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**Agricultural policies –
finding the right approach**

Photo: J. Boethling

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Dear Reader,

The development of rural areas calls for a holistic policy approach. Social and environmental policy, economic and trade policy and food and agricultural policy need to be cleverly combined in order to boost the rural economy without overexploiting natural resources, and if this is to succeed in the long term, to combat hunger and poverty. In this edition, with a view to agriculture as a driving force of rural development, we have chosen to focus on a sub-aspect of this policy mix: agricultural policy.

Over the last few decades, notions of agricultural development and hence agricultural policies have changed, depending on the circumstances and ideas happening to determine global politics. Much has proven to be wrong if not even disastrous for rural regions and has caused precisely the opposite of what was originally intended. Our authors give accounts of the lessons learnt and of what nowadays appears to be the right approach – from the angle of development co-operation and the partner countries, research and civil society.

Steve Wiggins of the Overseas Development Institute (ODI) first gives a short overview of the paradigm shifts during the last decades. He then shows what global framework conditions determine today's agricultural policies, on which items experts agree and in which areas they are at odds with one another (pages 8–10). Jonathan Brooks of the Organisation for Economic Development and Co-operation (OECD) explains why it is better to create an enabling environment for investment rather than intervening in markets and describes the significance of innovations and trade for raising production and income in rural areas (pages 11–13). Theo Rauch, Honorary Professor at Berlin's Free University, is convinced that agricultural policy has to be conceived with a view to supporting small-scale farmers in making use of the opportunities that increasing prices for agricultural commodities are currently offering them (pages 14–17). Just which policies are the right ones here – a farming/livelihood or a value-chain approach, a focus on public or private sector services, a high or low input policy – will ultimately always depend on the specific context, as Rhoda Peace Tumisiime, Commissioner of Rural Economy and Agriculture of the African Union, stresses (pages 32–33). Furthermore, it ought to be left to the farmers themselves which approach they opt for. And in accordance with the subsidiarity principle, they ought to be able to co-determine their country's agricultural policy themselves. How this can succeed and which hurdles they have to clear on the way there is described by Langelihle Simela of the African Farmers' Association of South Africa (pages 18–21).

Finding the right approach presupposes that the effects of policy measures are predictable. However, policy-makers often lack information and analytical capacity to effectively monitor how policies impact on different stakeholders. The MAFAP initiative of the UN Food and Agriculture Organization seeks to bridge this gap by supporting the development of policy monitoring

systems (page 27). Policy analysis and advice is also provided by the Futures Agriculture Consortium, in which leading African and UK-based research institutions are organised (pages 22–23). However, in order to give advice, institutions first have to understand the complex background of political decision-making. Other capacities that advisory activities require are described by Heike Höffler of Deutsche Gesellschaft für Internationale Zusammenarbeit (pages 28–31). Finally, Zhu Ling of the Chinese Academy of Social Science and Blessings Chinsinga of the University of Malawi give examples of the concrete impacts that agricultural policies have (pages 24–26 and 34–35).

Transboundary river basins account for 45 per cent of the Earth's land surface; 145 countries have to address the issue of how they can best manage the use of the common resource of water. Here, Agenda 21 suggests integrated water resources management. It is hoped that also through the participation of civil society, it will be possible to reduce potential conflicts over water issues. However, stakeholder participation is easier said than done, as the example of the Pungwe river basin in Mozambique and Zimbabwe shows (pages 36–38).

The civil war in Angola, which has been raging for decades, has turned what once used to be Africa's largest agricultural producer into a country that has to import the majority of its food. For a long time, this was not a matter of concern for the government. After all, extensive offshore oilfields and diamond mines mean that there is an abundance of revenues. Now, the government and private investors are making efforts to revitalise the ailing agricultural sector. But do these large-scale projects still leave enough room for small-scale farmers? (pages 39–41)

Opinions vary on the issue of two billion people with nutritional deficits. While there are those who advocate biofortification, others are opting for a balanced diet with a sufficient amount of fruit and vegetables. The World Vegetable Center is currently examining whether traditional vegetables are more nutritious than modern varieties and whether early growth stages of these consumers – sprouts and microgreens – can offer consumers a higher content of phytonutrients (pages 42–43).

With this last edition of the year, we would like to offer all readers our seasonal greetings and all the best for a peaceful, happy and healthy 2014.

Yours sincerely,

Silvia Richter



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Photo: IASS/Agentur Standard



Photo: Zhu Ling



Photo: L. Ringhofer

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Photo: W. Ebert

Losing ground? Global Soil Week 2013 discusses Agenda for Action

At the UN Conference on Sustainable Development (Rio+20) in June 2012, the international community agreed on an aspirational goal: a land degradation-neutral world. The measures that this requires and the hurdles that need to be cleared were discussed at the Second Global Soil Week, which was organised by the Institute for Advanced Sustainability Studies (IASS) together with various UN organisations, the EU Commission and the German Federal Government in Berlin/Germany in late October.

Speakers in the opening event once again illustrated the urgency of the issue: the worrying loss of soil (an estimated 24 billion tons a year), its finiteness (the formation of a 2.5 cm thick layer of humus takes around 500 years), its unequal distribution (less than two per cent of the land world-wide is owned by women) and the annual losses for the global economy (an estimated 420 billion euro). In addition, they demonstrated the close relations between the use and availability of soil and the overall goal of hunger alleviation, sustainable resource use, mitigation of climate change and security.

■ Taking global responsibility seriously

“Without soil and energy, we will not overcome poverty in the world,” IASS Executive Director Klaus Töpfer warned, and he called on the countries of the North to assume their global responsibility. Africa can boast 3,500 solar hours a year, compared to Germany’s mere 900. While Germany was showing hardly any interest in research on renewables, this was a crucial factor to Africa in efforts to overcome energy poverty. However, the continent was unable to finance research by itself.

Tarja Halonen, Co-chair of the High-level Panel of the UN Secretary-General

on Global Sustainability, reminded the audience that sustainable soil management was one of the most effective means of poverty alleviation and food security, which in turn had a crucial influence on a country’s social stability. However, Vandara Shiva, Board member of the International Forum on Globalization, maintained that, for a long time, soil had been regarded as an empty container that only needed to be filled with nutrients – especially in the times of the Green Revolution. “It is wrong to believe that fertility comes from fertiliser!” the activist explained, calling instead for a focus on an optimum provision of soils with organic material and the conservation of biodiversity.

Torgny Holmgren, Executive Director of the Stockholm International Water Institute, stressed that food production depended on water and energy. First, food production was one of the largest freshwater users in the world – alone the production of one kilogram of meat required 16,000 litres of water. Second, 50 per cent of water resources was being used in shared agreements. Scarcity and the transboundary nature of water could easily result in conflicts. In addition to investment in sound new technologies, partnerships among water and land owners and users were needed, said Holmgren.

The kick-off event was followed by numerous dialogue sessions and plenary discussions centring on four thematic threads: “Material cycles”, “Sustainable land management & soil engineering”, “International soil policy & sustainable development goals” and “Responsible land governance”.

■ Are we undermining our future?

Often, the issue of mining only plays a subordinate role in the debate on soil quality and the sustainable use of natu-

ral resources. This does not do its significance justice, as Graciela Meternicht, Professor at the University of New South Wales/Australia, and Mariné Pienaar, founder of Terra Africa Consult, demonstrated, referring to the impacts of extractive industries: immense water consumption, the conversion of agricultural land, deforestation, a loss of biodiversity, discharge of CO₂, gas flares and toxic chemicals, land degradation, water pollution, mining accidents, and the resettlement of villages. So all in all, there were enormous threats to people and the environment.

In Peru, for example, 12,000 people are involved in artisanal mining, while a further 30,000 depend indirectly on mining. “From 1975 to 2002, nearly 2,000 tons of gold was extracted in Peru, with 3,000 tons of mercury being left behind,” Meternich explained. Up to 30 per cent of this poisonous element ends up in the watercourses, while half of it evaporates. And in Papua-New Guinea, the activities of OK Tedi Mine, who extract copper and gold in the country’s Western Province, leave behind 70 million tons of waste rock and mine tailings a year that flows a distance of more than 1,000 km down the rivers, threatening biodiversity. Cuba is one of the largest producers of nickel. High levels of contamination have been reported for at least 1,350 hectares of coastal waters in the country’s Southeast.

In many poor countries, mining concessions are awarded unconditionally to mining corporations because the latter provide services that governments are unable to perform (sufficiently), such as building schools and hospitals. This in turn attracts many people from outside who settle in the mining locations. However, as Pienaar explained, not only do people lose their jobs when the mines close down after 20 to 30 years, but all public services are terminated as well.



Reversing soil sealing. To mark the beginning of Global Soil Week, IASS Executive Director Klaus Töpfer (left), environmental activist Vandana Shiva and Volkert Engelsmann of the "Save Our Soils" campaign broke open sealed soil in the heart of Berlin and planted it with vegetables.

to address rehabilitation issues. Jorge Jurado, Ecuadorian Ambassador to Germany, seemed sceptical, maintaining that corporations only acted in a responsible manner if forced to do so by a respective country's legislation.

■ Only that there is a lack of political will

Many encouraging examples were presented at this Second Global Soil-week. At the end of the day, however, it once again became clear that no matter how much expertise and engagement is put in, it will achieve nothing as long as political myopia gains the upper hand. In his video message on the opening day, Janez Potočnik, EU Commissioner for the Environment, had pledged further support for a European Soil Framework Directive, which the EU has been trying to implement in the context of its Soil Thematic Strategy since 2006. Opposition by a blocking minority of EU Member States has always prevented the full adoption of the Directive in the EU Council, the main reason given being that unlike air and water, soil does not reach across borders, which is why, in accordance with the subsidiary principle, no European regulations are required. Early in November 2013, José Manuel Barroso, President of the European Commission, announced that the Directive would be deleted from the agenda.

Silvia Richter

Documents of the various events are available for download at: www.globalsoilweek.org. The final draft of the Soil Weeks' "Agenda for Action", ready for comment, is also available there.

■ Rethinking has started

In many countries, artisanal mining is an important source of income for local communities, while mineral resources represent an indispensable means of gaining foreign exchange for the countries concerned. "It is a complete illusion to think that we can stop mining," Meternicht said. However, a rethinking of the issue was gradually setting in. Australia has introduced a guide to sustainable mining. With its Green Mining Initiative, Canada is attempting to position the country's mining sector as "the global leader in green mining technologies and practices". And some corporations seem to be increasingly aware of their responsibility, too, such as Richard Bay Minerals (RMB), a South African mining company that has been operating open-pit mining along the KwaZulu-Natal coast in South Africa since 1976, where it is mainly extracting titanium dioxide, zircon and high purity iron. The company's chief owners are Rio Tinto, one of the world's three largest mining companies.

Staff member Theresia Ott presented some of the company's mining guidelines, according to which efforts are being made to maintain most of the topography and prevent

soil movement. These include setting up windbreaks and the restoration of the natural vegetation. When areas are exploited, a 15 cm layer of topsoil is removed after bush clearing, spread at another location and then planted with cover crops such as sunflowers by the women in the community. These plants reach full height after about three to five months. Since all the seeds of the original forests are contained in the topsoil that has been removed, the original vegetation gradually redevelops. Initial tree growth, comprising Acacia karoo, dies off after around 20 years, and about 30 years later, a forest with high diversity will have established itself, it is claimed. Each year, 45 hectares of these areas is handed over to the community. Ott said that surveys by the University of Pretoria had revealed that in the course of the past years, both soil carbon and soil nitrogen content and the number of soil organisms had significantly increased.

The company is spending around 320,000 Rand per hectare (31,500 US dollars) on restoration. "This money is already embedded in the operational costs," Ott explained. The ecologist is convinced that competition among the mining companies is going to increase in future, so that they will be forced

‘A decent life for all’. European Development Days 2013

For two days in late November, some 5,000 representatives of civil society, business, academia and politics discussed how to frame a universal post-2015 agenda for sustainable development in Brussels, at the invitation of the European Commission. The motto of this year’s European Development Days was “A decent life for all”. At more than 80 individual events, the following thematic complexes were discussed: food, health and education, gender, peace and rights, environment, employment and inclusiveness, climate, trade and ODA (Official development assistance).

Eight events were devoted to the topic of “Food security, nutrition and resilience”. How can a just and sustainable global food system be achieved? What kind of agricultural development is needed to feed a growing population without depleting natural resources and aggravating climate change? What must partnerships look like to support the above-mentioned goals? And which role can the EU play in such a context?

■ Global food system in crisis

It is not a new insight that the global food system is far from being sustaina-

ble. Otherwise, around 840 million people would not be suffering from hunger (more critical sources state about 1.3 billion), and two billion people would not be affected by malnutrition. The causes have long been identified, too. The agricultural sector has suffered years and years of being neglected by national and international politics, climate change has had a negative impact on agricultural production, there has been inequitable access to resources, and economy systems have been thinking in the short term and opting for growth in production rather than for maintaining and making sustainable use of resources. So what has to be done?

First of all, it has to be ensured that investments actually reach those who are most in need: smallholder farmers, and especially rural women. All the discussion rounds stressed that they had to be the focus of efforts to combat hunger. Here, Catherine Garreta, Executive Director for Partnerships and External Relations at the Agence Française de Développement (AFD), sees three components as crucial: promoting smallholder organisations, strengthening contract farming and concentrating on local markets. “We urgently have to support the local finance systems as well as the processing enterprises at local level,” Garreta said. The AFD intends to have doubled its current investments in agriculture by 2016.

■ Partnership at eye level?

In 2012, the EU spent a fifth of its development assistance on food and nutrition. What above all counts for Jean-Pierre Halkin of the Directorate-General for Development and Cooperation at EuropeAid is to reduce the imbalance of power between farmers

Aggrey Mahanjana, Secretary General of the African Farmers’ Association of South Africa (AFASA)

and markets. This could be accomplished e.g. through value chain development in the context of public-private partnerships, such as those promoted in development co-operation over the last few years. However, such ventures often have a drawback, maintained Aggrey Mahanjana, Secretary General of the African Farmers’ Association of South Africa (AFASA): They lack a common vision. “We are convinced that the tripartite alliance of farmers associations, private sector and government is the way to go,” Mahanjana stressed. The problem, however, was that, frequently, a hidden agenda existed in this context that could jeopardise the much-cited win-win situation. This could be the case, for example, when, as had already occurred in his country, a major corporation “bought up the entire infrastructure” (financed by the government) including the storage facilities, etc. “We must ask ourselves whether this is still aimed at food security for African people – or at maximum profits for the corporation.” That the corporations involved should be forcing their terms on the farmers at local level was unacceptable. “Smallholders have a lot of talents, but they are not able to participate in these negotiations.” This was why it was up to the other two partners to provide them with relevant information so that they could be partners at eye level – and would depend neither on the government nor on NGOs to speak for them.

■ Home-grown solutions: CAADP

Ernest Ruzindaza, Permanent Secretary at Rwanda’s Ministry of Agriculture, stressed that government alone could not finance development. Partnerships were required to this end – both with private sector companies and with the producers. For example, since 2006, Rwanda’s land policy had ensured that farmers received ownership of their land. In turn, they could use this land



Photo: European Commission

as a guarantee of access to finance and thus contribute to strengthening the economic power of the rural areas. The second important partnership that he pointed to was CAADP, the Comprehensive Africa Agriculture Development Programme. Rwanda was the first country to sign a corresponding compact in 2007, committing itself to implementing an ambitious action plan to promote agriculture. In addition, co-operation was in progress with the International Food Policy Research Institute (IFPRI) in order to find out what the key areas of action were (staple crops, export crops, both of them, non-agricultural sectors, etc.). "We have gained a lot through these partnerships. Now, the entire country, including the Minister of Finance, is aware how significant agriculture is," Ruzindaza declared.

■ Reminding politicians of their duties

Programmes are one thing, but meeting commitments are quite another matter. It was above all the representatives of non-governmental organisations who reminded the politicians where gaps still existed. For example, the ten per cent of the national budget that the 54 members of the African Union had already committed themselves to earmarking for agriculture in Maputo in 2003 was only really allocated by eight countries, said Céline Charveriat, Director of Advocacy and Campaigns, Oxfam International. And for the 22 billion US dollars pledged at the G8 Summit in Italy's L'Aquila in 2009, there continued to be a funding gap of 51 per cent.

The hosts of the event were repeatedly confronted by criticism of their biofuels policy, which "fills petrol tanks with food, encourages land grabbing and thus increases hunger", as Natalia Alonso, Head of European Union Advocacy Office at Oxfam International, put it. Moreover, it was high time for the European Union to make

Elizabeth Dowler, Professor of Food and Social Policy at the University of Warwick/UK.

an effort to tackle climate change. In its 2013 framework for climate change and energy policies, the EU ought to be ambitious and at last consistently implement funding for climate change adaptation and mitigation in developing countries, which had now been promised for years.

■ Agroforestry a wonder weapon?

