



Technological innovations. Potential and constraints

Selected findings from a recently completed project on smallholder agriculture in the Eastern Amazon Region.

Smallholder agriculture, based on a fallow system, sustains the livelihoods of about 500,000 households in the Brazilian Amazon. Especially in densely populated areas, natural scientists found that fallows in the traditional slash-and-burn system have become too short to maintain soil fertility and fallow regeneration capacity for future generations. Furthermore, the use of fire for land preparation brings about additional costs in the shape of health effects, greenhouse gas emissions, and material damages due to accidental fires. Fire-free technologies that can also compensate for yield losses due to soil degradation have been developed, but smallholders seem to be reluctant to adopt them. For such innovations to be sustainable they are required

to foster economic development, reduce poverty, and decrease pressure on the environment at the same time.

Developing fire-free land use methods

ZEF and the University of Göttingen, together with their Brazilian partners ("Embrapa Amazônia Oriental" and "Núcleo de Altos Estudos Amazônicos"), developed, tested, and economically evaluated technological innovations for smallholder production systems in the Eastern Amazon.

The research focused on slash-and-mulch as a fire-free method for land preparation. A tractor-pulled bush-chopper is used to transform fallow of an age of up to twelve years into a thick mulch layer. This avoids the volatilisation of nutrients and allows for two cropping cycles instead of one as is traditionally the case. Additionally, the fallow period may be shortened by fallow enrichment through fast growing leguminous trees. Mechanical mulching allows to maintain the fallow system with its environmental services (conserving biodiversity, suppressing weeds, etc.), which is not achieved with other upcoming technological alternatives to slash-and-burn, such as conventional mechanisation. Yet it requires considerable cash outlays for using the machine, including the driver, and for applying fertiliser to compensate for nutrient immobilisation. The latter would be a change from current practices for most smallholders in the Eastern Amazon since only a minority of them use chemical fertiliser. This is attributed to the high variation of yields and product prices as well as the substantial up-front investment relative to household income.

The new technology was assessed regarding its economic, social, and environmental impact.



Smallholders working on a maize field.

Editorial

Building a knowledge society?

The recently published OECD report "Education at a Glance" stimulated intensive debate in Germany and elsewhere on necessary reforms of the education system from primary to university levels. The report enabled countries to see themselves in the light of other countries' performance by providing comparative data on educational attainment, the quality of knowledge provided, investment in education, and opportunities for acquiring advanced knowledge and skills. The point here is that comparative data and authoritative compendia of information are used to legitimise new strategies for action and to start reform programs and have thus become instruments of political action in a world moving towards a knowledge society. Advocates of development policy as a global structural policy will appreciate this trend, as world-wide comparisons highlight the structure of world society and make interventions plausible or even mandatory. But do comparisons between nations make sense? Can the government of Mauritius learn from the experience of the European Union, or should Singapore follow the development path of the United States? Are cultural differences adequately captured and does the art of modelling stifle or encourage new ideas and visions for development? Questions over questions – and many ideas for development research for the new doctoral students of ZEF. ■

Hans-Dieter Evers

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► **Technological innovations.**
Potential and constraints

Several methods were employed for this purpose. One is an econometric analysis of the traditional slash-and-burn system using representative farm-household data. The results show that fallow is an important part of the traditional system, since it has a relatively high share in profit. It was also found that those farmers who apply fertiliser respond rather strongly to a change in the ratio of fertiliser price to those of the goods produced. Reducing it would also lead to an increase in the cultivated area and in welfare.

Costs and benefits

A comparison of returns over costs was conducted using data gathered from farms at which the new technology was used. Farmers were not made to pay for mulching and fertiliser, although estimates of them are included in the calculations. Only eight percent of farmers that used the machine and applied fertiliser utilised the technology as suggested by researchers. This low acceptance could reflect a lack of interest and insufficient advice. The results of the analysis point to the importance of yields and crop choice. They show that only one of three enterprises analysed (cassava and beans in contrast to cassava and cassava and maize) showed a positive net cash flow. These results differ remarkably from mulching experiments on plots that were managed solely by researchers. Hence successful technology diffusion would have to be accompanied by intensive extension. Finally, the measurable social costs of slash-and-burn turned out to be lower than expected and do not call for immediate policy action.

