Fragility – a huge challenge

Photo: J. Boethling

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## Dear Reader,

Government failure represents a major challenge for development co-operation. Today, this is also, and perhaps all the more, the case given that the international community has to increasingly call the achievement of the Millennium Development Goals into question. Analyses clearly show how closely fragile statehood and development are interwoven. Wherever the state is unable to establish a working legal system, fundamental rights such as the right to food or access to natural resources will be difficult to realise. Wherever basic social services are lacking, it will be difficult to improve the health condition of children and women. It is certainly not by mere coincidence that around a third of the children that do not live to reach the age of five years should be found in fragile states (pages 6–9).

The vulnerability of states towards risks is also closely connected with fragile statehood. Risks such as climate change, population growth, dwindling natural resources or the volatility of prices of agricultural commodities hamper the attempts of communities to make use of their development potential to the full. It is up to the nation states to strengthen the resilience of their population towards such risks. However, the glance at the WorldriskReport 2011 shows that almost all the 15 most vulnerable countries are fragile states at the same time (pages 10–13). But how can the resilience of the people and communities in these countries be strengthened and rural development be promoted? One important success factor is to support social mechanisms which, despite – or perhaps even because of – weak statehood, allow affected communities to develop self-help capacities.

The important role that civil society plays above all becomes clear when internal state conflicts or, also, cross-border conflicts need to be resolved. One example here is Nepal, where the strong economic, social and geographical marginalisation of large parts of the population has resulted in a civil war lasting for ten years. In the districts of Rukum and Rolpa, the heartland of the insurgency, German Development Co-operation has nevertheless succeeded in improving the disastrous food situation and reconstructing a rudimentary infrastructure – thanks to a cleverly conceived involvement of the two conflict parties and the balanced composition of the project staff as to caste, ethnicity and gender. Thanks to newly developed solidarity, the previously marginalised groups have also succeeded in improving their social and economic status (pages 14–17).

In Sri Lanka, too, trust-building und reconciliation are basic conditions for progress in the process of rural recovery after nearly three decades of civil war. For the last twenty years, the Sri Lankan development organisation Sewalanka has been engaged in strengthening civil society in rural areas and facilitating the shift from relief aid to self-reliance and sustainable development. However, in the initial phase of the reconstruction and rehabilitation process in particular, a lack of the will to co-operate on the part of both the government and the international agencies complicated efforts, as Sewalanka chairperson Harsha Navaratne reports in the Interview (pages 22–23).

In vast areas of the Horn of Africa, pastoralism forms the backbone of the livestock sector. However, the pastoralists are often politically and socially marginalised. Their struggle for the ever scarcer resources of water, land and pasture is resulting in violent conflicts that are becoming increasingly brutal as more access to modern arms is gained. Since 2002, the Conflict Early Warning and Response Mechanism (CEWARN), set up by seven states in the region, has been involved in conflict prevention and peace-building. Thanks to its employment, violent incidents along the Ethiopia-Kenya-Somalia border and the Kenya-Uganda border have considerably decreased. Here too, involving civil society in all activities is one of the most important success factors (pages 18–21).

One universal phenomenon that is often overlooked is violent attacks on education institutions. In conflict areas, schools, teachers and students – particularly girls – are intentionally targeted by armed groups and government security forces. There are many reasons for such attacks. Schools are regarded as a symbol of the state by rebels. Education is perceived as a threat to the spreading of one's own ideology. Often enough, children are also regarded as new blood for armed groups. The human rights organisation Human Rights Watch shows ways of protecting education during armed conflicts (pages 24–26).

Fragility is a huge challenge for rural development – and a very multifaceted one. In our journal, we can only address some of the aspects involved. We look forward to your reporting on your experience in this respect or also on other areas of this highly complex topic at www.rural21.com.

Enjoy reading,

Silvia Richter

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**Partner institutions of Rural 21:**

Photo: J. Schröder


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Photo: L. Richard


Photo: M. Kottmeier

# Experts warn of poor ecobalance for biofuels

Biodiesel made from the oil plants Jatropha, oil palms and soy do more harm to the climate than fossil fuels. This accusation, which has already been raised for a number of years, has now been confirmed by researchers of the Center for International Forestry Research (CIFOR) in analyses carried out on twelve farms in six developing countries. "The results highlight that we have to suspend much of what we are doing in the name of protecting the climate," says Louis Verchot of CIFOR, and co-author of the study.

As Verchot goes on to explain in the study, published by the journal Ecology and Society, between 40 and 75 percent less $CO_2$ is released in the combustion of biodiesel than as is the case with conventional diesel. However, the statistics often appear far less favourable once the entire life cycle, i.e. including the production of the plants, is taken into account. "Biofuel is not generally a bad thing, but the necessary conditions for sustainable production are provided far less frequently than most people would assume," says the CIFOR expert. For example, as the CIFOR studies demonstrate, deep moor forests are increasingly being cut or burnt down – estimates suggest an area the size of western Germany by 2020 (approx. 2.5 million hectares). Deep moors store more carbon than rainforests. When they are destroyed, 200 to 300 tons of $CO_2$ per hectare is released, plus an annual ten tons for drainage and decomposition. "The carbon debt is only repaid after 200 years of biodiesel production," Verchot stresses.

Further studies conducted in Ghana, Zambia and Tanzania on the biodiesel plant Jatropha demonstrate their poor climate balance. Here, depending on the area, the $CO_2$ debt was 100 to 300 years, depending on the area under cultivation. Moreover, according to the studies, this oil supplier had a lower yield than the oil palm tree. A survey carried out with soy beans in the Brazilian Federal State of Mato Grosso revealed a less harmful ecobalance, indicating the probability of a smaller existing volume of biomass.

## ■ EU study on biofuels arrives at similar results

An as yet unpublished study by the EU Commission presents similar results, i.e. that biofuel made from palm oil, soy beans or rapeseed has a more severe impact on the climate than conventional fuels made from mineral oil. Germany's daily Frankfurter Allgemeine Zeitung (FAZ) reported this in mid-February 2012. For the first time, a survey of this kind also considers the indirect consequences of manufacturing biofuels in their ecobalance, in other words previously virgin rainforest or wetland being used for agriculture because of the previously used farmland areas now being planted with crops for biofuels. Only the biofuels made from sugar cane, sugar beet or maize clearly yield



*Recent studies on Jatropha cultivation assign it a bad climate balance.*

Photo: J. Boethling

better results than conventional fuels, according to the EU study.

As FAZ goes on to say, this effect has not yet been considered in the EU provisions on climate change. There was only a requirement for biofuel having to release at least 35 percent less carbon dioxide than a conventional fuel through its entire life cycle, i.e. from its being grown to its consumption. Neither must any rainforest be cleared for its production. However, if farmers cut down rainforest elsewhere because plants were growing for biofuel production on their own cropland, this condition remained unconsidered.          *(wi)*

CIFOR study:
http://www.ecologyandsociety.org/issues/view.php?sf=68)

# "Brown Revolution" to reverse desertification

Planned grazing of livestock is helping restore formerly degraded lands close to Zimbabwe's Victoria Falls world heritage site. The US-based Savory Institute and its partner organisation, the Africa Centre for Holistic Management (ACHM), have regenerated land, wildlife and water on land that was turning into a desert after livestock numbers increased by 400 percent on their 2,900-hectare ranch in the Dimbangombe area, near the town of Victoria Falls – thanks to planned grazing of livestock.

Livestock is often blamed of causing land degradation and high gas emissions. Allan Savory, a former wildlife

biologist and founder of the ACHM, maintains that livestock are the only tool that, if managed properly, can change the direction of desertification, biodiversity loss and climate change globally. "By using livestock to mimic the vast herds that used to roam our planet, before humans began replacing them and their role with fire, we are healing the soils and allowing them once more to capture and store vast amounts of both water and carbon – leading to reduced droughts and floods and beginning to seriously address climate change," said Savory in an interview with inter press service (ips). He calls this the "Brown Revolution".

Savory blames desertification not on the proverbial scapegoat – overstocking of cattle, sheep and goats – but on the way they are managed. Under holistic planned grazing, livestock are grazed in an area for a maximum of three days and not returned to the same piece of land for at least nine months. "In the process, they use their hooves to break up the hard ground and increase soil cover with dung and trampled litter, allowing for better rainfall absorption and carbon retention in the soil. The temporary compaction also facilitates seed to soil contact for better seed germination." With adequate animal numbers, holistic planned grazing can also eliminate the need for grassland burning, because annually dying grass parts do not turn grey and stale, necessitating the use of fire to ensure new growth.

According to ips, today holistic management is practised on up to twelve million hectares of land around the world. The Office of Foreign Disaster Assistance (OFDA) within the United States Agency for International Development (USAID) has provided 4.8 million dollars for ACHM and the Savory Institute to scale up education and training programmes in the southern Africa region. OFDA is also funding further research on holistic management to convince the governments of the region, particularly in Zimbabwe and Kenya, to promote this technique in their countries. The United Nations Convention to Combat Desertification (UNCCD) is working closely with the Savory Institute to see if new thinking on land restoration can be introduced at the Rio + 20 conference to be held in June 2012 in Brazil. *(wi)*

## Conserving tropical forests with fruit and cosmetics

Each year, more than 13 million hectares of tropical forest is being destroyed world-wide. One of the chief causes is slash-and-burn land clearance. However, these fires often get out of control and turn into blazes with drastic consequences for the remaining forests and the climate. Together with a Ghanaian timber processing company that is implementing a forest rehabilitation project in the Ashanti Region, scientists at the Institute for World Forestry of the Johann Heinrich von Thünen Institute (vTI) in Hamburg/Germany have been seeking ways of reducing slash-and-burn clearing while simultaneously improving the economic situation of the village population.

The solution is an agroforestry concept developed with all stakeholders. A border area has been designated around the forests to be conserved in which the smallholders have been able to grow crops of high-yielding fruit trees such as oranges, mangos, cashews or oil palms mixed with their usual crops, such as yam, maize or peanuts.

"If you plant trees to use them later, you won't burn them down," explains forestry scientist Dr. Jobst Schröder, one of the German experts in the project. Already in the third year after planting, good harvests were achieved, especially with mangos. And the smallholders have organised marketing of their fruit also beyond their region themselves, which is providing them with additional income.

One variety of the concept is to plant saplings of high-value forest trees, especially teak, in the fields. The smallholders and the timber-processing company sign an agreement under which the smallholders commit themselves to planting part of their fields with teak and the processing company guarantees its purchasing of the timber. In this manner, the timber processor can cover part of its natural resource demand. In order to meet the volume of young teak plants required, the village inhabitants have started their own tree nurseries in which they grow saplings that they then sell. This

idea has caught on with the local population, and over the last two years, co-operatives have also been formed in other villages that are now running their own tree nurseries.

The savannah forests bordering on the fields used to be threatened by fire and charcoal-making, too. The local population has always gained a butter-like fat from the sheanut trees (*Vitellaria paradoxa*) living there. Nowadays, there is a high demand for shea butter on the world market for cosmetics articles, a trend that has also been spotted by the local population. Mainly, groups of women have got organised to manufacture and distribute shea butter, which is now being successfully sold to international firms via long-term contracts.

The concept in Ghana has been implemented with the support of the Centre for International Migration and Development (CIM), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the German "Stiftung Walderhaltung in Afrika". *(wi)*

# Focus

# State fragility as a development policy challenge

**Fragile states are lagging far behind in achieving the Millennium Development Goals. Yet what exactly does the term itself mean? And why is state-building so difficult to accomplish?**

In this second decade of the 21st century development policy faces a new set of challenges. It had set itself – in the form of the Millennium Development Goals (MDGs) – a series of ambitious objectives for improving the living conditions of broad swathes of the global population, one of them being to halve the number of people living in absolute poverty throughout the world by the year 2015. With three years to go before this benchmark date is reached, however, the record is sobering: many of the goals will not be achieved. One key factor in this is that a significant number of countries are held back by state fragility, some even displaying the signs of state failure. These fragile states demonstrate significant failures in performance regarding key functions of government. For example, they have a limited capability – if any at all – to establish a monopoly on the

legitimate use of force or protect their citizens from violence. Political power is subject to few or flawed controls, and a judicial system barely exists. Public services and the tax system hardly function even in the larger towns and cities. The provision of basic social welfare is

guaranteed only at the most rudimentary level. How can the phenomenon of state fragility be delineated empirically? Can external actors support the development of statehood by means of state-building? These are the questions addressed in the following.

## ■ State fragility and obstacles to development – a review of the situation

A paper commissioned by the British **Department for International Development (DFID)** in 2005 constitutes an initial attempt to get to grips with this group of fragile states from an empirical perspective. It drew on data from the World Bank, whose Country Policy

*The Afghan state is still not in a position to perform major sovereign tasks such as imposing rule of law or collecting significant tax revenues.*

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Photo: J. Hippler

and Institutional Assessment (CPIA) evaluates debtor countries' political systems and institutional capacity. On this basis the DFID compiled a list of 46 states. The social situation in this group of countries was dramatic compared with other poor countries: per capita income was roughly half that of the reference group. Infant mortality was twice as high and maternal mortality as much as three times as high. About one third of the population was undernourished, and malaria was widespread. Even back then, the message was that these fragile states – comprising some 870 million people or 14 percent of the world's population – were unlikely to achieve the MDGs.

A review undertaken by the World Bank in 2007 in its **Global Monitoring Report** came to similarly dramatic conclusions. According to its authors, 9 percent of the population of developing countries live in fragile states. At the same time, 16 percent of the world's underweight children live in these states. Even more worrying is the fact that 30 percent of children who did not complete primary school or are not expected to reach the age of five came from this group of countries as well (Bourguignon et al. 2008: 7, Fn. 6). What this makes plain is that structural issues of socio-economic development are not, in and of themselves, the reason why it is so difficult to achieve the MDGs; rather, the functional capacity of state structures is at least as crucial an issue. The dismantling of statehood motivated by neoliberal agendas that took place during the 1980s has combined with an erosion of governmental institutions due to violent conflict during the 1990s to leave behind a problematic legacy for these crisis-prone regions. Overcoming this legacy will need to have a higher priority in any future strategies for achieving the MDGs.

In addition to the overviews of fragile states based on World Bank data, the **Failed States Index** (developed jointly by the Fund for Peace, an independ-

**Failed States Index 2011**



CRITICAL
IN DANGER
BORDERLINE
STABLE
MOST STABLE

Source: Foreign Policy
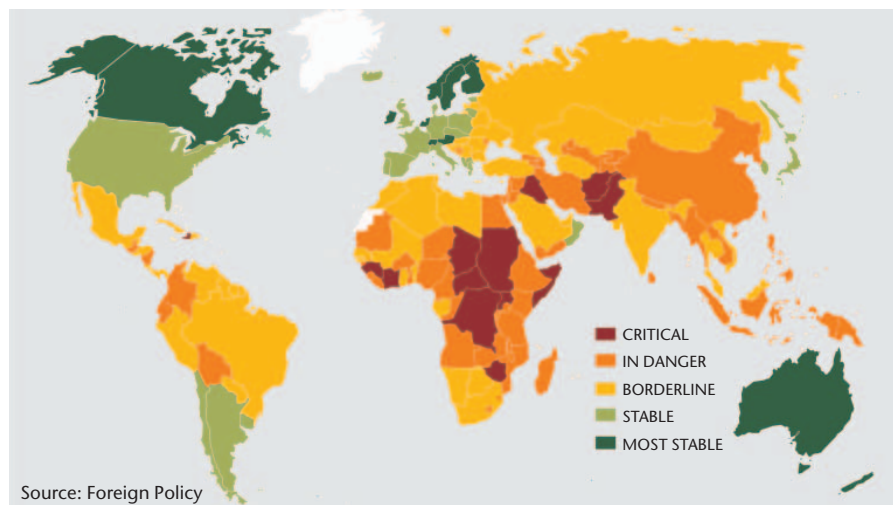
ent research institution, and *Foreign Policy* magazine; see figure above) has gained in prominence more recently. The index makes use of twelve social, economic and political indicators, for each of which a computer-aided analysis and coding process is conducted on tens of thousands of international and local media sources.