Just what corresponding climate-smart agricultural production could look like is obvious to Cheikh Mbow, a scientist at the World Agroforestry Center (ICRAF): agroforestry. This system had already been applied in West Africa for decades since it provided a wide range of ecosystem services, Mbow stated. Trees improve the humus content and hence the hydrologic balance of soils. They enhance agrobiodiversity and serve as energy suppliers – in many African countries, three quarters of energy consumption is covered by fuelwood. They can provide feed for livestock, which is growing scarce above all because rainfall has diminished owing to climate change. In addition, they represent a valuable source of food and income for people – for example the Baobab, with its highly nutritious fruits, or the Karité, whose shea butter is processed into a wide range of products by the women. And, last but not least, they store carbon dioxide. "Trees are of utmost importance for the mitigation of climate change. The potential of expanding agroforestry is huge in West Africa, without negatively influencing crop production," Mbow maintains.

In spite of these and numerous other encouraging examples, it was clear that challenges remained considerable. Making agricultural production sustain-



Photo: European Commission

able is going to require new technologies. However, research on this is costly and, according to Elizabeth Dowler, Professor at the University of Warwick, is being funded more and more frequently by the private sector. However, the latter's preferred contents are often of no relevance to small farmers. If irrigated agriculture, referred to by Niger's President Mahamadou Issoufou as one of the measures to combat hunger in his country, is to be promoted, this will demand additional energy. But generating more energy is not only expensive but may also be at the expense of valuable natural resources.

Nevertheless, the participants of the European Development Days rejected any pessimism. Shenggen Fan, Director General of the International Food Policy Research Institute (IFPRI), seemed convinced that it was possible to beat world hunger by 2025. This required a timeframe with clearly defined measures. The aim here was not to cut hunger, but to eliminate it. Or, as Keith Taylor, Member of the European Parliament, put it: "The only acceptable number of people being hungry is zero."

Silvia Richter

For more reports on the European Development Days, visit:

- www.rural21.com; for background information, summaries of the individual events and video recordings:
- www.eudevdays.eu

Agricultural policies in the 2010's: the contemporary agenda

Agricultural development has moved up the agenda. Today it has not only to reduce poverty and hunger, but also become environmentally sustainable and climate smart. Disputes over agricultural policies are highly visible, but consensus exists on fundamentals for growth. It is not just what to do that matters, but also how to do it. Increasingly, the search is not for optimal policy, but for 'good fit', or even 'good-enough' policy.

Ideas about agricultural development have changed in line with prevailing circumstances and ideas. In the 1950s industry was expected to lead economic development, with agriculture playing a supporting role. By the mid-1960s, however, fears that food production could not keep pace with rapid population growth led to promotion of the 'green revolution' that spread high-yielding varieties of cereals. The technical tour-de-force was backed up by equally impressive public investments in irrigation, roads, warehouses, fertiliser production and distribution, directed credit, agricultural extension and guaranteed prices.

The green revolution led to much larger cereals harvests, but as the threat of food shortages receded, interest in agricultural development declined. The 'Washington Consensus' that came to dominate development thinking from the early 1980s onwards prioritised macro-economic stability and free markets, with little attention to the specifics of particular sectors such as agriculture.

Since 2000, however, there has been a growing sense that agriculture has been unduly neglected, especially in Africa. The focus on poverty and hunger in the Millennium Development Goals

directed attention to the location of the poor and hungry: overwhelmingly in rural areas, most of them farming. Agriculture gained further attention when cereals prices spiked on world markets in 2007–08 to a degree not seen since 1973–74. A world that had grown accustomed to ever-cheaper staples on international markets – prices in real terms had declined by 60 per cent since the 1960s – was shocked.

■ Changing circumstances, changing priorities for agricultural development

With interest in agricultural development greater than it has been for decades, current circumstances differ from those of the past in four respects.

One, the **grip of the Washington Consensus on policy has weakened**. Asian experiences of economic growth and development suggest the importance of policies tailored to country contexts, rather those that follow rigid prescriptions from the Consensus. The belief that liberalisation and macro-economic stability alone would stimulate agricultural growth has been shaken by the evidence that smallholders, above all in Africa, are using very few purchased inputs, even when more productive technology in the form of improved seeds and fertiliser are available.

Two, the **environmental costs of agricultural development may no longer be**

Whether smallholders are viable enough to meet the mounting demands of buyers is highly debated.

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Photo: Ursula Meissner / giz

bearable, while climate change threatens. Agriculture has been able to grow in the last half century while overdrawing on groundwater aquifers, polluting soils and water, and converting forests and other habitats rich in biodiversity to new fields. Water scarcity and the rising value of ecosystem services mean these options cannot continue: farming will have to become environmentally sustainable. Meanwhile, climates are seemingly ever less reliable and erratic; probably the first impacts of global warming. The search is on for effective ways that agriculture can adapt to changing and more variable climate, while reducing its own emissions of greenhouse gases.

Three, **cheap oil may be coming to an end.** Agriculture has been able to grow for half a century or more by using cheap fossil fuels and fertiliser derived from them. More expensive oil will push up costs of production.

Four, **limited demand for agricultural produce may be changing to times of limited supply.** The success of the green revolution meant that for most of the last thirty years, supply of agricultural produce has not been the limitation: effective demand has been the limit. Today, emerging economies in Asia, the Near East and Latin America, increasingly urbanised with growing incomes, are seeing relatively rapid increases in their demand for higher value foodstuffs, including vegetable oils, sugar, fruit, vegetables, fish, dairy and meat. Moreover, rising oil prices stimulate demand for biofuels. Farmers in the developing world thus have large and growing markets, often in their countries and regions, demanding additional produce and prepared to pay for it.

Agricultural development in the 2010s faces a triple challenge. The longstanding need remains: how to promote agricultural growth in ways that meet demand while reducing poverty and hunger. But there are also immediate concerns about volatility of prices for staple foods on international

The role of small-scale producers in future is also going to depend on the development of rural-urban links.

markets and rising demand for biofuels. In the (slightly) longer term agriculture has to become both environmentally sustainable as well as compatible with climate change. It is a challenging agenda.

Photo: IFAD/Roger Arnold



■ Consensus on fundamentals for agricultural growth

Contemporary considerations on agricultural development include lively and eye-catching debates over issues such as the prospects for small-scale farms, land rights and the use of transgenic varieties (GMOs). But these should not obscure considerable agreement on fundamental conditions for agricultural growth – and indeed, growth that is broad-based, based on learning from five decades or more of experience. Two necessary, if not sufficient, conditions for agricultural development stand out. One is an **enabling rural investment climate**: consisting of peace and order; macro-economic stability with inflation contained and a competitive exchange rate; and basic institutions such as property rights respected. Although this may sound a counsel of perfection, the investment climate does not have to be perfect. Experiences from countries as diverse as China and Ghana indicate that reforms to correct the worst failings in the investment climate can provide a powerful stimulus to agricultural growth.

The second condition is that governments need to supply **rural public goods**: including physical infrastructure – rural roads, electricity, etc.; investments in people – education, water

and sanitation, health; and agricultural research and extension. Returns to these investments in Asia have been high. These, however, will only be funded adequately if resources are not squandered on costly subsidies and transfers that are politically tempting since they are so visible to voters.

■ Debates and uncertainties

Much of the rest of agricultural policy, however, is subject to debate and uncertainties. One of the more important concerns is the **lack of smallholder engagement with rural markets**, above all for finance, insurance and external inputs such as seed and fertiliser, that has undermined the expected benefits of economic liberalisation. Shortage of information is often the problem: for bankers knowing the character and competence of so many small-scale farmers, for farmers knowing the characteristics of seeds, fertiliser and other inputs.

The policy implications are, however, in debate. For some, the solution lies in replacing private provision through markets with government provision of inputs, finance and marketing services directly to farmers. Asian governments usually did this during the green revolution; as did many in Africa up until the 1980s and 1990s by which time costs proved too high, so that many mar-

Agricultural Policy: consensus and debate

Consensus Key functions of the state	<ul style="list-style-type: none"> ■ Rural investment climate ■ Provision of rural public goods
Debate and uncertainties	<ul style="list-style-type: none"> ■ Overcoming failings in rural markets for finance and inputs ■ Viability of small-scale farms ■ Land rights and tenure ■ Agricultural technology ■ Conditions for benign rural transitions ■ Environmentally sustainable farming that responds to climate change

keting boards were cut back or closed down. Contemporary examples of public intervention include the resurgence of fertiliser subsidies, with the apparent success of the targeted fertiliser subsidy in producing bumper harvests in Malawi a prominent case (see also pages 34–35).

The alternative approach to remedying market failures is to look for innovative relations between smallholders and buyers or processors. **Contracting** is one possible response, with processors supplying farmers with the inputs they need on credit, although to date contracts are only common for crops that require processing in plants that have little alternative use. **Farmer associations** may help reduce the costs of transacting with numerous smallholders, although care is needed to avoid the pitfalls of farmer co-operatives – excessively wide membership, too many objectives, weak management, politicisation, etc. – that led to failures in the past.

Debates continue over the viability of **small-scale farms**. While they have advantages in labour management over larger farms so that economies of scale may not apply beyond the family farm, smallholdings may be at a disadvantage when facing the mounting demands from buyers – increasingly supermarkets and exporters – for quality, consistency, timeliness, volume and certification of conditions of production. That could lead to smallholders being excluded from the markets for higher value produce.

Land rights and tenure are another concern. Does longstanding collective tenure give farmers sufficient security to invest in their land and to conserve it? Or are formal registration of rights, surveying and demarcation under freehold tenure necessary? This debate has been stimulated since 2008 as sovereign states and large corporations have looked to acquire land for large-scale farming in parts of Africa. Voluntary codes of conduct may help protect the rights of vulnerable people who lack formal land titles, but stronger action may be needed.

Passionate debates arise over **agricultural technology**. How desirable and feasible are technologies that use industrial inputs intensively, as the green revolution did, compared to the alternative of using fewer external inputs and depending more on agro-ecological techniques? Above all, what is the balance of opportunity and risk from transgenic varieties? Questions of corporate power, environmental hazards, scale of farming and the rights of smallholders are entangled in these discussions, making them especially difficult to resolve. Whatever their outcome, a broad range of technical options is likely to be needed in a future world of changing and more uncertain climate.

Other important issues where answers are uncertain include how to ensure that the **transition from agrarian and rural to urban and industrial societies** is benign, without smallholders being displaced wholesale from their land without better jobs to take up. Much will depend on how many decent jobs the rural non-farm economy can generate, and how urban-rural links develop.

Last but not least are the **environmental questions** of how to make agri-

culture sustainable as well adapted to a changing climate while reducing net greenhouse gas emissions. A radical shift towards a mosaic of sustainable agricultural systems may be needed, with improved localised resilience based on managing both farming and landscapes more closely in line with ecology.

■ Policy choice

The contemporary agenda is not just one of what to do, but also of *how* to do it. It may be impossible to satisfy all the range of objectives for agricultural development – economic growth, reduction of poverty and hunger, social, gender and regional equity and environmental sustainability – at once; especially given the fragmentation of public administration and political support. Sequences need to be discovered.

Moreover, policy-making for agriculture has often produced perverse outcomes, with over-production in OECD countries as governments lavish support on their farmers, while in low-income countries farmers have often been taxed heavily. If the answers to making better policy are neither clear nor straightforward, it is clear that politics matter. Attempts to devise optimal policies for agriculture that ignore political calculations are unlikely to succeed. In practice, the search has moved increasingly away from looking for ‘best practice’ towards an interest in ‘best fit’ and, more radically, towards ‘good enough’ conditions. This implies identifying those conditions necessary for progress, even if they are not sufficient in themselves; then understanding how they can be created, even if in forms that may be imperfect.

If this all sounds rather difficult, we should take encouragement from several countries across Asia, where solutions have been found in a variety of circumstances, leading to agricultural development that has allowed both growth and transformation of their economies.

Providing an enabling environment

The basic role for agricultural policies consists of providing the core investments and services that farmers need to develop their operations into viable farm businesses. Focusing on the sector's enabling environment benefits both agriculture and the wider rural economy, facilitating the construction of diversified rural economies. Such policies are likely to be more effective in the long term than subsidies or market interventions, which have the opposite tendency.

The agricultural sector has a central role to play in generating the income growth poor countries need to banish poverty and ensure food security. Yet for the best part of 30 years, agriculture was effectively discriminated against by developing country policy-makers and neglected by donors. One reason was low rates of perceived success, compared with investments in areas such as health and education. Another was the combination of falling real agricultural prices and, in successfully developing economies, a declining share of agriculture in GDP and employment. These changes were often misinterpreted as "declines", when in fact they were signs of development success, with productivity growth bringing prices down and permitting labour and other resources to be allocated to other sectors. In recent years, thinking has come full circle, and the importance of investing in agriculture is now widely recognised. But, in re-emphasising the importance of agriculture, it is essential that policy-makers and donors do not go to the

other extreme of prioritising agriculture exclusively, at the expense of balanced rural and economy-wide development.

Approximately two-thirds of the world's poor live in rural areas, where agriculture is the dominant sector. Most of the farming is done by smallholders, so raising their incomes is clearly a priority. Moreover, in the current context of higher agricultural prices, there are better opportunities for those smallholders to develop commercially viable operations than there have been for many years. Yet realisation of those opportunities by some will result in others moving out of agriculture into new, ultimately more remunerative, activities. Indeed, it is important to recognise that – as all

OECD countries have experienced – the majority of future generations will have better opportunities outside agriculture than within it. As agriculture transforms, it is also important to acknowledge that there is no single efficient farm structure. Smallholders are the current reality, but thriving rural economies will be underpinned by a mix of small, medium and large farms.

■ Broad-based investment in rural areas is essential

The lion's share of investment in agriculture comes from farmers themselves. There is a strong case for increasing the share of public spending in support of the sector, and redressing urban bias in the allocation of resources. There are high returns to investments in agricultural research, technology transfer, and farm extension and advisory services. These investments help farmers directly; indirectly, they benefit consumers by increasing overall food supply, thereby containing upward pressure on food prices and dampening the price volatility associated with tight markets.

Rising levels of foreign investment, prompted by higher food prices, can help offset a dearth of domestic resources. However, there are legitimate

Investments in agricultural research and development have high returns. They help farmers directly and benefit consumers by increasing overall food supply.



Photo: J. Boethling

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concerns about the nature of some of these investments and who will benefit. Hence, it is important that governments provide appropriate framework conditions for investment in agriculture, and that there are commitments to responsible business conduct on the part of both investors and recipients. Similarly, development aid can be a catalyst, with investments in infrastructure and core public services “crowding in” private investment.

In the case of low-income countries, it has been suggested that because of weak institutions and market failures, some market interventions may be warranted. For example, price stabilisation has been proposed as a way of providing a more predictable investment climate and containing the impact of large international price swings. Similarly, input subsidies for seed and fertiliser have been suggested as a way of redressing failings such as the under-development of infrastructure, missing markets for credit and inputs, and a lack of knowledge of the benefits of improved technologies. These arguments need to be balanced against multiple drawbacks. For example, price stabilisation thwarts the development of private risk management and can export instability onto world markets. Similarly, the provision of input subsidies can impede the development of functioning private markets. Moreover, such measures often become a target for special interests, imposing a severe drain on national budgets at the expense of essential public investments. If they are to be used, they should be time-bound with a clear exit strategy, and they should not crowd out essential investments which tackle the market and institutional failures they are designed to offset.

■ Innovation and effective pricing of natural resources needed

There is more scope for raising agricultural productivity than there is

for mobilising more land and water resources. While it is likely to become increasingly difficult to push yield frontiers at a constant percentage rate of growth (i.e. exponentially), there is great scope for developing countries to close the gap between actual and potential yields. The key to realising these gains is innovation in the wider sense, combining adapted technologies with improved farm management practices. There is evidence of high rates of return to research and development accompanied with extension, albeit with long time lags. Investments in infrastructure can help limit producer losses, which account for around one-third of all production in low income countries.

There is much less scope for increasing cultivated land area than there is for improving yields. Moreover, a large share of the world’s agricultural production is based on the unsustainable exploitation of water resources. There is a need for policies to manage both land and water resources sustainably, for example by strengthening land tenure systems and introducing water charges or tradable water rights.

