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**Achieving household food security through organic agriculture?
Lessons from Uganda.**

1. Introduction

The concept of organic agriculture has attracted widespread attention, not only in Europe, but also in sub-Saharan Africa (Scialabba/Hattam 2002; Parrott/VanElzakker 2003; Fischer et al. 2004; Youssefi/Willer 2005). By organic agriculture we mean a form of food and fibre production that is environmentally friendly, economically viable, and socially acceptable. Organic agriculture is different from traditional or conventional agriculture. For example, in organically managed agricultural systems soil fertility is maintained through nutrient recycling, the application of solid and liquid manure, intercropping of mutually beneficial plants, balanced crop rotations and the integration of nitrogen fixing shrubs and trees into cropping systems (Altieri 1995; Lampkin 1990; Cruxefix 1998). Organic agriculture excludes the use of mineral fertilisers, synthetic pesticides and genetically modified organisms (IFOAM 2002). In sub-Saharan Africa, the increasing attention that organic agriculture receives can be explained by at least two factors: the need for more sustainable food and fibre systems in the south and the increasing demand for organically produced agricultural commodities in the north.

In the debate about the importance of organic agriculture in sub-Saharan Africa, worries about food security play an important role. Given reoccurring food crises in different parts of the continent (Green 1992; Resnick 2004; Zerbe 2004), a fear of governments and the international donor community is that an expansion of organic agriculture would have negative impacts on household food security. In connection with this debate, households are considered as food secure if they have year-round access to the amount and quality of safe food that members of a household require to live active and healthy lives. Household food security has three dimensions: the availability of food, access to food and the utilisation of food (Sen 1981; Sen 1994; ACC/SCN 2001). Therefore, if organic agriculture is to contribute to household food security in

sub-Saharan Africa, then it must enable household members to access safe food of high quality throughout the year. This potential of organic agriculture is internationally contested (Pretty 1999). For the purpose of this paper we distinguish between two camps, the opponents and the advocates of organic agriculture.

Opponents of organic agriculture argue that organic food and fibre systems keep people poor and food insecure. Their argumentation is based on a neo-Malthusian perspective of food production that cannot keep pace with current rates of population growth in sub-Saharan Africa (Pinstrup-Andersen et al. 1999). Organic agriculture, following the reasoning of these opponents, is a low-external-input / low-output system. Such systems are characterised through low agricultural productivity (Low 1994; Borlaug/Downswell 1995). To meet the urgent need for increased agricultural productivity in sub-Saharan Africa, as this camp argues, it requires the widespread adoption of high-external-input technologies (Howard et al. 2003). Without such external inputs per capita food production is likely to (continue to) decline, thus sufficient amounts of food will not be available and accessible by the majority of the poor.

Advocates of organic agriculture claim that organic food and fibre systems reduce poverty and increase food security (Manorjan et al. 1998; Kotschi et al. 2003). They agree with the advocates of high-external-input technology that agricultural productivity increases are necessary to ensure food security for all in the long run. However, organic advocates argue that in resource poor environments the employment of organic principles and practice is one of the few options that farmers have to sustainably intensify agricultural production. They underpin their proposition by stating that organic agriculture increases crop yields and attracts commodity prices that are higher than world market prices for conventional produce. Organic agriculture is, following the reasoning of this camp, a low-external-input / high-output system that ensures household food security for the rural poor (Jiggins et al. 1996; Parrott/Marsden 2002). Furthermore, organic agriculture advocates point out that „the major constraints to food security are found in social, economic and political conditions rather than in production methods themselves” (IFOAM 2002).

This paper focuses on the assertion of organic advocates and examines the expected contribution of organic agriculture to household food security. Examples from Uganda, a country where the number of organic farms has increased exceptionally in recent years, provide the basis for this examination. Representatives of the National Organic Agriculture Movement of Uganda (NOGAMU), an umbrella organisation involved in pro-organic lobbying and advocacy activities, claim that organic agriculture is a viable mechanism to achieve household food security in Uganda (Mwanga pers. comm.).