A bio-economic farm-household model was employed to investigate the impact of adopting several variants of the new technology on land use and household welfare. Policies designed to promote adoption were also analysed. The results of this simulation exercise indicate that, under current conditions, mechanical mulching becomes profitable only when its costs can be reduced by about 50 percent. Crucial to these results is the abundance of household labour supply in the study region. Mechanical mulching requires substantially less labour than the traditional slash-and-burn systems. As a consequence of the low opportunity costs of labour, the traditional system continues to be a profitable



Farmers' experiences are indispensable to the project's results.

option in all scenarios analysed. Even an increase in rural wages by 30 percent does not make the new technology profitable since it affects all labour activities including on-farm processing. The situation would only change if opportunity costs for farm labour became extremely high and, in addition, farmers had sufficient cash to pay for mulching. On the other hand, if this technology is adopted due to favourable economic conditions, it will increase the land cultivated with the effect that fallow length and therefore also the environmental services of fallowing are reduced.

In summary, the importance of fallow for smallholder production and the benefits of maintaining the fallow system were confirmed in the econometric analysis. Other investigations showed that, from an economic point of view, mulching has to compete with a series of other less cost-intensive technologies, such as slash-and-burn with fertilisation and conventional mechanisation. As long as the external costs associated with these technologies do not break even with the costs of promoting mechanical mulching, direct government intervention is not a first best solution.

Barriers to technological solutions

This and other findings stress the need to develop further well-adapted alternatives and offer them to smallholders. This means further adaptation of mechanised mulching as well as the modification of available technologies. Moreover, the institutional barriers to tech-

nology diffusion and adoption remain noteworthy. Experiences have shown that even well-intended public attempts to induce technological innovation have failed due to poor infrastructure and clientelistic relations in local governments. The officially promoted decentralisation process bears the risk of even aggravating that picture. Consequently, major public investments in technology dissemination for smallholders can only be successful if embedded in an institutional setting that assures monitoring and enforcement of rules and regulations for technology access and application.

To explore the relevance of project results on a broader scale, technological innovations emerging in the Eastern and the Western Amazon were juxtaposed to investigate options that one region could provide to the other. Clearly, the tractor-based mechanisation and tractor service markets in the Eastern Amazon could lend support to fledgling activities in the Western Amazon. Likewise, improved pasture technologies for cattle production and legume-based fallow systems in the Western Amazon represent alternatives for larger and capital-endowed farms in the Eastern Amazon. ■ Jan Börner, Klaus Frohberg, Bettina Hedden-Dunkhorst, John Mburur and Arisbe Mendoza-Escalante

Bettina Hedden-Dunkhorst and John Mburu are Senior Researchers at ZEF.

Jan Börner and Arisbe Mendoza-Escalante are students in ZEF's doctoral program.

Klaus Frohberg is Director of ZEF's Department of Technological and Economic Change.

Civilian crisis prevention. ZEF advising the German Federal Government

On May 12, 2004, the German Federal Government passed the joint 'Action Plan for Civilian Crisis Prevention, Conflict Resolution and Post-Conflict Peace Building', to which ZEF had been contributing scientific expertise since April 2003. Through this action plan, conflict prevention is anchored in future government action as an overarching task. The plan proposes 163 actions, among them the elimination of money laundering to finance warfare, the support of peace potential and peace activists, the fostering of the civilian components in UN missions, the principle of "do no harm" at international monetary institutions as well as the extension of the European Conflict Prevention Unit. The national infrastructure for crisis prevention is to be bolstered by each Federal Ministry appointing a commissioner for civilian crisis prevention and creating a round table under the auspices of the German Federal Foreign Office (AA). Furthermore, raising a common fund for crisis prevention and installing a scientific advisory board are under consideration. In sum, the Action

Plan, which is to be implemented over the next five to ten years, strengthens civilian crisis prevention as a cross-sectional task of the Federal Government's overall policy.

Right from the onset, ZEF was actively involved in the conceptual and creative process of this basic document, which is unique in international comparison. As members of the editorial team under the direction of the Foreign Office, ZEF researchers from the research group on 'Governance and Conflict' could directly bring in proposals for action based on results from peace, conflict, and development research. In addition, they concretised and complemented contents provided by the Federal Ministries. However, the relevance of scientific consultancy diminishes in the course of such a process, since in the end the Federal Ministries are forced to come to an agreement on open or even controversial topics.