The rankings of the Failed States Index show that state fragility is to be found in nearly every region of the world. The list of least secure states includes not only the most prominent ones such as Somalia, Chad, Sudan, Democratic Republic of Congo and Haiti but also regional powers such as Nigeria (14), highly repressive dictatorships such as North Korea (21) and violence-prone democracies such as Sri Lanka (28). Despite this global distribution, it is striking how prominently the region south of the Sahara in Africa is represented on the list: seven of the ten most fragile states are located on the African continent. Many of them are in the midst of – or have recently emerged from – civil wars involving large numbers of victims. Even in places other than sub-Saharan Africa, violent conflict within states is directly related to state fragility. Thus the Peace and Conflict project at the University of Maryland concludes: "Seventy-seven percent of all international crises in

the post-Cold War era (1990–2005) include one of more actors classified as unstable, fragile, or failed at the time of the crisis" (Hewitt et al. 2008: 17).

■ **Why is there so much talk nowadays of state fragility?**

State failure is nothing new as such. In fact it can be described as a common phenomenon of the post-colonial era. After the end of the Cold War, however, many "quasi-states" (Robert Jackson) turned into "failing" or even "failed" or "collapsed" states. What was new after the end of the bi-polar world order was that the threat of state collapse in the sense of an inexorable downward spiral became more widespread and received heightened attention. However, analysing state fragility requires first of all that we define the concept of state itself. The definition provided by Pauline Baker and John A. Ausink (1996: 4) offers a helpful starting point:

**"We define state as a political entity that has legal jurisdiction and physical control over a defined territory, the authority to make collective decisions for a permanent population, a monopoly on the legitimate use of force, and a government that interacts or has the capacity to interact in formal relations with other such entities."**

First of all, then, state fragility has an internal dimension: there is a threat to social cohesion and society is no longer able to articulate or aggregate its support for or demands of the state. Often, traditional authority figures will take control in a certain locality, but they are not in a position to exercise political leadership at the national level. The external dimension must also be taken into account, particularly at sub-regional level, as neighbouring states are exposed to the threat of refugee flows, the spillover of military operations and mutual destabilisation. In addition, new economic and security structures emerge as a result of the ready availability of weapons, the spread of networks based on the war economy, and new opportunities for recruiting mercenaries, all of which threaten the security of the entire region.

### ■ Internal state formation and external state-building

Why do internal processes of state formation succeed or fail? We refer here first and foremost to Charles Tilly's study of the formation of European states, memorably summarised by him in terms of "war-making and state-making as organised crime". In this view, states emerged above all via the acquisition of political control, which entailed having free access to human and economic resources on the one hand while at the same time providing minimal protections on the other. What is remarkable, however, is that after the wave of de-colonisations of the 1950s, 60s and 70s, war contributed more often to state failure than to state formation in the regions of the global South. Herfried Münkler speaks of modern "wars of state collapse" (*Staatsverfallskriege*), which bear no relation to the "wars of state formation" (*staatsbildende Kriege*) in 19th and 20th century Europe.

There are frequent calls nowadays for international actors to accelerate processes of state formation from the outside. This strategy of "state-building" is not a new idea: it was first discussed in the 1950s and 1960s. At that time, modernisation theory strongly argued that post-colonial states in Asia and Africa would develop in a similar way to their European role models. In the majority of cases such expectations remained unfulfilled.

The first contributions aimed at re-launching the concept in the late 1990s were predominantly technocratic in nature. They bore certain parallels with the development policy concept of capacity building and formulated a clearly demarcated agenda based on establishing public security and enacting institutional reforms in the state apparatus. Accordingly, they promised rapid results. However, they underestimated the influence of culture, informal institutions, and the identities and interests of local actors. Seemingly non-political reform proposals actually turned out to be highly political, and this led to unexpected difficulties in their implementation.

A second approach combined state-building with the "good governance" paradigm. The aims were far broader than those of more technocratic approaches and included the defence of human rights, the rule of law, civil society participation, gender mainstreaming, social equity, poverty reduction, macro-economic stability and growth as well as the prevention of violent conflict. However, this strategy is vulnerable to the criticism that it burdens external and internal actors with too many tasks without setting clear priorities to guide action.

### ■ State-building in practice: failures abound, exceptions are few

Are there good prospects for external state-building? Empirical studies that focus on peace-building in post-war societies give cause for scepticism. For example, in a comparison of 121 cases between 1945 and 1999, Michael Doyle and Nicholas Sambanis found that it was possible to prevent a renewed outbreak of civil war in barely half the cases and that more far-reaching aims regarding political liberali-



*Photo: U. Terlinden*

*Somalia heads the Failed State Index.*

*Ruined houses in Basra, Iraq.*

Photo: J. Hippler

sation were achieved only very rarely. The reason for this poor rate of success on the part of external interventions stems not least from objectives that are often far too ambitious. What gets overlooked is that political order is always rooted in socio-cultural ideas about authority, law and legitimacy. Thus merely exporting organisational structures and constitutions is pointless unless they can be brought into line with societal values and preferences.

Even in cases where western countries have poured in enormous amounts of resources, success stories are hard to find. Afghanistan is a particularly obvious example of failure in this regard: ten years after the Petersberg conference the Afghan state is still not in a position to control large parts of its territory, to impose the rule of law or to collect significant tax revenues. External actors who arrived on the scene – usually with no prior knowledge of the situation on the ground – have been and are instrumentalised by local power holders. While it is certainly true that Afghanistan constitutes an extreme case, less dramatic cases such as East Timor and Cambodia also give little cause for optimism.

Where circumstances have been favourable, however, it has been possible to achieve moderate success. In countries such as Liberia and Sierra Leone conflicts had been brought to an end by the factual defeat of one party so that the question of political power was provisionally settled. The international community sent peace missions and mobilised large sums for these relatively small countries. This made it possible not only to put an end to the violence but to achieve an economic upturn and a perceptible improvement in state capacity. Nonetheless, these countries also have a long way to go – but at least a hopeful start has been made for now.

### ■ How to proceed?

Overall it has to be acknowledged that objectives which extend beyond an end to violence and a certain degree of economic recovery are rarely achieved. Large-scale transformative projects have tended to succeed in small countries ruled by cooperative elites interested in peace and political reform. These factors had a far greater influence on the chances of success than the strategies and resources of external actors.

Thus instead of continuing to consider large-scale interventions, research and practice should focus more attention on social and political orders on the ground. These orders often assume a "hybrid" form – in other words, they are a combination of formal state practices and institutions and informal ones. Even if these arrangements are unstable in some respects, they are nonetheless an important precondition for a society's ability to adapt and survive.

In the future, the international community will continue to attempt to build states in war-torn countries. This will occur in local political arenas where external forces become a part of hybrid orders. Since local actors are more familiar with these arenas, they will be able to instrumentalise international actors as a point of access to resources, power and legitimation and will ultimately play the deciding role in struggles over the country's political future. Given this set of circumstances, there is no single best way to achieve state-building. Nevertheless, it is our view that "bottom-up state-building" constitutes an attractive – and indeed necessary – alternative. The formation and preservation of a social order is based on identities, shared norms, and legitimacy. Development policies should attempt to engage in serious dialogue and discussion with the local structures instead of continuing to refine strategies that are directed towards central state governments (Fischer/Schmelzle 2009).

A full list of references is available at:
**www.rural21.com**
➜ **Of special interest**

# Countering vulnerability

State failure is one of many causes of human and community vulnerability. Global policy-makers must therefore find ways of increasing people's resilience to crises. The following article explores key approaches in rural regions.

*Global Risks 2012,* the latest report by the World Economic Forum, provides highly significant insights into the assessment of global risks. Out of a total of 50 risks covered in five categories, namely economic, environmental, geopolitical, societal and technological risks, several mentioned in the leading group are particularly relevant to development in the world's rural regions. These risks are, specifically, water supply crises, food shortage crises, extreme volatility in energy and agriculture prices, failure of climate change adaptation, unsustainable population growth, and land mismanagement.

## ■ Risk and vulnerability

However, global risk assessments of this kind often obscure the fact that there are wide variations in vulnerability to this type of hazard around the world. A country such as Japan can cope with the impacts of an earthquake of a certain magnitude far more effectively than Haiti, long-term drought affects people in the Sahel much more severely than people in Australia, and the impacts of a sharp increase in food prices are felt far more acutely by the poor in developing countries than by the average supermarket customer in an affluent region of the world.

In order to paint a realistic picture of the political, economic, societal and natural risks to individuals and communities, it is not enough to take an objective set of benchmarks – such as the strength of an earthquake, the duration of a drought, or a food price hike – as the basis for evaluating the impact of a harmful event; the different levels of vulnerability must also be factored in. Vulnerability is calculated as the function of three factors: susceptibility, i.e. a population's likelihood of suffering harm; lack of coping capacities, meaning capacities for a direct response to the impact of a given hazard event and for reducing its negative consequences; and lack of adaptive capacities, which refers to long-term strategies to avert risks and harm (cf. WorldRiskReport 2011).

The figure on page 11 depicts the WorldRiskIndex map. The concept of the WorldRiskIndex is based on the core understanding of risk as relating to natural hazard events (earthquake, flood, storm,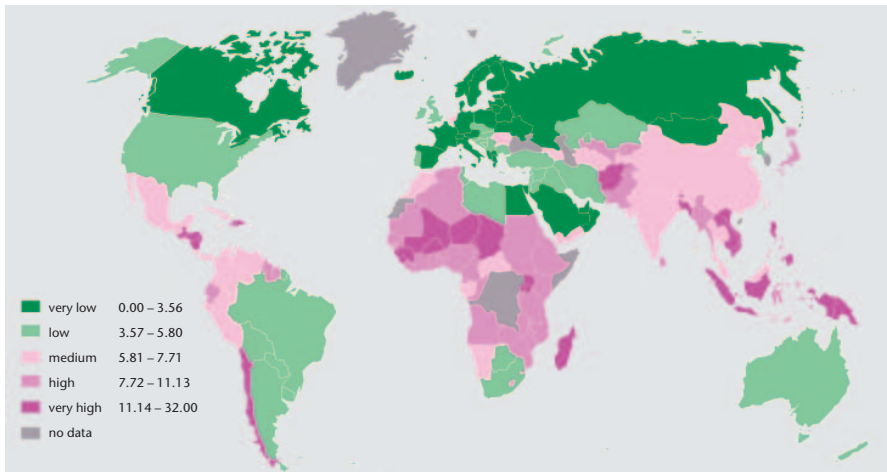 drought, sea level rise). In prin-ciple, however, this concept can also be applied to hazards in other risk categories, especially economic and societal. Due to their very high exposure to natural hazards, countries in Asia and Latin America – including the Philippines, Bangladesh, Timor-Leste, Cambodia, Guatemala, Costa Rica and El Salvador – have a very high disaster risk (see Table on p. 11). Three island states – Vanuatu, Tonga and the Solomon Islands – are among the 15 countries with the highest disaster risk. It would appear that this is mainly due to the extremely high exposure of these countries, for in terms of vulnerability, these islands perform significantly better than many other countries. However, their coping and adaptive capacities are not yet sufficient to substantially reduce their disaster risk. By contrast, Japan, Chile and the Netherlands – all belonging to the 15 countries with the highest exposure

*Countries of the South are far more vulnerable than industrial countries to risks such as droughts and floods or sharp increases in food prices.*

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Photo: J. Boethling

## The WorldRiskIndex



| | | |
|---|---|---|
| ■ very low | 0.00 – 3.56 | |
| ■ low | 3.57 – 5.80 | |
| ■ medium | 5.81 – 7.71 | |
| ■ high | 7.72 – 11.13 | |
| ■ very high | 11.14 – 32.00 | |
| ■ no data | | |

Source: WorldRiskReport 2011

to natural hazards – have sophisticated disaster preparedness systems, with highly developed coping and adaptive capacities, such that these three countries are ranked 35th, 25th and 69th respectively in the WorldRiskIndex (cf. WorldRiskIndex 2011).

Focusing solely on vulnerability – one of the factors used to calculate the WorldRiskIndex and defined as a function of susceptibility, coping capacities and adaptive capacities – Afghanistan has the worst performance, followed by a number of African countries and Haiti (see Table and Figure on p. 12).

### ■ Reducing exposure to hazards: a task for global policy-making

Exposure to risks puts people's lives and physical safety in jeopardy. Harmful events – which may be caused by long-term progressive degradation and destabilisation processes, as well as by sudden disasters and "shocks" – can impede or reverse development. Devastating floods such as those which occurred in Pakistan can wipe out years of hard-won development progress and deprive people of any further development prospects for a long time to come. For that reason, development policies must aim to minimise risks and implement appropriate preparedness measures. Broadly speaking, this

means reducing exposure to the "hazard", on the one hand, and reducing "vulnerability", on the other.

In practical terms, it is almost impossible to influence the "classic" hazards. Human communities have always been exposed to the forces of nature. Droughts and floods feature in the Bible and are described as "acts of God" – the product of divine will. With the onward march of progress, however, humankind has created its own potential hazards which have far-reaching implications. Large-scale deforestation along the upper reaches of rivers has increased the danger of disastrous flooding, and poor management of arid regions has worsened desertification. And of course, human-induced greenhouse gas emissions are changing the global climate, as is apparent from the increasing frequency of extreme weather events, with all their attendant effects, and melting ice caps, causing sea level rise. Human-induced hazards are thus becoming increasingly prevalent, alongside natural hazards. Finding ways to curb these human-induced hazards is now a task for global policy-makers, not only because a failure to do so would cause irreversible changes with incalculable new risks, but also because these hazards will otherwise impact with increasing severity on already vulnerable people and communities.

New "human-induced" hazards have also arisen outside the ecological sphere, however. A greater spatial division of labour and integration into a globalised economy have had major effects, particularly a substantial increase in prosperity, and have provided considerable impetus for development. However, as demonstrated by the food crisis which has caused extreme price volatility over recent years, this has created new hazards to which many people are defencelessly exposed (cf. von Braun and Tadesse 2012). Here too, global policy-making has a role to play in mitigating these hazards and ensuring that regional and globalised markets become an opportunity, not a threat, for vulnerable individuals and communities.
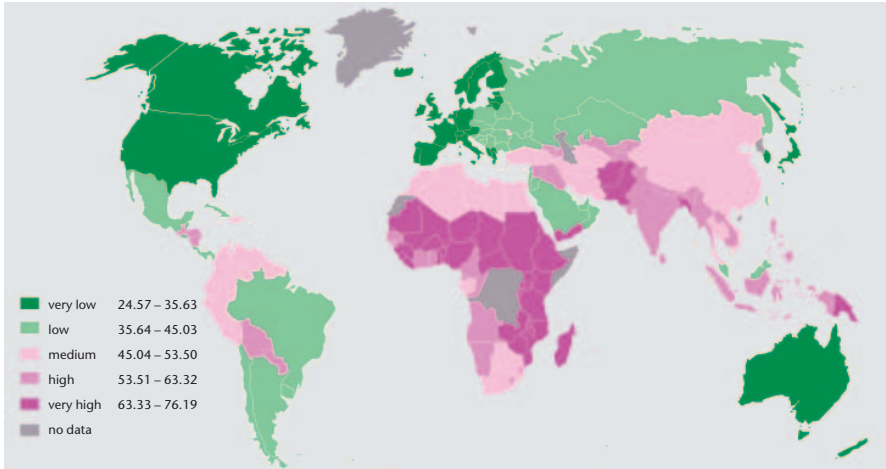
### ■ State failure: a risk factor

The effects of the new "human-induced" hazards are felt on a global scale, so averting these threats requires a concerted approach by the international community. Global Risks 2012 therefore highlights global governance failure – defined as weak or inadequate global institutions combined with com-

**WorldRiskIndex: highest country rankings**

| Rank | Country | Risk |
|------|---------|------|
| 1 | Vanuatu | 32,00 |
| 2 | Tonga | 29,08 |
| 3 | Philippines | 24,32 |
| 4 | Solomon Islands | 23,51 |
| 5 | Guatemala | 20,88 |
| 6 | Bangladesh | 17,45 |
| 7 | Timor-Leste | 17,45 |
| 8 | Costa Rica | 16,74 |
| 9 | Cambodia | 16,58 |
| 10 | El Salvador | 16,49 |
| 11 | Nicaragua | 15,74 |
| 12 | Papua New Guinea | 15,45 |
| 13 | Madagascar | 14,46 |
| 14 | Brunei Darussalam | 14,08 |
| 15 | Afghanistan | 14,06 |

Source: WorldRiskReport 2011

## Vulnerability



| | | |
|---|---|---|
| very low | 24.57 – 35.63 | |
| low | 35.64 – 45.03 | |
| medium | 45.04 – 53.50 | |
| high | 53.51 – 63.32 | |
| very high | 63.33 – 76.19 | |
| no data | | |

Source: WorldRiskReport 2011

peting national and political interests – as one of the especially significant and cross-cutting risks in future. By contrast, reducing vulnerability and strengthening resilience is primarily a task for individual states. If countries lack the requisite capacities of their own, the international community steps in with assistance, particularly in response to acute disasters. Development cooperation, in turn, can provide additional support in order to boost general self-help capacities and reduce vulnerabilities (= capacity-building).