We begin our examination with background information about Uganda and then turn to the causes for food insecurity in different parts of the country. Further we depict the concept of organic agriculture in more detail and highlight the main strategies and mechanisms that are inherent to organic agriculture. In the subsequent chapter we illustrate how different organic strategies and mechanisms address food insecurity. Given the continuous expansion of the organically managed area in Uganda, we ask what challenges and dangers organic agriculture stakeholders face at present. We conclude that organic agriculture is a mechanism with sufficient leverage to achieve food security at household level. Such achievements, however, can not always be taken for granted as in many cases food insecurity at the micro level has a distinct social, economical and political dimension at the macro level.

2. Uganda – an agriculture based economy

Uganda is a landlocked country located in east Africa. It covers an area of 240,000 square kilometres and has a population of about 27.6 million people (FAOStat 2005). The annual population growth rate is 2.7 percent. More than 85 percent of the population is rural. Rural households gain the major share of their income from agriculture; it employs 80 percent of the working population and contributes 45 percent to the gross domestic product (GDP). Agriculture is based on smallholder farmers: the three million rural households that earn a livelihood from agriculture have access to an average of three hectares each. The main staple food crops that smallholders grow comprise maize, millet, sorghum and starchy banana (known as matoke). Important cash crops are coffee, tobacco, cotton, tea, oil seeds, fruits and flowers. The majority of Uganda's smallholder farmers, however, are self-employed and have a distinct subsistence orientation.

Subsistence farming is based on family labour with no access to farming related information, credits or technical inputs. For example, the average use of mineral fertilisers in Uganda is one kilogram per hectare; nine times lower than the average mineral fertiliser rate for sub-Saharan Africa (MFPED 2000). The use of synthetic pesticides is limited to cash crops such as tomatoes that serve domestic markets and coffee and cotton that are produced for export. Despite several efforts to promote Green Revolution 'seed-fertiliser-pesticide' packages in Uganda, the response by farmers has been low. One of the reasons for the limited success of the Green Revolution is the underestimated ecological and socio-cultural complexity of traditional agriculture. Most of the proposed agricultural technologies were products of basic research and hence lacked farm

level adaptation done in collaboration with farmers (SMART/AGRI 2003). The application of mineral fertilisers made little agronomic and economic sense to farmers. In many cases mineral fertilisers were not available or economically out of reach for smallholders. Where mineral fertilisers were applied their efficiency was unsatisfactory due to low soil organic matter and the rain-fed nature of agriculture. Moreover, blanket 'transfer-of-technology' approaches across Uganda neglected farmers' local knowledge, focused on single commodities and had a strong gender bias.

In the hope to improve people's livelihoods, the Ugandan government has put in place the Plan for the Modernisation of Agriculture (PMA), a strategic framework for eradicating rural poverty through transforming subsistence farming into a dynamic and profitable commercial agricultural sector. The PMA has four main goals: (i) to increase household incomes and improve the quality of life of farmers through increased agricultural productivity, (ii) to improve household food security through markets rather than food self-sufficiency, (iii) to provide off-farm and non-agricultural employment through processing and value adding, and (iv) to promote the sustainable use of natural resources through the promotion of environmentally friendly technologies. The PMA is part of Uganda's Poverty Eradication Action Plan (PEAP) that aims to reduce the share of people living in absolute poverty to less than 10 percent by the year 2017 (MFPED 2000). In the year 2002/2003 approximately 42 percent of the rural population lived in absolute poverty (UBOS 2003). In a recent review of the PMA by Bahiigwa et al. (2004) it was concluded that the targeting of PMA support services has benefited better off farmers. They argue that weaknesses in the decentralised government structures resulted into local elite capture, which has excluded mainly poor farmers.

3. Food insecurity in Uganda

At national level, Uganda is considered food secure. The availability of food at this level, however, does not necessarily reflect the food security situation at the local level. In addition, sufficient food production in a given region does not automatically mean that all who need food can acquire food. Uganda has regions where households are confronted with temporal or permanent food insecurity (Bahiigwa 1999).