Climate change is expected to have a range of (mostly negative) effects on agricultural production. A range of investments – for example in research, irrigation and rural roads – can help improve resilience, but production will ultimately need to be located in areas where it is inherently sustainable. In many countries and regions, current production patterns may not be compatible with sustainable resource use, implying trade-offs between sustainability and immediate food security outcomes. Often, there is no effective pricing of natural resources, with the result that production is too intensive or occurs in areas where ultimately it should not. Pricing of resources could improve the sustainability of production but raise farmers’ costs and, in some circumstances, put upward pressure on food prices. Likewise, agriculture is

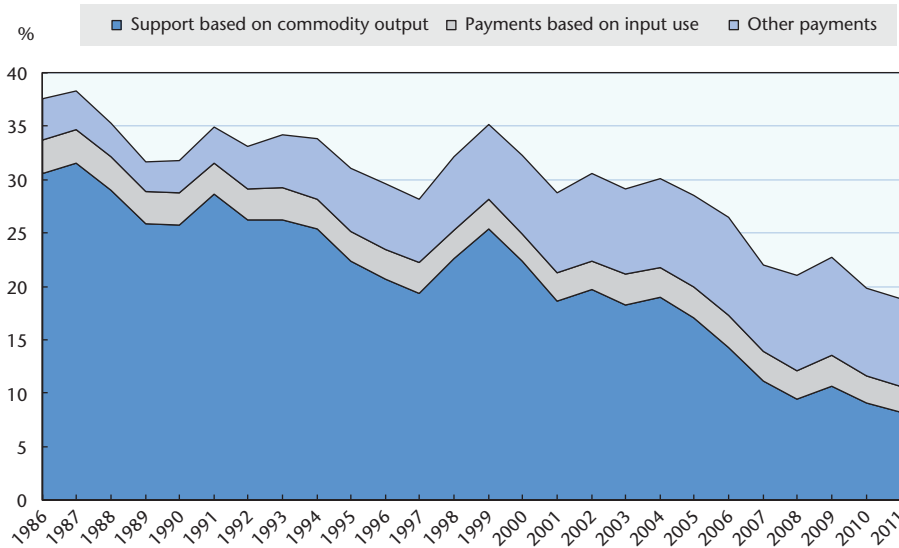
a major contributor to anthropogenic climate change, but taxing farmers’ greenhouse gas emissions could lower their incomes and raise food prices. These trade-offs underscore the primary importance of income growth: only if incomes grow sufficiently can food security and sustainable resources be fully compatible. On the positive side, pricing of environmental services could raise some farmers’ incomes.

■ Trade is pivotal, but complementary policies are necessary

Open markets have a wider role to play in raising production and incomes. Trade enables production to be located in areas where resources are used most efficiently and has an essential role in getting product from surplus to deficit areas. Trade also raises overall incomes through the benefits to exporters (in the form of higher prices than would be received in the absence of trade) and importers (through lower prices than would otherwise be paid), while contributing to faster economic growth and rising per capita incomes. Trade will also be essential in order for supply increases to be achieved sustainably. It enables production to locate in areas where natural resources, notably land and water, are relatively abundant, and where systems are more resilient to the effects of climate change. Looking ahead, the areas of the world with sustainable productive potential are not the ones experiencing rapid population growth.

However, reforming countries may need to put in place parallel measures to maximise the benefits and mitigate the costs. In order for existing and potential exporters to reap the full benefits from reform, there may be a need for complementary supply-side investments. Conversely, the needs of those who stand to lose from the removal of trade protection may require a combination of adjustment assistance and social

OECD composition of Producer Support Estimate, 1986–2012 Percentage share of gross farm receipts



The Producer Support Estimate (PSE) captures transfers to farmers from consumers (in the form of higher prices) and taxpayers (in the form of budgetary payments).

Source: OECD, PSE/CSE database, 2012.

safety nets. For mitigating the adverse impacts of international price volatility, targeted social programmes (including cash transfers) are a preferable option, while agricultural investments and the development of risk management tools can improve farmers' resilience to risk.

■ The right moment for fundamental reforms in OECD countries

The traditional charge against many OECD countries is that high levels of agricultural support and protection have undercut farmers' livelihoods in developing countries. Tariffs on agricultural products remain several times higher than those levied on industrial goods, which restricts market access for developing country farmers with export potential. Higher prices have historically led to the accumulation of surpluses, which have been disposed of with the use of export subsidies. These depress international prices, making conditions more difficult for competitors on international markets and for import-competing producers on domestic markets. Often, policies to support farmers have

also been counter-cyclical, which stabilises domestic markets but exports instability onto world markets.

There have been important reforms over the past 25 years. As a result, annual support to farmers across the OECD areas, in the form of higher prices than those prevailing on world markets or direct payments financed by taxpayers, increased from USD 240 billion in 1986–88 to USD 253 billion in 2010–12. This represents a decline in real terms and as a proportion of farmers' incomes, with the share of farmers' gross receipts coming from consumer and taxpayer support falling from 37 per cent to 19 per cent (see Figure). On average, support is also less production and trade-distorting, with less than 60 per cent of support now linked to output or input use. In recent years, there has been little use of export subsidies.

Reforms in recent years have been facilitated by strong market conditions, which have reduced the gaps between domestic prices and world market prices. Moreover, as price gaps have narrowed, so the counter-cyclical element of domestic support programmes

has declined. At the same time, some OECD countries have instituted supports for biofuel production, which have the reverse tendency of making international food prices higher than they would otherwise be, while (in the case of mandates) adding to price volatility by creating a demand that is less responsive to prices. In addition, a number of tariff peaks and cases of tariff escalation remain. Given structurally higher food prices, now should be a good time to remove all trade-distorting instruments and put in their place more efficient alternatives, including social safety nets and tools to help farmers manage risk, as well as measures to improve long-term productivity. However, recent changes in European and US farm policies suggest that this opportunity is unlikely to be seized.

In the context of high food prices, a range of new concerns has emerged. They include export restrictions, the use of biofuel mandates, and the opportunities and threats presented by increased foreign investment in agriculture. On these issues, as well as in terms of conventional support mechanisms, policies in emerging economies (in particular the BRICS – Brazil, Russia, India, Indonesia, China and South Africa) are increasingly important. Multilateral action is needed to ensure that national policies in OECD and emerging economies do not generate a new range of spill-overs that compromise development opportunities in poor countries.

Further reading

OECD (2012), *Agricultural Policies for Poverty Reduction*

OECD (2013), *Global Food Security: Challenges for the Food and Agriculture System*

→ see also www.oecd.org/agriculture

For a detailed review of the recent OECD publication *Better Policies for Development*, which focuses on policy coherence, see www.rural21.com → Publications

Food security, agricultural policy and the role of small-scale farms

Increasing prices for agricultural commodities offer a historic opportunity to intensify production systems for small-scale farmers in many developing countries. But without agricultural policies supporting them in making use of this opportunity, many of them would lose their access to land and income, resulting in aggravated food insecurity.

During the post-colonial decades, agricultural policies in developing countries went through a succession from neglect of agriculture via a period of state failure towards a period of market failure (cf. the article on pages 8–10). Often, it was a mix of state and market failure. On a global scale, these decades were characterised by agricultural surplus and low world market prices, which to a certain degree explains why neither states nor markets were successful in boosting agricultural production in developing countries on a broad scale.

■ New dynamics, new challenges, new opportunities

This global market constellation has turned to the contrary since 2005. Global demand for agricultural products is increasing due to factors like the consumption patterns of a new middle class in emerging economies and demand for agro-based energy. At the same time, relevant natural resources (good soils, water, oil) are getting

scarce or less reliable (increasing climate variability). Where increasing demand meets limited supply, prices tend to rise. What we saw during the price hikes in 2008 and 2011 is likely to become a long-term trend. This new global scenario asks for agricultural policy answers. There is a need for intensification, as an increasing gap between demand and supply can only be avoided through intensification, i.e. rising productivity. At the same time, there are new incentives for intensification, meaning that investments in the productivity of land or water will pay for the producer.

Moreover, there are underutilised potentials for intensification in many locations and farming systems. In numerous places, however, the majority of small-scale farmers (SSF) are not well prepared to make use of these potentials as they were neglected or discouraged in the past and have lost confidence in farming as a means of generating income. Therefore, rural families have tended to diversify their livelihood systems, rather than relying on farming only. On the other hand, large-scale private investors are well prepared to take advantage of the new market opportunities, either in order to gain access to food and energy or to make use of a profitable investment opportunity. The challenge for agricul-

tural policy is obvious. Unless SSF are capacitated to make use of intensification opportunities, there will either be supply shortages resulting in high food prices and reduced food security for the poorer sections or the latter will be pushed away from their natural resources, losing an important source of their livelihoods. Without other

Is an agricultural policy opting for a high level of external inputs such as pesticides and fertilisers the right one?

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Photo: J. Boethling

Any form of agricultural policy always has to set out from the right to food. But food and nutrition security cannot be achieved with agricultural policy alone.

income sources, their access to food will be endangered. Such scenarios cry out for state intervention. Where food security, natural resources and livelihoods of relevant sections of the rural population are at risk, market dynamics need to be regulated. There is a clear case for reactivating and redirecting agricultural politics.

■ Food security is not just a matter of food production

The normative framework for any agricultural policy is determined by the right to food, by the Millennium Development Goals (MDG) which focus on poverty reduction and by the paradigm of sustainable development. Thus, agricultural policy in developing countries has to be guided by the overall objective of ensuring that all residents can gain access to sufficient food without a degradation of the natural resource base. Reliable access to food depends not only on the availability of food, but also on entitlements giving people access to available food by purchasing power or via social redistribution channels (like food aid, etc.). So it is not agricultural policy alone which can ensure food and nutrition security. However, agricultural policy does have to contribute to food and nutrition security by improving food availability (and thereby modest and stable food prices) while, at the same time, seeing to it that the masses of the rural population have access to land and water and/or to income so that they can buy food. Hence an agricultural policy guided by the objectives of food security, poverty reduction and sustainability, taking into account the present global dynamics, has to ensure

- increased supply of agricultural (including, but not only, food) products based on intensification,



Photo: J. Boethling

- broad-based income/livelihood opportunities for the masses of the rural population, and
- environmentally friendly sustainable land use.

■ Policy issues

There is some debate over what a “development and food security oriented” agricultural policy actually means (cf. also the articles on pages 8–10 and 11–13). Should it focus on the potentials of existing SSF, or should it rather rely on the efficiency of commercial large-scale farms? Should it embark on high external input technology (HEIT) based on chemicals and fuel, or should it give preference to sustainable land use practices? Should it go for a “Food First” policy, or should all agricultural commodities receive the same attention? Should farmers be promoted by public or by private services? Moreover, there is disagreement on the appropriate approaches of promotion: are farmers helped most effectively by a farming / livelihood systems approach or by a value chain approach? And there is a debate on who is responsible for ensuring sustainable and climate-smart land use practices and adaptation of farmers

to climate change. However, the overarching question is whether there are general global answers to these questions or whether the answers depend on the specific local context. The answers to these questions have to be guided by the policy objectives mentioned above.

Context-specific policies: Although some of the dynamics referred to are of a global nature and ask for global answers, it is the specific local conditions which have to be considered to find appropriate policy responses. Consequently, there cannot be any general rule on whether small or large farms, whether low or high external input solutions, whether private business, civil society or the government will do better. It all depends on the specific local context! Rather than embarking on dogmatic debates, on what is preferable in general, the first and foremost rule for designing agricultural policies is to follow the principle of context specificity. This principle has far-reaching implications for the process of policy design. Policies need to be drafted on the basis of local-level analysis and experience and with participation of people with local knowledge. Such a process has to be adequately resourced.

Small-scale farmers first: SSF, being given the opportunity, can manage to intensify their production methods and thus increase productivity considerably. Especially in low-wage countries, SSF dispose of competitive advantages in the field of production of many commodities regarding quality requirements (African handpicked cotton is a prominent example), while they suffer from disadvantages in managing access to markets and services due to limited economies of scale. Taking their potentials into account, SSF should, for the sake of food security and poverty reduction, be given preference by agricultural and land policies wherever SSF is the predominant mode of production. Thereby not only can agricultural production be increased, but the masses of the rural population, who still rely on farming as a source of income or subsistence, will be entitled access to food. The disadvantages of smallholders in accessing markets and services can be compensated by making use of the capacities of agri-business through facilitating contract farming arrangements. To become strong and reliable partners within contract farming systems on the one hand and empowered negotiation partners on the other, SSF need to be organised.

Low-external input first: The mixed experiences of the "Green Revolution" indicate that HEITs, as a rule, allow increasing productivity within a shorter period and at a higher rate, while they have several disadvantages, especially for poorer small-scale farmers and for remote rural locations. Their price tends to increase at an above-average rate as most of these technologies depend on oil, thereby reducing farmers' gross margins. The service requirements of providing external inputs (including credit) are higher, resulting in tremendous institutional challenges, especially in remote rural regions. Practitioners and farmers know about the disastrous consequences of late input supply. As a result, HEITs are more risky in the case of climate variability.

In contrast, low external input technologies (LEITs) are more environmentally friendly. Their yield increasing potential is often underestimated (as a thumb-rule, they can be expected to achieve a duplication of yields). From the farmers' point of view, however, the labour requirements of some of the "good practices" of sustainable farming are often too high. Therefore, most SSF tend to appreciate the utilisation of a certain amount of chemical fertiliser as part of their specific technology mix. Taking the advantages and disadvantages of both technology sets into account, there are good reasons for an agricultural policy offering both options for choice. This means putting more emphasis on identifying and disseminating appropriate LEITs than in the past. In the end, the appropriateness of technologies will always depend on the specific context, the location, the target group and the commodity. Agricultural policies on technology should therefore focus on the identification of context-specific technology mixes in line with the principle "as little external input as possible, as much as necessary".

Private versus state services: Subsidiarity, complementarity and competition: Those who still remember the period of state-dominated agricultural services are usually reluctant to recommend their revival. In many countries, these services were ineffective, unreliable, corrupt and exclusively in favour of better-off farmers or members of the political party in power. But the replacement of the state by private agents left the majority of SSF without access too. Private service providers focused on selected commodities (rather than considering the whole farming system), locations and well-capacitated target groups. Promotion of sustainable land use practices (e.g. improved soil and water conservation techniques for coping with rainfall variability) is usually not on the agenda of private research and extension services. As food security and nature conservation are public responsibilities, agricultural policy has to play a crucial role in ensuring that related services are provided. Yet this does not necessarily mean actually providing the services by state agencies. Service provision should follow the principle of subsidiarity: Wherever



In low-wage countries, smallholders can enjoy competitive advantages in the production of labour-intensive goods such as hand-picked cotton.

private providers can deliver effective, affordable and inclusive access to services and markets, or where they can be enabled to do so by private-public partnerships, there is no need to revitalise government services. Where private players do not show any interest, in particular in remote and marginal areas, in fields like food security, climate change adaptation, sustainable land use practices, governments will have to take the lead and provide a financial and institutional framework for service provision. Depending on the capacity of private and state agencies, the provision of services can be managed by a context-specific mix of private and public providers, sometimes in a complementary and sometimes in a competitive manner.

Linking the logics of markets and people: These days, most development agencies tend to advise agricultural policies to go for a value-chain approach. The rationale of this approach says that unless agricultural producers follow the requirements of markets, they will not be able to compete successfully in a global market environment. In contrast to a rural livelihood approach, a value

chain-oriented agricultural policy is not people-centred but market-centred. As a consequence, it tends to focus on those farmers who are already part of a certain value chain, neglecting those who still struggle for access to markets. While livelihood approaches failed, as they neglected the markets and therefore did not help farmers find income opportunities, value-chain approaches have often been unsuccessful because of their neglecting the livelihood systems and hence the capacities and limitations of the rural people. Therefore, integration of small-scale farmers into value chains should not be based on a one-sided adjustment of agricultural producers to predetermined value-chain requirements. Instead, it should result from a negotiated process reconciling the livelihood logic of the people and the market logic of value-chain governance. Establishing sustainable market links in rural areas does not happen on its own. It needs to be promoted by agricultural policies taking up the task of interlinking potential partners (by agents who can fulfil the role of brokers knowing the local conditions and the external markets), arriving at fair compromises and ensuring reliability on the sides of all contract partners.

Diversified location-specific commodity mix rather than staple food mono-cropping: Should a food security-oriented agricultural policy focus on self-sufficiency in food production, or should the crop production pattern better be driven by market forces? As the recent food price crises indicate, there are good reasons not to entrust the right to food to global markets and those powers which tend to influence those markets for their economic or political gains. However, there are equally good reasons not to rely on food self-sufficiency at household, local or national levels. Mono-cropping of staple-food crops like maize may not be a sustainable and locally adjusted way towards food security in many places. Considering that food security

is not just a matter of availability but also ability to buy food, in certain circumstances, farmers may have good reasons to produce what grows and sells best or to go for a balanced mix of food and cash crops, of cereals and tree crops and of diversified seasonal income sources to minimise vulnerability. Again, it is up to the farmer to decide! Agricultural policy should provide a range of options for flexible adjustment to changing environmental and market conditions. But it should not try to influence the farmer's decision by subsidising the production either of food or of non-food crops. There are, however, good reasons to subsidise food consumption and to stabilise staple food prices.

Beneficiaries' payment for sustainable resource utilisation: Small-scale farmers will not be able to afford the investment costs for sustainable agricultural practices. On the other hand, many benefits offered by sustainable practices are enjoyed by the wider society, such as downstream residents, those threatened by global climate change or consumers of healthy products. Consequently, agricultural and environmental policies have to join efforts to ensure that beneficiaries pay farmers for their costly environmental services through appropriate mechanisms.

