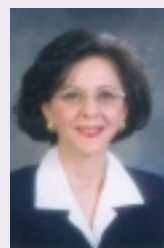
As agricultural water resources in Asia are becoming increasingly scarce, irrigation efficiency must be improved. Few studies quantify water reuse in irrigation systems. A unique study quantifies for the first time how water productivity increases in large-scale irrigation systems with more water re-use opportunities. In collaboration with the International Rice Research Institute (IRRI, Philippines), ZEF quantified water-use efficiency and productivity at ten different scales, ranging from 1,513 to 18,003 ha, in a large irrigation system in Central Luzon, Philippines. The results show that water re-use at the largest scale is equal to 30% used by the rice crop, which implicates that most of the farmers in the downstream parts of the irrigation system rely on re-used water captured by check dams or pumped from shallow wells. Of the gross in-



flow (irrigation, rainfall, groundwater pumping), 74% leave the system, which indicates a wide scope for increasing water productivity. By re-using water, productivity per unit of irrigation water at the system level (18,003 ha) is three to four times higher (Figure) than at smaller subsystem levels (1,513-3,011 ha). The complete study will soon be published in the ZEF „Ecology and Development Series“.

■ Muhammad Mohsin Hafeez, Nick van de Giesen and Paul Vlek

Mohsin Hafeez and Nick van de Giesen are research fellows, Paul Vlek is Director at ZEF.



Viewpoint

The Arab Human Development Report (2002) is the first regional report ever to be produced by the United Nations Development Program. Rima Khalaf Hunaidi (Jordan) is Assistant Secretary-General and UNDP Arab Regional Bureau Director. She has been Minister of Industry, Trade and Planning, deputy Prime Minister and Senator and served on the Economic Consultative Council, a public-private initiative to promote economic reform and modernization in Jordan. She has a Ph.D. in System Science from Portland State University.

ZEF: The Arab Human Development Report has been given wide media coverage. Has it received equal attention from regional governments?

Hunaidi: Indeed, the Arab Human Development Report has received unprecedented attention. In the Arab world and many Western capitals, virtually no major newspaper has failed to give it extensive coverage, and the broadcast media have been equally generous. (...)

Interest in the Report has not been confined to the media. The Arab League sponsored the Report's formal launch last July. (...) The Report was discussed in more than one meeting of the League's Council of Ministers. In this context, Arab Foreign Ministers constituted an intergovernmental committee of Arab officials and experts to weigh the Report's findings and analyze how to best harness its analysis. The Committee expressed appreciation of the substantial effort put in the Report and recognized it as a significant contribution to the Arab development discourse. (...)

(...) King Abdullah II has strongly endorsed the Report as a primary source for the direction of development in Jordan. The Report has also been examined extensively in Lebanon, Kuwait, the United Arab Emirates and Egypt with participation from Government, civil society and the media. (...)

(...) Various officials, practitioners and experts differed on the emphasis placed on various aspects of the diagnostics. Some questioned the causal relationship between the three major deficits identified by the Report and development. Others called for greater emphasis on external factors. Taking into consideration the varying views and assessments, it is safe to say that while the first Arab Human Development Report has generated considerable heat, it has also produced a lot of light that is crucial to the region's efforts to (...) overcome longstanding obstacles to human development.

ZEF: How do you respond to the critics of the Report?

Hunaidi: (...) Some criticisms of the Report's methodology emanate from conventional thinking that favors a uni-dimensional approach to developmental analysis. Such an approach has often been fixated on the economic dimension at the expense of other aspects of development. By contrast the people-centered approach of the AHDR (...) uses a multidimensional perspective that encompasses politics, economics as well as social and cultural aspects to analyze development challenges

and prospects.

One of the major implications of applying the human development perspective is the identification of the three deficits in freedom, women's empowerment and knowledge as root causes for the region's underdevelopment. This again contrasts with the overly economic approach (...). Other methodological critics targeted the Report's identification of freedom as the first of the three main deficits maintaining that there is no causal relationship between freedom and development. Others again disagreed with the proposed measurement of freedom. While the Report's authors recognized the problems with analyzing and measuring freedom, they still emphasized its absence as a major deficit (...)

My response to critics (...) is twofold. First, it is essential to recognize that freedom has an intrinsic value regardless of its instrumental function. Second, freedom and the democratic practices it engenders is needed to align the objectives of national leaders with those of their people and to secure the checks and balances necessary for good governance.

ZEF: How do we bridge the gap between research and policy in a climate where independent research is looked upon with suspicion by some governments?