According to the Uganda Demographic Survey carried out in 1995, 45 percent of the children below 5 years old were stunted as a result of malnutrition. The share of stunted children in rural areas is twice as high as in urban areas (MOH, 1995). NEMA (2002) reports that, despite intra-annual variations,

this ratio has been relatively stable over the last ten years. However, the situation has slightly improved within the last five years. The share of undernourished people (i.e. people who are unable to meet the minimum required dietary energy supply) has fallen to less than 20 percent between 1999 and 2001 (Benson 2004, citing FAO 2003 data). This is significant when comparing neighbouring countries such as Kenya (20-40 percent), Sudan, the Republic of Congo, Rwanda and Tanzania (more than 40 percent). It also represents a reduction of more than 3 percent within a decade.

What are the underlying causes for persistent food insecurity in some parts of Uganda? Following ACC/SCN (2001), we propose that household food insecurity occurs when a sufficient quantity of food is not supplied through household production (unavailability of food), when people lack the resources to obtain food from outside the household (inaccessibility of food), or when available and accessible food is not used to ensure a balanced diet for household members (improper utilisation of food).

3.1 Unavailability of food

In a subsistence context, the unavailability of food at household level is a result of low agricultural production. In the past, agricultural production has declined for several reasons. One explanation can be found in the growing population in some parts of the country. For example, the average population density in Uganda is 85 people per square kilometre. But population densities reach up to 300 people per square kilometre in the south-western highlands. As non-agricultural livelihoods are limited and out-migration is not attractive, more people compete over the same area of land. One consequence is land fragmentation. Pressure on land resources due to rising population densities has reached critical levels in most of the Ugandan highlands.

Declining availability of land does not only force a growing number of people to live on less land, but it implies that traditional practices of soil fertility replenishment, such as shifting cultivation, is no longer possible. The shortening of fallow periods without replenishing soil fertility through other means leads to low organic matter levels, nutrient depletion and hence soil degradation (Pender et al. 2004). Burning of bushes and crop residues, a practice that had its ecological use in shifting cultivation systems, is now contributing to the rapid degradation of natural resources. An increasing number of districts have become highly vulnerable to natural resource degradation. In a recent study by Nkonya et al. (2005a), it was found that farmers in eight representative study districts (Arua, Iganga, Kibale, Kapchorwa, Lira, Masaka, Mbarara and Soroti) deplete an average of 179 kilogram per hectare of nitrogen, phosphorus and

potassium per annum. The value of replacing the depleted nutrients is equivalent to about one fifth of the household income. Food insecurity is a direct consequence of declining agricultural productivity caused by natural resource degradation (NEMA 2002; Nkonya et al. 2005b).

If the quality of natural resources is low, then its vulnerability to weather shocks increases. For example, unpredictable weather and erratic rainfall has disrupted farmers' traditional cropping calendars over the past decade. Unreliable precipitation has been observed in areas with unimodal and bimodal rainfall patterns. Unexpected dry spells following the first rains is a frequent cause for crop failure. If farmers lack sufficient amounts of stocked seeds and planting material, the ability for replanting is limited. Under such conditions farmers tend to become more risk averse rather than increase agricultural productivity. Total rain failures, as frequently happened in north-eastern Uganda reduces pasture production and thus livestock productivity. As a coping strategy, pastoralists are then forced to sell off some of their livestock, which has happened again in the Karamoja district early 2005.

HIV/AIDS related illness and death reduces the number of active household labour. This has implications for agricultural production. Households with HIV/AIDS cases tend to shift from high to low-labour intensive crops, which may be less nutritious. Agricultural productivity declines and farmers are forced to sell off some of their food crops to generate income to meet household expenses. Furthermore, when a household member falls sick, women tend to get more involved in health care and have less time for food production (ICRW 2003). As a consequence of HIV/AIDS, the share of female and children headed households is increasing and so is their level of food insecurity. In 2003 about 540.000 people were living with HIV/AIDS (UNAIDS 2004).

Political instability and violent conflicts are the root causes for food unavailability in northern Ugandan households. The ongoing insurgency caused by the Lord's Resistance Army (LRA) has prevented people from accessing their land and livelihood assets. People living in the affected areas have stopped cultivating their land, which is undermining food production and thus food availability at regional level. Defence spending has become a top priority at the expense of spending on development and social welfare programmes. According to Zhang (2004), defence spending is relatively high (19 percent) when compared with other countries in Africa (11 percent), Asia (11 percent), or Latin America (6 percent). This is almost twice the sum of Uganda's spending on agriculture, health, and infrastructure. As a result of civil strife, about 1.36 million people in the north and the north-east are considered as internally displaced people (IDP), most of them living in IDP camps and supplied

with food by relief organisations. In total about 2.61 million people depend on food aid. Serious food shortages occur in the north and the north-east of the country, notably in the districts of Pader, Kitgum, Gulu, Lira, Kotido, Moroto and Karamoja.

