



Editorial

September 11 and the war in Afghanistan have transformed some aspects of international relations. Existing governments and states have gained credibility independently of their relations to basic Western values. Many anti-governmental forces that use violence as a strategic means have lost legitimacy and external support. For development research, the cascade of events has important implications. It brings to the forefront that some of the main obstacles to overcome on the path to sustainable development are of a political nature: the emergence of "failed states" that harbor terrorist organisations and do not respond to conventional diplomatic and military pressures; the grievances that American (and in part EU) post Cold-War politics has produced in large parts of the world, especially in the Middle East; more generally, the disenchantment with "Western" development and state models that has become widespread among the educated elites who no longer have guaranteed employment in the shrinking government apparatus. Islam is not the cause of these developments, it merely provides a language to express these grievances in some parts of the world. Rather than seeing terrorism as a consequence of poverty, such as World Bank officials did in the aftermath of the terrorist attacks, or as an expression of Islam's inherent tendency towards radicalism, terrorism results from failed political developments. Addressing these issues is a major task both for development policy and research.

Prof. Dr. Andreas Wimmer

Afghanistan's Economy of Violence

Conrad Schetter



The terrorist attacks of September 11, 2001 brought Afghanistan to the forefront of public attention – a country engulfed in a 23-year-old war, and one of the poorest and most devastated places in the world. Nonetheless some branches of the otherwise idle economy prospered in recent years. They support what can be designated as economy of violence. These sectors have profited from the erosion of state structures and have followed the rules of market economy. The following research emerged from the ZEF project *Afghanistan – Ethnicization of a Conflict*.

Erosion of central authority

One of the most significant consequences of the Afghan War, which broke out in 1979, was the gradual dissolving of power of the central authority. Already in the early years of the war the central Afghan army proved to be inefficient, so that the communist government had to rely increasingly on various splinter militia groups which were paid with Soviet financi-

al assistance. Their opponents, the *Mujahidin*, consisted of small warring factions as well, which were financed by the United States and Saudi Arabia. When Russia stopped its financial assistance for the central authority in 1992, the militias were no longer paid. As a result, the militias changed sides and joined the *Mujahidin* to topple the government.

Afghanistan then fragmented into numerous mini-fiefdoms. *Warlords*, often in control of not much more than a single village or valley, offered guarantees. In return they levied taxes on the local people and travelers. These local and regional *warlords* had entirely replaced the central authority.

The Taliban, who appeared in Afghanistan in 1994, managed to take control of over 90 percent of the country within just a few years. However, they did not crush the militias but incorporated them into their own ranks. That is the reason why the military structure of the Taliban resembled a militia more than a regular army. As the Taliban lacked a modern notion of the state, they did not subordinate their military power to the state. The Taliban conceived state institutions only as an instrument to help stabilize clientelist networks through awarding of offices, rather than as an institution with the monopoly on the use of force.

Afghanistan's economy of violence has an international dimension as well. Even prior to the appearance of the Taliban, militant Muslims from all over the world were

fighting against the communists in Afghanistan. Under Taliban rule Afghanistan evolved into an operational base for Muslim combatants who fought in the trouble spots of Kashmir, Caucasus and Central Asia. Apart from the Islamic-fundamentalist beliefs the Taliban shared with them, the practical advantages of this cooperation should not be overlooked: The international Muslim groups brought financial assets into the country and supported the Taliban in their struggle against the Northern Alliance. In return, due to the fact that there was no central authority committed to the international community of states, Afghanistan could offer military training camps and a "safe haven".

The expansion of opium cultivation

Before the war started in 1979, Afghans relied basically on subsistence farming. More than 80 percent of the population were directly dependent on agriculture. As an immediate consequence of the war, large areas of farmland and irrigation systems were destroyed or became unusable because of mines. Faced with a decline, farmers turned to the cultivation of poppy seeds and the production of heroin. Poppy is an undemanding plant, enabling farmers to earn roughly eight times as much as with food crops. Towards the end of the 1990s, Afghanistan had 75 percent of the world market share, making it the leading producer of heroin. About 20 percent of the revenues from the heroin trade went to the Taliban. Only late in 2001 did the Taliban restrict poppy cultivation in exchange for UN aid.