This kind of co-operation, which overcomes classical ministerial boundaries and the rifts between government and society, was a downright novelty that proved to be con-

ducive to the Action Plan. Besides representatives of the Foreign Office and ZEF there were also experts from the German Technical Cooperation (GTZ) and the German Federal Ministry for Economic Cooperation and Development (BMZ) as well as from the ZIVIK project of the Institute for Foreign Relations. In addition, more representatives of German civil and academic society as well as parliamentarians had the opportunity to bring in their views on the need for action in crisis prevention in the course of several hearings.

In a further step, the Action Plan is going to be discussed in the German Parliament, the Bundestag. ■ Tobias Debiel, Ulrike Joras, Conrad Schetter, Ulf Terlinden

Tobias Debiel and Ulrike Joras were, respectively, Acting Director and a Senior Researcher at ZEF, while Conrad Schetter and Ulf Terlinden are Researchers at ZEF.

The action plan can be downloaded from:
http://www.diplo.de/www/de/aussepolitik/friedenspolitik/ziv_km/aktionsplan.pdf

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Higher Education Forum about renewable energies

How can renewable energies play a more important role for people in developing countries? ZEF and the German Academic Exchange Service (DAAD) organised a Higher Education Forum entitled "Capacity Building in Developing Countries - Bringing Renewable Energies to the People". It took place as an official event of the International Conference for Renewable Energies (renewables 2004) in June 2004 in Bonn. The forum was partnered with the master programme "Sustainable Energy Systems and Management" (SESAM) of the University of Flensburg, the "Postgraduate Programme Renewable Energy" (PPRE) of the University of Oldenburg as well as the "International PhD Program for Agricultural Science" (IPAG) of the University of Göttingen. The 140 participants were experts from 38 countries, predominantly from developing countries. Nearly all of them have studied at the three universities. They made use of the forum as an opportunity to socialise and exchange their knowledge in the field of renewable energies.

The question how the implementation of renewable energies in developing countries can be promoted was a central issue in the presentations and lively discussions. In this context, the provision of off-grid electricity for rural areas was of special interest because of



Participants from 38 countries exchanged information and experience.

its high potential for developing countries. This solution lends itself especially to remote regions, where connection to the grid is mostly too expensive. One session dealt with the developments in the international climate negotiations and explained their benefits for the dissemination of renewable energies. In this regard, the 'Clean Development Mechanism' was highlighted as the most important tool. It allows industrialised countries to finance climate protection projects in developing countries for the sake of fulfilling their commitments.

The participants gained new impulses and ideas for the promotion of environment-friendly energies in their countries and were

enthusiastic about the possibilities for exchanging knowledge and experiences.

The Higher Education Forum showed that German universities play a leading role in educating experts from developing countries in the field of renewable energies. They contribute to the dissemination of modern technologies as well as to knowledge exchange with the developing regions. The countries are thus enabled to design their economic, environmental and social development on their own and to diminish their dependence on international support in the long run. ■ Markus Kaplan

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Soil erosion in Uganda. From modelling to adapted slope use

In developing countries of the tropics, the consequences of soil erosion constitute an especially serious problem as the torrential tropical rainfall leads to particularly rapid soil loss. Moreover, the secure subsistence of rural populations depends immediately on the conservation of soils.

Hence ZEF, in co-operation with the National Agricultural Research Organization (NARO) of Uganda and financed by the German Academic Exchange Service (DAAD), conducted a study in Uganda in order to grasp the erosion problem. For this purpose, the soil erosion model WEPP (Water Erosion Prediction Project), developed by the United States Department of Agriculture, was used under tropical conditions. In particular, the extent to which the systematic sequence of soil types on a slope influences erosion as well as accumulation rates was analysed. In addition to pedologic research, a participative workshop with

farmers was conducted in one village. Thus the local knowledge of the farmers could be compared to the pedologic results. This combined approach was useful in assigning specifically adapted, suitable land-use methods to respective zones on the slope in order to avoid soil degradation.

The WEPP model reacted sensitively to changing soil and land-use input parameters and thus proved particularly suited to the



A young farmer at work – but who's bigger, the hoe or me?

question. The results clearly show that erosion rates vary depending both on the position on the slope and on soil-specific factors, and that hence the land-use methods should be adjusted to the small-scale soil characteristics of the respective slope sections. While the average annual soil loss rate for the total slope is about two tons per hectare per year, which is relatively small, it can be up to nine tons per hectare at some particularly steep sites. Here, an additional soil cover of plant residues can reduce erosion by up to 70 percent, although it can achieve only little at more even slope sections.