While it goes without saying that governance measures, backed by development cooperation, can go a long way to building human and community resilience, there is one salient factor which greatly impedes this process, namely that human vulnerability correlates very strongly with weak statehood. Almost all the 15 most vulnerable countries (top 15) identified in the Table on the right score very high in various fragility league tables. These are countries with poor governance, weak state authority, and a low level of legitimacy. Above all, they have poor or non-existent capacities to deliver basic services (welfare, education and health) and minimal ability to guarantee the rule of law. What's more, they generally lack the ability or inclination to collect taxes on the scale that is nec-

essary to carry out much-needed infrastructural investment and establish a properly functioning administration.

## ■ Boosting resilience: the role of rural development

The recent famine in the Horn of Africa has clearly demonstrated the complexity of the factors contributing to the local population's high level of vulnerability. Prolonged and severe drought, resulting in a dramatic decrease in harvest yields, and poor availability of water and animal feed were among the hazards which triggered the crisis. But why did the drought have such devastating effects? Which factors caused the human vulnerability in this region? The causes lay in a much more deep-rooted chain of circumstances: resource degradation that is often triggered by unsustainable population growth, restrictions on the mobility of nomadic communities, a lack of capital reserves, an absence of alternative sources of household income, soaring international food prices and dysfunctional markets, protracted political conflicts (especially in Somalia), underinvestment in agriculture throughout the region combined with a lack of regional economic and trade links, general neglect of rural regions, and centralist development policies.

Droughts are essentially a natural phenomenon. By their very nature, this is unlikely to change, but human-induced climate change is an exacerbating factor. A drought is an "act of God", but a famine caused by drought is not. Famines can be controlled; better still, they can be avoided. This is just one example, but it is typical of the broader challenge which invariably arises in averting risks and avoiding crises. A policy which not only focuses on crisis management but also adopts a precautionary approach by tackling the various causes of people's extreme vulnerability in a given region, with a view to boosting their reliance, must address all these causal factors. However, isolated measures are not enough in order to find a solution. Instead, all the various sectoral policies must be integrated into a holistic regional strategy whose aim is to boost human and community resilience.

Here, rural development, as a multisectoral and territorial approach, has a key role to play. Integrated approaches to rural development often failed in the past – perhaps because of their own complexity, an overstretching of local capacities, and overly optimistic assumptions about the extent to which

### The most vulnerable countries

| Rank | Country | Vulnera-bility (%) |
|---|---|---|
| 1 | Afghanistan | 76,19 |
| 2 | Niger | 75,86 |
| 3 | Chad | 75,14 |
| 4 | Sierra Leone | 73,50 |
| 5 | Eritrea | 72,88 |
| 6 | Central African Republic | 72,42 |
| 7 | Liberia | 72,33 |
| 8 | Mozambique | 71,95 |
| 9 | Burundi | 71,82 |
| 10 | Haiti | 71,77 |
| 11 | Guinea | 71,13 |
| 12 | Ethiopia | 71,05 |
| 13 | Guinea-Bissau | 70,84 |
| 14 | Madagascar | 69,91 |
| 15 | Togo | 69,45 |

Source: WorldRiskReport 2011

**Areas of action to reduce vulnerability**

| Reducing susceptibility | Improving coping capacities | Improving adaptive capacities |
|---|---|---|
| Public infrastructure | Good governance | Education and research |
| Improving housing conditions | Disaster preparedness and early warning | Gender equity |
| Nutrition | Medical services | Environmental status / ecosystem protection |
| Reducing poverty | Social networks | Adaptation strategies |
| Improving economic capacity | Material coverage | Investment |

Source: The author, based on data from the WorldRiskIndex 2011.

processes can be planned. However, there is now a sober recognition that the isolated sectoral policies which usurped integrated rural development have certainly not led to more effective sustainable development outcomes in the regions concerned, nor have they boosted local communities' resilience. What is needed in future is a renewed effort to introduce more complexity with a spatially integrated approach. This will require a certain amount of courage, coupled with realism and a sense of proportion. Against this background, two key issues arise:

**1.** Which specific contributions can rural development, as a concept, make to boosting resilience?
**2.** Given that there is a particular need to boost resilience in fragile states, as we have seen, how can the concept of rural development be implemented effectively in the unfavourable conditions in place in fragile states?

The development of rural regions, long neglected, will require reform processes to be initiated in four sectors (cf. BMZ 2011): revitalisation of the rural economy, management and sustainable use of natural resources, provision of social services and technical infrastructure, and a general improvement in political and institutional conditions. The purpose of these reform processes

is to achieve improvements in those particular areas which are vital for reducing vulnerability and increasing resilience (see Table above).

As shown in the Table, the action to be taken in most of these areas is likely to be most effective if implemented by well-performing governance structures. The conditions prevalent in failed states greatly impede efforts to boost resilience, but do not necessarily condemn them to failure from the outset. In weak or failed states, it is essential to strengthen social mechanisms which, despite – or perhaps even because of – weak statehood, allow affected communities to develop at least a modicum of self-help capacity (cf. GTZ 2008). These mechanisms mainly take the form of social networks, such as community support, kinship groups, and the types of network which spring into action when disaster strikes and help to mitigate its adverse effects. Generally speaking, the complex interaction between

governance and civil society must be a mechanism for increasing resilience (cf. WorldRiskIndex 2011).

Multisectoral concepts of rural development are familiar to us all. After a long period of neglect, they are, happily, gaining ground again in development cooperation. Implementing these concepts is standard practice in functioning states, but efforts to initiate rural development measures in conditions of fragile statehood means entering new territory, and will involve a process of trial and error, at least for a time. Tried and tested approaches to boost food security, such as those customarily applied in crises, disasters and conflicts, will be an important element and starting point for these efforts. For the wider purpose of preparedness, however, rural development should adopt a much broader reach.

A further difficulty is that implementing these concepts requires patience, as it involves structural interventions; rapid successes therefore should not be expected. Nonetheless, this should not prevent us from using rural development mechanisms as part of a long-term strategy to boost human and community resilience as a key element of crisis and disaster prevention. After all, there seems to be no other option.

A full list of references is available at:
**www.rural21.com**
➜ **Of special interest**



*Photo: J. Boethling*

*Somali refugee children in the Kakuma refugee camp in Kenya.*

# Breaking the silence

For ten years, Nepalese fought Nepalese in a conflict which divided the country and left a trail of destruction and poverty – especially in rural areas. In the districts of Rukum and Rolpa, the Maoist rebels established a parallel government, while the official government was entrenched in the district headquarters. People mistrusted each other. Can a German International Cooperation project work successfully in such a fragile environment?

The Nepali society has always been characterised by a strong economic, social and geographical marginalisation of large parts of its population. The central governments in Kathmandu have always neglected people in the rural areas. As a result, infrastructure as well as access to state services has remained marginal through the times.

Nepali society as a whole is governed by patriarchal norms and values. Therefore, the majority of women from all castes and ethnicities are traditionally excluded and marginalised. The *Global Gender Gap Report* (2011) of the World Economic Forum places Nepal rank 126 out of 135 countries. So-called lower castes are similarly excluded from public life.

The different manifestations of exclusion and the resulting high rates of poverty and unemployment, the unequal distribution of resources and food insufficiency were the root causes of the civil war from 1996–2006. Today Nepal ranks 157th in the *Human Devel-opment Index* (2011) and is one of the poorest nations world-wide.

## ■ Heartland of the insurgency

It is no coincidence that the districts of Rukum and Rolpa were the heartland and starting points of the insurgency. They were specifically chosen by the Maoists when they travelled the country to spread their ideas before going underground. Here, all of the conflict's root causes were particularly pronounced, and here, the goals of the Maoists were mostly met with sympathy. At the same time, people did not have a choice, but were compelled to go through all the hardship of the hostilities between the Maoists and the government forces.

The mere mention of Rukum and Rolpa triggered fear in the capital and vast areas of the country. Media controlled by the government and the king further boosted their negative image.

The atmosphere in the districts during the conflict was characterised by widespread mistrust and speechlessness of the population. Many families were divided and torn apart when some of their children were recruited by the Maoists, and some by the opposing government forces. Furthermore, the insurgents also often forced children to fight for their cause. The Maoists established a parallel so-called *People's Government* and declared Rukum and Rolpa

the new *Magarat Autonomous Region*. The radius of official Nepali state institutions was reduced to a fenced area in the district capital.

The social and economic consequences in the conflict areas were enormous. The districts were isolated by the government, no goods were allowed to enter, and no social and economic services were provided. During the conflict time, the food situation worsened drastically, and the already rudimentary infrastructure was mostly destroyed or damaged, which further limited access to markets and services.



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*Processing agricultural products creates new jobs.*



Photo: giz

## Searching for the breakthrough

Given the aggravated food crisis in the conflict, the German Government, in co-operation with *Deutsche Gesellschaft für Internationale Zusammenarbeit* (GIZ) was ready to support the people of Rukum and Rolpa out of the *Emergency and Transition Aid* Fund. The minimum basis for attempting to work in Rukum and Rolpa was an agreement with the government in Kathmandu (only information, no co-operation) as well as acceptance by the Maoist rebels. The clear tendency of the rebels was rather to diminish external influence and chase all actors. Thus, the programme manager and a Nepalese staff member went to Rolpa to seek the approval of the Maoist leaders.

After four days of walking and talking to lower ranks, the district-level official in charge of the *Magarat Autonomous Region*, Santosh Buda, suddenly



Photo: giz

*Women have become an indispensable part of Nepal's public life.*

showed up in their hotel room in Thabang. That talk decided whether the project would perish or survive. The modest presentation of the project aims with a focus on fighting hunger and improving infrastructure finally convinced Mr. Buda and gave GIZ the chance to prove itself. But definitely, a high pressure to produce fast impacts lay on our shoulders.

## Setting the frame

The offices were not located in the fenced district capitals, but directly in the project area, so that access was possible at any time for the target group and the Maoist cadres. Frequent visits to the district government and the security forces established a balance of communication. Practically all staff were stationed in the field and stayed at houses of the local population.

A baseline survey was unthinkable during the conflict. From the very beginning, the project was based on flexible indicators, because it was unclear what could be achieved under

the conflict circumstances. According to the respective scope given, the project ranged from technical to social activities. The Maoists considered social mobilisation as their proper domain. GIZ was considered provider of "hardware". Therefore, the first activity was road construction, where hundreds of people immediately received food and cash for their work. However, the accompanying "software" was the introduction of basic democratic rules, public audits and an equal wage policy in the work gangs. Public audits permitted GIZ to demonstrate complete transparency regarding the use of funds and were much appreciated by the Maoists later on.

## Communication is the key

Every step of the project staff was monitored either by the Maoists or by the security forces. Thus each word spoken, or even each facial expression, could have had irreparable consequences for the project or the individual. Continuous extensive communication was the main instrument to prevent damage in the fragile conflict environment. From programme manager to messenger, all staff had to be clear about the "dos and don'ts", especially because the complete lack of telephone facilities

*New confidence through mastering new challenges – like road construction.*

Photo: giz

impeded spontaneous co-ordinating among staff members. Communication training helped to incorporate the strategy. Guidelines and places of permanent exchange were:

- Time to communicate shared between the conflicting parties in a balanced manner.
- Terminology already claimed by the Maoists replaced (use supervisor instead of mobiliser, local problem solving instead of conflict resolution, etc.).
- Regular internal staff meetings to reflect and revise the strategy.
- Binding monthly work plans transmitted to security forces, government and Maoists to maintain transparency.
- Message system established for staff between nearby work sites. Updates given every two days. Notes and messages often passed (and read?) by villagers.
- Reports of District managers to the district government and development stakeholders in monthly meetings.
- Delivery of goods had to be channelled via a commission of security forces, the army and the *Ministry of Local Development* in Kathmandu. Only then did the check-posts let the trucks pass.
- Public audits step by step re-established open discussions.

Being under observation all the time opened a variety of possibilities to send messages in a triangular manner. Dropping the right comment to the right person at the right time sometimes proved to be more effective than to address a person directly, because it left her or him with more freedom to react or just turn a blind eye on an issue. Communication was the key that dissolved upcoming tensions continuously and opened the doors to the heads and the hearts of the people.

## ■ Managing the risks

The project had a helping hand in the *Risk Management Office* (RMO), which was established in 2002. Funded by GIZ and the United Kingdom's *Department for International Development* (DFID), it was the first Office of its kind, but was often copied afterwards.

The RMO provided valuable information for the staff in the field through daily risk assessment reports, communication and risk management training for field staff and drivers, and frequently asked questions regarding donations and mainstreaming of procedures via the development of *Standard Operating Procedures* for the project work and the *Basic Operation Guidelines* signed by various donors.

The great benefit of RMO was to lift the threats that were felt by each staff member working in and on the conflict from an individual to a collective level. They helped GIZ mainstream the

actions and gain strength out of acting in a united manner within the project and in line with other actors.

## ■ Selection of staff – living up to one's own principles

The quality of implementation depended on the capacity and sensitivity of staff. Thus the selection process was delicate. Composition was to reflect the project's principles, be balanced in terms of gender, caste and ethnicity and integrate local people. At the same time, it would have been fatal to hire politically infiltrating staff. In a first step, consultants were hired to explore road alignment. The capable and loyal technicians were offered a contract afterwards.

Social mobilisation was first run by a local NGO, but after frequent hiccups with the Maoists, the contract was terminated. The NGO was then expelled by the Maoist side. In retrospective, co-operation with the NGO increased the risks for the project because the discipline and communication of the NGO staff could not be mainstreamed in the same way as the performance of internal staff, which ultimately put project efforts at jeopardy. Nevertheless, some party-affiliated persons managed to enter the team. Whenever detected, the project had to replace them in a diplomatic way, because the risk of backbites to the project was extremely high.

At the beginning, the potential of staff members – especially of local women – was not fully explored, and mostly, they remained inconspicuous. Then they slowly received more responsibilities according to a monthly working plan on which they had to report back. They grew with their responsibilities and became self-assured and vocal.

Working for GIZ was risky for the local people, because the Maoists had to approve them and watched them

suspiciously. Moreover, they were exposed to bombings and shootings and could not even contact their families. The nearest public telephone was outside the project area, and they had to queue for hours for a short talk.

After the initial struggles, the staff composition reflected the project principles. Women and men were balanced, and lower castes and other marginalised groups were strongly represented and fully respected members of the team.

## ■ Civil society boosts development

The social balance within the rural communities was of essential importance in the integration of Ex-Combatants after the end of the conflict and for sustainable peace. The backbone of the social mobilisation process was a network of newly established user and self-help groups with basic democratic rules and elected steering board members. The groups as well as the steering boards consisted of at least 50 percent women. Furthermore, 20 percent of the members were lower caste Dalit.

*Participatory Learning Centers* (LCs) proved to be very effective instruments to boost social inclusion and thereby counter one of the root causes of conflict. They addressed the needs of marginalised groups such as women, lower castes or people with disabilities and offered them opportunities for social and economic empowerment. The participants learned to read and write, received training in income-generating activities (e.g. agriculture) and used

them as a platform to discuss and solve social issues. Further, LCs conducted social and hygiene campaigns, as well as campaigns against domestic violence, alcoholism and discrimination. With their new capacities, the members started earning money, and part of it went to the saving and credit schemes of the Learning Centers. Upon request of the villagers, they started intervening in local disputes and received refining training from the project side. Nowadays, the participants of the LCs are respected members of the rural society and continue to motivate their compatriots to go ahead in development.

Of utmost importance overall was the introduction of free expression and discussion in all self-help groups – the opposite of the culture of speechlessness that was so common during the conflict.

## ■ Stable achievements in a fragile environment

After the urgent food crisis was alleviated through Food and Cash-for-Work measures, sustainable social and economic activities could be conducted. Through the construction of roads, schools, service centres, water supply and irrigation, access to services and markets as well as the food security and health situation have been drastically improved.

Social balancing in terms of gender and caste was fundamental. In all project activities – and especially in the LCs and self help groups – marginalised groups were overrepresented. They were soon identified as the main forces for development and received full support.