Smuggling

Under Taliban rule, Afghanistan developed into a transit country for intense smuggling between Iran, the CIS States, Pakistan and within the free trade area of Dubai. This illegal trade was possible only because the Taliban controlled vast sec-

Afghanistan: Country without a State

The incidents of September 2001 prompt the question as to how social and political circumstances could develop in Afghanistan in such a way that they are diametrically opposed to any norms and values of a modern state and a civil society. Afghanistan appears to be a prototype of a failed state. The authors of this book give answers as to which causes, processes,

dynamics and repercussions the alleged absence of state has on the situation in Afghanistan. Topics such as humanitarian aid, the situation of women, the war economy and regional developments as well as the notion of the state by the Taliban and the Northern Alliance form the core of this publication.

Christine Noelle-Karimi, Conrad Schetter & Reinhard Schlagintweit (eds.): Afghanistan: Country without a State? IKO-Verlag, Frankfurt am Main, 2001, 260 pp. ISBN 3-88939-628-3.

tions of Afghanistan. The Taliban offered guarantees to the smugglers for their transit and collected dues of six percent. In 1997 alone they earned about 2.1 US \$ billion. The array of products ranged from crude oil from Iran, high-tech products from Dubai to weapons and car parts from the CIS and stolen cars from Pakistan.

Consequences

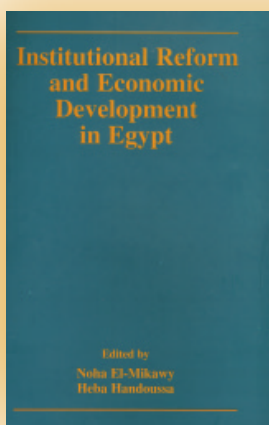
The Afghan economy of violence rested upon illegal trade and the provision of security. Apart from heroin, consumer goods were not produced in the country itself. The Taliban created the basic structures of the economy of violence and were its beneficiaries. The profits trickled away into private pockets and were also needed to finance the war against the Northern Alliance. But the money was neither used for the reconstruction of the country nor in order to secure the basic needs of the Afghan people. The Taliban were also eager to delegate tasks in areas such as schooling, health and infrastructure (roads and sewage systems) to non-governmental organizations and foreign donors. As a consequence of the Taliban's

general policy social disparities became even more pronounced, as only a few merchants and feudal land-owners made large profits, whereas more than five million Afghans lived below the poverty level.

The complete erosion of state authority in Afghanistan left a vacuum, where illegal business such as smuggling and the production of heroin boomed and where militant Muslims found refuge. The international network of militant Muslims operating from Afghanistan threatens not only the region but the entire world. The situation in Afghanistan highlights the failure of our entire global system of states to safeguard adherence to international treaties, a failure that jeopardizes the preservation of world peace.



Conrad Schetter is a member of the research group 'Ethnic Conflicts and State-Building' at ZEF. The German Federal Foreign Office has appointed him as a member of the task force 'Future Perspectives of Afghanistan'.



Handoussa, H.; El-Mikawy, N. (2001): Institutional Reform and Economic Development in Egypt. Publisher: Center for Development Research and the Economic Research Forum in Egypt, 195 pages

This new publication tackles the issue of institutional change and economic performance in Egypt in the 90s. The first part of the book

highlights the political institutional environment of economic law-making. The second part focuses on the administrative environment which affects performance and transaction costs of investment and exports. The measurement of institutional capacity is based on opinion surveys of businessmen, policymakers and parliamentarians as well as on long-term trends of state revenues

and expenditures. The authors have assembled an impressive array of data to demonstrate conclusively that political and economic reform need to proceed in tandem, with special attention given to the institutional environment of Egypt's two reform objectives: investment and export promotion.

What does ICT Bring to Chinese Farmers?

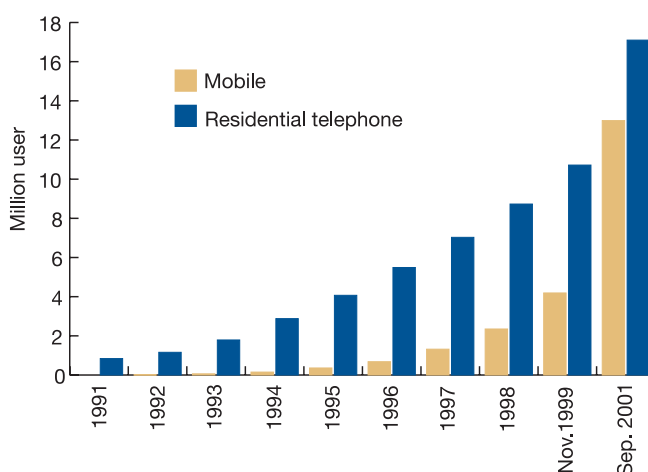
Wensheng Wang

ZEF examined the determinants of access to ICT for farm households and what this means in terms of income growth.