Future erosion scenarios should therefore both consider soil-specific site properties and integrate the local knowledge of farmers in order to be able to identify adapted strategies for the improvement of agriculture and thus avoid soil erosion. ■ Almut Brunner

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Water sector reform in Ghana and South Africa

Around the world, water sectors are currently being restructured and adjusted to changing requirements. In this situation, new management concepts have evolved. Today, by international consensus, "Integrated Water Resources Management" (IWRM) is considered as the most promising approach. It aims at assuring an efficient, equitable and environmentally sustainable supply of water in a cross-sector perspective. IWRM places novel demands on policy-makers, operators and water-users. Integrated planning of

water resources should combine socio-economic, environmental and technical aspects into a unified decision-making framework. The development of new institutions and organisations is at the hub of the reforms. Ghana and South Africa are two examples of African countries that have been engaged in water sector reform processes since the early 1990s and have tried to incorporate IWRM principles. They have, however, followed different approaches.

The case of Ghana

In Ghana, water sector reforms and the introduction of IWRM were strongly influenced by international donor organisations at all stages. A new organisation, the "Water Resources Commission" (WRC), was established by the Water Resources Commission Act 552, 1996, as a driving force behind the reform process. The Commission comprises 14 members representing the majority of organisations that deal with water resources. Its complex mandate includes co-ordinating all activities in the water sector, including negotiations concerning the management of transboundary waters, imposing raw water charges on all major abstractors of water and implementing IWRM pilot projects in selected river basins. Yet a number of constraints limit the organisation's attainments. It is substantially under-resourced in terms of staff and logistics. Besides, the WRC has little power to enforce its regulations. At government level there has been little support for the WRC and for long-term strategies such as the implementation of IWRM. Rather, there is an emphasis on visible short-term civil works projects. Another problem is the institutional straightjacket that Act 552 has proven to be in



Access to water is essential for a fair water distribution.

terms of the Commission's membership. The national agency for facilitating drinking water supply projects in rural areas, which has become the major implementing actor in the water sector over the last 5 years, is not represented in the WRC, which considerably limits its capacity for co-ordination. Moreover, the WRC is struggling with a lack of data necessary for sufficient planning, since IWRM implies that assessing and monitoring the various competing uses of water is an instrument for effective planning. In this respect, the GLOWA Volta Project of ZEF and other foreign supporters are trying to reduce the data gaps.

The case of South Africa

In South Africa, the end of Apartheid in the early 1990s facilitated the introduction of reform processes in the water sector. The poor water supply of the rural population and skewed access to water urgently required adjustments. Two new laws, the Water Service Act of 1997 and the National Water Act of 1998, provided the basis for institutional and organisational change. The laws established the right to water supply and sanitation for every South African and authorised the transformation of water rights from owner to user rights. They also stress the need for IWRM. Implementation strategies for the new water policy include the restructuring of water management organisations, the devolution of water management responsibilities to catchment management agencies (CMA) and communities (for domestic water and sanitation) and the privatisation of services where possible. In order to achieve rapid improvements, the government initiated a number of interrelated programmes. The programmes aim to respond

to immediate demand, including the provision of infrastructure and a response to poor households' failure to pay for basic water supplies (free basic water policy), as well as capacity building initiatives. Throughout, the reform process was strongly supported by political leaders, and remarkable success was achieved in the supply of domestic water. Yet drawbacks, particularly in terms of building new management organisations, were faced. Above all, the setting up of CMAs and the transfer of responsibilities from

the well-established "National Department of Water Affairs" has been delayed substantially. Other constraints arose primarily as a result of lack of capacity and co-ordination, as well as from high costs for pilot projects.