3.2 Inaccessibility of food

Food inaccessibility occurs when individuals have insufficient income to purchase food, which is of an acceptable price. In Uganda this means people who earn less than one US dollar a day are likely to have inadequate access to staple food that they would require for a balanced diet. In 1992, 62 percent of the population was living below the poverty line. This improved to 49 percent in 1997/98 and to 39 percent in 1999/00 (Appleton 2001a, 2001b). Poverty persists mainly among the rural population (Bahiigwa et.al. 2004).

The inability of households to earn income through agriculture is related with the poor market orientation of farmers as well as poor marketing systems. Farmers tend to sell surplus production, but not deliberately search and produce for a market. This often results in low financial returns and farmers are therefore not able to save and to invest. For example, due to households demands for instant cash farmers sell their products soon after harvest when prices are lowest. If this happens, then farmers have to sell more of their produce to meet their financial needs than they would have had to sell off-season, which contributes to the depletion of their food stocks. This in turn increases food insecurity during the dry season and towards the beginning of the rainy season. This problem is further exacerbated by weak farmers' organisations which are unable to mobilise production and marketing of their members for better prices.

Many farmers depend on traditional export commodities and their declining world market prices are threatening attempts to build secure livelihoods. Coffee, a commodity that dominates Uganda's economy, is a good example. The high coffee prices between 1994 and 1996, at the time when coffee trade had been liberalised in Uganda, increased the share of the world market price received by the farmer from 23.1 percent in 1989/90 to 41.2 in 1994/95 and 43.7 in 1999/00. This is responsible for a dramatic reduction in poverty among coffee growers (Kasekende 2000). However, the decline in coffee prices is also responsible for a subsequent rise in poverty, illustrating the vulnerability of farmers with an over dependency on single export commodities. Similar dynamics have occurred in the cotton sector. Coffee and cotton are major cash crops and world market dynamics have a direct impact on poverty and food insecurity.

Poor access to input and output markets in Uganda are one of the main causes for limited market integration of farmers. In rural areas, farmers' access

to external inputs such as mineral fertilisers, synthetic pesticides and seeds is restricted due to the limited number of outlets that sell these products. At the same time, market infrastructure, such as organised buying and collection points are only available for conventional cash crops.

3.3. Improper utilisation of food

Improper utilisation of food arises when people do not make use of (theoretically) available and accessible food sources. This means that individual food security is mediated by actions and choices people make in producing food, earning income for purchasing food, preparing food and allocating food within the household (Johnson-Welch et al 2000). For example, cropping system choices made by subsistence farmers have a significant impact on the quality of food that is available within a household. In Uganda, large areas are dominated by banana-based and grain-based cropping systems. Both cropping systems yield sub-standard diets in terms of energy, protein and minerals (McIntyre et al. 2001). In the banana-based cropping system, these deficits are rooted in land allocation decision and the cultural valorisation of food and hence crops. Children may lack vitamin A because the family does not grow vitamin A rich food. Respective cropping system choices, which contribute to poor diets, are often linked to culturally bound preferences and long practiced consumption habits.

Crop and food choices have a distinct gender dimension. For example, participatory variety test trials with farmers in Uganda revealed that women prefer bean varieties that are of lower market value but are more useful as food for home consumption. Men have tended to opt for bean varieties with higher market value (Johnson-Welch et al 2000).

The production and consumption of crops is linked to education and skills in food preparation and feeding practices. If such skills are not available or not applied, forms of hidden hunger occur despite the availability and accessibility of food. Signs of hidden hunger can be found in households with low dietary diversity, notably in the form of child malnutrition.