In the context of a rapidly changing political, economic, and social environment, China's telecommunication sector has been growing at annual rates of between 30 and 50 percentage points for the past ten years (see figure). Information and communication technology (ICT) experts generally believe that ICT fosters economic growth and improves human welfare. Hence, there is little doubt that ICT will bring tremendous opportunities to China. However, it is less evident what social and economic impact ICT has on rural China, specifically on farm households. As half of the Chinese are working as farmers, this question is of tremendous importance.

Against this background, ZEF conducted an empirical study of the impact of ICT on farm households in three select provinces in China. The study focused on two questions: (1) what are the determinants of access to ICT for farm households and (2) what is the impact of ICT on farm households in terms of income growth? The results of the analysis show that the demand for ICT above all depends on the socio-economic characteristics of farm households, such as income, educational level, and sideline business types. Furthermore, there is a positive relationship between the adoption of ICT and the annual income of a farm household.

Telecommunication development in China



Despite the low level of ICT application – China's national telephone-density rate and its Internet-user rate still remain low with 23 percent and two percent respectively in 2001 – accumulated evidence shows that ICT can benefit farm households in several ways: by enhancing productivity, improving education and health-care facilities, providing more reliable means of moni-

toring environmental disaster, and by promoting greater social participation and extending markets. An example of the latter is a group of vegetable farmers in Shandong province, who have created their own website to extend their production market world-wide.

Acknowledging the potential positive impact of ICT for farmers, one has to be aware that ICT does not offer a panacea for rural development in general. Three essentials should be considered as social prerequisites of rural development when policy makers seek to secure benefits from ICT application to the rural areas. These are (1) investing in human capital formation, (2) providing the necessary physical infrastructure and (3) formulating integrated development policies. It is obvious that without reliable power lines or passable roads, farm households could hardly be expected to improve their living status with the help of ICT alone.

Overall, the study conducted by ZEF suggests that ICT presents a historic opportunity for the development of rural China, specifically for the enhancement of the Chinese farm household. To fully size this opportunity, all policies are helpful which enable the rural population to get better access to ICT, e.g. investing in human capital, social networks and the physical infrastructure.



Dr. Wensheng Wang completed his doctorate in the Department of Economics and Technological Change at ZEF in December 2001.

facts and news

Dr. Eric Craswell has started a twelve-month assignment as guest fellow with ZEF. He is going to study the balance and flow of nutrients within and between developed and developing countries. With a doctorate in soil fertility from the University of Queensland and post-doctoral experience in Reading, he has worked in international agricultural research for 25 years, including appointments at IFDC in Alabama, IIRI in Los Banos, ACIAR in Canberra, IAEA in Vienna, FAO in Rome and as Director General of IBSRAM in Bangkok.



Within the framework of the International Conference on Freshwater held in Bonn on 3 - 7 December 2001 ZEF conducted a side event on *Research Insights and Challenges for Sustainable, Efficient, and Fair Water*

Use. Various researchers at ZEF presented new insights into issues currently discussed internationally, such as integrated approaches for modeling river basins (GLOWA-Volta), aspects of international water law and institutional research in river basin management and problems of drinking water supply for the poor.



Prof. Ramón Lopez has received the prestigious Alexander von Humboldt Award. Lopez, a well-known resource economist at the University of Maryland, is a senior fellow at ZEF and a lecturer in the Doctoral Studies Program. He is involved in various environmental economics research projects at ZEF.



The European Development Research Network (EUDN) established its secretariat at ZEF in September 2000. It

has launched its new home-page at www.eudn.org. EUDN is the European hub of the Global Development Network (GDN).