■ Conclusion

An agricultural policy aiming at food security should not only focus on raising food production but should provide income opportunities for the masses of rural (and partly urban) families as well. Consequently, instead of facilitating the ongoing trend towards large-scale agricultural investments, it should embark on capacitating existing small-scale farmers to use the opportunity and cope with the challenges of intensifying cultivation, thereby making more food available and generating more income for buying food at the same time.



Photo: J. Boethling



Martin Bwalya (CAADP-NEPAD Programme), Phanuel Mabyane (Mutual & Federal Co., Ltd.) and Andrei Molchan (Ambassador of Belarus) attending a smallholder farmers' meeting.

Photo: AFASA

The role of farmers' organisations in defining national policies – experiences from South Africa

Farmer organisations play a crucial role in the development of rural areas. But how influential are they when it comes to defining national policies? What can they achieve, and where are their limits? Our authors demonstrate this with regard to the small farmer organisations in South Africa.

In developing countries, growth in agriculture has proven to be more effective in reducing poverty than equivalent growth in any other sector, and in sub-Saharan Africa this is as much as 11 times more effective than in non-agricultural sectors. Hence the world

has been seeking better ways of growing the agricultural sector, and in the process realised that farmer organisations could play a central role in driving the intended growth.

the agricultural sector was deregulated in 1996, leaving the farmers vulnerable to free market forces. The shock eliminated many of the smaller commercial farmers, and the number of commercial farmers dropped from 60,900 in 1996 to about 37,000 large-scale farmers presently. Like many of the established commercial farmers, smallholder farmers had had no incentive to acquire marketing skills under the regulated environment, leaving them worse off after deregulation. They lacked appropriate training as well as access to marketing information and marketing infrastructure. Unlike the established commercial farmers who had commod-

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■ The South African scenario

In Africa, the role of farmer organisations in driving the development of the sector has increased over the years, especially after the economic structural adjustment programmes that reduced government involvement in providing vital support services such as extension and linkage to markets. In South Africa,

ity organisations as well as firmly rooted unions such as AgriSA and TAU SA, the majority of smallholder farmers were not nearly as well organised, especially at national level, where there was only one newly-established organisation called the National African Farmers' Union (NAFU). They were left in the lurch, with virtually no access to information of what to produce, how to produce it, how much to produce and where to sell.

■ Main concerns of smallholder organisations

NAFU was established in 1991 as the first national organisation representing smallholder farmers' interests. Its main objectives were to:

- lobby for policy reforms aimed at levelling the field in all agricultural matters with particular reference to land acquisition, agricultural funding, market access and public policy,
- lobby for the provision of appropriate services e.g. extension, marketing and credit to members,
- identify, quantify and address the needs of members,
- facilitate the provision of training and
- empower women and young people so as to enable them to participate fully in farming activities.

These are still core issues concerning the smallholder farmers in South Africa about which their representative organisations should ensure that there are national policies that build the production capacity of the farmers and enable them to participate meaningfully in all available markets.

In the broader sector there are macro-economic factors, such as international trade arrangements, tariffs and taxes, and high costs of inputs and doing business. While important, these issues tend not to feature strongly in the lobbying and advocacy of farmer organisations that represent smallholder farmers. The main reason for this could be

that the current major focus amongst most smallholder farmers in the country is to access land and/or have tenure security on land, which will enable them to invest on a long-term basis. Secondly, they need basic knowledge and technical skills of what to produce, for which market and how. Thirdly, smallholder farmer organisations lack the well-built structures that farmer organisations of established commercial farmers have, with enough resources to engage appropriately qualified technocrats to handle and advice on the various aspects that impact on the sector.

■ Impact on national agricultural policies

Smallholder farmer organisations largely recognise and uphold their obligation to influence national policies in favour of the smallholder producers, especially to transform the sector and enable broader participation. Smallholder farmers usually join farmer organisations to derive social and economic benefits, so they have an internal rather than external focus. Also, because of the heterogeneous membership (youth, women, poorer and developing farmers), the internal expectations from the organisations are usually correspondingly diverse, exerting much pressure on the leadership of their organisations to deliver in a meaningful and measurable way to each subgroup.

One of the major challenges for the smallholder farmer organisations in South Africa was growing in a time when there was reduced government direct support to the sector as a result of deregulation. They therefore had to immediately contend with ensuring that the members were receiving appropriate services, while at the same time urging that policies provided for such services to be available on a broad scale.

On the whole, the farmer organisations in South Africa have raised the concerns of the smallholder farmers to

appropriate authorities. However, concrete proposals of how exactly the government should address farmer capacity issues have perhaps been lacking. The farmers' organisations have often reacted to how existing and new government farmer support and development programmes (such as Land Redistribution for Agricultural Development [LRAD], Comprehensive Agriculture Support Programme [CASAP], Micro-Agricultural Finance Schemes of South Africa [MAFISA], extension services and recapitalisation fund programme for land reform beneficiaries) have not been effective in providing the intended support. The attempt to influence farmer support has thus largely been reactive to programmes rather than proactively influencing the formulation of policies that yield these programmes.

Limited funding has probably been the principal stumbling block, curtailing the organisations' ability to influence policies accordingly, and, e.g. in the case of NAFU, to communicate with members, convene members' meetings and employ capable staff with adequate resources to address farmers' needs. In some cases, this was confounded by self-serving leaders using the organisation to their advantage. Such constraints made it difficult for effective representation and policy engagement.

Parallel to the farmer organisations' efforts, the government's relationship with them also impacts on their ability to influence national policies. On the whole, the South African government has been open to working with organised agriculture in developing policies and programmes, and states this in its strategic documents (e.g. as in the Strategic Plan for South African Agriculture, 2001 and all subsequent plans). In practice, however, the officials frequently want to facilitate the formation of other organisations outside the already established ones or do not trust the legitimacy and representativeness of the existing organisations. They hence call up meetings of farmers in general,

Experiences with the revitalisation of NAFU

In 2010, the National Emergent Red Meat Producers' Organisation (NERPO) was tasked to revitalise the then existing farmers union, NAFU, after it had been be-riddled with a number of challenges that virtually left a vacuum in the representation of smallholder farmers in the country. As part of the exercise, NERPO conducted surveys of stakeholders and farmers to determine what the perceived problems were with the existing national union and what their proposed solutions were. According to the farmers' opinion, the union was there to:

- be the mouthpiece of smallholder farmers, which represents their interests and lobbies on their behalf,
- develop smallholder farmers, which includes supporting members, ensuring that they farm successfully and profitably and,
- organise and unite farmers.

To achieve these goals, the farmers felt that the union should:

- convene farmers' meetings, organise and unite farmers,
- educate, train and advise farmers,
- facilitate access to finance,
- facilitate farmer development and provide technical support, and
- facilitate access to information.

The responses were indicative of the needs on the ground, and hence the type of policies that the unions should drive in order to ensure that the farmers were developed. The farmers felt that the union had not met their needs for a number of reasons, which included poor governance, poor communication with members and lack of capacity and required resources.

without necessarily going through the leadership of the existing organisations. In such instances, it has been up to the leaders of the farmer organisations to approach the relevant government representatives and insist on their inclusion in the processes as organised agriculture, which has worked well in a number of cases.

In recent years, the consultative processes have been progressively more inclusive, the classic example being the manner in which the Department of Rural Development & Land Reform conducted its consultative processes in developing policies out of the recent green paper on land reform. The Department used National Reference Groups (NAREG) consisting of farmer representatives from each province and representatives of stakeholder organisations. The NAREG were used as public forum platforms, discussing and providing input into the proposed policies on land reform. The impact of the farmer organisations under such a process

would depend on how consistent their representatives were in participating in the consultative processes, the extent to which they consulted and provided feedback to the groups that they represented, how informed they were about the policies and what needed to be done, and whether they could engage at national level with relevant government representatives and ensure that their position was heard and considered.

■ Broader sectoral issues require an organisation with clout

The limited institutional capacity has generally limited input into the broader macro-economic issues. However, since these directly affect the entire agricultural sector, the organisations of established farmers have tended to handle them on behalf of the sector. Typical examples here include negotiations on wage determination, and input into the

development of water policies and into the tariffs related to meat imports.

Members of organised agriculture have increasingly realised that, despite differences between developing and established farmers, with one group still seeking means of production and the other looking for more market opportunities locally and abroad, the sector cannot be as influential as possible as long as it remains divided. Hence the Agri-Sector Unity Forum (ASUF) was established in 2011, consisting of the following organisations:

- AgriSA (established commercial farmers);
- TAU SA (established commercial farmers);
- African Farmers Association of South Africa (AFASA, smallholder farmers);
- NAFU (smallholder farmers);
- Agbiz (agribusiness); and
- SAAPA –South African Agro-Processors Association.

Under ASUF, participating organisations can speak with a united voice on matters of common interest where consensus has been reached. Since its establishment, ASUF has presented the need to support growth of agriculture to the ruling party, and provided strong opinions and recommendations of labour wages, land reform and Agricultural Broad-Based Economic Empowerment (AgriBEE). Endeavours to have policy standpoints on various issues and thus proactively influencing policy reforms are a notable development within ASUF. Thus the united sector has the potential to pool together a critical mass of resources and represent a balanced view (of both smallholder and large-scale farmers) on the policies required in the sector. On the other hand, because of the disparities between the smallholder and established commercial producers, and the entrenched structures, it will probably take a few more years before all organisations truly amalgamate into one body.

References: ► www.rural21.com

How to increase farmer organisations' effectiveness?

Thompson et al. (2009) succinctly summarise the support that is needed by farmer organisations that deal with policy and advocacy, namely:

- Focus on leadership development – also of women leaders – to strengthen the farmer organisations. This includes sensitising members to be more self-reliant rather than dependent on external parties to provide resources and build the capacity of farmer leaders with potential.
- Develop systems to provide up-to-date information to farmer organisations to facilitate their participation in developing agriculture and rural development policies.
- Second professional staff to farmer organisations to improve advocacy and policy engagement activities.
- Provide training on strategic and operational planning and on evidence-based advocacy skills.
- Encourage formation and strengthening of national, regional and international networks of farmers' organisations.

Local farmer organisations can learn much from farmers in the Northern hemisphere, as was illustrated by the "Farmers' Exchange Across Continents" seminar which was held in 2013 by farmers from Germany with their counterparts from 15 African states. The major areas in which the learning could occur are:

■ Governance

Most African farmers unions are still struggling to run and manage their day-to-day administrative duties due to lack of experience and institutional capacity. They could learn from their counterparts from the North through training of leadership and management of the national farmer organisations in governance (much along similar lines to the IFAD Support to Farmers' Organizations in Africa Programme).

■ Effective models for co-operation in accessing inputs, farm power, credit and markets

This is in recognition of the fact that smallholder farmers are probably here to stay on the African continent and hence, like in the North, have a potential

to transform their small businesses into combined big businesses with stakes in the whole agricultural value chain in their respective regions and countries.

■ Technical knowledge and farmer training

Farmers in the South would also benefit from capacitation to collate and disseminate technical information to members on a timely basis. A number of such platforms have been developed elsewhere in the world which could be adapted to situations in which they are being localised. In a similar vein, one of the greatest challenges of smallholder farmers in South Africa is technical knowledge and entrepreneurship in agriculture. Approaches to fill in this gap could be adapted from the various vocational training models in the North, such as the Netherlands and Germany. Efforts to achieve this in South Africa include the partnership between the Dutch and the North West Department of Agriculture for the use for Kgora Resource Centre as a farmer development centre, as well as a memorandum of agreement signed between South Africa and Germany during the Farmers' Exchange Across Continents seminar. The challenges are that some of the agreements take long to implement and the efforts are too few

and far between to be effectively scaled up.

■ Secondment of staff & training

Farmer organisations could benefit from secondment of staff whose primary role would include capacitation of the existing leadership and management to run the organisations. Secondment could also be linked to specific development programmes.

■ Better co-ordination across the sector

Better co-ordination across the sector can be achieved through a united body to deal with matters of common interest. The state could facilitate co-ordination with a policy for the recognition of legitimate and representative farmer organisations, and strengthen such organisations to play their advocacy role more effectively. Participation in national, regional and international forums assists leaders of farmer organisations to learn best practices from each other and influence policies at even higher levels than the national governments. The major national farmers' unions of South Africa have affiliated to the relevant regional and international organisations.

Langelihle Simela, Tinashe Chavhunduka
African Farmers' Association of South Africa (AFASA)



Photo: AFASA

Farmers from Germany and 15 African states at the "Farmers' Exchange Across Continents" workshop in May 2013.

Envisaging alternative futures for African agriculture

The Future Agricultures Consortium was established in 2005 with support from the UK Department for International Development (DFID) as a learning alliance of leading African and UK-based research organisations. The Consortium provides independent analysis and advice for improving agricultural policy-making. The aim is to encourage critical debate and policy dialogue on the future of agriculture in Africa, elaborating the practical and policy challenges of establishing and sustaining pro-poor agricultural growth.

Agriculture remains a crucial pathway out of poverty in Africa: absorbing labour, producing food and generating economic growth, both within and perhaps most importantly beyond the sector. While there are various ongoing efforts focused on promoting agriculture to increase food security and generate growth in the wider economy, a huge gap prevails in understanding the political incentives that underlie agricultural policy-making in Africa.

Since 2005, the Future Agricultures Consortium has aimed to fill this gap by looking at politics and policy processes shaping agricultural research and development in Africa: examining how and why decisions are made, the conditions for change, and the practical and policy challenges of establishing and sustaining agricultural growth that benefits poor producers, pastoralists and consumers.

With original research, analysis and debate, Future Agricultures aims to provide critical insights and dialogue on African agricultural policy agendas, through a network of over 90 researchers in 15 countries in Africa, as well as in the UK.

■ Agriculture: more than just a technical challenge

Too often it is assumed that the key to policy change is better evidence and enhanced technical design, yet many of the best designed policies falter when implemented. The best technologies or the most sophisticated economic analysis may not be enough. Future Agricultures' research is focused on understanding these 'implementation failures' and the importance of politics

and policy processes in realising policies and plans on the ground.

Insights drawn from comparative studies in Future Agricultures' themes are informing and influencing several national and regional policy debates. This includes looking at key political economy issues related to a number of important themes, such as the commercialisation of smallholder agriculture, the role of young people, social protection and growth, innovation, land deals, accountability, climate change, pastoralism and the increasing influence of China and Brazil in African agriculture.

Livestock exports in the Horn are booming among pastoralists. Supporting policies that capitalise on innovations and local knowledge are vital for economic growth, livelihoods and poverty reduction.

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Photo: Abdurehman Eidi/Future Agricultures Consortium

Unpacking the ‘black box’ of policy processes. How do African political systems shape the incentives for policy and investment support to smallholder agriculture? Understanding political decision-making is central to the Consortium’s work on *Political Economy of Agricultural Policy in Africa* (PEAPA), which has explored specific regional/country settings, from cotton in Burkina Faso to fertilisers in Malawi. Insights from Future Agricultures’ PEAPA project are feeding into major programmes and initiatives, including discussions around the New Alliance for Food Security and Nutrition (NAFSN).

Creating policy space for pastoralism. Future Agricultures’ research challenges negative stereotypes of pastoralists in the Greater Horn of Africa to reveal their often-ignored innovation, opportunities and successes in the livestock trade. For example, our researchers have worked closely with pastoralists and local government officials in Kenya and Ethiopia, convening policy dialogues to address misunderstandings and challenges to this centuries-old way of life. A major conference held in 2011 on *The Future of Pastoralism* reinvigorated this debate and resulted in launching the book *Pastoralism and Development in Africa: Dynamic Change at the Margins*.

Land deals and land grabs. In 2010, in response to concern about large-scale land deals in Africa, Future Agricultures brought together leading researchers from across continents working on transnational commercial land deals in Africa and the policy frameworks governing them. The organisation helped to form the *Land Deal Politics Initiative*, an international network which convenes research and dialogue on the subject. Its new project, *Land and Agricultural Commercialisation in Africa* (LACA), explores which new forms of commercialisation of land might promote growth and reduce poverty and inequality, through case studies in Ghana, Kenya and Zambia.

Towards a regional focus

In early 2013, the Future Agricultures Consortium (FAC) launched three Regional Hubs linked to academic centres of excellence in East Africa (Tegemeo Institute of Agricultural Policy and Development, Egerton University, Nairobi), West Africa (ISSER – Institute of Statistical, Social and Economic Research, University of Ghana, Accra) and Southern Africa (PLAAS – Institute for Poverty, Land and Agrarian Studies, University of the Western Cape, Cape Town) to co-ordinate the Consortium’s research and policy engagement efforts. Each Hub has a Coordinator to support Future Agricultures’ activities in the respective region. The Consortium also maintains a CAADP Coordinator at the West Africa Hub and a Communications and Networking Coordinator at the East Africa Hub.