Through Learning Centers, marginalised groups of society have improved their social and economic status, gained income of their own as well as independence and continue to advocate for disadvantaged persons and for development.

Today, people from the project area have overcome caste discrimination; lower and higher castes eat, work and live together (LC Assessment 2009). This new solidarity and the courage to raise their voices are giving them strength to face new challenges and to take the district government under accountability – just like civil society is supposed to act.

The project team still stays in close contact with many of the people there, and we are optimistic that they will make it!



*The women from a Learning Center enjoy winning first prize at an agricultural fair.*

Photo: giz

# Anticipate and prevent violent conflicts

Again and again, there are conflicts over the scarce resources of land, water and pasture in parts of the Horn of Africa region where pastoralism is predominant – and they often lead to deadly violence. The Conflict Early Warning and Response Mechanism (CEWARN) has opted for regional, cross-border co-operation to tackle the root of the problem.

It is 7 pm on a Sunday evening in August; CEWARN staff are far away from Addis Ababa, at a strategy development retreat. The Director, Dr. Martin Kimani Mbugua, receives an SMS message from the co-ordinator of CEWARN's national early warning and response structure in Kenya. It recounts a report received from field reporters on the killing of 22 Kenyan pastoralists and the theft of their cattle that were allegedly driven across the border into Ethiopia by armed attackers. The attackers are believed to be from a neighbouring community in Ethiopia.

As the evening wears on, details of the attack are updated through SMS, telephone calls and email amongst field reporters, national co-ordinators of Ethiopia and Kenya as well as the CEWARN director. In less than two hours, reports are in on senior officials in both capitals being briefed and their taking immediate steps to deal with the situation. The conversation of updates, clarifications, questions and developments continues for the next four days until the perpetrators have been arrested, their weapons seized and the stolen livestock recovered. There is a

handover ceremony carried out with the help of local officials that blends the legal state approach with the local practices of reconciliation. At the end, the relationship between the countries is strengthened by their ability to agree on a version of what happened in an area where communication is poor,

while the violence is prevented from escalating to claim even more lives and property.

The anecdote is based on an actual event and is a glimpse of CEWARN in action. Set up as a pioneer regional early warning and response mechanism in
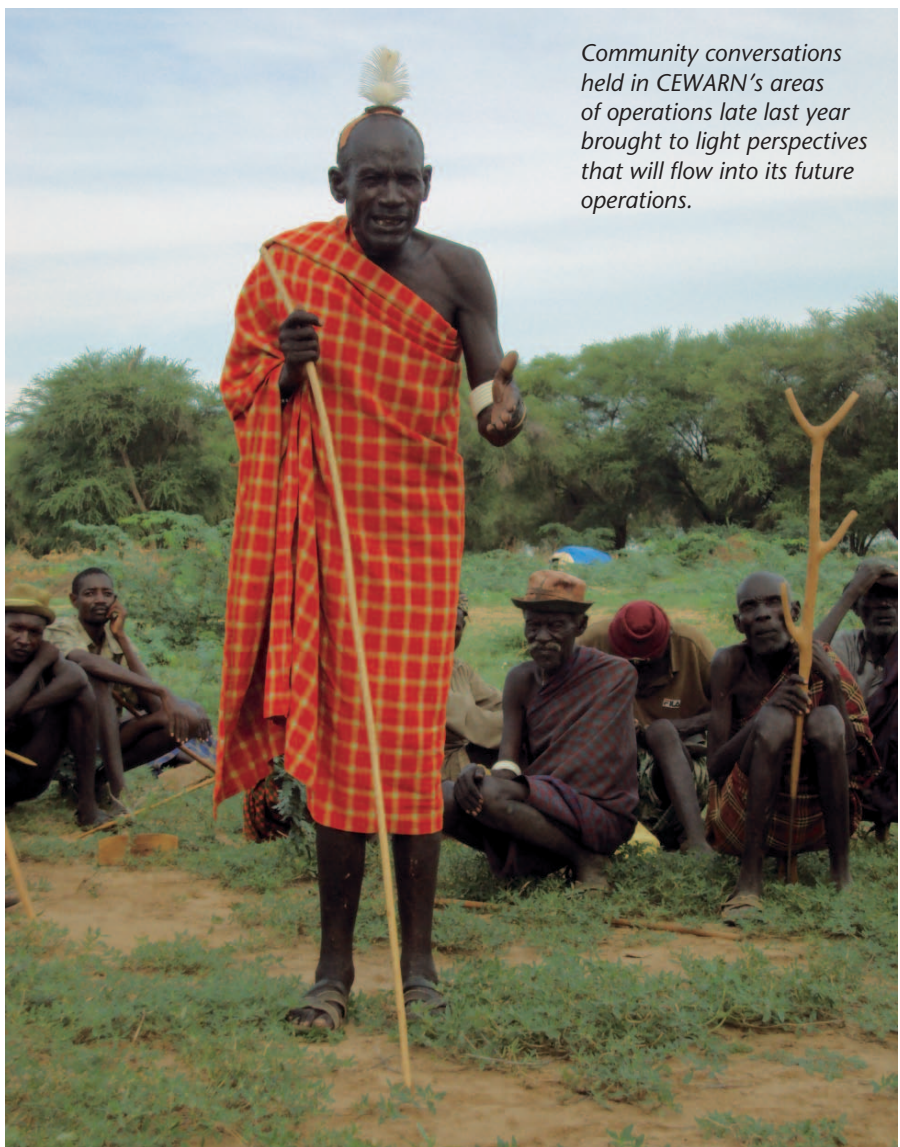


*Community conversations held in CEWARN's areas of operations late last year brought to light perspectives that will flow into its future operations.*

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*CEWARN uses sports events to facilitate positive interaction among youth and other community members previously locked in conflict.*



Photo: CEWARN

Africa, The Conflict Early Warning and Response Mechanism CEWARN was established in 2002 by the seven Member States of the Intergovernmental Authority on Development (IGAD; see Box on page 20). It is a network of governmental and non-governmental institutions that operate at local, national and regional levels. These institutions work in close co-ordination, supported by a protocol that has the broad support of policy-makers and officials. Taken together, the many parts of the CEWARN Mechanism represent a profound regional hope in peace built on shared understanding and united action against violent conflicts.

## ■ A tightly woven net of stakeholders

At the local level, CEWARN's field monitors and locally constituted peace committees – stationed along the Djibouti-Ethiopia; Ethiopia-Kenya-Sudan-Uganda as well as Ethiopia-Kenya-Somalia borders – work on sourcing real-time early warning information and sharing the information to stimulate response action. While Field Monitors are mainly responsible for sourcing early warning information, local peace committees that comprise representatives of provincial administration, government security structures, civil society organisations, traditional and religious leaders as well as women undertake response measures.

At the national level, CEWARN works through early warning and response hubs called National Research Institutes (NRIs) and national Conflict Early Warning and Response Units (CEWERUs.) These hubs co-ordinate early warning and response measures at the national level with field monitors

and local peace committees. Country analysts based in the NRIs are responsible for receiving information from field monitors, verifying the information as well as undertaking thorough analysis and recommendations on response options. On the other hand, CEWERUs, whose composition is similar to that of local peace committees, in other words a blend of government and NGO actors, are responsible for undertaking response measures.

CEWERUs are composed of representatives of government institutions working on peace and security, including ministries of interior and foreign affairs, national parliaments, civil society organisations and women who are actively engaged in national peace-building efforts.

Cross-border linkages and collaboration are key aspects of CEWARN's mandate and amongst its core strengths with local peace committees and national CEWERUs collaborating across borders to undertake joint interventions against cross-border threats. In addition, CEWARN's senior technical and policy structures that oversee its work also provide avenues for high-level regional co-operation.

## ■ Pastoral conflicts and regional peace and security dynamics

Pastoralism is a livestock-based production system that involves extensive use of land for grazing and seasonal mobility of people and livestock. Pastoral communities in the Horn of Africa region inhabit up to 70 percent of the region's land mass and make up the largest concentration of pastoral communities globally.

Pastoral communities comprise from 95 percent of the population in Somalia and Djibouti, to about 60 percent in Ethiopia and Uganda. In Kenya and Sudan, the numbers are between 20 and 25 percent. These communities are concentrated in semi-arid and arid areas and are spread along common borders of countries in the region. They often straddle long borders with their livestock in search of increasingly scarce water and pasture.

Pastoralists depend on an intimate knowledge of the environment and the climate. This awareness is built on generations of observation that allow them to survive in environments that are generally resistant to other more sedentary livelihood systems.

## CEWARN and IGAD

The Conflict Early Warning and Response Mechanism (CEWARN) was established by the seven Member States of the Intergovernmental Authority on Development (IGAD) to fill a critical gap in crisis management and conflict prevention in the region.* The gap was considerable given both the prevalence of armed conflicts in the region and their considerable human and material cost. In addition, conflict management and resolution efforts had proven expensive and generally ineffective, necessitating a more proactive approach to anticipate, prevent and mitigate organised violence.

CEWARN's structures and operations typically deploy early warning information gathering, analysis, and formulation of policy options as well as catalysing and supporting response initiatives at local, national and regional levels. These activities complement IGAD's wider interventions towards fulfilling its arduous mandate of promoting and maintaining peace and security.

While IGAD as a regional bloc was founded in the 1980s to address the twin challenges of drought and desertification, it is currently regarded as a leading peace and security institution, having steered the Sudan Comprehensive Peace Agreement and the long process of establishing Somalia's Transitional Federal Government. This work in fostering a more secure region is complemented by longstanding efforts in strengthening food security, environmental protection as well as economic co-operation.

Conflict early warning is a central feature of IGAD peace-building efforts with CEWARN having been established in 2002 as part of the Peace and Security Division. Since then, CEWARN has been a regional and continental pioneer in early warning methodologies and operations, and more recently in supporting local and national response as well.

*IGAD's Membership comprises Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda. All except Eritrea and South Sudan were founding members. The two countries joined the bloc upon gaining independence in 1993 and 2011 respectively.

In economic terms, pastoralism is the backbone of a multi-million dollar livestock industry in the region. In Ethiopia for instance, the livestock sector contributes about 40 percent of agricultural GDP and more than 20 percent of total GDP. According the 2007 National Census, Ethiopian pastoralists own 42 percent of cattle, 75 percent of goats, 25 percent of sheep, 20 percent of donkeys and almost all the camels.

Despite their economic contributions to national economies, pastoralists are often politically and socially marginalised; especially from the concerns and priorities of national capitals. Their remote – at least according to capital city dwellers – and difficult-to-access areas enjoy patchy and thin government presence in terms of service delivery. Their livelihoods are also increasingly under threat from natural and anthropogenic factors such as environmental degradation, a sharp

increase in drought and desertification, as well as decreased access to pasture land due to inadequate protection of pastoral property rights. Add extensive insecurity to this brew and you have a large percentage of pastoralists living precariously, ever vulnerable to crashing poverty and violent attack.

## ■ A new dimension of violence

Conflicts among pastoral communities both within and along international borders in the Horn of Africa are not new. The pastoral way of life characterised by high mobility is often accompanied by fierce competition and, in many cases, by violent conflict with other pastoralists, farmers and ranchers vying for the same limited resources. Pastoral communities also engage in cattle raiding, which pits different communities against one another as a means of replenishing depleted livestock – espe-

cially following the losses that come from a drought.

In yesteryear, raiding did not have the destructive capabilities now enabled by the access to cheap modern armaments. The AK-47 assault rifle has transformed the lethality of the raid for the worse. And matters have not been helped by the progressive breakdown of traditional mediation systems as pastoralists join the rest of the globalising world in leaving much of their tradition behind in favour of expectations and practices that hail far from their lands.

Today, raiding is far more commercialised and violent. Government security staff are thin on the ground and are often unable to provide comprehensive security – meaning that a culture of self-defence has taken root, unfortunately accompanied by the logic of revenge and escalation.

Local conflicts can have regional and even international significance. Recall Darfur's conflicts becoming part of UN Security Council deliberation when they started as localised fighting for resources. The fact that many pastoralist communities live along the borders which they cross frequently also means that it is extremely important that the violence occurring in this areas is well understood by the governments to avoid bilateral tensions. These border areas are also theatres for threats such as illegal arms running, border disputes and insurgencies.

It was this strong regional dimension of pastoral conflict and associated risks of disruption in inter-state harmony that led the IGAD Member states to choose cross-border pastoral and related conflicts as an entry point of collaboration through CEWARN. While cross-border pastoral conflicts present a complex shared concern for the region, they also offer a rare opportunity in terms of building capabilities and confidence in regional co-operation in conflict prevention.

CEWARN thus came to being as a mechanism with unique expertise for anticipation, prevention and mitigation of conflicts in the region as well as a platform for dialogue and co-operation among IGAD member states on policy and visions for cross-border peace, security and development.

## ■ Successes …

CEWARN's greatest achievement has been building on the strengths of existing government and non-government institutions and creating functional linkages and synergy amongst them. By doing so, it is able to intervene locally, nationally and regionally. Through the synergy among its units, CEWARN has also closed the gap between early warning and response. It applies state-of-the-art technology for this purpose: It utilises a custom-made software tool called the CEWARN Reporter in collating, organising, analysing and disseminating large volumes of early warning data from its areas of reporting. The various features of the Reporter allow analysts to make a compelling presentation of peace and conflict trends. CEWARN has recently expanded its use of information and communications technology (ICT) by supplying high-frequency radios to field monitors in the most inaccessible of its areas of reporting to ensure timely flow of information.

One important success factor is the active part played by civil society in all its interventions. The role of civil society is prominent in information gathering through field monitors; analysis through National Research Institutes and decision making through representatives in local peace communities and national conflict early warning and response units. Civil society representatives also have equally significant roles in the design and implementation of response measures through the same structures at both national and regional levels. This has created a strong sense

*Providing high frequency radios to field monitors in areas with no communications infrastructure ensures timely flow of early warning information.*

of transparency and local ownership of efforts.

In terms of response efforts, the composition of local peace committees and CEWERUs allows co-ordination of efforts as well as complementarities between government-led responses to curb violence that often employ security structures with other dialogue-centred peace building efforts.

CEWARN's use of traditional dispute resolution methods and innovative approaches such as holding youth sports events alongside peace dialogues has ensured the success of its local efforts. This is most visible along the Ethiopia-Kenya-Somalia border as well as the Kenya-Uganda border where violent incidents have sharply decreased.

In short, it is the sum of this approach, developed over a decade, that has earned CEWARN its reputation as a continental pioneer in using timely information to prevent and mitigate conflict. The IGAD member states, as well as other regional mechanisms in Africa, have increasingly adopted its systems for their own use.

## ■ … and challenges

However, understandably, CEWARN faces multiple challenges in fulfilling its mandate. These include poor infrastructure and inaccessibility of its areas of reporting as well as limitations in governments' capability to ensure physical security throughout their territories. Furthermore, CEWARN's long-term impact will depend less on local interventions and more on broad and implemented policy shifts, and stronger collaboration among member states in addressing the underlying structural causes of conflicts.



*Photo: CEWARN*

CEWARN is currently undergoing a period of expansion and growth both in thematic and geographic terms. It is set to expand its areas of reporting to cover new areas in Somalia, Sudan and South Sudan. It will also be closely monitoring and driving response in relation to conflicts driven by factors connected to food security, environmental degradation, volatile climate, and migration, just to mention a few. To this end, CEWARN is engaged in a bottom-up strategy development process encompassing local peoples and communities, national stakeholders and regional actors to determine its priorities and foci in the next few years.

Sources for further reading can be found at:
**www.rural21.com**

# "The process will take time"

In May 2009, after nearly three decades of civil war, the Sri Lankan military claimed victory over the Liberation Tigers of Tamil Eelam. Harsha Navaratne, a Sri Lankan development practitioner, has spent more than 30 years working in the conflict-affected areas and is the Chairperson of Sewalanka Foundation, one of the largest Sri Lankan development organisations. Rural 21 wanted to learn from him whether and how the country has taken advantage of its potential for rural recovery.

■ **Mr Navaratne, which phenomenon has been most characteristic of Sri Lanka since the end of the war?**

When you consider the development potential, you need to look at it from a historical perspective. Ethnic violence in Sri Lanka is rooted in our electoral politics. We were one of the first countries in the world to have democratic elections with universal voting rights for men and women.

During those early elections, political debates focused on class, but it didn't take long for the political elite to change the debate to ethnicity. Political parties became divided along ethnic lines. The politicians used political patronage in the form of government services and development aid to get votes. Access to political power and development resources was dependent on ethnicity and political party, and the country became increasingly divided.