In collaboration with its Brazilian partners, ZEF organised a workshop to plan and coordinate forthcoming research activities for the SHIFT (Studies on Human Impact on Forest and Floodplains in the Tropics) project on "Small-Scale Farmers in the Amazon: Interactions between Ecosystem and Socio-Economic System in the Management of Tropical Forests". The project is funded by the German Federal Ministry of Education and Research (BMBF) for a period of three years. The workshop took place in Belém, Brazil, 18 - 21 December 2001.



Integrating economy, hydrology, and institutional analysis for water management

Nick van de Giesen, Thomas Berger, Claudia Ringler, Barnabas Amisigo, Maria Iskandarani, Patrick Obeng-Asiedu, Annette van Edig

The classic domain of economists is to distribute limited resources such that returns to society are optimal. In the case of water resources, however, we face particular hydrological and institutional constraints on how water can be distributed and used. Water cannot easily be moved upstream. Therefore its natural availability and distribution over space has to be accounted for. Furthermore, in developing countries, many existing technologies for water use in households and agriculture are not feasible given the present state of institutions. To account for these constraints, ZEF economists, hydrologists and institutional analysts have recently started to build an integrated water optimization model for the

GLOWA Volta Project in West Africa (see ZEF News Nos. 2 & 7).

The core of the model is formed by a standard economic optimisation routine that maximizes returns on water under a given set of constraints. What is new is that the constraints can also be hydrological or institutional in nature. This work builds directly on previous work by Ringler (ZEF Discussion Paper 38). At each "node" of the river network, the amount of water available in each month is calculated. The model then decides how much water is used locally and how much can better be used downstream. Most of the decision support generated within the GLOWA Volta project concerns detecting institutional bottlenecks. Water in

the basin is mainly used for hydropower in downstream Ghana and for rapidly developing irrigation upstream. However, it is unknown what impact increased irrigation has on overall productivity of the water resources. During the first model runs, dry-season water use was optimized for the Volta Basin as a whole, and for Burkina Faso and Ghana separately, thus mimicking the possible effect of international agreements. The runs showed that current water use for irrigation in upstream Burkina Faso would not change under an optimal distribution at basin level.

Given present data uncertainties, this information should not yet be passed on as sound policy advice. Nevertheless, it illustrates the type of decision support to be expected from a mature model. Further, the preliminary but integrated model helps scientists from different disciplines to focus their research towards better interdisciplinary understanding. Accommodating several disciplines under one roof, the ZEF environment is conducive to this approach. This environment helps prevent integra-

Doctoral Studies Program

Scholars from the Robert Bosch Foundation in the International Doctoral Program



The International Doctoral Program for Development Studies has currently 100 doctoral students from more than 35 countries. Around 20 of the participants are from the EU, – 17 of them from Germany. For German students who want to pursue a doctoral degree in Agriculture or Forestry Science at ZEF, the Robert Bosch Foundation offers special scholarships. The target group are young German scientist interested in an international professional career in development organizations or research institutions like the Consultative Group for International Agriculture Research (CGIAR). The grants from the Robert Bosch Foundation cover stipends for a period of up to three years

and a financial support of the students' field research. Currently, Karin-Astrid Siegmann and Frank Mussgnug are scholars of the Robert Bosch Foundation. Siegmann, an economist, conducts her doctoral research on "Gender employment and equity – effects of foreign direct investment (FDI) on rural Indonesia". This research project aims

to explore the effects of FDI on gender-differentiated employment and distributional effects within the context of rural Indonesia.

In his doctoral research, Mussgnug, best student of the year 2000 at the Faculty of Agriculture and Horticulture in Berlin, analyses the crop yields and soil fertility in farmers' fields and in long-term experiments on degraded soil in the Red River Delta in Vietnam, near Hanoi. This region is one of the most densely populated rural areas in the world, with highly intensive crop production systems of three to four crops per year. Generally, external inputs and crop yields are high in the Red River Delta. However, the positive effects of external inputs are less certain on degraded soils due to

constraints such as multiple nutrient deficiencies. The goal is to understand the critical soil, plant and nutrient processes in specific cropping systems on these degraded soils in the Red River Delta, and to develop optimum nutrient management practices.

A successful application for a scholarship from the Robert Bosch Foundation requires an excellent master or diploma degree preferably in agriculture or forestry, and excellent proficiency in English. The applicant must have German citizenship and should be younger than 32. The application in English must include: a letter of application, an abstract of the master or diploma thesis, the plan of proposed research, two letters of recommendation, a recent photograph, a curriculum vitae and certified copies of all relevant certificates.