4. Organic principles and mechanism

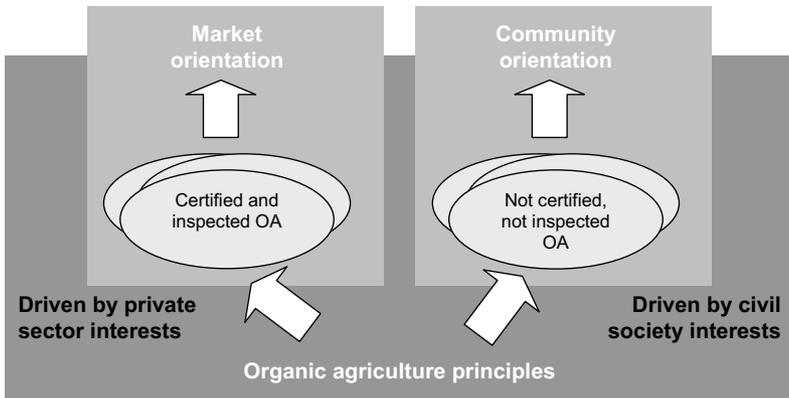
Agriculture in Uganda is often described as 'organic by default' (Van Elzakker/Leijden 2000; Kidd et al 2001; Bigirwa 2005). This popular notion is based on the observation that external input such as agro-chemicals are out of reach for the majority of smallholders in Uganda. We consider this a misconception. In reality, organic agriculture is a deliberate decision made by

farmers as organic agriculture requires the adoption of organic principles and practices.

According to the International Federation of Organic Agriculture Movements (IFOAM), organic agriculture is based on four interlinked principles: the principle of health (i.e. organic agriculture must sustain and enhance the health of soils, plants, animals and humans), the principle of ecology (i.e. organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them), the principle of fairness (i.e. organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities), and the principle of care (i.e. organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment (IFOAM 2005). Organic agriculture is defined and regulated by national and international organic standards, i.e. agriculture that is labelled 'organic' must comply with respective standards. A final draft of the Ugandan organic production standards has been recently published (UGOCERT 2004).

In Uganda it is useful to distinguish between two broad strands of organic agriculture. Both strands are based on organic principles and comply with organic standards, but are different in their orientation. There is organic agriculture which is inspected and organically certified. Organic inspection and certification is necessary when commodities are being traded on international organic markets. Certified organic agriculture has a clear market orientation. Then there is organic agriculture which is non-certified, but compliant with organic principles and standards. These farmers lack access to international organic markets. Instead of the distinct business focus non-certified organic initiatives have a pronounced community development orientation. Certified organic agriculture tends to be driven by profit interests of the private sector, while non-certified organic agriculture has been a domain of civil society organisations (Figure 1). Most recent organic agriculture initiatives have characteristics of both strands. Within a decade the number of certified organic farms has grown from a few hundred to about 40,000. We estimate that the number of non-certified organic farms is three to four times higher than the one for non-certified farms.

Figure 1. Simplified distinction between certified and non-certified organic agriculture (OA)



Organic agriculture functions on the basis of several mechanisms, pursuing goals such as sustainable natural resource management, income generation and social equity. Based on observations made in Uganda we propose five important mechanisms that have direct or indirect implications for household food security.

4.1 Making use of locally available resources

Organic agriculture systematically works with what farmer can afford. External inputs are limited and much attention is given to the maintenance and the recycling of on-farm available materials. For example, composting of organic materials and the application of compost as a soil fertility enhancing agent is a key practice in organic agriculture. Emphasis is given to local seeds systems and the multiplication of annual and perennial crops through community nursery gardens.

4.2 Promoting resource conserving technologies

Organic agriculture emphasises the functional integration of locally available resources with resource conserving technologies. Such technologies and practices comprise the use of cover crops to protect the soil from rains, physical soil erosion measures such as trenches and terraces, the spatial and temporal integration of nitrogen fixing legumes to enhance soil fertility, or the use of plant tea and fermented animal urine as crop protection agents. The integration of livestock systems with crops plays a major role. All this results in a reduction of soil nutrient losses and increases the nutrient use efficiency.

4.3 Building on existing knowledge systems

The goal of organic agriculture is not to replace local knowledge by modern scientific knowledge, but to design farm management strategies that build on the experiences, cultures and institutional arrangements of farmers and farming communities. Local knowledge is an important source of information in organic agriculture. Farmer and community participation in technology development and experimentation enhances local innovativeness and the ability to adapt technologies and practises to rapidly changing environments.