Hunaidi: As a former Minister in my own country, I realize that bridging the gap between research and policy requires the concerted efforts of governments, think-tanks and research institutions as well as other partners such as the private sector and donors. Governments need to be more open to the findings and messages of credible research and policy analysis even when they do not conform to the preferences or preconceived assumptions of officials. On their part, think-tank and research institutions have to produce analysis that is attuned to the needs and demands of public policy making. They also have to represent interests that are otherwise ignored or under-represented, particularly the interests of poor people and vulnerable groups such as women and children. Donors known for their neutrality, such as UNDP, have a crucial role to play. Impartial support from such donors for policy-analysis by Arabs and for Arabs should enhance its credibility and hopefully its effectiveness. The AHDR is a case in point. ■ Interviewer: Noha El-Mikawy

This is an extract. A longer version appeared in the newsletter of the Economic Research Forum for the Arab Countries, Iran and Turkey (ERF) (www.erf.org.eg/nletter/newsletter_sum02/summer.02.htm).



Village scene in Khorezm.

Insufficient drinking-water quality and declining incidences of waterborne diseases: a contradiction

In the Aral Sea region, decades of ecological neglect and the present economic downturn have led to the degradation of water and soil which may, in the long run, cause serious health problems. Poor drinking water supply and quality pose a serious risk to human health. The GIS-supported investigation of „Drinking Water Supply and Water-Related Infectious Diseases“ is being carried out by ZEF, in close collaboration with the Uzbek Government, in the framework of the project „Economic and Ecological Restructuring of Land and Water Use in the Khorezm Region (Uzbekistan)“ funded by the German Federal Ministry for Education and Research (BMBF).

The province of Khorezm is situated along the Amu Darya River. About 51% of all the households in Khorezm extract their drinking water either from open wells or shallow boreholes, which are often faecally contaminated due to the shallow groundwater table and a lack of sanitation. The microbial quality of drinking water supplied by the public network has deteriorated dramatically over the last decade. Since 1999, at least 37% of the samples contained more than 100 Colony Forming Units (CFU) per liter. In 1999, even 62% of the samples showed values above this limit. The faecal contamination of drinking water is measured by Colititer and Coliindex, and the fact that since 1999, more than 35% of the samples have always exceeded the locally acceptable limit would suggest a serious health threat through waterborne infectious diseases. Surprisingly, preliminary results do not indicate any increase in the incidence of waterborne diseases. Between 1991 and 2001, cumulative incidence

for hepatitis-A in Khorezm province declined from 395 cases to 103 cases per 100,000 people. Incidences of typhoid fever and shigellosis show similar patterns.

These results may partly be due to changing disease rates; however, a lack of reporting by the Uzbek health system and the system's impact on health behavior and socio-economic constraints could be the more important factors. Admissions of patients to health care facilities dropped in Uzbekistan from 24 per 100 people in 1991 to 13 in 2000. The country's total health expenditure as a percentage of GDP halved from 6 to 3% between 1991 and 2000, and the total health expenditure measured in purchasing power parity conversion per capita (ppp \$) shows a decline from 165 ppp \$ to 65 ppp \$ for the same period. Under these circumstances, it is likely that people seek health consultations only in severe cases, which result in a biased registration of waterborne diseases. These discrepancies need to be reconciled.

In the summer of 2003, a household survey and microbial testing of different drinking water sources will be conducted to investigate these relationships further. Only then will data from this sub-project be useful in the elaboration of improved water management plans for the region, the central task of the project. ■ Susanne Herbst, Thomas Kistemann and Christopher Martius

Thomas Kistemann is head of the section for public health and medical geography at the Institute for Hygiene and Public Health of the University of Bonn, Susanne Herbst is junior researcher at the same Institute and participant in the doctoral program at ZEF and Christopher Martius is project coordinator at ZEF.

Book Announcement

■■■ Lucc Report Series No. 6:
„Agent-Based Models of Land-Use and Land-Cover Change.“
Edited by: Dawn C. Parker, Thomas Berger, and Steven M. Manson.
■■■ Understanding land-use dynamics in the context of global change and investigating possible corrective actions at regional and local levels is one cross-cutting theme of research at ZEF endorsed by the Core Science Project on „Land-Use and Land-Cover Change (LUCC)“ of the „International Human Dimensions Programme on Global Environmental Change“ and the „International Geosphere-Biosphere Programme“. The new Lucc report, to which ZEF made significant contributions, provides a state-of-the-art overview and synthesis of representative Lucc-related agent-based modeling efforts. An electronic version (PDF) can be downloaded from: <http://www.indiana.edu/~act/focus1/>. A printed copy may be requested on the same website.

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At a glance

■■■ In January 2003, ZEF organized a workshop titled: „Afghanistan: from a war economy towards economic reconstruction“. Around 30 representatives from governmental and non-governmental organizations discussed the issue of reconstructing Afghanistan effectively by means of transforming a war economy and the rule of warlords into the establishment of democracy, security and stability.

■■■ Thomas Berger, research fellow at ZEF, was accepted as group leader under the priority program of the Robert Bosch Foundation for junior scientists in agriculture and forestry research. In the next three years, Berger will receive a grant of around 435,000 EUR for his research group on multi-agent systems. (<http://www.zef.de/mas.htm>).