The deadline for applications for the doctoral program and scholarships are: May 31, yearly, for EU citizens and scholarships of the Robert Bosch Foundation, and September 30, yearly, for non-EU citizens and DAAD scholarships (available only for applicants from developing countries).

Information can be obtained from Dr. Günther Manske (E-mail: docp.zef@uni-bonn.de) and from the ZEF homepage (<http://www.zef.de>).

tion taking place only at the end of the project when full-fledged economic, hydrological and institutional models can only be linked superficially; a well-known dilemma in many "classical" multi-disciplinary research projects.



Dr. Nick van de Giesen is a senior scientist at ZEF. Dr. Thomas Berger is a research fellow at ZEF. Dr. Claudia Ringler is a postdoctoral fellow at the International Food Policy Research Institute in Washington, D.C. Dr. Maria Iskandarani and Dr. Annette van Edig are research fellows at ZEF. Barnabas Amisigo is a WRI scientist and Ph.D. student at ZEF. Patrick Obeng-Asiedu is a Ph.D. student at ZEF and ISSER.

new books
new books
new books
new books

Webb, Patrick and Katinka Weinberger (Eds.), 2001, Women Farmers: Enhancing Rights, Recognition and Productivity. Development Economics and Policy Vol. 23, New York, Frankfurt: Peter Lang.

A recent publication on gender and development explores whether 25 years of increasingly 'gendered' development interventions have made a difference to rural women, and what lessons can be learned. With 15 contributions covering case studies from Asia, Africa and Central Europe, the book shows that women do not automatically benefit from development interventions, even if explicitly singled out, and that gains for women in one area of their life can entail losses in another. Successes can certainly be found, but greater attention to rights, not just the rhetoric of 'mainstreaming', is needed in the future.

Virchow, D.; von Braun, J.(eds), 2001: Villages in the Future. Crops, Jobs and Livelihood. Berlin, Springer-Verlag, p. 410 + CD

Life in rural communities is bound to change with historically unprecedented speed in the coming decades. How will this change be guided by local, national and global policies in order to enhance the livelihoods of rural inhabitants and to overcome the growing division of rural and urban areas? The overall message is unanimous: there is a promising future for the rural areas worldwide if adequate policies can be enforced and more efficient and fair institutions can be created.

Strategies of the Poor for Securing Water Needs in Jordan

Maria Iskandarani

Household water insecurity is a pressing problem in most developing countries. It has many different facets concerning water availability, access to water, and its usage.

Together with partners at the University of Jordan, ZEF conducted a study looking at the economics of household water security in Jordan. A comprehensive household survey helped to gain insights into household strategies in dealing with (institutional) supply constraints, in particular through diversifying drinking water sources and the households' willingness to pay for supply reliability.

Diverse sources of drinking water

Public piped water is the main source of water used by Jordanian households. But due to deficits in infrastructure and water availability, domestic water supply is rationed through intermittent supply, particularly in the summer season. Since households only receive water for a few hours once or twice a week, people are compelled to invest in storage tanks and buy additional water from private vendors at high prices in order to satisfy their water needs and improve supply reliability. As the government has failed to respond to rapidly chan-

ging water demands and seasonal water availability, a spontaneous local (informal) water market has developed. Individually operating water vendors buy water from farmers owning wells and transport the vital resource with large tanker trucks over many kilometers to the capital Amman and other urban areas and then resell the water to individual households at a comparatively high price.

A survey of low-income households in eastern Amman showed that around one third of the households purchase water from the private market at a price which is ten times higher than the piped water price. In the northern rural areas, around 20 percent of the interviewed households complement their water needs through rainwater harvesting, a technique which is gaining new importance, especially in the highlands of Jordan. Interviews showed that rainwater is even the preferred drinking water source, particularly for the preparation of the traditional tea. In other words, households manage to overcome water rationing through investing into facilities to store piped water during time of supply, by purchasing water from the informal market and/or by collecting rainwater or fetching springwater. Nevertheless, the total house-

hold water consumption per capita lies between 60 and 80 liters per day, depending mainly on household characteristics, storage capacity and season, and is therefore quite low. About 20-30 percent of this water is obtained from other sources than the public piped water system.