Lessons learnt

The comparison of water sector reform processes in Ghana and South Africa points to a number of issues that appear to be crucial to success. In both countries, the reforms were introduced with new acts and policies related to water management. Whereas in Ghana the responsibility to co-ordinate water management was handed over to a newly established organisation, in South Africa a devolution process has started that transfers responsibilities to existing and new organisations. The establishment of new organisations seems to be a difficult, resource-consuming endeavour in both countries. To some extent, political will has turned South Africa into a success story of water supply. The flexible and adequate introduction of programmes has contributed to these achievements. Yet, like in Ghana, lack of co-ordination and the underestimation of resource requirements limit the achievements. In Ghana, where the reform process has been donor-driven with little domestic political support, problems of acceptance can be observed. The focus on IWRM in both countries has broadened the perception of policy-makers, practitioners and scientists, but the new concept's complexity and the lack of related experience are an enormous challenge to implementing countries. ■

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Both authors are Senior Researchers at ZEF.

Viewpoint

Interview with Eric Craswell on the Global Water System Project (GWSP)



The Global Water System Project (GWSP) is a newly established joint project of the international program of biodiversity science DIVERSITAS, the International Geosphere-Biosphere Program, the International Human Dimensions Program, and the World Climate Research Program, which together form the Earth System Science Partnership (ESSP).

The international project office of the GWSP is hosted by ZEF with support from the German Federal Ministry of Education and Research (BMBF) and the Government of the Land of North Rhine-Westphalia.

What is the main concept behind the GWSP project?

Water is essential to life on earth. It plays a key role in the development and functioning of society and is recognised as a high priority resource for sustainable development.

Over the past few decades, environmental science has produced insights into the linkages, interconnections and interdependencies in the global water cycle. Consequently our project is based on the concept that the various human and physical, biochemical, and biological facets of the cycle make up the global water system.

The goal of the GWSP is to address the overarching scientific question of how human actions change the global water system and what the environmental and socio-economic feedbacks are that arise from the anthropogenic changes in the global water system. The agenda for the GWSP will incorporate impact studies on water governance, land cover change, major diversions, climate change and nutrient and sediment flows. Linkages at different scales and the legacy of past human impacts will also be included, as well as the resilience of the water system and its adaptation to change. For example, researchers will undertake a comprehensive study to compare the requirements of human society with that of aquatic ecosystems and the ecosystem services provided by freshwater.

Water has become an important global issue and many projects now deal with water use and management questions. In

what respect does GWSP differ from other projects?

The niche of the GWSP can be defined as a combination of several components. We focus on global environmental change, human dimensions and a global perspective while drawing from regional case studies. Hereby our research is integrative and interdisciplinary, with past, present and future time domains. Another point is that the project is science-driven, but we have policy-relevant objectives. And we focus on freshwater rather than marine systems.

One of our early activities will be to develop an information system about the global water system. We want to accomplish this by assembling and synthesising databases from a wide range of sources, especially the established core projects of the ESSP programmes.

Who are your project partners and on which specific issues do you co-operate?

The IPO in Bonn is utilised as a platform for international collaboration. We are expecting to develop cooperation on information and database exchange, modelling, development of indicators, training of developing country scientists, and development of a dialogue between natural and social sciences. We are collaborating with GLOWA and other partners to organize an international conference in Bonn in February 2005. The conference will provide an opportunity to review the state of the art of integrated water resources management from a North-South perspective and define plans for future collaboration

Which are your main target groups?

Our target groups in the first instance are scientists and members of the public who seek knowledge about the global water system. We intend to prepare white papers on important topics, and to distribute these to key policy-makers to give them access to the latest scientific thinking about global environmental change and the global water system.

What is the benefit of co-operating with a research centre like ZEF?

We see many benefits. As a centre for development research with a strong ecologi-

cal and natural resources focus, ZEF is already strongly committed to research on water. The GLOWA Volta project and the Uzbekistan activities of ZEF are directly relevant to the GWSP, and the interdisciplinary approach of ZEF fits in well with the ESSP philosophy that drives the GWSP. Thus the intellectual atmosphere at ZEF, combined with the strong PhD programme, provides an excellent environment for the IPO of the GWSP. Another benefit of being in Bonn is the opportunity to link closely with the UNU Institute on Environment and Human Security and other UN agencies in the environmental field.

GWSP recently initiated a 'Virtual Water Project' that deals, among others, with the potentials of virtual water trade. Could you elaborate on the aims and development of the project?