4.4 Tapping new markets

A main thrust of organic agriculture is to link farmers to markets that offer premium prices for organically produced commodities (FAO/ITC 2001). Farmers gain a premium price for their products in the range of 10 to 30 percent. These markets have grown worldwide and have reached a turnover of 23 billion US\$ in 2002. At present organic food and fibre markets are growing at a rate of 20 percent per annum (Yussefi/Willer 2005).

4.5 Promoting social development

Organic agriculture interventions address intra-household decision-making processes about goals, labour sharing arrangements and allocation of resources. Gender sensitisation, conflict resolution training, HIV/AIDS awareness raising, and nutritional education go along with technology interventions.

The degree to which some or all of these mechanisms take effect depend on the principal orientation of the organic initiative. In Uganda, these initiatives are highly heterogeneous. The leverage towards increased food security can vary greatly, notably by disaggregating organic agriculture in its certified and non-certified strand.

5. Implications for food security

Considering the principles and the underlying mechanism of organic agriculture, what current food security outcomes are farmers able to derive? We identify three process related outcomes that address food security. The examination of the two organic agriculture strands, however, suggests difference in the degree to which these outcomes are being realised (Table 1). For example, non-certified organic farmers derive food security through subsistence food production (agricultural intensification) and certified organic farmers tend to purchase food security (economic specialisation). Food security through social mobilisation is found in both strands, but is more pronounced in non-certified organic agriculture.

Table 1. Simplified illustration of links between food security dimension and outcomes achieved through certified and non-certified organic agriculture

Food security dimension	Principle outcomes	Certified organic agriculture	Non-certified organic agriculture
Availability of food	Agricultural intensification	Focus on cash crops, moderate management changes, moderate to no yield increase	Focus on food crops, pronounced management changes, moderate to high yield increase
Access to food	Economic specialisation	Premium price, substantial increase of household income, possible reinvestments in food	No premium price, moderate / no increase of household income, questionable reinvestments in food
Utilisation of food	Social mobilisation	Moderate / no sensitisation about nutrition	Moderate / high sensitisation about nutrition

5.1 Agricultural intensification

Increasing agricultural productivity is a key objective of many rural households in Uganda. When converting high-external-input systems, such as conventional agriculture into organic agriculture, yields decline by up to 30 per cent per unit area. Such yield declines are most remarkable where high amounts of mineral fertiliser are suddenly replaced by organic means of soil fertility management. This is different in systems in which the reliance on inorganic fertilisers was low or even zero. In such systems the successful adoption of organic principles and mechanisms is likely to increase crop yields by 200 to 300 percent (Scialabba 2000; Pretty/Hine 2001; Parrott/Marsden 2002). It seems that increasing yields are more commonly observed in non-certified organic initiatives. However, similar effects are reported for organic cotton in northern Uganda (Blom pers. comm.), where yield increases are attributed to improved soil fertility derived through the first two organic mechanisms.

The integration of locally available materials and resource conserving technologies potentially results in more stable agro-ecosystems. Rather than maximising production organic agriculture balances the goal of yield increase and risk reduction. For example, the combination of two or three crops reduces the

impact of crop failure. Sequential cropping minimises risk exerted by climatic uncertainties and provides farmers with a phased harvest. Mulched soils have a higher water storage capacity and can therefore more easily withstand dry spells. All this strengthens ecological resilience of organic agriculture systems (Milestad/Darnhofer 2002).

Organic agriculture tends to yield a more diversified food basket, which is closely linked to changed production choices (see also section 5.3).

5.2 Economic specialisation

The self-image of certified organic initiatives is one that seeks to improve household income through new and profitable organic enterprises. For example, in one of the largest organic cotton schemes in sub-Saharan Africa, the Lango Organic Farming Promotion (LOFP) project that is located in the Lira and Apac districts, farmers have obtained farm gate prices which are about 19 percent above the world market price for conventional cotton. During periods of price fluctuations, such as in the 2004 season when farm gate cotton prices declined by 50 percent, organic farmers were able to draw on the organic premium for accessing food on local markets.