People have experienced more than 30 years of brutal violence, and it has affected more than just physical infrastructure and economic activities. There is a need for healing, reconciliation and trust-building on all sides. Any development initiative has to start from this point. It is not the same as the post-tsunami recovery. The process will take time.

■ **How was reconstruction and rehabilitation organised?**

After the war ended, there was a good co-ordination mechanism in the northern conflict-affected areas. There was a Presidential Task Force that co-ordinated with all stakeholders including the UN, international donors, and non-governmental organisations. The government, UN, and NGOs worked together to prepare a joint plan that was submitted to the international community for funding.

Challenges later arose because the government wanted all resources to be channelled to infrastructure and economic development. They were not willing to approve any "soft-side" activities like training, psychosocial support, or community-based organisation development. It was difficult to get

*Harsha Navaratne is the Chairperson of Sewalanka Foundation*

Photo: Sewalanka

approval for many programmes that were planned and funded. This was a significant restriction during the initial phases of resettlement and recovery, but the situation is now improving.

■ **Has collaboration between the various actors worked well?**

Government and military authorities, international donors, UN agencies, international NGOs, and local NGOs have all been involved in the resettlement and recovery process. There was good co-ordination when the joint plan was being prepared, but the process has been more difficult during the implementation phase.

One of the main challenges is that most of the actors think they can do everything by themselves. For example, the national-level administration feels that all foreign-funded development projects should be channelled through government agencies. They do not see a role for NGOs or other actors. The issue is that most of the government structures in the conflict-affected areas are still being established. The projects are implemented by government servants who work from nine to five Monday to Friday and do not have exposure to this kind of development work. Many bottlenecks and delays could be avoided if they were to partner with skilled and experienced development groups that are able to work more flexible hours. Some of us have been in dialogue with the government to try and build up

partnerships and synergies between government agencies, development practitioners, and the private sector.

The international agencies tend to have the same mentality. Although there is talk about co-operation, exchange, and local partnership, most projects are being implemented in a vacuum. They are not integrated with other initiatives in the area.

There have been positive developments. As the civilian administration gets stronger, local-level co-ordination has improved. The district-level Government Agents now have good co-ordination mechanisms. All of the stakeholders meet monthly to discuss practical issues in the field.

### ■ What has been achieved? And what are the remaining challenges?

The main achievements have been related to resettlement and infrastructure development. Nearly all of the people who were displaced by the conflict are back in their home area. Roads, irrigation infrastructure, schools, and hospitals are being repaired or constructed.

The most urgent needs are related to livelihoods and food security. According to a recent government study, over 60 percent of households in the Northern Province and 47 percent of the households in the Eastern Province have income-related food insecurity. There are signs of asset depletion, high indebtedness and other coping behaviours.

*Land mine warning in northern Sri Lanka.*

### ■ What needs to happen to enable Sri Lanka to make full use of its development potential?

There has been a tendency for national development planners to look at the "East Asian model" and focus on infrastructure, exports, and foreign direct investment as the main priorities for development. All of these things may be important for growth, but without consideration of how this growth is distributed, Sri Lanka will never reach its development potential.

Since Independence, Sri Lanka has had a core-periphery form of development. The majority of people in Sri Lanka still live in rural areas, but nearly half of Sri Lanka's Gross Domestic Product comes from the capital city of Colombo and the surrounding Western Province. The unequal distribution of opportunities, particularly between rural and urban areas, has led to violent youth uprisings in both the north and the south of the country.

Poverty in Sri Lanka is a predominantly rural phenomenon. The most vulnerable families are those that are dependent on rain-fed agriculture and agricultural labour. Any national



Photo: Sewalanka

development plan needs to consider the rural sector and address the constraints of these communities. There have been a few government development initiatives focused on rural economic development. Geographical areas with efficient and effective government servants have shown positive results. These targeted interventions have a great potential, particularly if they are integrated with other initiatives in the same area.

*Harsha Navaratne was interviewed by Silvia Richter.*

*Internally displaced people walking out of the northern conflict area in April 2009.*

Photo: Sewalanka

# Protecting schools, teachers, and students from attack

In many conflicts around the world, schools are not just caught in the crossfire, they are intentionally targeted for attack. Armed groups have threatened and killed students and teachers, and burned schools. Government security forces have taken over schools for military purposes. This article suggests four ways that governments, international donors, and civil society can do more to protect education during armed conflict.

In conflict areas around the world schools, students, particularly girls, and teachers are intentionally targeted by armed groups and government security forces. Well-known are horrific attacks in Afghanistan, where men on motorbikes have sprayed pupils with gunfire and doused schoolgirls with acid to prevent them from going to school. The targeting of education in other conflicts has been less well-publicised. For example, in Somalia, the Islamist militant group al-Shabaab has turned schools into battlegrounds, using functioning school buildings and compounds to fire on opposing forces, deliberately placing students and teachers in harm's way from often indiscriminate return fire. The group has in some cases bombed school buildings, killing students, teachers and bystanders. And the group has used schools to recruit students as fighters and to abduct girls and young women for rape and forced marriage.

Al-Shabaab have also imposed their harsh interpretation of Islam on schools in areas that they control, prohibiting

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English, the sciences and other subjects deemed improper, and enforcing severe restrictions on girls' dress and interactions with male students. They have threatened and even killed teachers who resist their methods.

## ◼ What are the reasons of attacks?

World-wide, more than 40 percent of the 67 million primary-school-age children out of school live in conflict-affected countries, according to UNESCO. Between 2006 and 2011, schools were attacked or used for military purposes in Afghanistan, Burma, the Central African Republic, Chad, Colombia, Cote d'Ivoire, the Democratic Republic of Congo (DRC), Georgia, India, Iraq, Israel and the Occupied Palestinian Territories, Libya, Nepal, Pakistan, the Philippines, Somalia, South Sudan, Sudan, Syria, Thailand and Yemen.

Motives vary. Rebel groups may see schools and teachers as symbols of the state, high-visibility "soft" targets that they can use to garner media attention and undermine confidence in government control. Some groups oppose the content of curriculum, for example secular or "Western" material, or who is being educated, for example girls. Groups may seek out schools to indoctrinate children, recruit them,

The words of a mother whose 17-year-old daughter was abducted by al-Shabaab from school in Somalia:

*"I was always worried when they were at school. You always worried when the day ended to see if your boy was recruited or your girl was kidnapped. Every day you get your child back at the end you are thankful. Every day there were incidents reported from the school."*

or abduct them for sex or forced marriage. Some attacks are non-ideological, relating to local disputes or criminal elements seeking to drive out authority. Government security forces and non-state armed groups are often attracted by the location, solid structure, and ready facilities found in schools, and use them for military bases, shelters, weapons caches and outposts.

Regardless of the reason, attacks are deeply damaging. Students and teachers may be traumatised, injured, or killed. Attacks often result in dramatic decreases in attendance, particularly among girls. Buildings and teaching materials may be damaged or destroyed. Classes may be suspended for days or even months; in the worst cases hundreds of schools may be closed. Attacks can also have a ripple effect on schools in surrounding areas, driving out or slowing down NGOs and other non-governmental education service providers.

Education is universally recognised as essential for individual intellectual and social development, and during situations of conflict, education can be both life-saving and life sustaining. When the school environment is safe, it can give children a sense of normalcy in an otherwise unstable situation. Schools can provide life-saving information and services, such as landmine-awareness. Education is also central to the realisation of other human rights, such as freedom of expression, association, and assembly; full participation in community life; and freedom from discrimination, sexual exploitation, and the worst forms of child labour. Indeed, the exercise of these rights may help countries overcome and recover from conflict. Educating girls carries particular benefit for a country's overall development, from reducing maternal and infant mortality to promoting economic growth.

But even in contexts where attacks on education are recognised as a tactic of the conflict, governments and outside actors may overlook the nexus between security and education, instead focusing only on military strategies. This is especially true in fragile and conflict-affected states where the government is not carrying out its basic role, including core functions such as providing education. In these instances, the response falls on others, and the support of international donors is especially critical.

### ■ How to protect education during armed conflicts?

Without downplaying the importance of addressing security concerns – indeed, basic security is needed for children and teachers to travel to and study safely in schools – all political

*A paramilitary Ranger walks by students at Pakaluesong Elementary School, Thailand. About 30 Rangers live in a camp established in the school grounds.*

"Abdi S." describes what happened at his school in Somalia in mid-2010:

*"Al-Shabaab came into the compound of the school and told us to stay in class. It was noon and they set up [a surface to air rocket launcher] and they started launching from inside the school compound. They set it up in the 'playing' area…. Some students tried to get out of the compound but they were turned back by al-Shabaab. We were trapped for two hours … There was incoming fire coming back at our direction. There were five rockets hitting around the school compound. One landed as we were released and it killed eight students."*

actors should consider the crucial relationship between security, state fragility and education. Recognising that targeted attacks on schools, teachers, and students are often present in conflicts around the globe, governments, international donors and civil society should thus ensure better protection for education in conflict in four areas:

■ monitoring and reporting of attacks;
■ programmatic measures to prevent and respond to attacks;
■ protections in law; and
■ accountability for perpetrators.

All levels of education, including secondary and university education, also for girls, should be considered.

First, timely and accurate **monitoring and reporting** on attacks on education is crucial for responding to attacks, for holding perpetrators accountable, and for seeking to prevent attacks from occurring in the first place. Yet reliable, first-hand information may be difficult to collect as areas most vulnerable to attacks may be the least accessible because of poor security and infrastructure. Those with the greatest access to information or responsibility to monitor may lack skills, resources or motivation to monitor, or may face serious security threats to their own safety or that of witnesses. Reporting systems may be weak or non-existent or not linked to effective responses.

Governments, and relevant UN bodies, NGOs and others all should monitor, report and respond to attacks on education. For example, the UN-led Monitoring and Reporting Mechanism on Children and Armed Conflict (MRM), currently present in 15 countries, has an explicit mandate to monitor attacks on schools, teachers, and students, as well as military use of schools. Based on this information, the UN Security Council can take strong action against parties that attack education.

Access to education should also be considered a non-military indicator of security: if an area is too unsafe for stu-

Photo: © 2010 David Hogsholt/Getty Images for Human Rights Watch

An abandoned girls' school just south of Kabul, vacated after students discovered an explosive device. A threatening "night letter" ordering the school to be closed was left at the local mosque before the attempted attack.

*Photo: © 2005 Human Rights Watch*

dents and teachers to go to school, the area should not be considered secure. Using access to education is a practical benchmark in that it is often the most common point of interaction between individuals and their government and data are concrete, measurable, and outcome-focused.

Second, education service providers, including NGOs, UN agencies, and governments, supported by international donors, can develop more **targeted programming to prevent and respond to attacks**. Possible areas of focus include early warning systems, physical protection of schools, community involvement, alternative delivery and negotiations with armed groups, among others. A joint NGO and UN coalition, the Global Coalition to Protect Education from Attack (GCPEA), has begun to collect information about diverse strategies that are being tried in the field, but more research is needed on what works in what contexts, and why.

Third, governments should strengthen **legal protections for schools**. This is important not only for countries currently in conflict but also for those who wish to show leadership and build up good state practice. International humanitarian law ("the laws of war") prohibits attacks on schools and other education structures that are not being used for military purposes. However,

many states in their criminal law afford no special protections to schools beyond those generally given to civilian property, which typically do not take into account the larger impact of destroying or damaging a school. This lapse includes the majority of the 116 states party to the Rome Statute, the international treaty establishing the International Criminal Court, which provides that international attacks on buildings dedicated to education are a war crime. Governments should make explicit in their criminal and military laws that intentional attacks on school buildings not being used for military purposes during an armed conflict are war crimes.

Additionally, the use of education institutions by militaries and armed

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A teacher from Afghanistan:

*"I was sleeping and I was woken up by the noise. We went out and saw the building of the girls' school was destroyed, the roof came down, the door was burned …There were a lot of flames and smoke. I was a little bit scared when I saw that! It might have been a remote-control mine …. For one week after that just a few girls came and then we encouraged them to come. But there were some who never came back at all … I have a girl relative who went to that school. Although we were worried about her, we didn't forbid her to go because it's her future, but I still feel worried. I feel there is a security problem. But now we are watchmen – we made a schedule and each person has one night."*

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groups during situations of conflict and insecurity can disrupt or completely deny education in both the immediate and long term. Only seven countries currently prohibit or explicitly restrict the use of education buildings by their armed forces, according to a recent survey of 56 countries by Human Rights Watch. However, this small number includes India, the Philippines, and Colombia, all states involved in prolonged internal armed conflict, demonstrating a belief that such use is not necessary for successful fighting. Governments should prohibit armed forces' use of schools. NGOs should advocate for these protections, and donor governments should promote them.

Finally, **accountability for those who attack schools, teachers, and students** is critical, using information collected through effective monitoring and protections in criminal law. Where local laws and justice systems are not functional, however, civil society may need to resort to more informal methods of accountability, including through public stigma (increasing the price of attacks in the court of public opinion). The International Criminal Court also has jurisdiction over wartime attacks on buildings dedicated to education, although no one has yet been charged under this provision and the court can try only a very few cases. Other governments may help through travel bans, financial freezes and other forms of pressure. UN bodies, from the Committee on the Rights of the Child to the UN Security Council, can also increase the perceived "price" of attacks.

There is growing recognition among donor governments, UN agencies and non-governmental organisations that more needs to be done to protect schools, teachers and students from targeted attack in conflict. These areas – monitoring and reporting, programmatic response, legal protection and accountability – provide fertile ground for action.

# Strategies to feed the nine billion mouths

With the world population set to exceed the nine-billion mark by 2050 in the not too distant future, a range of measures are becoming necessary to address the problem of sufficient food for all. At the same time, ecological threats to the planet are growing. Improved co-ordination of agricultural food security and climate change policy can help provided that a more focused food security strategy is in place.

The world's population will reach 9.1 billion by 2050, 34 percent higher than today. The problem of feeding this massive population frequently grabs the headlines. The recent crisis in the Horn of Africa highlights the vulnerability of millions of poor people around the world. Further, as the global resource landscape shifts, there is growing apprehension that an era of sustained high resource prices and its related sustainability (environmental, social and economic) risk is likely to emerge. Thus, agriculture is under pressure due to the demand dynamics, supply factors and a few of the unsustainable features known to be associated with the sector. The challenge includes producing more food, fibre and fuel to feed an affluent population whose consumption patterns are dynamic. This has to be done with a smaller rural labour force and under the conditions of increasing competition for ecosystem services. Further, the challenge is to adapt to climate change, adopt efficient and sustainable production methods to scale and ensure that the poorest people are no longer hungry and micronutrient malnourishment is minimised. Underlying challenges include building resilience to changing food prices, improving livelihood opportunities for the poor and strengthening basic services, such as education, healthcare, and sanitation.

The Table on pages 28–29 delves into the immediate and underlying causes of this multifaceted problem of feeding the nine billion mouths along with a sustainability assessment of the strategies in place.