The three African Hubs are supported by a small Secretariat located at a fourth regional centre in Europe, based at the Institute of Development Studies (IDS), UK. Each Regional Hub is linked to and supports a network of national, regional, and international partners. The new structure marks a transition to an African-led, Africa-centred organisation which will ensure that Future Agricultures Consortium continues to conduct high-quality, policy-relevant research, communicate findings and implications, and create spaces for debate and dialogue in order to inform and influence agricultural policy across the region.

► www.future-agricultures.org; Twitter: @FutureAgrics

Convening and communicating. Throughout its history, Future Agricultures has aimed to convene high-profile policy debates responding to policy moments. On each occasion, the organisation has been able to bring local level evidence and insights to illuminate wider debates. Future Agricultures’ conference with the Salzburg Global Seminar on *Towards a New Green Revolution for Africa?* explored lessons from recent successes in African agricultural development and how recent growth can be sustained, expanded, and accelerated.

Two *Global Land Grabbing* conferences focused on the politics of global land grabbing and agrarian change. The issue of how young people engage with the agri-food sector in Africa was debated at the *Young People, Farming and Food* conference held in 2012, while our *Political Economy of Agricultural Policy in Africa* (PEAPA) conference held in March 2013 brought together key figures from research, politics, donor organisations and civil society to understand the influence of African political systems on agricultural policy. Through our growing website complemented by an active publishing programme, the Consortium has become a hub of infor-

mation exchange on political economy of African agricultural policy.

Building next-generation capacity. Building capacity among the academic community is also vital for addressing the problem of ‘brain drain’ of Africa’s researchers. The flagship Fellowship Programme focuses on mentoring young academics, enabling them to produce high-quality publications and launching their careers. So far, Future Agricultures has awarded 27 fellowships to young researchers addressing themes related to the political economy of agricultural policy processes in Africa.

Engaging with CAADP. One of the most important aspects of Future Agricultures’ engagement work has been working with the ten-year-old Comprehensive Africa Agricultural Development Programme (CAADP), the flagship programme of the African Union’s New Partnership for Africa’s Development (NEPAD). Over the past five years, Future Agricultures has been contributing to CAADP regional and national processes and events, including regular participation in Partnership Platform meetings and jointly reflecting on lessons learned from the past decade.

Agricultural policy reform and food security in China

In 1978, the rural reform began in China, and since then farmers, including the poor ones, have benefited from a steady growth in income and gradually strengthened food security. This article explains how China achieved food security in the past three decades, how the reform process has affected poverty reduction and what aims are established to deal with extreme poverty and child malnutrition for the period of 2011–2020.

In 1976, when China was still under the planned economy, the nationwide average annual per capita income in the People's Communes (the agricultural collectives) amounted to 60.2 Yuan, which was lower than that of 1956 at constant prices. At that time, more than one third of farmers' households were in debt, and about 100 million farming people suffered from a shortage of food. By 1978, China was no longer self-sufficient in grain and had to rely on imports to supply 40 per cent of the urban population.

Farmers created a responsibility system with an output contract for the work groups in 1978 and developed it into a household contract system in 1981. The initiative of the farmers was given a positive response by top-level leadership, and eventually, it led to the abolition of the People's Communes. The following principle measures in the reform programme were implemented during the 1980s:

- A family farm system replaced the collective system. Every peasant household now ran a small farm with the right of usufruct for an average 0.5 hectares of farmland.

- Price and marketing policies changed by means of lifting the state monopoly on purchasing and marketing farm products, opening the free market, introducing the state contract purchase system and raising prices.
- Structural policies were devised to stimulate agricultural diversification.
- Rural non-agricultural economic development policies were designed in order to shift surplus labour away from agriculture.

The above-listed measures were issued through Document No.1 of the Central Committee of the Chinese Communist Party at the beginning of each year during 1982–1986, which indicates the first priority in the decision-making fields of top-level leadership. Document No.1 first plays a role in getting the local governments to pay special attention to food production and rural development. Second, it publicises the measures to target the short-term goals of the policies for the year that the document refers to. Third, it reasserts the mid- and long-term strategies and policies for food security and rural development. During 2004–2013, Document No.1 mainly emphasised the issues below:

- To establish a minimum price guarantee system for rice and wheat growers in response to market signals with the purpose of protecting farmers from price volatilities. At the same time, farmers are now in a position to

sell their products to any other buyers when the market prices are higher than the guaranteed prices offered by the public purchase agencies. The minimum purchasing prices for public procurement have been raised steadily. For example, the price was set at 1.64 Yuan/kg for first-grade paddy rice in 2008, while it has been 3 Yuan/kg in 2013, and first-grade wheat prices are 5 per cent lower than the paddy rice prices during the same period.

- To subsidise grain growers with direct payment links to sown areas and purchase of high quality seeds (and animal breeds), machinery and tools, and agricultural inputs, such as diesel and chemical fertilisers.
- To increase public investment in agricultural research and infrastructure

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Household income and off-farm activities

Year	Household size (person)	Family labour (person)	Non-agricultural labour (%)	Cultivated area (mu)	Sold quantity/ Total grain output (per cent)	Annual net income per capita (Yuan)	Income from farming (%)
2000	4.20	2.80	29.7	7.43	44.8	2,253	46.2
2005	4.10	2.80	37.9	7.09	59.0	3,255	42.4
2008	4.00	2.80	41.0	6.86	63.9	4,761	38.3
2010	3.95	2.85	—*	6.50	—	5,919	—

Source: The Ministry of Agriculture, P.R. China, 2009 and 2012, China Agricultural Development Report (in Chinese), Beijing: China Agriculture Press.
Note: — means no data available. 15 mu = 1 ha.

improvement. For instance, in 2011, central government spent 130.99 billion Yuan, the equivalent of 21.1 billion US dollars (USD), on the construction of rural roads, power and irrigation facilities.

- To expand key demonstration zones for agricultural technology extension. In addition to the provision of extension services, mechanisation of the small farms is promoted through the production of small tractors and machines. The better-off farmers are also motivated to specialise in machine service and enter the agricultural service market. The modernisation of small-sized agriculture has brought about a significant increase in grain yield, from 3 tons per hectare in 1984 to 4.88 tons in 2008.
- More investment is allocated to capacity building for disaster prevention and mitigation as well as to land consolidation and amelioration. Fiscal spending of central government on these items amounted to 104.2

billion Yuan, equivalent to 16.8 billion USD, in 2011.

Public support has dramatically strengthened food availability with increasing yields. The total yield of grain production exceeded 400 million tons in 1984, and it reached a level of over 500 million tons in 2010. The yield of edible oil went beyond 16 million tons in 1990 and doubled in 2010. The output of meat production was counted for 29 million tons in 1990, and it had increased by 189 per cent by 2012.

■ Effects of the reform processes on poverty reduction

Agricultural growth during 1978–1985 as well as an accelerated process of industrialisation and urbanisation since the 1990s enabled a majority of rural households to attain food security and get out of poverty. The Table shows that an average household's grain output commercialisation rate increases as the area of its farmland is gradually reduced. The share of non-agricultural labour has risen, while the proportion of the farming income has declined in the total income of the household. First of all, such a tendency reflects the fact that part of agricultural land is turned to non-agricultural use. Second, agricultural productivity is enhanced. Third, around 260 million rural labourers have migrated into the urban areas and provide considerable remittance to their

families in their home towns or villages each year.

Together with the rural reform process the central government launched a poverty reduction programme in a few provinces in western China in 1982 and initiated a nationwide antipoverty strategy in 1986, aimed at providing food and clothing for the poor through promoting development in poor areas. By 1994, the goal of food security was virtually achieved. Subsequent anti-poverty schemes have chiefly aimed at eliminating income poverty, and in the main antipoverty measures so far, socioeconomic and human resource development projects have been run. According to the poverty line set by the World Bank (USD 1.25/day per capita consumption or income), China's urban poverty incidence dropped from 44.5 per cent in 1981 to 0.9 per cent in 2008, whereas the incidence of rural poverty dropped from 94.2 per cent to 22.3 per cent during the same period. In 1978, when rural reform commenced, rural poverty in China was identified among 250 million people. It was measured with a poverty line defined by an annual food grain accessibility of 200 kilograms per capita.

■ Addressing extreme poverty and child malnutrition for 2011–2020

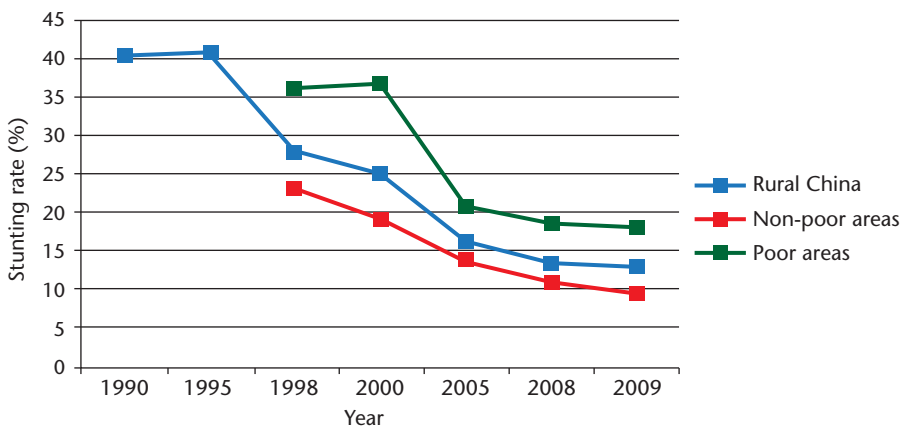
For the period of 2011–2020 the Chinese government initiated a new programme for rural poverty reduction, and at the end of 2011, it lifted the poverty line to 2,300 Yuan per capita annual



Photo: Zhu Ling

Public support has dramatically strengthened food availability with increasing yields.

Nutritional status of rural children under 5 (Stunting prevalence)



Source: Nutrition Monitoring Team of Chinese Center for Disease Control and Prevention, 2010, Nutrition Surveillance Report.

net income equivalent to 1.8 USD per day at 2005 purchasing power parity. Measured with the new poverty threshold, the size of rural poverty is estimated at 128 million people, or 13.4 per cent of the total rural population. Among the rural poor, there are 17 million children under the age of 6 years, accounting for 20 per cent of the total rural children at the same age.

In the past three decades, child malnutrition has almost been eliminated in cities. The nutrition monitoring team found out that the low-weight and stunting indices of the urban children under the age of 5 years had dropped from 5.3 per cent and 11.4 per cent to 1.4 per cent and 3.1 per cent during 1990–2005. Compared to children living in cities and non-poor rural areas, malnutrition of the children in the same age group but living in the poor rural areas remains a challenge. From 1998 to 2009, the low-weight rate of this age group declined from 14.5 per cent to 6.6 per cent, and stunting prevalence was reduced from 36.4 per cent to 18.3 per cent. However, in 2010, the stunting rate of the children aged from 12–24 months was still observed at a peak of 22.8 per cent.

The government has taken comprehensive and multi-dimensional measures to tackle the remaining food supply gap, extreme poverty and child malnutrition:

1. Maintaining food supply and demand balance through self-sufficiency in staple grains with imports of soybean and edible oil. In fact, China has already been importing about 40 million tons of soybean and around 8 million tons of edible vegetable oil each year.
2. Extending the social protection system from the urban to the rural. Currently, over 95 per cent of rural people are part of the medical co-operative system. Since the end of 2009, an experimental pension system has been in progress, and now, farmers aged over 60 years are eligible to receive a monthly non-contributory benefit of 55 Yuan from central government finance. Moreover, a rural minimum living standard guarantee system has been set up to target the extreme poor, and it is financed by both the local and central governments. In 2012, 28 million rural households with more than 53 million people were assisted with a monthly average cash transfer of 104 Yuan per capita. The share of the transfer from central government accounted for 65.1 per cent and 60.1 per cent for the urban and rural schemes.
3. During the period of the 12th 5-year national socioeconomic development plan (2011–2015) and over

the next decade, the Chinese government will continue to prioritise the elimination of absolute poverty in its antipoverty strategies. The extremely poor areas that are adjacent to each other (especially areas inhabited by ethnic minorities, border areas, and ecologically delicate areas) will be the key regions for carrying out the antipoverty programme, centring on increasing poverty relief funds and gradually raising the poverty line.

4. Starting from spring semester in 2012, central government has undertaken a school feeding programme in 669 hardcore poor counties that covers 26 million rural children.
5. At the same time, an experimental programme of nutrition intervention is being implemented in 100 counties in ten provinces, with supplementary food for the rural children aged 6–24 months.

Conclusion

China is in continuous fast transition to industrialisation and urbanisation, and is striving to maintain sufficient food supply. New measures are increasing the farmers' own productivity through developing the small farms, decreasing market regulations, and expanding international trade in food. Poverty reduction and social security programmes together with better education are parts of the efforts to strengthen agriculture and food security.

** Zhu Ling is a Professor at the Chinese Academy of Social Sciences and this year's winner of the Justus von Liebig Award for World Nutrition. The Award is conferred annually by the fiat panis Foundation in recognition of outstanding achievements in combating hunger and rural poverty; also see: www.rural21.com → news.*

Making policy count: FAO's Monitoring African Food and Agricultural Policies initiative

Policy is a key ingredient for agricultural development and increased food security. To implement their national strategies, governments in developing countries are keen to create a policy environment that is conducive to those objectives. However, policy-makers often lack information and analytical capacity to effectively monitor the effects of policy on producers, consumers and other stakeholders in the value chain. The Monitoring African Food and Agricultural Policies (MAFAP) initiative, funded mainly by the Bill and Melinda Gates Foundation and the UN Food and Agriculture Organization (FAO), responds to this need by supporting the development of sustainable policy monitoring systems in selected developing countries. These systems provide reliable information that is used for evidence-based policy dialogue and decision making at the national, regional and international level.

■ Building a system to support policy-makers

To monitor the public sector's support to agriculture, MAFAP uses a common set of indicators that allow for the comparison of policy effects on prices and public expenditures between years, countries and commodities. Since MAFAP's methodology was developed in collaboration with the Organisation for Economic Development and Co-operation (OECD), the indicators are compatible with the *Producer Support Estimates* that are used to measure support to agriculture in developed and emerging economies.

MAFAP's policy monitoring focuses on the following three areas:

- the level and composition of public expenditure in support of agriculture and rural development;
- the impact of policies on price incentives for producers and wholesalers in key agricultural value chains; and
- the degree of coherence between the government's stated policy objectives, policy measures implemented to achieve these objectives and the effects they generate.

So far, FAO has partnered with government institutions and research organisations in ten African countries – Burkina Faso, Ethiopia, Ghana, Kenya, Malawi, Mali, Mozambique, Nigeria, Tanzania and Uganda – to support the establishment and institutionalisation of policy monitoring systems on the basis of this approach. Capacity development in the area of policy monitoring constitutes an important element of those partnerships. The indicators, available in the publicly accessible MAFAP database, as well as other outputs, such as MAFAP Policy Briefs, Commodity Specific Technical Notes and Country Reports, have been used in various policy fora at the national level, including the Parliamentary Committee for Agriculture in Tanzania and National Stakeholder Policy Dialogue Forum in Kenya, and as a monitoring tool of the National Investment Plan for the Rural Sector in Burkina Faso and Mali.

MAFAP also supports the monitoring of progress towards development goals

such as those established under Africa's Comprehensive Africa Agriculture Development Programme (CAADP). In 2013, NEPAD commissioned a special MAFAP report, which assesses the coherence of price support policies and public spending in West and East Africa.

■ MAFAP Synthesis Report 2013: lessons learnt from the years of crisis

The recently launched MAFAP Synthesis Report summarises the initiative's main findings for the years 2005–2010, a period marked by the world food price crisis in 2007–2008. The analysis shows that:

- despite governments' ambitious goals and strategies to advance agricultural and rural development, producer prices were depressed by an average of 12 per cent as a result of market and trade policies, coupled with poor market performance;
- market and trade policies generally aimed at lowering food prices, favouring consumers over producers;
- producer prices could increase by 10 to 17 per cent if inefficiencies in key value chains were removed through targeted investments and policy interventions; and
- the level of public expenditure on agriculture and rural development had declined, mainly due to reductions in donor support; national budget allocations increased by 14 per cent over the study period.

Over the next years, MAFAP will continue to monitor the effects of food and agricultural policies on prices and public expenditure in a growing number of countries in Africa, Asia, Latin America and the Caribbean.

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More information about MAFAP, the Synthesis Report, Database, MAFAP/NEPAD Report on Policy Coherence and all the other MAFAP products are available at: www.fao.org/mafap



Developing capacity for sustainable agricultural policy monitoring.

Photo: FAO

Capacity development for agricultural policy advice

The changes in global agricultural markets over the past decade have major implications on agricultural policy. What are the challenges and opportunities for development-oriented agricultural policy-making? And what advisory capacities are needed to deliver substantive advice to developing countries' governments? The answers to these questions constitute a new agenda for contemporary capacity development for agricultural policy advice.