Increasing supply reliability

The strategy of poor households to store water and obtain additional water from other sources in order to secure household water involves additional costs which have to be taken into account when assessing water-related expenditures and water prices. These are the storage costs and the price difference between piped water and vendor water. The survey showed that during the summer season, on average, 30 percent of the overall water-related expenditures are costs incurred to increase the reliability of water supply. In the rural areas the share is even higher, around 50 percent. In all, poor urban households spend up to ten percent of their income on water during the summer season.

In a nutshell the study has shown that households use various strategies to overcome water insecurity, sometimes with high opportunity costs. The challenge for Jordan remains that of improving water supply infrastructure and to assert an intersectoral water reallocation by redistributing water from the agricultural sector to the domestic sector. This would benefit the domestic water consumers and would help to reach a more efficient, reliable and equitable water allocation.



Dr. Maria Iskandarani is a research fellow at ZEF.

On September 28, the Security Council took an important step forward when it unanimously adopted a mandatory resolution requiring all states to block funding and all other forms of support for terrorist acts. ZEF has interviewed Sir Marrack Goulding, a former under-secretary general for peace-keeping missions and member of ZEF's International Advisory Board.

ZEF: How do you evaluate the prospects for a greater role of the UN in the campaign against terrorism?

Goulding: The United Nations has an important role to play in strengthening the international community's capacity to defend itself against organised terrorism. Its ability to play that role will depend, as always, on whether its member states wish it to do so and are ready to provide it with the necessary resources.

On September 28, the Security Council took an important step forward when it unanimously adopted a mandatory resolution requiring all states to block funding and all other forms of support for terrorist acts and to improve international cooperation in preventing such acts. The UN Security Council has the power to give international legitimacy to military operations undertaken by states in the territory of other states in order to counter international terrorism.

The UN's peacemaking and peacekeeping services will also be available to member states if the campaign against terrorism leads to international conflict or civil war and third-party mediation is required. The UN's role will have to be clearly defined, practicable and agreed by the hostile parties. The UN, in the person of Mr Lakhdar Brahimi, is already playing a peacemaking role in Afghanistan; it is too soon to judge whether a UN peacekeeping operation will also be needed and feasible there.

Finally, the UN's humanitarian agencies are, as always, ready to do all they can to relieve the suffering of civilians caught up in conflicts resulting from the campaign against terrorism.

ZEF: According to your assessment, what are the main forces that have led to the rise of Islamic terrorism and the recent escalation?

Goulding: The underlying purpose of those who committed the criminal acts of 11 September and earlier attacks on United States targets is not entirely clear. It may, as many believe, be to reform Islam by removing influences and practices which are said to have corrupted it. Fanatical movements committed to returning Islam to the pristine purity of its early years have risen up from time to time in various parts of the Muslim world. But there are other possible motives - a desire for political power or simple hostility towards the United States.

What is clear, however, is that those who are believed to be responsible for the attacks are, whatever their real purpose, exploiting widespread and sometimes intense hostility towards the United States and other Western countries in Arab and Muslim countries.



One of the causes for hostility is the perception that Western policy on the Palestine question favours Israel and discriminates against the Palestinians. Why, it is asked, has the West not obliged Israel to stop the creation of new settlements in the occupied Palestinian territories? Why is Arafat, not Barak, held responsible for the failure of the Camp David negotiations at the end of Clinton's term of office?

A second cause is that Iraq, which was widely criticized for its seizure of Kuwait ten years ago, is now perceived as a victim of Anglo-American hostility, persecuted by ten years of punitive sanctions which have brought misery to its people. Why, it is asked, is one Middle Eastern state punished for having occupied the territory of its neighbours and for seeking to develop weapons of mass destruction, when another Middle Eastern state which remains in occupation of two of its neighbours' territory and has acquired nuclear weapons suffers no penalty at all? The aggressor of 1990 has been transformed into an Arab hero because of his defiance of the United States and the United Kingdom.

A third cause is the sense that since the end of the Cold War the United States and other Western countries have taken over the United Nations and other international institutions and are using them to promote the interests of the developed countries at the expense of the developing countries, and that the latter are being marginalized

by the process of globalization. If Western countries are to succeed in their campaign against terrorism, they will have to address these difficult issues.

ZEF: What is your opinion with regard to the current position assumed by the World Bank and other major development institutions, i.e. to reinforce development efforts on a global scale in order to tackle the "root causes" of terrorism?