*Sustainable intensification of global agriculture is essential to feed the growing population.*



Photo: FAO/R. Faidutti

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**Situation analysis and strategy assessment of the problem of feeding the nine billion mouths**

| | Factors | Present situation and projected trend | Criteria for delivering intervention and strategy | Action, choice or examples |
|---|---|---|---|---|
| **Demand** | Population growth | Every day, 200,000 people are added to the world food demand. Due to population growth and rising incomes, annual cereal production has to grow by a billion tonnes from 2.1 billion tonnes today, and meat production by over 200 million tonnes to reach 470 million tonnes in 2050. | a) Increasing investment in primary agriculture; agri-biotechnology, Research and Development. b) Improving agronomy for smallholders. c) Raising awareness of the pressures of increasing population growth. | Production has kept pace with food demand in the past. It can certainly do so again, provided free trade and technological progress co-exist. |
| | Hunger and poverty | Presently, an estimated 925 million hungry people exist in the world. Poverty is the principal cause of hunger. | a) Investments in sectors linked to agricultural productivity growth. Establish enabling environment for farmers. b) Developing targeted policies/programmes to assist populations vulnerable to climate change and food insecurity. | MGNREGA – the Mahatma Gandhi National Rural Employment Gurarantee Act – has provided jobs to over 50 million rural households in India. The company Danone has floated a new unit to develop products for masses. |
| | Changing consumption patterns; urbanisation | Consumption patterns have had significant impacts on food supply. There is an exponential effect on grain (and water) demand, an increased use of fertilisers and associated sustainability risks such as degradation of soil/water and the marginalisation of small farmers. About 70 percent of the world's population will be urban in 2050 (compared to 49 % today). Income levels will rise. | a) Reshaping of consumption patterns; influencing population to shift to wider types of food, to build resilience of the food system. b) Emphasis on nutrients intake rather than calories intake. c) Shifting diets from meat to fish. | Reducing the use of cereals and food fish in animal feed. Re-allocating fish currently used for aquaculture feed directly to human consumption, where feasible. |
| | Government imperatives | Government fiscal and regulatory intervention ideally requires societal consensus. | a) Innovative and targeted safety-net mechanisms. b) Making government policies predictable and inclusive. | Conditional cash transfers. |
| **Supply** | Water | Water withdrawals for irrigated agriculture are projected to increase by 11 percent by 2050. | a) Increasing crop-per-drop: replacing flood irrigation with micro-irrigation systems. b) Growing crops suited to the local climate. | Planting sorghum instead of rice or wheat in drought-prone areas. |
| | Climate change | Food productivity is influenced; changes in pest population, ozone damage. | a) Adopting climate-smart agricultural practices; minimising pollution. b) Modifying farming systems to mimic natural ecosystems. | Higher levels of $CO_2$ can boost plant growth and also help with water retention. |
| | Land availability; productivity | Approximately, a 90-percent growth in crop production is projected to come from higher yields and increased cropping intensity. Arable land in use in developed countries is expected to decline by some 50 million hectares. | a) Reducing land conversion by increasing farm productivity. b) Arable land will have to expand by around 120 million hectares in developing countries. | Investments to bring land into production which is not yet in use. |
| | Oil and biofuels | Energy use at the farm has increased. Oil is a source of this energy and the base for other chemicals (pesticides, fertilisers); demand factor for certain food crops that can be converted into biofuels. | a) Deriving biomass from agriculture for electricity co-generation. b) Designating lands for food production, animal feed, and biofuel. | Encouraging higher generation biofuels based on waste. |
| | Fertilisers | Fertilisers cause environmental problems like algal blooms in rivers and lakes. Potash is a finite resource; nitrogen fertilisers are manufactured using coal, oil or gas; Phosphorus takes millions of years to return to the soil. | a) Satellite mapping can detect changes in soil nutrient levels, making fertiliser use more efficient, and b) reduces dependence on fertilisers. | Using Mycorrhiza, vermicompost etc. |
| | Declining fish stocks | The United Nations reports that three quarters of the world's fish stocks are in distress. | a) Expanding aquaculture in poor countries, since fish account for 20 to 30 percent of the total animal protein consumed. b) Establishing conservation zones; banning trade in threatened species. c) Establishing industry-wide principles for sustainable fishing. | Tougher fishing controls; shrinking the size of fishing fleets. The company Unilever purchases fish only from sustainably managed fish stocks. |
| **Environmental sustainability** | Toxicity | Soil tillage releases methane; nitrate from fertiliser leaches into groundwater and threatens human health; farm animal waste pollutes land and water. | a) Promoting zero or minimal tillage practices. b) Global investment in sustainable agriculture. | Controlled and measured application of animal waste on agricultural lands; waste lagoons with liners. Using bio-yield enhancers, biofertilisers, biopesticides, etc. |
| | Deforestation and loss of biodiversity | UNEP predicts that agricultural land area could increase by 25 percent in the Asia-Pacific region by 2050, much of it at the expense of forests. Forest conversion is especially associated with a higher incidence of certain infectious diseases, including malaria. | a) Increasing overall productivity and efficiency in existing production systems. E.g. improving feed-efficiency ratios in livestock systems through use of better timings; mix of feedstock and additive nutrients to support animal growth. b) Creating biodiversity reserves that benefit local farming communities; developing habitat networks in non-farmed areas. | Moratorium on clearing natural forests in Indonesia as part of Reduced Emissions from Deforestation and Forest Degradation (REDD). Halting farmland expansion and land clearing for agricultural purposes, especially in tropical rainforests. |

| | Factors | Present situation and projected trend | Criteria for delivering intervention and strategy | Action, choice or examples |
|---|---|---|---|---|
| **E. sustainability** | Waste & emissions | Roughly one-third of food produced is lost or wasted globally, which amounts to 1.3 billion tons per year. Food losses mean lost income for small farmers and higher prices for poor consumers. | a) Raising awareness among food industries, retailers and consumers. <br> b) In developing countries, reducing food waste in the value chain, investing in transport infrastructure, and in developed countries, reducing end of supply-chain waste. | In the United Kingdom, the Waste Resources and Action Programme works with businesses and communities to reduce food waste. |
| **Social sustainability** | Changing diets; obesity and diabetes | The consumption of rich and processed foods can lead to the many diseases of affluence, particularly diabetes. | a) Public policy can be used to change unhealthy eating habits. <br> b) Sustainable consumption has to be promoted. | In 2004, France passed legislation requiring advertisements for processed food and drink containing added sugar, salt or artificial sweeteners to include health information. |
| | Food safety and access to nutrition | There is particular concern in developing countries where social costs can be especially high for those lacking access to proper medical care. | a) Enforcing and harmonising food safety legislation. Nutrient labelling. <br> b) Creating products for the poorest socio-economic group (bottom of the pyramid). | Hong Kong issued guidelines to reduce acrylamide in food; Food Safety Labelling in Thailand; PepsiCo's EthioPEA – a public-private partnership to increase chickpea production in Ethiopia. |
| | Child labour and labour rights | 70 percent of working children are in agriculture, totalling over 132 million girls and boys aged 5 to 14 years old. | a) Companies should ensure local buy-in and implementation of responsible supply chains. <br> b) Lobbying local governments to set regulations. | Many NGOs are working on making companies responsible and taking action on sustainability. <br> Sustainable Food lab (see: www.sustainable-foodlab.org) |
| | Land rights | Legal rights to land give assurance and incentives to make investments in land. Land acquisitions have multiple implications for the affected societies. For example, water prices may rise to reflect the true cost or value of water, with particularly severe consequences for the urban and rural poor. | a) Companies buying agricultural commodities should ensure that the land from which their suppliers are sourcing has a free and clear title and that local villagers and tribes have received a fair price. <br> b) Consultation rounds with civil society groups. | Women and Land Rights Project by Action Aid. <br> In India and Nepal, joint forest management programmes (JFM) that have allocated rights to forest products to local groups. <br> Landesa is an NGO that ensures that poor families have secure rights over the land they till. |
| **Economic sustainability** | Food price volatility | Food represents a large share of farmer income, and the budget of poor consumers; changes in income due to price swings can reduce children's consumption of key nutrients, leading to a permanent reduction of their future earning capacity, increasing the likelihood of future poverty and thus slowing economy. | a) Price regulation and larger cereal stocks should be created. <br> b) Reorganising food market infrastructure. <br> c) Global fund to support micro-finance to boost small-scale farms. <br> d) Investing in sustainable small-scale agriculture. <br> e) Improving livelihood opportunities for the rural and urban poor. <br> f) Strengthen the provision of basic services. | Purchase for Progress under World Food Programme (WFP). <br> Vodafone's use of communications to drive sustainability in the food chain. |
| | Agricultural finance | Current and projected financing and insurance cover is substantially insufficient to meet challenges faced by the agricultural sector. | a) Synergistically combining financing from public and private sources, earmarked for climate change and food security. <br> b) Integrating food security and sustainable agriculture into global and national policies. <br> c) Community based financial organisations. | M-Pesa, a mobile-phone based money transfer service in Kenya. <br> Micro-insurance innovation like ENSO insurance in Peru. |

## ■ Discussion and conclusion

The UN Food and Agriculture Organization (FAO) states that the required increase in food production can be achieved if the necessary investment is undertaken and policies conducive to agricultural production are put in place. It further suggests that these must be complemented by policies that enhance access to food by reducing poverty. The need for a sustainable intensification of global agriculture in which yields are increased without adverse environmental impact and without the cultivation of more land

has been highlighted by the Royal Agricultural Society of England.

Due to the scale of the challenge, no technology should be ruled out, and different strategies may need to be employed in different regions and circumstances. Bringing about better uniformity between agriculture, food security and climate change policy-making at national, regional and global levels will help. A food security strategy backed by choices that relies on a combination of increased productivity in agriculture, greater policy certainty and broad-spectrum openness to trade

is needed. In addition, adopting an ecosystem approach, a focus on local strategy and ensuring inter-sectoral co-ordination and co-operation is crucial to an effective solution to the problem – feeding of the nine billion. Supporting farmers in developing diversified and resilient eco-agriculture systems that provide critical ecosystem services will help to deliver adequate food to meet local and global consumer needs.

*The views expressed herein are the personal views of the authors and are not intended to reflect the views of any organisation.*

# Use it or lose it – Agrobiodiversity conservation in China

China is extremely rich in agricultural biological diversity, as many crop plants and domesticated animal breeds now found around the world originated from China. However, many of the traditional varieties and breeds have been pushed out of cultivation by modern high-yielding varieties, resulting in an alarming reduction in China's agrobiodiversity resources.

For centuries, farmers in China have carefully selected and nurtured countless animal breeds and plant varieties according to local environments and their needs. Now, economic growth, agricultural production and conservation of natural resources have become competing objectives. Thus integrated approaches to balancing these objectives are needed. While the government of the People's Republic of China has to address short term food security issues, it must also conserve its agricultural genetic resources in order to ensure long-term national and global food security. More than ever before, in the 21st century, the genetic diversity of plants and animals has a crucial role to play in our adaptation to the consequences of climate change, desertification, other environmental changes and new market demands. If important genetic resources are lost, they will no longer be available as building blocks

for breeding plants and animals better adapted to a changing climate and newly emerging pests and diseases. Thus the conservation of agrobiodiversity – world-wide and in the P.R. China – is key to providing insurance against future threats.

## ■ The Sino-German agrobiodiversity project

The Chinese government is aware of the importance of agrobiodiversity. In order to adhere to its international responsibilities in this respect, the P.R. China has initiated a range of related national efforts and is successfully implementing the provisions of international agreements regarding biodiversity, such as the Convention on Biological Diversity. Evidence of its commitment lies in the fact that it is now home to the second largest gene bank

in the world. Still, it is equally important to conserve agricultural plants in their natural environment (Latin: in situ) so that they themselves can continue to adjust to changing environmental conditions through evolutionary processes. In China, there has been insufficient experience in participatory in situ conservation, which actively involves local people in the protection of agrobiodiversity by improving their understanding of, participation in and, most importantly, benefits from conservation. Thus, the Ministry of Agriculture of the People's Republic of China (MoA) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ), jointly tested innovative approaches under the framework of a joint project from 2005 to 2011, and then made the project's results publicly available for replication.

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### What is agrobiodiversity?

Agrobiodiversity comprises the variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries. It comprises the diversity of genetic resources used for food, fodder, fibre, fuel and pharmaceuticals. It also includes the diversity of non-harvested species that support production (soil micro-organisms, predators, pollinators), and those in the wider environment that support agro-ecosystems (agricultural, pastoral, forest and aquatic) as well as the diversity of the agro-ecosystems themselves. *(Source: FAO)*

*"In the past the more we exploited the mountains, the less we benefited. Now we protect the mountains, but also benefit considerably from them."*

Mr. Huang Hanlin from Nangeng Village, Hainan Province, talking about the high returns from Yizhi (black cardamom [*Fructus alpiniae oxyphyllae*], a traditional Chinese medicine promoted by the project as a component of agroforestry systems).

## ■ Approach

In mountainous areas of different agro-ecological zones (tropical, sub-tropical, subtropical/temperate) in the provinces of Hainan, Hunan, Anhui, Hubei and Chongqing, the project tackled agrobiodiversity management through a multi-level approach ranging from village interventions and capacity building to providing policy advice and mainstreaming agrobiodiversity at the county, province and national level (see Figure).

In 26 pilot villages, the status of agrobiodiversity, including related traditional knowledge, was assessed. Subsequent village-level activities for *in situ* conservation of agrobiodiversity were planned in a participatory way, with activities such as small habitat protection, training on biodiversity-friendly farming techniques in newly established farmer field schools, improved seed maintenance, seed fairs, and developing a village-level code of conduct for agrobiodiversity management. In addition, small infrastructure measures were planned as incentives or compensation, mainly funded by the Chinese government, such as the establishment of biogas converters, small rural roads and drinking water systems.

In order to provide economic returns on agrobiodiversity conservation, agro-biodiversity crops with economic potential were identified, their value chains

*Mr Chen Guangbo proudly presents the unique red rice produced in Shimen Village, Hunan Province. This forgotten traditional rice variety now provides additional income to Shimen farmers. Before the start of the project, farmers had not been aware about agrobiodiversity – why it should be protected and how to make money from it.*

Photo: J. Breiholz

analysed and areas for improvement highlighted. For example, steps such as promoting the further processing of crops, reducing the intermediaries from farmer to market and performing customer analysis contributed to creating a marketing strategy for agrobiodiversity products focused on their quality, nutritional value and unique origins or associated cultural backgrounds. Farmers' production and marketing skills were strengthened and cooperatives for agrobiodiversity products established. Participation in food exhibitions where farmers showed their agrobiodiversity products was also facilitated.
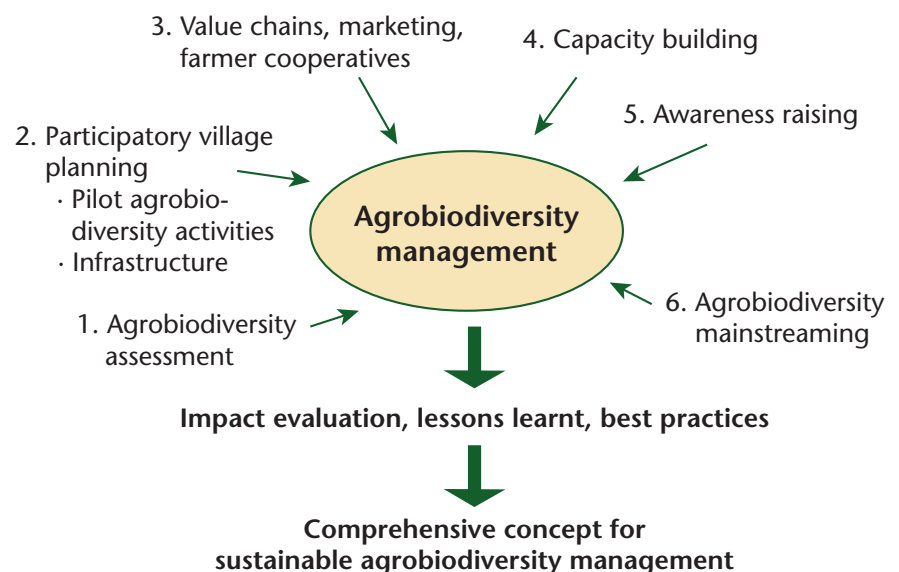
Capacity building, at farmers' level through the farmer field schools as well as at the institutional level, was key to project success. Study tours to local, regional and international places significant to conservation proved an efficient means for transferring knowledge. Numerous project activities then served to raise awareness of agrobiodiversity. The project's documentary film was broadcasted in five provinces by

**A multi-level approach to agrobiodiversity management**

3. Value chains, marketing, farmer cooperatives

4. Capacity building

5. Awareness raising

2. Participatory village planning
· Pilot agrobio-diversity activities
· Infrastructure

**Agrobiodiversity management**

6. Agrobiodiversity mainstreaming

1. Agrobiodiversity assessment

**Impact evaluation, lessons learnt, best practices**

**Comprehensive concept for sustainable agrobiodiversity management**

*Applying a wide variety of project interventions for different target groups and analysing the impacts achieved, lessons learnt and best practices provided the basis for formulating a comprehensive concept for sustainable agrobiodiversity management.*

local television channels. Its travelling exhibition, which was shown 18 times within China and once in Germany, always attracted many viewers. Various project publications aiming at different audiences – farmers, trainers, students, scientists, government decision makers and others involved in agrobiodiversity conservation – also raised awareness and made agrobiodiversity knowledge more readily available and easily accessible. Project results were incorporated into government policies and plans, the establishment of new institutions was facilitated and agrobiodiversity courses were introduced at universities.