Global agricultural markets have experienced major shifts during the past years. The era of low agricultural prices came to an abrupt end in 2007/08, with the historic price spikes for major food crops. As a result, agriculture as a sector is now receiving much more attention from policy-makers in many countries, particularly in developing countries. Ideas about agricultural development have changed significantly and a revival of interest in stimulating the sector via active policies can be observed. This requires developing country policy-makers to reconsider their role, policy objectives and instruments as much as it requires development agencies to re-think their capacities to advise on agricultural policy topics and processes.

Yet, most international agencies that provide agricultural policy advisory services work with staff who were educated at a time when agricultural economics and rural development were taught differently. For example, the strong credo for liberalised and deregulated markets as an outcome of the 'Washington Consensus' (see article on pages 8–10)

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resulted in a generally reluctant position towards state interference in agricultural markets. But since the agricultural world is changing, so are the challenges in policy advisory work. Governments tend to (again) pursue a much more active role in agricultural markets, e.g. by implementing subsidy schemes or food price stabilisation. A critical look at advisory skills is important in order to better equip the staff of international agencies to provide adequate advisory services for agricultural development today and in future.

■ The contemporary capacity agenda

In 2012, GIZ on behalf of the German Federal Ministry for Development and Economic Cooperation (BMZ) initiated a discussion process with colleagues and international agricultural policy experts to assess the portfolio of countries where German Development Cooperation is involved in agricultural policy advice and to scrutinise the topics and processes advisors are involved in. What are the topics and instruments for development-oriented agricultural policy-making? What are the challenges and opportunities to support its implementation? And what advisory capacities are needed to deliver substantive advice to developing countries' governments? The answers to these questions constitute the contemporary capacity agenda

for agricultural policy as depicted in the graph (page 29) and are outlined below.

■ General advisory skills

Above all, a set of overarching and more general advisory skills have to be highlighted as a necessary precondition for any successful advisory services. These include intercultural communication skills and a general "analytical mindset". Modern concepts of advice and extension have evolved from a pure delivery of technical solutions to technical questions to a much more process-oriented interpretation of the role of advisors as "trusted acquaintances", who help navigate through rather stormy



policy processes. These necessary general skills are not further elaborated here; however, as they play a key role in enabling an advisor to establish a trustful relationship with the individuals and institutions he or she is advising, they are of utmost importance. Regular training or coaching can keep these skills afresh and help developing increased advisory capacities. In addition, colleagues state that important advisory skills are gained by working under good leadership, learning from inspiring examples and developing personal experiences.

In addition to such general skills, three sets of different skills are necessary to meet the increasing challenges to agricultural policies: (1) technical capacities, (2) process management, and (3) political understanding.

■ Technical capacities

Acquaintance with technical subject matters is seen as absolutely crucial to the credibility of any advisor and is usually valued very highly among most individuals and institutions that seek advisory services. Therefore, it is important to map out the necessary technical capacities for contemporary agricultural policy advisory services, since they have widened over the past decade. The first

The capacity agenda for contemporary agricultural policy advisory services in development cooperation

General advisory skills		
Technical capacities	Process management	Political understanding
1. Rural development, transformation and poverty trends	1. New aid architecture / harmonisation and alignment	1. Political system, budgeting, decision-making procedures
2. Basic economics	2. Planning in complex and dynamic systems	2. Political economy of the agricultural sector
3. Agricultural economics: markets, marketing and failures	3. Multi-stakeholder policy dialogues	3. New public management / public choice
4. Environmental sustainability and climate change	4. Public-private partnership moderation	4. Political instinct

area constitutes the ability to assess the general rural development trends of a country or region using modern methods and parameters of various disciplines such as poverty analysis, household demography, social security, migration patterns, resource use, property rights, the analysis of the non-farm rural economy and assessing the status of structural rural transformation.

Secondly, advisors need to have basic economic knowledge to understand the macro-economic situation and trends for the country and their impacts on the agricultural sector, including public finances, inflation, terms of trade, tax base and savings and interest rates. They should also be familiar with growth economics, including the role of public goods and investment, technology, factor accumulation, human capital and the labour market.

Agricultural economics is almost needless to mention as a key area of knowledge. Today, sound agricultural economic analyses require proficiency in the following four areas:

- a) a profound understanding of agricultural markets and the factors driving supply and demand (on the supply

side, this includes farm economics and the ability to assess gross margins for agricultural produce; on the demand side, it implies a thorough understanding of price and income elasticities of demand and the integration of rural and urban as well as domestic, regional, and international markets);

- b) a clear understanding of the value chain concept developed over the past decade and agricultural marketing;
- c) an understanding of causes and effects of prevailing market failures in agricultural markets;
- d) an understanding on the role technology can play in changing agricultural economics in terms of factor production and returns to research and extension.

Lastly, a contemporary agricultural policy advisor will not be able to do good work without some basic knowledge of environmentally sustainable agricultural production amidst climate change. Sustainable intensification and land use changes will dominate much of agricultural policies in future. Anticipating changes in production patterns and helping to prepare options for either adaptation to climate change or mitigating risks and vulnerability, particularly in marginalised areas, will become a major task for development co-operation in the years to come.

More than just a provider of technical solutions. In today's understanding of advice and extension, consultants play the role of a trusted acquaintance.



Photo: Ursula Meissner/giz

■ Process management

The importance of the capacities summarised as “process management skills” has definitely increased over the past years, namely after the release of the Paris Declaration on Aid Effectiveness in 2005 and its follow-ups, such as the Accra Agenda for Action and the Busan Partnership Document. The new aid architecture requires developing country governments and all involved development partners, and hence advisors, to consult, collaborate, cooperate, align and harmonise their activities much more than before. In a number of countries, the frameworks under which aid programmes operate have changed into sector-wide programming, programme-based approaches or even budget support. All such modes of delivery require participation in new forms of policy planning and dialogue forums. Advisors therefore need to understand the limits to linear planning and the importance of flexibly engaging in policy planning processes at national level in ever more complex and dynamic agricultural sector debates.

To succeed in policy process management, the facilitation of multi-stakeholder dialogues is becoming ever more pertinent. With democratisation, agricultural policy processes in many countries today require widespread and inclusive participation of different stakeholders. For Africa, the emergence of the NEPAD Comprehensive Africa Agriculture Development Plan (CAADP)

came with an additional need for new co-ordination mechanisms at country level. Many advisors are faced with the task of supporting public sector actors in managing the moderation of such multi-stakeholder processes that include farmer organisations, private sector actors and civil society organisations. They are requested to provide thoughts on “how to do this” for developing country government representatives, who often lack the experience in engaging effectively with non-state actors. This holds particularly true for the moderation of public-private partnerships along agricultural value chains. Many developing country bureaucracies lack experience and opportunity in partnering effectively with private sector actors. Whereas many prejudices prevail on both sides, policy advisors can act here as brokers and facilitate the two sides to work together for results. They can offer a third party in such partnerships and thus need good negotiating skills and a deep understanding of rationales of both the public and the private sector.

■ Political understanding

It might sound self-evident, but it is important to stress this third set of crucial skills: advisors need to understand the political system they are operating in. More than often, decision-making in agricultural policy depends to a lesser extent on technical evidence, but on the power and leadership of involved individuals, institutions, and interest groups.

Human capacity development

Human capacity development (HCD) develops individual capacities and shapes learning processes in four areas:

- Personal and social skills
- Technical expertise
- Managerial and methodological capacities
- Leadership skills

The aim is to enable advisors or partners to extend their individual capability base so that they can draw on comprehensive skills and knowledge when making policy decisions. GIZ offers generic trainings in these four different areas as well as tailor-made learning formats.

➤ www.giz.de/en/ourservices/270.html

Advisors need to understand the mechanisms of formal policy-making as well as the informal values and principles that dominate policy and decision-making processes. Here, a comprehension of policy choice as discussed in contemporary political economy literature is necessary. Advisors need to understand the motivations and incentives of key actors: this might be ranging from agribusiness actors exercising pressure to influence markets or to obtain subsidies; to politicians, who need to weight the implications for power and stability; to the ideals of equity and justice found among NGOs; up to other donors and their institutional interests and incentive structures. Such are the complexities (and potential fallacies) in the above-mentioned multi-stakeholder processes. There are no blueprint ways of advising under such circumstances, however it is important to contemplate that engaging in such policy processes requires advisors to think and work politically. This means understanding the politics at national level as well as politics of international development.

Advisors need to develop a sense for political timing and opportunities in their given work environment.



Photo: Markus Kirchgessner/giz

As for public administration, advisors need to know basics of the theory and practice of public management. When working within bureaucracies, knowledge of the theory of bureaucracy, organisational development and change management are essential. The same applies to decentralisation (and its variants, such as deconcentration processes as they are increasingly enfolded, particularly in a number of African states).

Lastly, advisors need to develop a sense for political timing and opportunities in their given work environment – what colleagues call “political instinct”. Development co-operation is increasingly involved in rapidly changing societies. Changes in governments often provide unique dynamics and windows of opportunities. To prepare the individuals and institutions you are advising for quickly seizing such political opportunities can make a real difference in outcome. As much as the term “instinct” might sound like a congenital feature, it is far more of a skill acquired over time with ears and eyes wide open and the analytical senses sharpened.

■ Some final reflections

This contemporary capacity agenda for agricultural policy has resulted in an arguable long list of desirable skills which needs to be validated against the real world people constituting the staff who work as advisors and consultants. The agenda set out is deliberately broad, since advisors need to appreciate technical, procedural and political considerations, if they are to provide informed advice. To be effective, advisors need theories, concepts, and specific technical knowledge at equal share. Had this been written thirty years ago, technical skills might have been given a higher weight. The shift in emphasis probably reflects the awareness that agricultural policy decisions are embedded in complex sector processes that equally need



Photo: Florian Kopp/giz

Agricultural policy processes today require widespread and inclusive participation of different stakeholders.

“procedural cleverness and endurance” and technical inputs alike.

■ How to do it? A way forward

The GIZ Sector Project “Agricultural Policy and Food Security”, on behalf of BMZ, is leading a process to discuss this capacity agenda together with partners from developing countries, project staff, other agencies, consultants, intermediaries and private sector players. One element here is to implement capacity development activities for agricultural policy advisors and their partners in the field. Classical training courses will form part of this, however human capacity development (HCD) can draw on a much wider set of learning and knowledge instruments (see Box on page 30). A sometimes simpler and less costly way to gain knowledge is through learning from experience by monitoring and evaluation of advisory practices, the documentation of insightful case studies and effective dissemination of results. More so, our current thinking for enhancing agricultural policy advisory skills embraces mechanisms for peer-learning in institutionalised networks and on-the-job learning events, e.g. within the scope of GIZ’s sector network working groups. Instead of singular

donor efforts, German Development Cooperation is encouraging networking between European development organisations and agencies in order to build international alliances to develop the necessary capacities within development agencies and, more importantly, in the developing countries that need to politically manage the agricultural complexities and challenges ahead.

Further reading

This article is based on discussions held during GIZ Sector Network for Rural Development (SNRD) meetings in Africa and Asia in 2012 and 2013 as well as on the Expert Meeting “Agricultural policy for development: a fresh look at policy options, instruments and roles for governments, private sector and development agencies” held in Bonn in December 2012; see also www.rural21.com → news

An extended version of this skills debate can be found in the ODI-GIZ Background Paper by Steve Wiggins et al. (2013) *Agricultural development policy: a contemporary agenda*, Chapter 4; see www.giz.de/expertise/html/7981.html

A commendable evaluation of policy dialogue capacities has been undertaken by Australian Aid: *Thinking and Working Politically*; see www.ode.usaid.gov.au

“Each country must define its own priorities”

Many a dogma produced by agricultural policies over the past decades has proved disastrous for African agriculture. Ms Rhoda Peace Tumusiime, Commissioner of Rural Economy and Agriculture of the African Union (AU), looks at lessons learnt and suggests ways to bring progress to Africa’s rural regions.

■ Ms Tumusiime, during the last decades, agricultural policies have undergone profound changes. What have the consequences been for the rural areas in Africa, and what are the lessons learnt from these policies?

Structural Adjustment Policies – SAP – compelled many African governments to reduce financing and investing in agriculture, and this downgraded the African agricultural sector. Reduced financing was accompanied by downsizing of personnel servicing the sector, including extension workers. This left the rural masses involved in agriculture on their own. Agricultural production and productivity fell drastically. Even after the African Union Heads of State and Government had adopted the Comprehensive Africa Agriculture Development Programme (CAADP) in 2003, it was not until 2007 that Rwanda became the first country to sign a CAADP Compact, an encapsulation of multi-stakeholder consensus and partner buy-in on the drivers of agricultural production and productivity, food and nutrition security.

It was not before 2009 that the bulk of the AU Member States signed CAADP Compacts. In adopting CAADP, AU Member States undertook to increase financing for agriculture to at least ten per cent of the national budget in order to attain six per cent growth in the sector. This was meant to be a break-away from the SAPs that had proven so disastrous for a continent whose citizens’ livelihoods predominantly depend on agriculture. When government disinvested from agriculture, the private sector could not fill the gaps. Government had to revive support for the agricultural sector. As time went on, it was also noted that government alone would not boost or sustain the sector. Thus initiatives for public-private partnerships have emerged. The local private sector is being engaged through AFRACA and other mechanisms, and, also working with the World Economic Forum, the AU is trying to leverage international corporate finance and investment towards agriculture.

■ Global issues such as climate change are impacting on agriculture. Eliminating hunger and raising farmers’ incomes are pressing objectives. Where do you see particular challenges for agricultural development in Africa?

The continent’s agriculture faces several challenges, finding itself competing for attention and resources among many priorities which more often than not outcompete it. Where no deliberate policies have been taken, agriculture still gets

eclipsed. At the same time, the private sector has been reluctant to intervene in the agricultural sector, considering it as risky and as generating low returns. In the same vein, agriculture has tended to be left to the illiterate and the elderly as the educated youth flock to urban areas in search of white-collar jobs. Poor market infrastructure and underdeveloped factor and product markets are hampering progress in linking agriculture with markets. Another challenge is to do with low uptake of science and technology that in turn manifests itself in dismal application of fertilisers, use of irrigation, diversification and other modern techniques. Further, the issue of land tenure, land ownership and land use remains problematic, in particular as women, who are the majority of farmers, do not own land in most cases and therefore have no collateral to secure credit to purchase inputs to improve yields. One other challenge is climate change and climate variability, which leads to erratic weather patterns and causes prolonged droughts or devastating floods, thus eroding advances in agriculture.

■ So what should agricultural policies focus on?

The priorities for agricultural policies should vary from region to region and country to country and should, therefore, not be prescribed or generalised. The CAADP framework provides for multi-stakeholder consultations at country level. This ensures that each country can determine its priorities, which end up being signed into a CAADP compact. The compact forms the basis for a national agriculture investment plan to which any intervention, be it local, national or foreign, should be aligned. While some countries, such as those in the Horn of Africa and the Sahel, will place more emphasis on building resilience to climate change shocks, other regions may stress different aspects. But agricultural policies should generally aim to turn agriculture into a business, making it more attractive to investors and also the educated youth. Agricultural policies should cover the entire value chain: not only production and productivity but also post-harvest handling, processing and marketing infrastructure, hence the importance of agribusiness. It is the entirety of these that will catalyse the agricultural sector.

■ Are the policies in place suited to reach the envisaged goals?

The policies some countries are pursuing are likely to lead to the envisaged goals. The case in point is Ethiopia, which has embarked on policy and institutional reforms led by the Agriculture Transformation Agency. In Rwanda as well as in Burkina Faso, among others, the political leadership has determined

agriculture as a top priority and hence accorded it due support to provide food and generate employment and incomes. Agricultural policies in a number of African countries are taking on board a critical constituency, the private sector, and this is especially so for countries within the Grow Africa Initiative such as Benin, Burkina Faso, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Senegal and Tanzania. Creating an enabling environment for private sector investment will attract it into agriculture and thus complement the efforts of the public sector towards boosting agricultural production for the benefit of citizens the majority of whom are engaged in agriculture.

■ **Can success stories of some Asian countries serve as a model for policy design in Africa?**

South-South Co-operation is one of the priorities of the African Union and its Member States. Recently, in July 2013, the African Union Commission, in collaboration with the United Nations Food and Agriculture Organization as well as the Lula Institute of Brazil, convened a high-level meeting in Addis Ababa to end hunger in Africa through unified approaches. The high-level segment was preceded by a senior level meeting that brought together African, Latin American and Asian experts to share experiences on best practices and success stories. There are a lot of similarities and lessons to draw within the context of South-South Co-operation, including, but not limited to India, China and Vietnam.

■ **An important aspect of public-private partnerships is the value chain approach. How can it be ensured that small farmers are not left behind?**

Small-scale farmers remain the pivot of African agriculture as the majority of our farmers are smallholders and so, our policies and programmes maintain them at the centre. Even when we advocate for Foreign Direct Investment in agriculture, we push to ensure that the interests of small-scale farmers are taken into account as outgrowers or contract farmers, among other options. This is the only approach that can lead to a win-win outcome. The AU Land Policy Framework and Guidelines are helpful in this regard.