Organic agriculture has positive implications for non-organic farmers. For example, in all areas of the country where market oriented organic export projects are in operation (e.g. cotton and sesame in the north, arabica coffee in the east, cocoa and vanilla in the west, robusta coffee in the south west, fruits in the central region) conventional producer prices have been forced upwards as traders dealing in conventional products try to stay in business. They have often had to match organic prices in order to meet their own orders which in turn force the organic commercial companies to raise their offers in order to maintain the agreed premium (SIDA 2001). Such local competition benefits both organic and non-organic farmers.

5.3 Social mobilisation

Several organic agriculture programmes have noticed that agriculture based interventions (e.g. agricultural intensification and economic specialisation) of production do not necessarily translate into the adequate utilisation of food. Especially non-certified organic initiatives have successfully diversified people's food choices through nutritional awareness raising and training. This includes improved services for and empowerment of women through family planning, the reduction of women's workload (through labour sharing arrangements), and improved access to educational programmes, information and counselling. Such programmes go along with technology based training and ex-

tension. Where respective integrations are not in place, intra-household equity may be at stake. For example, Malins and Nelson (1998) report that although men and women both participate in the cultivation of organic cotton, it is the men who are in charge of the cotton income and therefore there is potential for men to benefit more than women.

Certified organic agriculture seems to have a comparative advantage in terms of enhancing people's entitlement and access to food through increased household income, but non-certified organic agriculture drives the policy lobbying and advocacy at the macro level. In the long run, such lobbying and advocacy activities build micro-macro linkages that also benefit certified organic agriculture. LOFP is now a prominent member of NOGAMU and brings its members access to knowledge and information through training and extension service, access to other communities of organic agriculture actors and policy makers and is now actively involved in national agriculture policy advocacy.

Early 2004, organic stakeholders from the northern region successfully lobbied the president to ensure that the northern region is zoned to protect the organic production areas from infiltration by one of the world's largest multinational cotton companies. At that time the organic project areas in the region were threatened by a pesticide based incentives programme for farmers, a development that would have complicated organic certification.

6. Challenges and dangers

Despite the different leverage effects towards food security, we suggest that organic agriculture potentially increases household food security in Uganda. However, we are making this statement not without drawing attention to some of the challenges and dangers that organic agriculture presently faces.

Non-certified organic agriculture, with its distinct community orientation, is being urged to employ a more rigid market orientation. While this is logical and understandable from an income generating point of view, such concerns need to be balanced with food security requirements at the household level. Managing trade-offs between household income generation and household food production is, given the often limited resource endowment of farmers, a balancing act. The following aspects are of importance.

First, certified organic farmers serve a niche market. It is unlikely that organic markets will grow as fast as it would be necessary to pull large shares of the three million smallholders in Uganda into certified, export oriented organic production. Moreover, it is questionable if this is an appropriate mechanism to address the underlying structural causes of food insecurity. The local organic

market in Uganda is being developed, but may grow at a lower pace than international organic markets.

Second, the transition to certified organic agriculture is costly. Annual charges for certification excluding international travel and subsistence for the inspectors are in the region of 4,000 to 8,000 US\$ for a project of 500 small-holder farmers and 20,000 US\$ for a project consisting of about 10,000 small-holder farmers (Gundren 2002). These costs are prohibitive at start-up and have been one of the main challenges to the commercialisation of organic farms in Uganda. The development of local inspection capacities through a local certification company is aimed at reducing respective costs. This company is in the process of getting accredited within the coming five years.

Third, certification of organic agriculture in tropical countries is based on standards that were developed for temperate industrialised agriculture conditions. Conversion periods of three years for perennials and two years for annual crops (Neuendorff/Koschella-Sabel 2002) that were aimed at building up ecological balances and the removal of residues in the north are not always appropriate in the south. In addition, specifications for soil fertility management like control over manure inputs and specifications for crop rotations are not appropriate for tropical farming systems. The rigid documentation that is the basis of certification is a big challenge for communities with low literacy levels (Barrett et al. 2002).