The 'Virtual Water Project' was the first pilot project of the GWSP and concerns the water resources required to produce agricultural commodities that form part of the international trading system. When the grain is harvested, that virtual water is exported by the producing country and is imported by another. This saves having to use its own water resources to feed its people. Conducted at the UNESCO Institute for Water Education in Delft, the project was designed to synthesise available data and information on virtual water and its values and to support method development and provide alternative global water balances with a focus on virtual water fluxes under a range of global change scenarios. The results show the strong dependence of some countries and regions on virtual water. Considering that regions such as the Middle East are major importers of virtual water, scarcity is the driver in 15-25 percent of virtual water trade. Thus, virtual water trade illustrates the global perspective of water in the Earth System, as defined in the GWSP. ■ Eric Craswell is Executive Officer of the Global Water System Project (GWSP).

The interview was conducted by Charlotte van der Schaaf of ZEF.

Regional integration and labour mobility in Burkina Faso and Côte d'Ivoire

The West African Economic and Monetary Union (WAEMU) seeks to change the weak intra-regional trade and the strong disparities between countries. Intra-African migration flows are one of the best arguments for regional integration. While exports of goods from Burkina Faso to Côte d'Ivoire represent only 0.07 percentage points of the total exports in 1996, migrants from Burkina Faso represent the majority of foreigners living in Côte d'Ivoire (56 percent of the foreign population in 1998). The outputs of the current research project constitute a very comprehensive and detailed empirical analysis of changes in labour mobility inside WAEMU. Also, a new database on skilled migration and brain drain in the union countries is being constructed for the study of macroeconomic convergence.

At micro level, results show that special attention should be placed on seasonal migration, since seasonal migrants do not cause labour shortage. Under the conditions of free movement of rural labour, an increased expected income of a magnitude of 10 percent of the Sahelian average income would induce an increase of 6.3 percentage points in seasonal migration. However, an increase in the level of mistrust by 10 percent among households in delegating the security of their livestock would decrease the probability of migration by 3.2 percentage points. At the same



Migration can be beneficial for local labour markets in West Africa.

time, migrant households are able to meet their basic consumption needs, which in the local context is subject to high uncertainty. The latter is shown in the results in the following way: Important income instability in the preceding period enhances the practice of seasonal migration. The capacity of migration to generate and efficiently allocate remittances toward technological adoption for food security is also interesting. However, the study warns about the huge return migration flows that follow the current Ivorian political crisis and the potential losses coming from brain drain at macroeconomic level. In partic-

ular, Burkina Faso showed a severe brain drain to Côte d'Ivoire compared to other similar Sahelian countries. However, the effect of brain gain holds only for countries with well-controlled migration outside the WAEMU and to an industrialised country. Once the migration effects are included, the regional annual convergence speed is enhanced by 0.85 percentage points.

From the detailed and comprehensive assessment, it becomes evident that the migration phenomenon is complex but represents a desirable activity in the context of missing credit and insurance markets, high agroclimatic risks and a low level of human capital. The study recommended promoting the free movement of people while identifying alternative destinations for future migrations. Policy-makers should develop a local labour market that allows households to hire shepherd services under secured conditions, the latter being a condition for the participation of pastoralists groups in the income diversification strategy of migration. To make brain circulation a beneficial activity, more effort should also be made in co-ordinating sending and receiving country policies to reach an optimal skilled migration level that is favourable to human capital formation in the poorer sending zones. ■ Adama Konseiga

The author wrote his PhD thesis at ZEF.

At a glance

■■■ Noha El-Mikawy delivered a statement in a closed G8 ministerial meeting in New York on September 9 2004, outlining the priorities for reform in the Arab region from the point of view of Arab civil society. The statement pressed the need for a mechanism of partnership between civil society, the private sector and Arab and international governments in order to measure, monitor and evaluate progress towards reform. In preparation for that statement, El-Mikawy met with representatives of civil society from 12 Arab countries in Beirut, Lebanon in September, which was organized by the Economic Research Forum, the Lebanese Transparency Association and the UNDP regional office.

■■■ Prof. Hans-Dieter Evers participated in a conference on "Regional Development and Poverty Alleviation" in Indonesia in August

2004. This conference was organised by the Indonesian National Department of Development Planning (BAPPENAS), the World Bank, GTZ and DFID. The conference participants debated the impact of decentralisation measures on poverty programs and methods to measure poverty under local conditions.