■ **There are different perspectives of the role the different actors should play in designing agricultural policies. Where do you see the specific tasks of each sector?**

The hallmark of the CAADP process is its all-inclusiveness, and as such, CAADP country roundtables that precede the CAADP compact signing must of necessity involve and consult all stakeholders including government, business, civil society and partners. And their views must be reflected in the CAADP Compact which they eventually sign to prove this point. In terms of roles, the public sector is expected to provide the enabling environment, including peace and security and also sound and predictable policies as well as regulation and infrastructure. The private sector is, on its part, required and

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expected to bring in finance and investment to boost agriculture, including technology transfer. In AU parlance, farmers are also part of the private sector.

Civil society is expected to advocate for and champion policies and practices favourable to agricultural investment and development.

■ **Are farmers organisations sufficiently represented in agricultural policy design?**

The African Union, through a widely consultative process, supported the establishment in 2010 of the Pan African Farmers' Organisation (PAFO). PAFO is a continent-wide organisation comprising farmers' organisations from each of the AU's five regions. Engagement with farmers' organisations, as part of stakeholder consultations, is part and parcel of the AU's decision-making process in the agricultural sector. Farmers' organisations are also part of the CAADP process, ranging from roundtables to compact signing, investment plan design, implementation, monitoring and evaluation. Where this has not happened yet, the AU encourages it as much as possible.

■ **With regard to the above-mentioned challenges, what role can and does CAADP play to promote the process?**

It sets the target for AU Member States. They are to put in place policies and strategies to increase funding for the agricultural sector along the lines of at least ten per cent of their national budgets so that they can achieve a minimum of six per cent growth in the sector. CAADP also provides a framework for an evidence-based approach in designing policies and programmes in the agricultural sector. Furthermore, it has a mechanism that drives operations towards results and impacts on food, nutrition, incomes and general wellbeing. CAADP also ensures involvement and engagement of all stakeholders, not only government and donors but the private sector and civil society as well. In its four pillars, CAADP is, in fact, comprehensive in approach, covering land and water, the private sector, food and nutrition, and research and technology. CAADP also promotes prioritisation and alignment of interventions towards actualising the set priorities.

Rhoda Peace Tumusiime was interviewed by Silvia Richter.

‘Smart subsidies’?

A critical review of the Malawi fertiliser subsidy programme

Initially hailed a huge success, Malawi’s effort to boost agriculture with fertiliser subsidies appears to have met with failure. The author has a look at what went wrong, arguing that developments must be assessed against the backdrop of politics.

For several years since the 2005/06 growing season, Malawi hit the international headlines for pioneering the implementation of ‘smart’ subsidies which broke the vicious circle of chronic hunger and food shortage. For the first time in two decades, the country was able to feed itself without recourse to either food aid or commercial food imports.

Through the fertiliser subsidy programme, a smallholder farmer is given two bags of fertiliser, 50 kg each for basal and top dressing, 5 kg of hybrid seed and 2 kg of legumes. The smallholder farmers access these inputs through the use of vouchers which they redeem at designated marketing outlets. The programme targets at least half of the total farming families, estimated at three million. The subsidy programme earned the tag ‘smart’ because of the use of vouchers. The argument is that ‘smartness’ increases the likelihood of subsidy programmes avoiding the shortfalls that characterised the first-generation subsidies such as elite capture and political manipulation. Although the success of the subsidy programme has somewhat unravelled and there has been change of government following the death of President Mutharika in April 2012, the programme continues to be implemented.

■ An example to other countries in sub-Saharan Africa

In the inaugural season of implementing the subsidy programme, Malawi surpassed its annual food requirements, then estimated at 2.1 million tonnes, by 500,000 tonnes. This continued for six consecutive growing seasons, prompting the UN Secretary General, Ban Ki-moon, to remark that “Malawi has moved from hunger to feast in short years”.



The apparent success of the programme encouraged several sub-Saharan countries to consider

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a return to subsidies as a key strategy for revitalising their fledging agricultural sectors. In 2011, for instance, ten African countries spent roughly 1.05 billion US dollars (USD) on subsidy, amounting to 28.6 per cent of their public expenditures on agriculture.

Ironically, the Malawi success story that triggered the subsidy frenzy across the continent is crumbling. This year alone, reports indicate that more than 1.63 million people, or eleven per cent of the population, are facing severe food shortages, and Malawi requires 30 million USD to meet the shortfall by the end of 2013. Consequently, the Head of the Comprehensive Africa Agriculture Development Programme (CAADP) was quoted as saying that “African agriculture needs strong local institutions to avoid the kind of bubble that we saw in Malawi which was largely driven by external energy”.

There can be no better time than this to take a critical look at the Malawi fertiliser subsidy programme. It became a regular feature in critical international agricultural policy debates but has now given way to pessimism regarding the potential of ‘smart subsidies’ to avoid the ills of the first-generation subsidies.

■ The historical background

The history behind the subsidy programme is quite important. It arose out of democratic consensus of the nation. Following two devastating hunger episodes in quick succession since the turn of the new millennium, there was strong agreement across the political divide in the country that the implementation of a fertiliser subsidy was the only feasible strategy to get Malawi agriculture moving again. The use of vouchers promoted targeting of beneficiaries who could not genuinely afford to procure inputs on their own. Since poverty in Malawi is deep, widespread and severe, targeting the subsidy programme fairly efficiently and effectively greatly contributed to breaking the low maize productivity trap which makes the cultivation of maize in Malawi less profitable.

The low maize productivity trap prevails because nearly everyone grows maize even though many cannot access

productivity-enhancing inputs, while those who can are constrained to invest more in the production of maize because of great variability in inter-year maize prices, making it a highly risky undertaking. The subsidy programme enhanced the prospects of the majority of Malawians breaking free from this trap by accessing inputs they could not otherwise have afforded.

Compared to most programmes that have since sprouted across the continent, the benefits of the subsidy programme were broad-based. Its early years were underlined by a willingness to learn and innovate. When, for example, the programme was threatened with elite capture, open community targeting was introduced to enhance transparency and accountability in the selection of beneficiaries. This was supported by a vibrant Logistics Unit in the Ministry that planned all aspects of the programme with a great deal of prudence and integrity.

The use of vouchers has contributed to the progressive expansion of private-sector involvement in the agricultural sector. For example, agro-dealers operating in the seed sector have ensured that farmers can access high-quality seeds almost at their doorstep. Prior to the launch of the programme, farmers had to travel long distances to procure seed, hence most of them ended up using local seed or recycling hybrid seed. Since the 2005/06 growing season, when the programme was introduced, the uptake of hybrid seed has improved from 43 to about 70 per cent.

Overall, the success of the programme endowed the nation with a sense of pride and dignity. For a while, Malawi could not beg for food. It was self-sufficient, and once even donated maize to Swaziland and Lesotho. This was further buttressed by the fact that the programme brought Malawi into the limelight as a pacesetter for a uniquely African Green Revolution.

■ What about sustainability?

With the benefit of hindsight, it is now possible to understand why the fertiliser subsidy programme was at first successful, but why this could not be sustained. The nature of politics in the initial years played a critical role and could therefore offer some useful lessons for countries that have already adopted subsidies or desire to.

The success of the subsidy programme in the initial years could principally be attributed to the political insecurity that the late President Mutharika faced during his first term of office. He had fallen out of favour with the party that sponsored his election as President and proceeded to form a new party that did not have any parliamentary representation.

It was difficult, if not impossible, for Mutharika to push any meaningful legislative agenda in an opposition-dominated Parliament. It is against this backdrop that he seized the fertiliser subsidy programme to build up political support outside Parliament, taking advantage of the fact that food security lies at the heart of Malawi's political economy. It virtually forms the basis for a social contract between citizens and government since maize can be said to be a national crop as it is grown by over 90 per cent of the households in the country.

The apparent collapse of the subsidy programme coincided with historic landslide victories for Mutharika and his party in the May 2009 polls. This was widely construed as his reward for ensuring food security through the fertiliser subsidy programme. The main question for Malawian voters is whether a government is able to enable them to have food on the table either through subsidised production or at market prices they can afford. The unprecedented electoral victory ironically altered the government's incentives for performance as far as the fertiliser subsidy programme was concerned. It quickly degenerated into a vehicle for dispensing rents, especially to those who had reportedly bankrolled the May 2009 electoral campaign. This has greatly contributed to undermining the continued success of the fertiliser subsidy programme.

In particular, according to a 2011 joint World Bank and Government of Malawi review, the major beneficiaries include Mulli Brothers and Simama General Dealers, who were very close allies of the governing party. These companies were given far larger fertiliser import contract volumes than they could manage and at prices almost double those of the most competitive bidders. These two companies further monopolised the distribution of the fertiliser at inflated prices, too. They were Malawian Kwacha (MK) 30–34/10 km, while the comparable rate for the private sector was MK 22/10 km, which greatly undermined the cost efficiency and effectiveness of the subsidy programme.

The Malawi case demonstrates that the nature of prevailing political incentives matters a great deal in determining whether subsidy initiatives succeed or fail. Thus no matter what the technical arguments for or against particular policy positions are, it is ultimately the configuration of political interests that determine policy outcomes on the ground.

The success of the Malawi fertiliser subsidy programme in the initial years was a direct result of the alignment of the political and technocratic incentives. The major challenge, however, is to discern these opportune moments, which appear to be associated with political fragility and insecurity of incumbent elites.

Stakeholder participation. Easier said than done

Twenty-seven nations are classified as ‘water scarce’, a further 16 as ‘water stressed’. This situation, coupled with the fact that many surface and groundwater systems are shared between two or more states, has led governments to develop sustainable water management strategies. This implies a real commitment by all water users – households, farmers, and industrialists – to use available supplies in ways that reap sustainable and equitable benefits for all. Drawing on the experience from Mozambique and Zimbabwe, the author discusses some of the challenges of articulating stakeholder participation in a transboundary context.

The 2003 UN Report ‘Water for People, Water for Life’ listed 263 transboundary basins world-wide. These basins – the land area drained by a river, including its tributaries – cover 45 per cent of the land surface of the Earth, affect 40 per cent of the world’s population, and cross the political boundaries of 145 nations. The management of transboundary basins, whether sub-national or international, is one of the most demanding challenges facing water managers today. As upstream exploitation or diversion of groundwater or rivers can have harmful consequences for those living downstream, transboundary rivers often provide a source of conflict between actors, nations or states, especially where water resources are scarce. Similarly, when water-based pollution spreads across borders, there is an intricate need for sound governance.

In a global attempt for sustainable water resources management, Chapter 18 of the Agenda 21 (1992) suggests integrated water resources management (IWRM) as a means to ensure the

sustainable management of the shared water resources among the riparian countries. This was further emphasised in the Johannesburg Plan of Implementation (2002), promoting the achievement of the three key objectives of integrated water resources management: social equity, economic growth and environmental protection under the prevalence of good governance and stakeholder participation.

There is common consensus that the goals of efficiency, sustainability and equity require the intricate involvement of the public. This decision is not necessarily taken for idealistic or moral reasons, but rather presents tangible benefits to governments: the participation of civil society not only improves the credibility and accountability of governmental decision-making processes, but also supplements scarce government resources for developing laws as well as for monitoring and inspection. In this respect, the involvement of the public holds the promise of reducing the potential for conflict over water issues. Therefore, in an effort to promote the institutionalisation of stakeholder participation, international water laws and agreements – such as the Southern African Development Community (SADC) Treaty, the SADC Regional Water Policy, and the SADC Regional Water Strategy –

have over the past years started incorporating provisions committing governments and river basin organisations (RBOs) to involve stakeholders in water management decisions.

There now exist various approaches to stakeholder participation in transboundary water management: from bottom-up to more top-down, and from large geographic to smaller scales. One such attempt that resulted in greater stakeholder involvement was made by the Pungwe River Basin Joint

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Not only water availability but also water quality is a matter of concern for the communities living in the Pungwe river basin.

Integrated Water Resources Management Strategy in Mozambique and Zimbabwe – or simply referred to as the ‘Pungwe project’. Funded by the Swedish International Development Cooperation Agency (SIDA), the first project phase began in February 2002 as a collaborative initiative by the two countries to jointly manage, develop and conserve water resources in the Pungwe river basin. A second project phase, this time with a stronger focus on designing and implementing a strategy for creating real stakeholder participation, ended more recently, in 2012.

■ The Pungwe experience

The Pungwe river basin, an international watercourse shared by Mozambique and Zimbabwe, extends some 400 km from its source in the Eastern Highlands of Zimbabwe to its estuarine mouth in the Indian Ocean coast of Mozambique. A relatively small proportion (5 per cent) of the total basin area of 31,000 km² is located in Zimbabwe.



Photo: L. Ringhofer

The rest of the basin and approximately 340 km of the river length are situated within the central region of Mozambique. Despite the relative abundance of water within the basin, however, there are sub-national and inter-state challenges to sharing Pungwe water. Increases in water demand are envisaged to come from the nearby Mafambisse Sugar Estate’s rehabilitation, various proposed large-scale irrigation schemes as well as the influx of agricultural water users along the Inhazonia River, a Pungwe tributary. There are also concerns about the deteriorating water and environmental quality due to gold panning activities in both Mozambique and Zimbabwe.

As a first step towards a joint water management strategy, both countries ratified the SADC Protocol on Shared Watercourse Systems of 1995 and designed and implemented various water sector reforms. In Mozambique, the Water Act *Lei No 16/91* was promulgated in 1991, based on the principle of decentralisation in water resources management at operational level. It paved the way for the creation of five

Regional Water Administrations (ARAs) on the basis of river basins. ARA-Centro, the regional water authority responsible for Sofala province, has been in charge of setting up the Pungwe Basin Committee as the main institutional structure for stakeholder participation. In the beginning though, the Committee was widely criticised as one of a mere consultative function. By contrast, Zimbabwe’s national Water Act of 2000 provided for more direct stakeholder participation right from its onset. River systems are declared catchment areas and catchment councils control and administer all local water affairs in these areas. Each catchment area is subdivided into sub-catchments where elected sub-catchment councils are in charge of the water management within a more localised river subsystem. The stakeholder forum dealt with in the Pungwe project is the Pungwe Sub-Catchment Council.

■ Power prevents participation

The role of these stakeholder forums appears quite straightforward: mediating between the water users and the water authorities. This also implies the inclusion of relevant stakeholders in development programmes, rural water supply schemes, or small-scale irrigation projects. In practice though, stake-



Photo: L. Ringhofer

The formal inclusion of women in stakeholder fora does not automatically ensure that their interests are being voiced.

Integrated Water Resources Management

The concept of Integrated Water Resources Management (IWRM) is defined as 'a process, which promotes the co-ordinated development and management of water, land and related resources, in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems'. (The Global Water Partnership)

IWRM is therefore not just about the more efficient management of physical resources, but also about reforming human systems to enable people – women as well as men – to reap sustainable and equitable benefits from those resources.

holder participation turned into a highly complex issue throughout the project, given the dynamics of stakeholder roles, resources and relationships, all embedded in the larger context of power relations.

The first challenge was the limited timeframe for the formation of these formal stakeholder structures. This was particularly true for the establishment of the Pungwe Sub-Catchment Council in Zimbabwe, whose set-up followed a Catchment Council pilot model, keenly supported by various donor agencies as a way of saving costs. Yet another development at Zimbabwe's national political level seems to have put political pressure on the stakeholders to accelerate the water redistribution process, thereby triggering an even less participatory approach: the government's 'fast track' land redistribution programme. This resulted in reducing the scheduled six-month inception period for council formation to a mere six weeks. Or put differently: the formation process turned from an envisaged bottom-up into an implemented top-down approach.

A further challenge constituted the use of language among the different stakeholders. In Zimbabwe, although many of the stakeholder representatives spoke Shona as their first language, the official language used in the Catchment Council and Sub-Catchment Council was English, which seemed to contribute to the difficulty of expression for some participants. Similar observations were made in Mozambique, where

Portuguese was used as the official language at the stakeholder meetings, although people's first language was either Ndau or Chigorongoza. The different competing individual interests were manifest in the emergence of alliances among stakeholders belonging to the similar sectors. The by far strongest alliance in both countries surfaced between medium- and large-scale commercial farmers, enabling this group to dominate the forum agenda. The result was a strong emphasis on irrigation-related issues.

Although many studies identify women as central actors in the provision and safeguarding of water, women's involvement in water-related decision-making structures remained low throughout the project. In Zimbabwe, women councillors within the entire catchment area merely constituted between 3.5 and 20 per cent. Generally, women's participation on the Mozambican side accounted for less than 10 per cent. Despite the fact that international donor support triggered the stakeholder forums in both countries to adopt a more gender-responsive approach as the project progressed, the formal inclusion of women did not automatically ensure that their interests were being voiced. This newly assigned role to women as strategic decision-makers went very much against the prevailing tide of social attitudes concerning the role of women.