Goulding: I believe that the reinforcement of development efforts, plus the opening of developed markets to goods and services from the developing countries, can be a valuable measure to address the third of the causes of anti-Western hostility mentioned in my previous answer.

ZEF: How, if at all, has September 11 changed the political environment, including the funding possibilities, for social science research, or for development research in particular?

Goulding: The events of September 11 have produced significant changes in the political environment, at least in the short term. Who would have predicted on September 10 that we would soon be praying for the survival of the military regime in Pakistan or that it would become politically incorrect to criticize Russian atrocities in Chechnya or that the United States would start paying off its debts to the United Nations? But I doubt whether the events will produce significant changes in the volume of funding for research in the social sciences.

ZEF: What changes in the research agenda of the social sciences do you foresee as a consequence of the war on Afghanistan?

Goulding: There will probably be a greater focus on the fields of international relations and conflict resolution, and the research will be more policy-oriented. Questions of particular interest are likely to be: what can the West do to help poor countries avoid becoming 'failed states'? is there a need for a new form of trusteeship to help such states rebuild their institutions and resume their place in the community of nations? how can the international community persuade states not to harbour terrorist organisations? how can the West avoid creating the resentments and grievances which enable terrorist organizations to recruit their operatives?



Does Globalization Provoke or Pacify?

Testing the Effects of Trade and FDI in New Models of Civil Violence, 1989 – 2000.

Indra de Soysa

Recent studies on conflict by the World Bank find strong empirical support for models identifying greed rather than grievance to be the most potent predictor of civil war. These studies show that the share of primary commodity exports to total exports is strongly related to civil war. These results, however, have alternative explanations.

The study conducted at ZEF evaluates the competing propositions focusing particularly on the question of primary commodity exports signifying vulnerability to global capitalist markets. Recently, anti-globalization forces have blamed violence on the deepening of exploitation by powerful corporate interests. Even supporters of globalization, such as economist Dani Rodrik, ask if globalization has 'gone too far', while

UN agencies, such as the United Nations Development Program (UNDP), question whether globalization has a 'human face', and the United Nations Research Institute for Social Development (UNRISD) sees globalization as a cause of 'social disarray'.

Using the World Bank's models as a backdrop, the study at ZEF finds that openness to trade has a substantially large negative impact on civil war, contrary to pessimistic voices on globalization. Neither does it confirm that control by Multinational Corporations (MNC) has a fostering effect on civil conflicts.

The results suggest that there is no systematic relationship between the structure of the global system and greed-driven conflict, results that are supportive of a spate

of recent empirical studies on globalization and human rights. Among alternative explanations considered, there is no support for arguments about natural resource scarcity as a cause of conflict, nor for civilizational explanations. Countries with larger proportions of both Christians and Muslims are significantly safer. But the greater the degree of ethnic and religious homogeneity within both Islamic and Catholic countries the greater the risk of conflict. It seems that theories that have painted Islam to be militaristic have ignored a large number of largely Catholic countries in Africa and Latin America, which have been prone to chronic instability. This suggests that it is institutional factors rather than cultural clashes that cause conflict. Alternative measures of resource wealth yield ample evidence for the greed-based explanations of violent civil conflict. However, globalization already seems to have a rather 'human face', given that trade and investment also boost economic wellbeing, a strong predictor of peace.



Dr. Indra de Soysa is a research fellow at ZEF and conducts research on globalization, conflict and resources.

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ZEF Discussion Papers on Development Policy

No. 40 - Renate Schubert, Simon Dietz: Environmental Kuznets Curve, Biodiversity and Sustainability Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2001.

No. 41 - Stefanie Kirchhoff, Ana Maria Ibañez: Displacement due to Violence in Colombia: Determinants and Consequences at the Household Level Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2001.

No. 42 - Francis Matambalya, Susanna Wolf: The Role of ICT for the Performance of SMEs in East Africa – Empirical Evidence from Kenya and Tanzania Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2001.

No. 43 - Oded Stark, Ita Falk: Dynasties and Destiny: On the Roles of Altruism and Impatience in the Evolution of Consumption and Bequests Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2001.