## ■ Economic returns have to be visible

Out of the many experiences gained through project implementation, six "best practices" were identified as valuable and worth sharing with others: (1) awareness raising for sustainable agrobiodiversity management, (2) integrated surveys on agrobiodiversity, (3) *in situ* conservation, (4) farmer field schools, (5) adding value to 'agrobiodiversity products' and (6) mainstreaming agrobiodiversity. The best practices publication (see end of article) outlines these six practices and provides recommendations for future actions to be taken by decision makers, development agencies and practitioners, farmers and other stakeholders in China as well as on a global level.

### Why agrobiodiversity is important – the case of Ireland

During the 1840's, the majority of the people in Ireland had lived mainly on subsistence farming. The potato was the country's most important staple food. Only two varieties were under cultivation. A potato disease, caused by a fungus (*Phytophtora infestans*), broke out. As both varieties of potato were susceptible to this disease, it was able to spread unhindered, wiping out large parts of the crop for six years. Over a million people died, 12 percent of the entire population, and a further two million left Ireland and migrated to America. If there had been more diversity in potatoes, this disaster might not have happened with such drastic impacts.

Embodied in the slogan, "use it or lose it", *in situ* schemes address the fact that the conservation of genetic resources is inherently linked to their use. The project found that one central factor determining the motivation of smallholders to support the conservation of plant species and animal breeds was the need for demonstrated economic returns. Farmers had to be motivated to actively use agrobiodiversity for reasons beyond pure environmental protection, e.g. higher incomes by means of better marketing of local 'agrobiodiversity products'. Based on the lessons learnt and best practices, the project produced a concept note with policy advice for sustainable agrobiodiversity management. This will be used by the Ministry of Agriculture for planning agrobiodiversity activities.

## ■ Conclusions

Essential in agrobiodiversity management and therefore deserving special attention are the active involvement of the rural population in *in situ* conservation, the vital role of women in the conservation process, and adding economic value to products derived from agricultural genetic resources ("use it or lose it"). Future efforts should focus on these in order to effectively tackle the tasks of conserving and sustainably utilising agrobiodiversity.

The project's best practices are vital tools for unlocking the value of agrobiodiversity in agro-ecosystems, both within and beyond China's borders. Scaling up this project's outcomes and best practices at the county, province and national level will support the P.R. China in leveraging its role as an important actor in improving the global state of agrobiodiversity. Successful and sustained efforts within China and abroad will contribute substantially to the conservation and sustainable management of agrobiodiversity in China and world-wide.

*This article reflects the author's personal opinion.*



*Photo: giz*

*Farmers involved in the project exhibited their traditional crop varieties at the Shanghai BioFach, attracting many visitors' interest and establishing links to national-level markets.*

### For further reading:

Seib, Nina (Ed., 2011): Best Practices – Sino-German Project on Sustainable Management of Agrobiodiversity. GIZ, Beijing. The publication can be downloaded at www.gtz.de/de/dokumente/giz2011-en-agrobiodiv-best-practices.pdf.

# Mutual support groups surge ahead

How small-scale farmers in Uganda are joining forces and stimulating rural development – an example from the diocese of Luweero.

Kamu Kamu (One by One) is the name of the group of small-scale farmers to which Henry Kiwanuka and his daughter Joyce Kiziito belong. Father and daughter, along with 38 other farmers from three villages in Kasaala Parish, meet every week to give each other advice, to save and lend money together, and to help each other in emergencies. Caritas Kasanaensis in the diocese of Luweero (60 kilometres north of the Ugandan capital Kampala) organised this group and more than 500 others like it. Rather than waiting for material aid from outside, the members take action themselves to improve their lot in life – and they receive technical assistance in agricultural and financial matters from Caritas for doing so.

## ■ A cow makes the rounds

Henry Kiwanuka's family does not go hungry, even though the conditions are rather basic. The corn is ripe and ready for harvest: the mature ears on the 1.5 hectares of dry plants need to be shucked and shelled by hand. On another field, the 64 year old farmer pulled the peanuts from the soil a few days ago and has laid them out in the sun to dry. The farmer also grows coffee, bananas, cassava, squash and eggplant. The surplus not needed for subsistence is sold.

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Kiwanuka is building a new stall for his two sows and their piglets. 25 chickens scratch around the barnyard. 20 cattle roam on distant grassland and are being fattened for market, and a few goats provide meat for the family. Every morning the farmer herds his future milk cow out to graze on the plantation. He obtained her as a heifer at no cost from Caritas, and he will give her calf to another family. With time more and more rural families will thus be able to produce their own milk.

Henry Kiwanuka farms a total of ca. 15 hectares, which he inherited from his father. Division of property is practiced in Uganda, which means that even if the land remains in the ownership of the entire family, in practice it is continuously subdivided (de facto splitting). Kiwanuka has thus already given 1.5 hectares to his son Andrew, a teacher at the local elementary school who farms "his" land as a second occupation on weekends. He still plans to do so even when he (like so many other young people) moves to the city after further education. Hence in spite of rural-urban migration, the land is not left for the farmers who stay behind to manage.

## ■ Novel ideas diversify incomes

Just four years ago Henry and his family were living in a small round mud hut with a thatch roof. He has since built a sturdy house with a sheet metal roof, living room, and two bedrooms for himself, his wife Magdalena and seven grandchildren (their twelve surviving children are now grown). The house is even equipped with a laundry room. A generator runs for four hours every evening to supply current for charging a cell phone and to operate their latest acquisition, a television. 80 percent of the Ugandan population still lives in scattered rural villages. Electricity is available only in exceptional cases, along the major power lines. Nevertheless the entire country is equipped with a functional mobile tel-

*Joyce Kiziito received a cow as a calf from Caritas and she must likewise give the first heifer calf to another family. Thus more and more rural families will be able to produce their own milk.*

*Henry Kiwanuka harvesting corn: the 64-year-old farmer must shuck and shell each ear by hand. The group has planted demonstration fields on some of its members' farms. In this manner they are learning from one another and continuously improving.*

Photo: L. Richard

ephone network. And thanks to cheap cell phones and rates, even the rural population has access to information.

Because Henry's television is the only one for miles around, the neighbours gather at his place. Outsiders pay a small contribution to watch television. Henry bought the set with a microloan provided by the Kamu Kamu self-help group. His daughter Joyce bought a solar panel, with which she charges her neighbours' mobile phones in the midst of the bush and far from the nearest store for a small fee. The families of both farmers thus profit from two alternative sources of income.

## Strength in unity

With support from Luweero Diocese and the organisation Caritas Kasanaensis, the small-scale farmers joined forces in 2001. They learned how to organise themselves in a group, and they elected a chairman (Henry Kiwanuka) and an executive committee with a secretary and recorder, bookkeeper and accountant, and persons responsible for mutual information. Each group has around 30 to 40 members, and eleven such groups form a regional association. They are each composed of equal numbers of men and women with a good mix of generations, and Christians and Muslims work together. When the positions in the executive committee are filled every two years, care is taken to ensure a good distribution and that all villages are represented.

Each week the farmers meet for about three hours at one of their member's places under shady trees, where they discuss technical problems in agriculture and give each other advice. Some of the farmers have planted demonstration fields of bananas, sweet-potatoes, or coffee for showing their colleagues how production can be improved or how to deal with problems. They are assisted by Denis Kabi-ito, a young, well-educated consultant from Caritas Kasanaensis who not only knows a great deal about agriculture and the production of organic herbi-

cides and fungicides, but also has an excellent understanding of markets and prices.

## Managing savings and microloans themselves

The weekly deposits and payments are a key aspect of the meetings: each member comes with 1000 to 5.000 Uganda shillings (UGX; 1 EUR ≈ 3.700 UGX) each week. The amount is entered in a bank book. All amounts and bank books go into a large box with multiple locks. The three keys and the box are kept in separate locations. Strict rules and monitoring along with transparent decisions give a sense of security and build trust.

The deposited assets yield no interest. However, they do serve as the basis for microloans of three times the amount deposited. A member may apply for such a microloan, which must be paid back with 10 percent interest within three months. The borrowed money can be used for agricultural improvements, for school tuition, or for household purchases. The interest rate is considerably lower than that charged by banks (which is around 20 %). Even more decisive, however, is the fact that the banks are far away in the cities and that some farmers only tend the land but are not considered as owners and therefore have no collateral for a bank loan. Often in the past their only way out was to accept credit from the dealers. As with the founding of the cooperative credit banks and Raiffeisen banks in Germany, Ugandan farmers too now have access to self-help and mutual support.

At the end of a given year each member receives his or her assets back, the interest earned is paid out proportionately, and the cycle starts over. Kamu Kamu, for example, managed to save 3.58 million UGX (just under 1000 Euros) this way in the first half of 2011, more than three quarters of which was

used for loans. But the group sees itself as more than a community savings bank, for it has also set up a social fund to which a little bit is added each week. A small allowance is granted from this fund in emergencies. It is not a lot, but it does help when times are tight and enables people to buy essentials like cornmeal or milk.

The farmers generally sell what isn't needed for subsistence to dealers. A portion of the products is sold in a store run by a member of the group, with the aim of improving collective marketing and marketing in general over the medium term. The certification of marketable products such as coffee, corn and pineapples as organic and fair trade products is another objective.

## Integrative village development

With the formation of these groups, Caritas Kasanaensis Luweero has opened a future-oriented chapter in rural development. There are 537 such groups with 35 to 45 members each in the Caritas Kasanaensis zone. They are about participation and codetermination, professional development, networking the villages with one another, equality and appreciation of the roles of men and women, involvement of youth and elderly alike. Other topics of interest include environmental protection, health care and water quality. According to Father Hilary Muheezangango, the director of Caritas Kasanaensis, since the end of the war in 1986 the government has functioned sporadically at best and has done far too little to support or organise such groups. He advocates stronger networking and constructive interaction among governmental, church and private structures.

Hence the church, which is especially well-established in the rural regions of Uganda, is interested in working with the agricultural con-

*Caritas Kasanaensis has created more than 500 small-scale farmer groups. The groups learn about saving and granting each other micro-loans. Everything is meticulously recorded in bankbooks or credit lists. A carefully designed system helps build trust.*



Photo: L. Richard

sultants of government agencies and is also interacting with private organisations such as the Hanns Neumann Foundation in Germany. The latter works with leading coffee roasters, funds sustainable projects in the coffee growing sector, and assists the small-scale farmers with production technology and marketing: the Uganda Natural Coffee Farmers Alliance, an association of small-scale farmers who are improving productivity in coffee growing, cooperating with each other, and generating more added value by processing the coffee and cutting out the numerous dealers (middlemen), is headquartered in the city of Mityana. The middlemen still dominate the business almost everywhere else and determine the prices as they see fit, a daily fact of life for Henry Kiwanuka as well. Farmers frequently have to sell their crops prematurely at a poor price, as they need the money for tuition for their children. Cooperation helps farmers remedy this situation by ensuring market transparency and helping them get through hard times.

## Both sides engaged

The now 25-year old regime of President Yoweri Museveni has indeed provided stability and peace in the country, but "the government needs to plan for its own people, as in practice a lot of things don't work," says Father Hilary. There are still no rural roads, the quality of the public schools leaves something to be desired, and there are not

enough affordable medications available in the public health care system. The high inflation rate (nearly 13 % in 2010) and the corruption are hard on the people in terms of such things as everyday expenditures or the granting of land titles. "Land grabbing" is a problem that must be taken seriously. Land titles are frequently granted in an underhand manner, without the knowledge of the owners and the farmers tending the land. The farmers tending the land need to be better informed about the laws in effect and supported in land acquisition – and without having to pay (bribe) money.

Father Hilary Muheezangango views the union of the local people as the best chance for strengthening and consolidating the market power of small-scale farmers and for speaking with one voice politically. Also there is no getting around the need for commercialisation and professionalisation of the farmers. They should become more specialised, limit themselves to a few key products, and focus on improving the latter and making them marketable. A small home garden could ensure subsistence, advises Father Muheezangango.

The groups of Kasaala Parish prove that such a union bears fruit – with solidarity and exchange of experience, with education and technical support, with transfer of responsibility and democratic structures. And with time.

# First-class energy from second-hand turbines

In 2009 a refurbished turbine from Europe became Gambia's first wind-power plant. Now two more are being connected to the electricity grid, underpinning the small country's pioneering role in the face of considerable resistance to the use of wind energy in the West African region.

Thirty metres above ground-level on the nacelle of West Africa's first wind turbine, all is well with the world. A fresh breeze blows over the village of Batokunku in Gambia. Fishermen row their pirogues parallel to the coastline, casting nets to catch barracudas or red snappers. Looking down on the densely populated coastal region, the thinly wooded landscape looks greener than it really is on the ground at the beginning of the dry season.

Muffled reggae music is coming from the Nissan pick-up parked at the base of the turbine. The truck belongs to a firm called Global Energy. The small company with the big name has the service contract for the 150 kW turbine originally made by Bonus Energy, Denmark's pioneering wind-turbine manufacturer – now part of the Siemens conglomerate – and installed here three years ago. A real challenge, because servicing wind turbines is completely new territory in this part of West Africa. And the Batokunku turbine has already given a lifetime of previous service: it harvested European wind at Nysted in Denmark for many years before it was stowed in a container, shipped to Africa, and given a second lease of life.

"We like the job," says the firm's Dutch boss Milko J. Berben, who has lived and worked in Gambia for more than ten years. In the past, his team of fitters mainly serviced diesel engines, repaired ships' machinery and carried out other installation jobs, but nowadays they are more and more involved with wind energy. The pioneer turbine will soon be followed by two more second-hand units from Germany, each with a capacity of 450 kilowatts and due to be erected in the next few months in the coastal settlement of Tanji, just a few kilometres to the north of Batokunku; a challenge that the people from Global Energy accept with relish.

## ■ Private commitment meets state stonewalling

The starting point for this remarkable development in Gambia, a country of one-and-a-half million inhabitants, is the commitment of one individual. "Peter has done so much for us," says Ebrima Touray of the Batokunku village committee emphatically. She is talking about the efforts of Peter Weissferdt. The 70-year-old electrical engineer from Kiel in Germany moved to Gambia a few years ago with his wife Gitta. Being a well-known character in the

*Carl-Rasmus Richardsen from Windstrom SH showing Kim Mbowe of Global Energy how to maintain the plant.*



Photo: M. Kottmeier

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German wind-energy scene, his mind soon turned to harnessing the energy of the wind in the West African country he has chosen as his home.

When the first second-hand turbine was erected at the start of 2009, this idea became a reality – after years of troublesome planning and seemingly endless negotiations with the state energy supplier Nawec. Only a Public Utilities Regulatory Authority (PURA) appointed during the process by the Gambian parliament finally turned the tide, and overrode the energy company's stonewalling attitude towards the wind-power project. It forced Nawec to allow feed-in to the grid and to authorise the operation of a local network. "Nawec is one of these typical state enterprises in Africa which employs lots of old-school bureaucrats, who are simply afraid of making decisions on anything new," Peter Weissferdt comments on the monopoly that, until now, has controlled Gambia's energy and public water supply. Yet the state-run company presides over massive inefficiency; electricity losses in the Nawec grid are appallingly high. Experts think that around 40 percent of the energy fed in is lost within the grid alone, the majority due to cable faults, but theft is also rife when people simply by-pass electricity meters. On top of that, in urban areas only one in two residents is connected to the grid; in rural regions it is just one in four.

### ■ A village flourishes – thanks to its own initiative

The village community in Batokunku was spurred on by Weissferdt to take its destiny in its own hands and lay its own network of electricity cables and water pipes as part of the wind-power installation project. Both the electricity and water supply networks as well as the 150 kW wind turbine are now self-run by the local council and the non-governmental organisation Batokunku Rural Electrification.

### Wind energy in Africa

Worldwide installed wind-energy capacity crossed the 200,000 megawatt mark in 2011. China, the USA, Germany and Spain are the global market leaders. So far, progress in Africa has been modest at best. According to figures from the World Wind Energy Association (WWEA), installed capacity for the entire African continent was precisely 906 megawatts by the end of 2010. The lion's share is produced in just three countries: Egypt, Morocco and Tunisia, which have a combined capacity of 890 megawatts. The remaining capacity of 16 megawatts is dispersed across South Africa, Nigeria, Cape Verde, Ethiopia, Namibia and now Gambia, although the WWEA expects the addition of another 700 megawatts by the end of 2013. What is called for, particularly in countries south of the Sahara, is a fundamental overhaul of the energy policy framework so that wind energy – including smaller-scale installations – can really get off the ground in rural regions.