This reveals that effective stakeholder participation means adapting to the local socio-cultural context, rather

than the other way round. Knowing the customary 'rules' is particularly important for the management of a common resource as important as water. It is meaningless to set up externally induced regulations for water use when there are a vast number of small-scale users who exert their own social control mechanisms.

■ Informing all, yet involving a few

Another key lesson in the process of stakeholder participation was considering the balance between informing all, yet involving only a few. Not all issues are equally relevant for all. This became particularly obvious when discussing the burning issue of gold panning in the upper parts of Pungwe river basin. Many subsistence farmers from more downstream areas, where gold panning is hardly an issue, were also asked to participate in various stakeholder sessions and voice their opinions. Also, negotiations about the potential of small-scale development initiatives were initially channelled through ARA-Centro, the local water authority, with hardly any involvement of the local subsistence farmers who should be reached as the main project beneficiaries.

■ Progress takes time

On the whole, the Pungwe project has given an important impetus for stakeholder participation in the transboundary management of the Pungwe river basin. The project has contributed to an enabling environment for stakeholder involvement, structures are now in place and people are aware of what it takes for integrated water management to materialise. However, ensuring equitable processes of representation, decision-making, and conflict resolution requires further time and efforts. Effective stakeholder participation is indeed a long-term process that transcends the lifetime of a single project.

Green revolution with black gold

Last year Angola earned 48 billion US dollars from petroleum. Yet the country that was once Africa's largest agricultural producer is reduced to importing food. Now the government and private investors want to develop the agricultural sector, in the hope that Angola could become a new Brazil. But will there still be room for small-scale farmers?

Pungo Andongo is one of Angola's few tourist hotspots. And if Marco Brandão has his way, this historic location will point the way forward for Angola's agricultural sector. "Until not long ago, there was nothing but savannah here. But until a few years ago there was nothing in Mato Grosso, either, whereas today thanks to its agricultural production it is one of the richest states in Brazil."

The agricultural engineer steers his pickup over a broad field track. Harvesting machines the size of detached houses strip to and fro across the field, spluttering noisily and spitting the dried leaves of the sugarcane plants onto the ground. Sliced into forty-centimetre-long transplants, the sugarcane lands in lorries that trundle alongside the harvesting machine over the rough clod. "We still devote around 5,000 hectares exclusively to producing transplants," says Brandão and sweeps his gaze across the wide plateau. The sugarcane plantation is part of an emerging agroindustry park: the Pôlo Agroindustrial de Capanda (PAC) in Malanje Province is unparalleled in Angola and beyond.

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It covers an area of 410,000 hectares, of which almost 300,000 hectares are earmarked for farming use. The government wants this park in the valley of the Kwanza River to kick-start the resurgence of Angolan agriculture. Or more accurately: to catapult it into the future.

■ The woeful legacy of the civil war

Back in the 1960s the former Portuguese colony was Africa's largest agricultural producer. Freighters set off from Angola's ports to ship cargoes of sugar, cotton, bananas and palm oil all over the world. The country used to be the world's fourth-largest coffee producer.

But the war of independence, immediately followed in 1974 by the outbreak of civil war, put an end to all that. The National Union for the Total Independence of Angola (UNITA), having been supported by the USA and the South African apartheid state, did not surrender until 2002 following the death of its leader Savimbi.

The civil war cost hundreds of thousands of lives, and huge sections of the infrastructure were destroyed. Outside the booming capital Luanda, burnt out tanks can still be seen, and buildings that have collapsed under continuous shelling like houses of cards. Even today, a great deal of arable land still lies fallow, so Angola has to import the majority of its food.

Over half of the country's imports are foodstuffs. But according to government figures, out of the country's total area of 124.7 million hectares, 30 million are usable for arable farming. That is almost one-third of the entire European Union's arable land area. Moreover the climatic conditions are excellent, particularly in the central highlands where two harvests a year are possible, depending on the crop. But so far this has drawn remarkably little interest – mainly because offshore oilfields and

Together with a sugar factory, the sugarcane plantation is to create jobs for just under 1,500 people.



Photo: J. Boethling



Photo: J. Boethling

A woman hacking weeds from coffee plants on the Fazenda of Fernando Sobral.

these players include China's Citic Construction. The company's red and white logo is in evidence throughout Angola.

But Odebrecht has the competitive edge at the PAC agro-industry park. By 2018 the sugarcane plantation is scheduled to

expand to 32,000 hectares. According to Brandão's figures, the plantation and the sugar factory will create 1,470 jobs. The plantation's Angolan operator is the Bioenergy Company of Angola (Biocom), a joint venture between Odebrecht, the state oil company Sonangol and a group of Angolan investors. It is an open secret that one of these is President dos Santos's daughter, who also happens to own the country's largest mobile telephony company. Nobody will confirm this officially, however. President dos Santos of the former liberation movement MPLA has been in office for almost 33 years. Nobody in Angola can defy his clan. Although the national flag still bears the machete and cogwheel symbols and the MPLA leadership still calls itself the politburo, Angolan-style socialism has been a sham for some long time.

■ Restoration work

Angola has a tradition of large-scale farms. During the Portuguese colonial era, predominantly large fazendas supplied the local and global market. On many of these the hard work was done by forced labourers. Small farmers tilled their land just to subsist. The bulk of agriculture and the associated production chain – marketing systems, the machinery and tool trade, ferti-

liser manufacture – was in Portuguese hands. When the country gained independence in 1975 and most of the Portuguese left, the agricultural sector collapsed.

A half-day car journey from the Biocom sugarcane plantations, sightseers can still view the remains of the illustrious past. The region around the small town of Calulo was one of the most important coffee production areas. It is reached by driving down a red sandy track. Turnings branch off on either side to abandoned fazendas. Briars sprawl among the white flowered coffee plants. The once-elegant villas are now derelict. On Fernando Sobral's fazienda the buildings are not in much better condition, but the plantation is being worked. "Over 100 years ago, my grandfather was the first to start farming in this region." The farmer beams from behind dark sunglasses. Behind him women with machetes are hacking down the weeds between the coffee bushes.

diamond mines generate abundant revenues, at least for the country's upper class. Luanda is the second most expensive city in the world after Tokyo. Yet now as ever the majority of the population lives in bitter poverty: 70 per cent still have to survive on less than 1.70 US dollars per day.

■ The first sugar factory takes shape

At the centre of the plantation, a sugar factory is just taking shape. It will be Angola's first sugar factory. "Before the war we had three in the country, but those are run down or destroyed now," says Marco Brandão, the Angolan with Portuguese roots, who grew up in Luanda and studied in Lisbon. His employer Odebrecht, based in Brazil, is one of the largest global corporations. In Brazil it is one of the most important sugar and ethanol producers; in Angola Odebrecht has built bridges, roads, dams and shopping centres. For around five years the corporation has also been active in agriculture, mainly on behalf of the state agricultural agency Gesterra (Gestão das terras aráveis). Founded six years ago, the agency's mandate is to develop large-scale farms. It has commissioned various global players to clear and cultivate several thousands of hectares per farm. Along with Odebrecht

■ Prices set by the state

"Fighting in this region was fierce until the end." Fernando Sobral went to live in Luanda for a while, and for longer in Portugal where he worked in the pharmaceutical industry for 14 years. Now he is trying to get the plantation flourishing again. In the colonial era, the family harvested 500 tonnes of dried coffee beans per year from the plantation, which is around 700 hectares in size. Today five tonnes is all they produce. The plantation can only be worked by hand, and is fertilised with fermented fruit flesh and plant residues. In Angola, chemical fertilisers cost three or four times the global market price. Pesticides are not used either. "So our production is organic," says Fernando Sobral and grins. But the farm cannot afford to gain certification. The price for the shelled and dried beans is set by the state – and is much too low, in the opinion of most producers. Fernando

Sobral earns more by selling his manioc and the self-produced palm oil that he markets directly to Luanda. "Really I ought to modernise the plantation completely, but the necessary support isn't there," he says.

Ownership rights to agricultural land do not exist in Angola. Users lease their fields and arable land from the government. When most of the Portuguese fled in 1975, the socialist government confiscated their land but made no sweeping changes to tenant farming law. Those who stayed on, like the Sobral families, kept the land. The other fazendas fell into the hands of high-ranking army officers or the nomenclatura of the governing MPLA party. Few of these tenants if any have paid any attention to their holdings so far. But that is now changing.

■ A chance for small farmers, too?

Since the financial crisis of 2008 and a brief slump in demand on the petroleum market, the government has registered that the country's economy can be diversified with the help of agriculture. After all, a country like Brazil earns thirty per cent of its gross national product from agriculture. Angolan businesspeople, politicians and military leaders are now beginning to invest in arable land. This is evident from the first large-scale farms and meat plants, constructed by experts flown in from Portugal or the Netherlands. Skilled workers come in their largest numbers from the former motherland, battered by the economic crisis.

But how compatible is this with the subsistence agriculture of the country's many small farmers? Virgilio Nguli from the village of São Pedro sees his farm as his lifeline. It feeds his family of five. It was still wartime when he took over the farm in Kwanza Sul province from his father, and repeatedly had to flee from fighting in the surrounding mountains

and forests. Only since the permanent ceasefire has he been able to make full use of his resources.

Virgilio Nguli's fields slope down towards a small river. If need be, he can irrigate them with river water. But in fact there is sufficient rainfall on the Kwanza Sul plateau, meaning that in the former granary of Angola, tillage farming can continue all year round – if the resources to do so are available. After the war, Virgilio Nguli had no seed. Agricultural equipment was also non-existent. "Without the seed bank I would not have made it this far." The 56-year-old points to his fields of chillies, garlic, potatoes and maize. The seed bank, established with German support from *Brot für die Welt* (BfdW, Bread for the World), is organised on a cooperative basis. It loans out transplants and seeds. After the harvest, the farmers must give back double the quantity. Virgilio Nguli started producing maize and beans. He took his very first bean harvest to the capital, Luanda. For the first leg of the journey, he transported almost a tonne of beans to the great river using a yoke of oxen. "The bridge was still destroyed and I had to cross by boat." From there, they continued by lorry. "The trip took two days but for that I got a really good price in Luanda." Virgilio Nguli runs a hand over the grey stubble on his face, and grins. He can spout the figures for all his inputs and returns off the top of his head. His nine hectares make Virgilio Nguli the second largest farmer in São Pedro.

■ Concern over land rights

The population of Angola numbers

Farmer Virgilio Nguli with his son. He makes use of the seed bank set up with the support of Brot für die Welt.

Photo: J. Boethling



just 18 million people in an area more than three times the size of Germany. Only one-fifth of its potential arable land is in use. So says the government, at least. Does this figure include the land used by the small farmers of São Pedro? They are not in possession of land titles or tenancy contracts. Many do not even have identity documents. "We receive information from various sources and from reports by partner organisations about the unjust granting of land-use titles in Angola," says Petra Aschoff, regional officer for Southern Africa at BfdW. She hears that the state is increasingly reassigning small farmers' traditional land-use rights to private investors. "This results in de facto land dispossessions which deprive smallholders of their subsistence base," Petra Aschoff goes on.

Marco Brandão from Odebrecht believes in the coexistence of agroindustry and farmers in the province of Malanje. "They will benefit from the infrastructure that we are creating here with Biocom." Odebrecht is supporting small farmers in the immediate vicinity with a project that, among other things, supports vegetable production. Women in particular are earning money from it by selling vegetables to the Odebrecht canteens and at local markets. They talk enthusiastically about their new business venture. Is this the start of a livelihood that can be sustained? Perhaps, but only if they are not forced out by one of the large-scale farms in the near future.

Sprouts and microgreens for a nutritious diet

Recent studies have shown that modern breeding for high yield, visual appearance and long shelf life led to an unintentional decline in taste and the content of essential nutrients in vegetables. AVRDC – The World Vegetable Center is studying whether traditional vegetables are more nutritious than modern varieties and whether early growth stages of these vegetables offer consumers a higher content of phytonutrients.

Diet-related diseases such as obesity, diabetes, cardiovascular disease, hypertension, stroke, and cancer are escalating in developed and developing countries due to imbalanced food consumption patterns and have become a major burden for the public health sector. Health experts are convinced of the multiple benefits of consuming vegetables and fruits and the urgency to take preventive action to control diet-related diseases. The World Health Organization recommends that consumers eat at least 400 grams of fruit and vegetables a day, while the World Cancer Research Fund would like to see this threshold level raised to 600 grams per day. As fruit and vegetables, especially traditional vegetables, are rich sources of vitamins, micronutrients and antioxidants, encouraging frequent consumption of these crops is a good strategy to combat micronutrient deficiency. But are modern vegetable varieties really nutrient-dense?

Recent studies have shown that breeding for high yield, visual appearance and long shelf life may lead to an unintentional decline in taste and the content of some essential nutrients. This

was the case for wheat grain (Fan et al. 2008), potato tubers (White et al. 2009) and a number of horticultural crops (Davis et al. 2004). Studies undertaken by AVRDC have shown that traditional vegetables have a much higher density of essential phytonutrients than global vegetables like tomato and cabbage (Yang and Keding 2009). There are also reports in the literature that early growth stages of vegetable crops have higher nutrient density than fully grown vegetables (Xiao et al. 2012).

Through a new project funded by the Council of Agriculture of Taiwan, AVRDC is studying the levels of essential micronutrients and consumer preferences of selected legume crops (mungbean, soybean) and traditional vegetables (amaranth, mustard, radish) at different growth and consumption stages: (a) sprouts, (b) microgreens (seedlings harvested when the first true leaves appear) and (c) fully grown plants. The comparison includes landraces from

AVRDC's genebank and modern cultivars available commercially. Should this research prove that local vegetable varieties have higher nutrient levels than modern cultivars of the same crop species and that sprouts and microgreens are characterised by a higher phytonutrient content than fully grown vegetables, this specialty produce would then be an ideal vehicle to deliver exceptional flavour and taste, and high phytonutrient content to consumers with micronutrient deficiencies. As sprouts and microgreens are usually consumed raw,

Mungbean sprouts are very good sources of ascorbic acid, reaching levels above 50 mg ascorbic acid/100 g fresh weight. Due to increased activities of hydrolytic enzymes during sprouting, there is a loss in total dry matter, starch, and antinutrients such as phytic acid and polyphenols and an increase in essential amino acids, sucrose and reducing sugars, and vitamins. Sprout digestibility is improved due to the partial hydrolysis of storage proteins and starch during sprouting.

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Photo: A. Ebert

there is no loss or degradation of heat-sensitive micronutrients through food processing. An additional advantage of sprouts and microgreens is the fact that they can easily be grown in urban or peri-urban settings where land is always a limiting factor.

■ Small-scale production – some recommendations

AVRDC also worked on simple production schemes for small-scale production of sprouts and microgreens. The findings can be summarised as follows:

- Sprouts and microgreens can be grown from a wide range of crop seeds, all year round, at the home-stead in containers on a terrace or windowsill, or commercially. Given the short growth cycle of 3-7 days for sprouts and 7-14 days for microgreens from sowing to harvest, they do not require fertilisers and pesticides.
- Seed intended for sprouting is washed and then soaked in water for six to twelve hours at room temperature. The soaked seed is placed in any suitable kitchen container, such as plates, bowls, pans and plastic trays, or packed into glass jars or other containers and covered with cheesecloth or greenhouse net to maintain constant temperature and a high moisture level. The seed needs to be rinsed or sprinkled with water at least once a day to keep humidity high and facilitate the sprouting process. Proper drainage is important for aeration and to avoid fungal and bacterial growth. Spring or distilled water is preferable for rinsing as chlorinated water may damage the embryo and result in poor sprouting.

Sprouts are grown in the dark in water. Microgreens are produced under light, either in soil or soil substitutes derived from organic or inorganic substrates. Another alternative for micro-

green production is the use of troughs with hydroponic nutrient film from which plants can be easily pulled for harvest and eaten whole with roots.

Microgreens require a lower seed density than sprouts. One or two days after germination, the seedlings are grown under light with good air circulation and normal humidity levels. These conditions make microgreens less prone to bacterial contamination than sprouts. Seed must be kept moist at all times to facilitate complete germination. Clear plastic is a good cover for microgreen containers during seedling emergence and provides a mini-greenhouse effect. Once the seedlings have fully emerged (2–3 days), the plastic cover is removed.

Morning hours are best for harvesting the tender sprouts and microgreens and only the amount required for the daily meal should be collected as levels of vitamins decline with storage. Sprouts and microgreens can also be stored in a refrigerator for several days up to one week. Microgreens are larger than sprouts, but smaller than baby vegetables or baby greens. Compared with sprouts, microgreens have superior flavour and aroma and present a wider range of textures and colours, which are attributable to the difference in growing conditions.

■ Outlook

The results obtained in the project will be validated in a second set of trials scheduled for 2014 to be able to assess seasonal effects and to confirm the observed trends. The consolidated findings will then be disseminated through scientific and promotional articles, press releases, trainings and field days to enhance awareness of decision-makers and the general public with regard to the enormous potential of sprouts and microgreens to contribute to healthier and more diverse diets.

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