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New Technologies to Replace Slash and Burn in the Eastern Amazon

Manfred Denich, Konrad Vielhauer und Bettina Hedden-Dunkhorst

More than a century ago, the first European settlers occupied the region east of the Brazilian city of Belém, close to the mouth of the Amazon river, and since then smallholder agriculture has been practised there. Traditionally, fallow periods of several years play a key role in the farming system to maintain soil productivity. Land preparation for cropping is done by slashing and burning the bush fallow. Burning is a cheap, simple and fast way to remove fallow biomass. At the same time, the remaining ash fertilizes the following crop. The great disadvantage of this type of land preparation, however, is the loss of nutrients and organic matter by volatilization during the burning.

In recent years, demographic pressure and integration in the market economy have led to an intensification of land use. This, in turn, might entail an irreversible degradation of the fallow system. Therefore, a research project aiming to adapt the fallow system to the present agricultural conditions, was set up by the University of Göttingen and Embrapa Amazônia Oriental in Belém in 1991. ZEF came in as a principal partner in 1999. The project is funded by the German Federal Ministry of Education and Research (BMBF) and the Brazilian Research Council (CNPq).

The project is based on a three-phased plan: it started with diagnostic research, which was followed by solution-oriented research including the development of technologies. The project has now reached its final phase of implementation-oriented research.

“To develop practicable methods for the conversion of the bush fallow into mulch is of fundamental importance if we want farmers to adopt fire-free land use methods. Mechanization of this process is the only option,” says Paul Vlek, director at ZEF. Hence, a tractor-propelled bush chopper was developed in cooperation with the Institute of Agricultural Engineering of the University of Göttingen. The chopper cuts and

chops the fallow vegetation and spreads the chips over the field. However, this process involves costs, which would have to be covered by higher returns. In-depth economic analyses are presently being carried out in cooperation with the University of Belém to capture farmers’ returns from activities with and without mulching, fertilization and other agronomic practices. A bio-economic whole-farm model will provide indications of the impact of alternative technologies on the income of the farm-household. Overall welfare gains will be derived when social effects related to the adoption of the new technology are quantified and results are scaled-up to a larger level.

The crucial point of any agricultural research is the adoption of the innovation by the farmers. Incentives for adoption of the fire-free land preparation systems could derive from several components. For example, mechanized land preparation is generally interesting for farmers, as they no longer have to carry out the backbreaking work of the manual slashing of the fallow vegetation. Preliminary estimates show that mechanised mulching does not cost more than the slashing of the fallow vegetation if the latter is carried out by contracted fieldworkers. Furthermore, crop varieties have been found which perform much better in mulch systems than locally known varieties. However, as ash is not available, fertilization is indispensable. But these investments pay off. It was estimated that fertilization doubles net returns of the system due to the much higher crop yields. Finally, whereas the fallow can only be burned during the dry season, the chopper can work at any time of the year. Better adjustment of planting times and scheduling of harvesting into seasons of low product supply is possible, which allows for higher returns. All the innovations can be offered to the farmer as modules, so that the system can be improved step by step, according to farmer’s needs and abilities.



Thereby, farmers can control the degree of risk they are prepared to take. In the long run, mulching not only helps to reduce nutrient losses, but also contributes to the conservation of soil organic matter, thus improving soil properties.

The introduction of mechanization requires public-private-partnerships. The project has initiated cooperation with a local mechanical engineering company that is ready to construct a model of the chopper that meets Brazilian industry norms. Furthermore, a private contractor is prepared to rent the chopper to farmers. As part of an institutional analysis the project examines what organizational set-up is most suitable to put the chopper at the farmers’ disposal.

Many farmers in the region have accompanied the project from the beginning, either as fieldworkers or as observers. It can be recognized that the close contact to the research project over several years influences farmers’ own land-use behaviour. Besides, farmers have to search for fire-free land use as legal and political initiatives that restrict the use of fire in land preparation are increasingly putting pressure on them.

Recently, farmers in the study region were observed collecting plant material to cover the extremely bare soil in pepper plantations. Perhaps such biomass transfer systems with *ex-situ* mulch production and permanent land use will dominate future land use in the region. But cutting and chopping of the vegetation on fallowed fields will certainly not lose its importance in the near future, particularly when land demand increases. This applies to the project region, but also to many other tropical rainforest areas world-wide.



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Imprint

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Center for Development Research
University of Bonn
Walter-Flex-Str. 3
D-53113 Bonn
ISSN: 1438-0951

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ZEFnews is published three times a year in English and German and can be ordered free of charge.