A five-person committee oversees the turbine and the village network, and takes all operative decisions. "It has enabled us to have light in our houses, buy fridges, open a cinema; manufacturers bought sewing machines, others are running small electric oil-presses. It's a completely different life from before," says village committee member Touray. "That's why we hope to have a school here soon as well." The necessary money will be raised by the wind-energy plant: for a five-year term, the state energy company has undertaken to pay 80 percent of the consumer tariff per kilowatt-hour generated: currently, that converts to about 18 eurocents. The "father" of Gambia's first wind energy plant is unashamedly gratified by this tariff. "The pennies are steadily trickling into our village fund," says a smiling Peter Weissferdt.

The tariffs for the two new turbines that will shortly arrive are not quite as good. The future operating firm Gamwind Ltd. has a separately negotiated contract with the supplier Nawec, and will receive the equivalent of 14 cents per kilowatt-hour for the first five years of operation. "It's not quite as much as we hoped, but it's still very good," says Björn Schäfer of the firm Windstrom Service SH from Schleswig-Holstein in Germany, which owns a 51 percent stake in Gamwind Ltd. Windstrom Service SH, a mid-sized company specialised in the repair and servicing of older turbine models, was already involved in erecting the 150-kW Bonus plant. As one of the future operators of the two 450-kW Bonus plants, once again it will coordinate the installation work side by side with Milko J. Berben's team. For Schäfer, the assignments in Gambia are a fantastic change of scene. He is most inspired by the country's positive mood: "Even the President is getting behind wind energy."

### ■ Appropriate technology

Schäfer thinks the use of second-hand turbines in countries like Gambia makes perfect sense. "What do I want with a high-tech plant that nobody local can maintain?" is his simple reasoning. "In any case, only wind farms of ten megawatts or more can reliably get hold of replacement parts for new plants." So much the same as when the first turbine was installed two years ago, he will probably be found sitting in the mini-substation late into the night pondering how to solve problems with the controls of the refurbished turbines.

One thing is certain: with the two new plants, Gambia will hit the 1-megawatt mark of installed wind-energy capacity, gaining that much more independence from costly imported petroleum – and, what is more, hoisting the sails for wind power throughout the region.

# Land deals and water: the underestimated dimension

The phenomenon of foreign actors securing farmland in other countries has reached an unprecedented pace and dimension. Water plays a central role in these land deals. However, studies analysing these procedures and impacts of land deals on the existing water management system of a country are still rare. This article presents the outcomes and lessons learnt from a study in Ethiopia. The author was presented the Hans H. Ruthenberg Advancement Award for Graduates for her Master's thesis in 2011.

Foreign direct investment has become vital in many developing countries, particularly in Africa. While media coverage has dramatically increased, scientific research has just begun and mainly focuses on the underlying political mechanisms as well as on the economic, environmental and social impacts of these investments. Also, very little research has been done on the role of water management in areas where foreign investors and local farmers share water resources.

This article presents the outcomes and lessons learnt from a study that was carried out in Ethiopia in 2010: Horticultural farms were allocated land in an area that was formerly managed by small-scale farmers, and started to use the same water sources. The study aimed at assessing how the institutional set-up of a water management system changes when foreign actors enter the arena and how this change and the arising conflict can be explained. The study's theoretical background is *Institutional Economics* employing *Common-pool Resource Theory* and the *Distributive Bargaining Theory of Institutional Change* (Knight 1992, 1995). The study primar-

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ily draws on data collected during two months of field work in 2010. Seventy farmers from two communities, five investment managers and ten governmental representatives and researchers were interviewed.

## ■ The research area

The irrigation scheme under study is situated in central Ethiopia, in the administrative region of Oromia. The scheme was built in the 1980s with the initial objective to establish state-owned horticultural farms with a corresponding 1,600 hectares of irrigable land. Only 500 hectares was realised, and a state-owned farm was installed to produce vegetables and fruits. This farm was only operational for a few years, after which the land was partly given to smallholders, the rest remaining unused. Around 2005, the government allocated approximately 140 hectares to floricultural and horticultural investors from abroad. The land was taken from the former state farm and also from local farmers, who were granted compensation.

Since the arrival of the investment farmers in the area, the canal water has been shared among both groups – the investment farmers and the local producers. The water flows into the primary canal leading southwards to local

farmers and nine floricultural and horticultural farms that are directly situated along the canal. Five out of the nine farms are owned entirely by foreign investors from the Netherlands (two), Israel (one), the Palestinian Territories (one), and China (one). Two of the farms are organised as joint ventures between Ethiopian and foreign investors (Russian/Ethiopian and Israeli/Ethiopian), and two farms are completely Ethiopian. The average farm size is 20 hectares. What is unusual about the irrigation scheme is that the water flow into the canals can be only controlled by using a special key. Thus the water guards, who have such keys have the power to change the water level in the canal system.

The flori/horticultural farms irrigate their greenhouses and open fields throughout the year, using groundwater and, to a lesser degree, water from the canal. In contrast, local farmers use irrigation water primarily during the dry season for the production of onions, tomatoes, potatos and chickpeas, using flood and furrow irrigation, and are dependent on canal water. The irrigation scheme considerably contributes to food security in the area, with farmers producing for subsistence and for the local smallholder market.

Before the investors arrived, the water distribution system was organ-

ised by self-devised rules with almost no governmental involvement. Decisions were taken in farmer user groups on a democratic basis. In order to acquire the right to use canal water, a farmer needed to pay the land tax or rent land from another farmer, to become a member of a group and abide by its rules. Rules included "to use water by turn", "attend meetings" and "use water properly", e.g. not to flood the neighbour's field. Most, but not all, water groups raised water user fees, which were collected by the committees of the groups. Most of the groups also had sanctions for non-compliance with the rules. However, these sanctions were rarely executed.

### ■ Arising water conflicts

Water scarcity increased when the nine investment farms became operational. This resulted in water conflicts at the water gates, where the invest-

ment farmers had sent their own water guards, while the local farmers were still using their own water guards to open and close the canals. To solve the conflict, one investor founded an association to manage and maintain the canal system. This new association was established without any governmental involvement and managed by a chairperson, his assistant and a farmers' representative. A former governmental extension worker was appointed as the chairperson, and an employee of one of the investment farms as his assistant. The new association called for regular meetings, but, usually not many representatives from both sides would attend the meetings due to work commitments.

Very soon, the new association reorganised the previous water management system of the local farmers. Firstly, the farmers' water user groups were re-structured into groups with lower membership. Secondly, water

user fees were introduced to all remaining user groups that had not had them before, and the user groups' committees were instructed to hand the money over to the new association. Previously, the collected money had remained with the user groups. Thirdly, sanctions for non-compliance to the still existing rules were introduced for all user groups and sanction fees were raised substantially. Fourthly, the new association set up a water turn-taking system between the investment farms and the local farmers, giving the days to use the canal to local farmers and the nights to the investment farms.

Four binding rules were thus enforced onto the local farmers: pay the water fee, attend the group meetings, respect the turns and use water properly. The latter three were considerably sanctioned in case of non-compliance. However, only two rules were established for the investment farms: pay the yearly water fee and respect



*Before the investors arrived, the water distribution system was organised by self-devised rules with almost no governmental involvement.*

Photo: A. Bues

*The average farm size of the flori/horticultural farms is 20 hectares.*

Photo: A. Bues

the turns agreed between farmers and investment farms. None of these rules were sanctioned. The question rises as to why this unequal arrangement could be enforced, although local farmers were represented in the new association.

One answer could be that farmers did not feel equally represented in the meetings of the new association. The farmers' representative often felt ruled over by the investment farms' representatives. The reason for the farmers to agree to the new rules for the user groups was because the chairperson of the new association was known to them as a government representative. In rural Ethiopia, opposing the government can cause the denial of important government services, such as health care or agricultural support (Human Rights Watch 2010). Therefore, many farmers maintain a deeply humble and submissive attitude and rather accept what the government proposes.

The Distributive Bargaining Theory of Institutional Change (Knight 1992, 1995) explains the findings of the study very well: The actor with the higher bargaining power will shape the bargaining for rules and ultimately pushes for the agreement that is most favourable for his interests. In the case presented, the three power resources *governmental support, resource dependence* and *education and knowledge* lead to the investment farms shaping an agreement that favours themselves, while local farmers did not have a choice but accept it. These three power

resources set the investment farms in a better position to form the agreement to their distributional benefit.

■ **Recommendations as a reflection of lessons learnt**

As the whole resource setting and the traits of the actors in terms of their power resources are characteristics of agricultural foreign investment in a low-income country, the dynamics are likely to be repeated in similar settings. Therefore, the study is highly relevant when investigating the possible consequences of agricultural foreign investments on the local water situation, and its lessons can be converted into recommendations for both the Ethiopian government and the international community:

1. The details of any arrangement concerning land and water need to be negotiated among all actors on equal terms.

2. All land investments must be based on thorough social and environmental impact assessments involving all concerned parties. Water needs to be an integral part of this.

3. Customary water and land rights have to be fully acknowledged.

4. Resource priority must be given to local farmers.

In order to have major recommendations implemented, organisations of development co-operation must request the respective governments to do so and assert and monitor them so that the local population have the chance to actively decide about their future.

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# The impact of increasing rice and maize prices on household income in north-western Vietnam

A representative household study in north-western Vietnam shows that increasing maize output prices had a positive impact on net household income. In fact, this increase outweighed the negative impact of rising rice consumer prices in the past five years. During the same time, however, maize production had massive fluctuations of maize net revenue as well as sharply increasing input costs.

High world food price levels in the past five years and the recent food price increase in 2011 give reason for concern about pushing millions of poor people in low-income countries into hunger. However, not only do rural households in low-income countries spend a large proportion of their income on food, but most of them also generate a major share of their income from agriculture. Hence, the net impact of changing consumer and producer prices on household welfare can be positive or negative, depending on whether a household is a net buyer or net seller of agricultural commodities. The input intensity of agricultural production can further determine how changes in input cost impact on net revenue. In addition, rural households face increasing income variability. This escalates the risk of agricultural pro-

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duction, likely increasing pressure on households' coping capacity and consumption stability.

Against this background, a representative household study at the University of Hohenheim (Stuttgart-Hohenheim, Germany) as part of the Uplands programme funded by the German Research Foundation (Deutsche Forschungsgemeinschaft – DFG) focuses on the impact of increasing rice and maize prices as well as increasing input costs on household income in a region in north-western Vietnam.

### ■ The research area

The household study was carried out in Yen Chau district, a mountainous region in north-western Vietnam. The district is amongst the poorest areas in the country, with 17 percent of households living below the national rural poverty line in 2007. Households are highly dependent on two crops: paddy rice for subsistence, comprising 11 percent of total farmed area and 8.5 percent of consumption expenditures, and maize, the main cash crop covering 71 percent of total farmed area

and constituting 65 percent of total household cash income. Both crops are cultivated with high input intensity and the use of modern hybrid varieties, yet only maize is highly commercialised. In paddy production, approximately half of the households are self-sufficient and the other half are net buyers of rice. Only 7 percent of households are net sellers. In contrast, 97 percent of households are net sellers for maize, selling almost all of their produce.

### ■ Impact of price changes on net household income

In the past five years, both rice consumer and maize producer prices increased considerably, by approximately 15 and 27 percent annually, respectively. The average impact of rising rice prices on household net income was moderately negative for net buyers (- 3 % per year) and slightly positive for net sellers (+ 2 % per year). On the other hand, all households benefited to a larger extent from rising maize producer prices. The joint effect of rising rice and maize prices on net household income was + 13 percent per year, on average.

# SCIENTIFIC WORLD

**Development of input prices, maize output prices, and maize income 2006–2010 (in Viet Nam Dong, VND)**
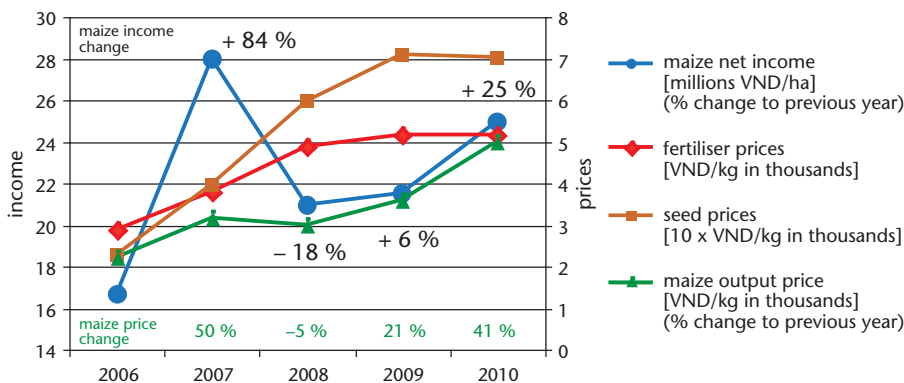


## ■ Maize net income development

In assessing the real change of household crop income, the development of input prices is as important as the development of output prices. Since 2006, fertiliser prices increased 10 percent and seed prices 19 percent annually, on average. The hike in input prices was severe, with the largest price leaps occurring in 2008 and 2009. In addition, the steady upward trend in maize prices exhibited a small decrease in 2008. Besides price changes, maize production was also impacted by regional weather events, such as a major drought in 2010. Consequently, net maize income in real terms was highly volatile, with a rise of about 84 percent in 2007 and a decrease of 18 percent the year after. However, even with a strong increase in input prices, maize price development in most of the years since 2006 has been sufficient to either keep net maize income at the same level or to even improve net maize income year by year (see Figure).

## ■ Household response

How did households cope with this volatile income? For households with low consumption and with limited access to insurance mechanisms, as is common in low-income countries, price shocks can lead to a depression in consumption if they are not mitigated by coping strategies. Hence, the impact of the 2008 maize income shock on household consumption expenditures in the post-harvest period was analysed. The analysis did not find a negative impact from the shock on household consumption expenditures. On the contrary, households were able to increase their consumption expenditures compared to the previous year. The most likely explanation is that the decline in income in 2008 cannot be understood as a shock to households given the large maize income increase the year before (2007), but rather

*Most of the rice crop is consumed by the farming household.*

constituted a drop to a normal level after a good year. This can be underlined by the fact that 88 percent of affected households did not engage in any coping strategy to deal with the decline in maize income. Households that did apply a coping strategy postponed making a long-term investment, such as purchasing a working animal or motorcycle, or were taking out a loan. It can therefore be assumed that households invested the extra income in 2007 into durable goods rather than in everyday consumption.

A notable difference in marketing maize since the price increase has been when producers decide to sell maize. Households actively tried to sell maize later in the season when maize prices were increasing. Following a repetitive trend of an intra-seasonal increase in maize prices, from 2006 to 2008, households gradually prolonged the time between the onset of the maize harvest and the selling time by about two weeks. Since traders come to villages, almost all farmers can negotiate with several traders and can therefore choose to wait for an acceptable price.

## ■ Factors limiting households' adaptive capacity and policy recommendations

Options for farmers to adapt to maize price fluctuations remain limited. Generally, they have to sell their maize soon after the harvest to avoid severe post-harvest losses, obtain cash for their daily needs and pay back loans. Hence, policies are needed that help improve post-harvest management.

In particular, farmers in remote areas which are not well-connected to main roads can, in general, achieve rather low maize prices. Thus, maize market integration must be improved for areas facing structural disadvantages. Attention also needs to be given

to improving formal rural financial institutions in the area. Even though informal input loans are widely accessible and farmers make use of them, prices paid for inputs by using a loan are 22 percent higher than the direct price. Furthermore, poor households have to pay a 21-percent higher interest rate on informal loans than better-off farmers. Increased access to formal credit and savings could improve the risk-coping capacity of households by providing insurance and supplying investment capital to advance maize production and promote income diversification.

Nonetheless, the high specialisation in maize production is a relatively risky income strategy given the high input intensity and the large maize income fluctuations observed. Production risk is further aggravated by severe soil erosion in the mountainous area, threatening the sustainable production of maize. Therefore, income diversification should be fostered in the long term.

## ■ Conclusions

The results from north-western Vietnam show that increasing maize producer prices could outweigh the impact of rising rice consumer prices on household income and that maize net revenue increased despite sharply rising input costs. However, maize net income proved to be highly variable. Therefore, policies are needed to improve the rural infrastructure and market environment and to support the adaptive capacity of households and their risk management strategies. In this regard, with its relatively uniform land distribution, basic infrastructure (roads, phones), basic education level, and access to inputs and a competitive maize market which enables farmers to benefit from increasing price levels, the area researched is already better off than many other low-income countries.