Fourth, the organic sector and organic farmers benefit from world trade, but also depend on inequitable power relations among global market players (Reijntjes 1998). World commodity prices impact on organic agriculture and thus on food security. Unlike fair-trade programmes, organic agriculture initiatives lack price buffer mechanisms that become effective when world market prices fall below a certain threshold. Farm subsidies in the OECD countries undermine the capacity of poor smallholder farmers in Uganda and other developing countries to compete on world markets, including organic farmers.

Fifth, organic agriculture has not attracted sufficient interest from the technical bureaucrats in the relevant ministries and government institutions. The attitude of policy makers ranges from hostility, indifference, scepticism to mild support. Current efforts to develop a comprehensive national organic policy are movements in the right direction. The challenge will be to develop a policy that facilitates the development of organic agriculture and protects the sector from threats such as the introductions of genetically modified planting material and the planned reintroduction of DDT (dichlorodiphenyltrichloroethane) in malaria control programmes.

7. Conclusion

In this paper we have argued that household food insecurity is a function of unavailability of food, inaccessibility of food and/or improper utilisation of food. All three food insecurity dimensions exist in Uganda. Based on the past experience of agricultural development in Uganda, the successful promotion of high-external-input systems is not realistic. One of the view options that farmers have is to build on locally available resources in their pursuit to increase agricultural productivity. On the basis of current food security outcomes that organic agriculture derives, we conclude that farmers who have successfully adopted organic principles and mechanisms are likely to experience positive food security outcomes. Organic agriculture is an approach that sustainably intensifies and economically specialises agricultural production while placing emphasis on social mobilisation. These outcomes address different food security dimensions. Certified organic agriculture seems to be more in line with the goals of the PMA, due to its pure focus on income generation (sometimes at the cost of sustainable natural resource management). This may increase farmers' vulnerability to food insecurity in the future, especially when farmers are unable to exchange entitlements derived through certified organic agriculture. The uncritical promotion of certified organic agriculture as well as the isolated adoption of single organic mechanisms may be done at the risk of achieving the reverse. Integrating organic mechanism to achieve more balanced food security outcomes (in terms of agricultural intensification, economic specialisation and social mobilisation) is most useful to achieve food security through organic agriculture.

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Abstracts

Der organischen Landwirtschaft wurde in der Vergangenheit viel Aufmerksamkeit zuteil. Ein umstrittener Aspekt im Zusammenhang mit den jüngsten Entwicklungen der ökologischen Landwirtschaft ist jedoch deren Einfluss auf Ernährungssicherung auf Haushaltsebene. Unter Verwendung von Beispielen aus Uganda stellt dieser Artikel die Frage, wie organische Landwirtschaft Ernährungssicherung auf Haushaltsebene zu gewährleisten vermag. In diesem Kontext wird darauf hingewiesen, dass die Nichtverfügbarkeit, der fehlende Zugang und die unrichtige Nutzung von Nahrungsmitteln als Hauptgründe von Ernährungsunsicherheit zu betrachten sind. Auf Basis von fünf Mechanismen und durch Prozesse landwirtschaftlicher Intensivierung, ökonomischer Spezialisierung und sozialer Mobilisierung trägt organische Landwirtschaft zur Linderung von Ernährungsunsicherheiten bei. Wir schlussfolgern, dass die organische Landwirtschaft ausreichend Hebelwirkung zur Erreichung von Ernährungssicherung auf Haushaltsebene hat. Allerdings dürfen diesbezügliche Leistungen nicht als selbstverständlich angesehen werden, da Ernährungsunsicherheiten auf Mikroebene eine ausgeprägte soziale, wirtschaftliche und politische Dimension auf Makroebene haben.

Organic agriculture has received widespread attention in the past. A contested issue in connection with recent organic agriculture developments, however, is its impact on household food security. By using examples from Uganda, this article asks how organic agriculture is able to achieve household food security. In this context, unavailability, inaccessibility and the improper utilisation of food are suggested as the main causes for food insecurity. Based on five mechanisms, organic agriculture contributes to mitigate food insecurity through processes of agricultural intensification, economic specialisation and social mobilisation. We conclude that organic agriculture has sufficient leverage to achieve food security at household level. Such achievements, however, cannot always be taken for granted as food insecurity at the micro level has a distinct social, economical and political dimension at the macro level.

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