■■■ In co-operation with the Technical University of Berlin's Institute of Ecology, ZEF has started a two-year project on biological sources of polycyclic aromatic hydrocarbon (PAH) contents in tropical soils. PAH's, such as naphthalene, are important pollutants, and termites are thought to be a major source. The project is to be carried out with "Embrapa Amazônia Ocidental", in Manaus, Brazil. It will be funded by Deutsche Forschungsgemeinschaft (DFG-German Research Foundation).

Facts & news

■■■ ZEF is to start its new "Public Lectures" series in October 2004. This term's overall theme will be diversity. The lecturers are high-ranking experts from the academic and political scene. The Lectures will be held in English and take place once a month. You'll find up-to-date information about the Lectures on our homepage: www.zef.de. (Contact: Rolf Sommer, rolf_sommer@uni-bonn.de)

■■■ ZEF has also started a series called "Silk Road Lectures" on issues of development, security, and state formation in Asia. The aim of this lecture series is to provide insights into the political, economic and social changes in Central Asia, Caucasus, Afghanistan, Pakistan, Iran and the surrounding countries. (Contact: Conrad Schetter, c.schetter@uni-bonn.de)

The media and development policy

With the increased importance of governance issues in the 90s, the role of media in development policy has received more attention. The UNDP's Human Development Report 2001 refers to information and communication technologies (ICT) as 'the key to reducing global poverty'. The World Bank endorsed the growing importance of the media in the development process in its World Development Report 2002. In a special report called "The Right to Tell – The Role of Mass Media in Economic Development", the President of the World Bank, James Wolfensohn, emphasised that freedom of the press is "at the heart of just development". In its latest publication, Donor ICT Strategies Matrix, the OECD underlined the enormous potential of ICT for promoting political and socio-economic development, as well as for achieving the UN Millennium Development Goals. At the UN's World Information Summit in Geneva in December 2003, the issue of information became the focus of world-wide public attention. In its Action Program 2015, the German Federal Government assigned the media an important function in their efforts to halve global poverty.

In a democratic system, free media play a key role in covering, justifying, and criticising politics. This is not possible without a sophisticated media system. That is why ZEF saw a central role of Media Development Cooperation (MDC) in implementing 'good governance'. Therefore, together with researchers from the University of Bochum and journalists from "Deutsche Welle", it founded a working group on MDC. According to this working group, the well-functioning of MDC depends on the following factors:

- the design of media policy and the framework available to the media to carry out their functions,
- the material design of the media landscape and people's opportunities to have access to the media,
- the level of initial training and the working conditions of those involved in the media and
- people's opportunities for receiving and participating in media.



Experts discussing perspectives of German media development policy in Bonn, October 2004.

The authors therefore propose the following principles and measures in order to achieve long-term and sustainable media development co-operation:

- The guiding principle of MDC is the claim that media are to be independent of economic and political interests and influences. MDC should aim at providing media with material support corresponding to the respective social needs and economic conditions of the partner country.
- MDC has to offer opportunities to participate for all parts of the population (in partic-

ular for those who have been disadvantaged to date). Media competence and cultural diversity are the general aims of MDC and are to contribute to creating and securing humane living standards.

- Media, media organisations and media structures should be supported in their role of generating social dialogue and endorsing cultural identity. In addition to the initial and further training of journalists, this should also include the provision and transfer of knowledge for selecting and working with suitable technology as well as for managing people and organisations.

- Journalists should be trained more intensively to make a more substantial and deliberate contribution to developing peace, as well as to preventing conflict and crises (as a measure of sensitisation and preparedness for reporting before, during and after conflicts).

- The provision of public access to the Internet should also be promoted, particularly in poorer areas. Websites of local relevance should be made accessible to a mass audience via traditional media. In addition, alternative approaches to integrating the Internet into traditional mass media should be tested and encouraged.

- In view of global media concentration, capacities for establishing, maintaining and strengthening the local production of programs should be supported (including regional pooling and networks for program exchange).

- In the media work carried out by political foundations, there is a need for a more coherent and co-operative approach to development policy for MDC, which incorporates both the different national implementing organisations and foundations as well as media companies and international players. ■

Hartmut Ihne

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The members of the working group were: Sigrun Abels, Annette Massmann, Barbara Thomaß (all of the University of Bochum), Helmut Osang (Deutsche Welle Academy) and Hartmut Ihne (ZEF). The results of their work were presented in a paper: 'Media Development Cooperation – a central function of co-operation'.

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