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The Distance Learning Center at ZEF

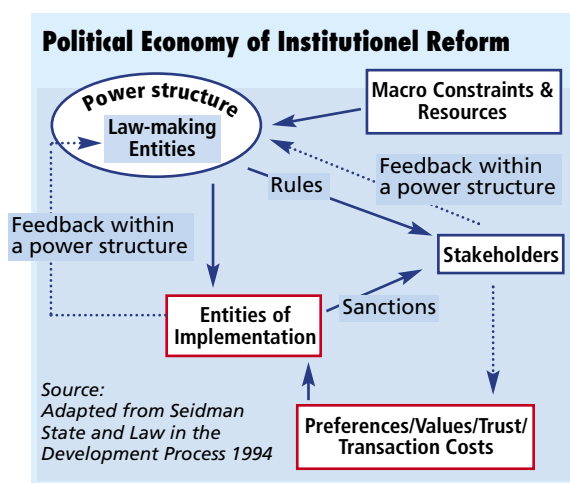
Since May 2002, ZEF has been affiliated with the Global Development Learning Network (GDLN) and has established the first GDLN center in Germany. GDLN is a global partnership of public, private, and non-governmental organizations at the World Bank Group dedicated to fighting poverty and committed to providing quality distance learning programs. Currently, there are 28 affiliated distance learning centers (DLCs) worldwide. The goals of ZEF's DLC are to use technology in a cost-effective way for distance education, or for dialogues with representatives from politics, business, and NGOs worldwide, and to improve the communication among research institutes. The first two distance lectures took place in November 2002. Lecturers from International Food Policy Institute (IFPRI) in Washington D.C. and the International Center for Tropical Agriculture (CIAT) in Colombia gave presentations on specific development topics to doctoral students at ZEF. The first Global Dialogue at ZEF in December 2002 was organized by ZEF's research group on Information and Communication Technologies (ICT) and consisted of two live video conferences. Opportunities and challenges of ICT for poverty reduction among concerned parties including academics and policy-makers were discussed, providing a unique opportunity to disseminate the results from ZEF's research group and to initiate discussions on key issues. These and other related development workshops have been funded by the Land of North Rhine-Westphalia, the Federal Ministry of Economic Cooperation and Development and „Deutsche Gesellschaft für Technische Zusammenarbeit“. ZEF's facilities include three rooms for video conferencing of which one room has a seating capacity for 250 people, a computer network, multimedia equipment, FTP, and a server. These facilities can also be used by other organizations. ■

Günther Manske and Ulrike Grote

Günther Manske is head of the Doctoral Students Program, Ulrike Grote is a senior fellow at ZEF.

Institutional reform in Arab countries

Efforts have been underway to reform the economy in some Arab countries. Several Arab countries have successfully stabilized their economies and embarked on a slow process of structural adjustment and market liberalization. This latter reform process is supported by the Barcelona process which binds Morocco, Tunisia, Jordan, Egypt, Algeria, Lebanon with the EU in free trade agreements. Moreover, Jordan signed a free trade agreement with the USA; Morocco and Egypt are negotiating similar ones; Morocco, Tunisia, Egypt and Jordan have created a joint free trade area („Agadir“), and a wider Arab free trade zone is being designed.



Such multi-lateral commitments require a comprehensive overhaul of Arab institutional structures which have been characterized by protectionism, public sector domination, weak productivity and unemployment. Institutional reform to open Arab economies and increase the competitiveness of their domestic markets has taken the form of dozens of new laws and regulations in the areas of labor, competition, property rights, trade and investment, etc.

However, creating an enabling institutional environment to reform such markets is not an

easy job. The Arab institutional reform process has proven to be problematic for two reasons. Firstly, the design phase of laws and regulations has not been transparent, often excluding many stakeholders from the deliberation process. Secondly, the laws are implemented by ill-prepared administrative structures. It is in the legal and regulatory design phase that market failures and market needs (including high transaction costs due to bad implementation) enter the reform process. It is in that same phase that consensus is achieved over policy directions and institutional frames which govern economic action. Despite its importance, the legal and regulatory design phase is a less studied aspect of institutional reform.

ZEF has therefore launched a comparative research project in Morocco, Egypt, and Jordan to study two aspects of the participation-process of stakeholders in the legal design phase of economic reform. Firstly, since legal reform is an information-based exercise, the study will analyze to what extent the process of participation by various stakeholders in economic reform depends on knowledge. Secondly, since participation beyond individual lobbying requires the mobilization of collective resources, ZEF's

research project will develop indicators to assess stakeholders' capability to participate in a way that reduces rent-seeking lobbyism. The research focuses on a selected number of laws and regulations for trade and investment promotion. The study is financed by the German Federal Ministry for Development and Economic Cooperation (BMZ). ■ Noha El-Mikawy

The author is senior research fellow at ZEF and author of two books on consensus building and institutional reform in Egypt.

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