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Commercialising organic agriculture. Does it improve household food security? A case study from south-western Uganda

Aigelsperger[1], Lisa[a], Njuki, Jemimah[b] and Hauser, Michael[a]

a University of Natural Resources and Applied Life Sciences (BOKU), Department of Sustainable Agricultural Systems, Gregor Mendel Strasse 33, A-1180 Vienna, Austria

b International Center for Tropical Agriculture (CIAT), Chitedze Agricultural Research Station, P.O. Box 158, Lilongwe, Malawi

Introduction

Since the late 1980s, organic agriculture has expanded rapidly in Uganda which made the country one of the leading exporters of organic produce in sub-Saharan Africa. More than 40,000 farm households are organically certified and inspected (Tumushabe et al., 2006). At the same time, Uganda faces a range of rural development challenges, such as increasing population densities in some parts of the country, little income earning opportunites, health problems (above all malaria), natural resource degradation, shifting food demands and food insecurity. Several studies point out that organic agriculture may be a potential strategy for addressing some of these challenges (e.g. Scialabba and Hattam, 2002; Hine and Pretty, 2007; Willer and Yussefi, 2005; Parrot and Marsden, 2002). The contribution of organic agriculture to food security, however, is still controversial and lacks empirical evidence, especially at household level (Walaga and Hauser, 2005). Against this background, the study was aimed at gaining a better understanding of entry points, pathways and food security implications of commercialised organic agriculture in rural Uganda. This paper draws on ongoing work carried out in Rakai/Masaka district, south-western Uganda.

Methodology

The study is based on the sustainable livelihoods approach and uses the sustainable livelihoods framework. It focused on the linkages between organic agriculture interventions, representing the pillar of transforming process within the livelihoods framework, and household food security which is considered a livelihood outcome (Scoones, 1998). The concept of household food security is defined as follows: "Food security exists when all people at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996). This definition integrates three central food security dimensions, namely access to food, availability of food and utilisation of food. Stability is considered a cross-cutting issue. *Household* food security, a specification of food security, is additionally concerned with food distribution within the household and intra-

[1] Corresponding author. Email: lisa.aigelsperger@boku.ac.at

household priority setting related to food production, acquisition, utilisation and consumption (Callens and Seiffert, 2003). The study was designed as an ex-post impact assessment of farm households that transitioned to commercial organic agriculture and yielded both qualitative and quantitative data. Certified organic households were contrasted with traditional and non-certified organic households. People's relative perceptions of changes (rather than absolute measures) were compared. Data collection was done in three phases:

1. **Initial exploration:** Key informant interviews, community meetings and group discussions helped to explore general livelihood conditions, which resulted in the definition of household food security indicators.
2. **Household survey:** Household food security indicators where translated into structured interviews integrating PRA tools such as scaling, calendars and rating.
3. **Final group discussions:** Verification of results was done by generating an impact diagram that illustrates linkages between commercial organic agriculture and the applied household food security indicators.

Results and Discussion

The identified linkages between organic agriculture and household food security are based on livelihood assets. Human and social capital constitute the entry point of livelihood changes. Two pathways following this entry point were identified and characterised which are based on natural and financial capital. These pathways translate changes into food security outcomes.

Entry point: Human and social capital as basic requirement for food security

Social capital development within and across households was identified as one main entry point for organic agriculture interventions. Strengthening group cohesion, an important social capital indicator, was of particular importance. Human capital building through organic training interventions marks another starting point for positive changes in farmers' livelihoods. Enhanced social and human resources consequently lead to important spill-over effects towards other livelihood assets. The certified organic households were all organised in an organic cooperative and benefited from the following factors:

- **Social learning** through organic trainings, exposure visits to other organic farms and exchange of experiences among organic farmers builds human capital.
- **Collective action** within the group is a prerequisite for accessing international organic markets.
- **Safety net mechanism** through buffering shocks or crisis (e.g in-kind or financial support to needy member households).
- **Financial access to food** through investing group savings into the purchase of food for the group members in times of food shortages.

By contrast, non-certified organic farmers perceived 'selling individually' as constraint to market access and product prices. In regard to their ability of securing food supply, the missing advantages offered by group marketing are reflected in a lower purchasing power and dependence on subsistence farming or other income strategies compared to their certified counterparts. The group structures of the traditional households under study tend to be weaker

than those of the organic group – they are selling on a less regular basis, they receive lower trade prices for their commodities and common group savings are invested in external inputs.

Pathway 1. Building on natural capital towards improved food availability through enterprise intensification and strategic diversification

As a result of enhanced human and social assets, certified organic farmers intensified natural resource management by introducing new and improving already practised farming techniques. Consequently, this has lead to perceived positive changes like improved soil fertility, increased yields and enhanced product quality. These developments indicate a tendency towards improved food security. While non-certified organic farmers reported a similar trend, traditional households clearly showed a less common as well as less frequent use of farming techniques (Figure 1a).

The study found that improvements among certified organic farmers are mainly restricted to crops for export, supposedly because the organic trainings were oriented towards cash crop production. It turned out that farmers are not aware of the applicability of organic farming practices on other crops, notably food crops.

Another challenge negatively affecting the course of this pathway are changing and unpredictable climate conditions which increasingly threat farm productivity As indicated in Figure 1b, the perceptions on soil fertility mark a decline over the last five years, being in contrast to the positive outcomes which were associated with the improvement of farming methods. Certified organic farmers perceive climatic variability as the most influential factor for their current household food security state. The fact that farmers are not aware of any adaptation strategies for dealing with changing climate conditions aggravates the rising level of vulnerability to which the farmers feel exposed.

Figure 1a: Average number of NRM techniques applied per household, aggregated by frequency of use

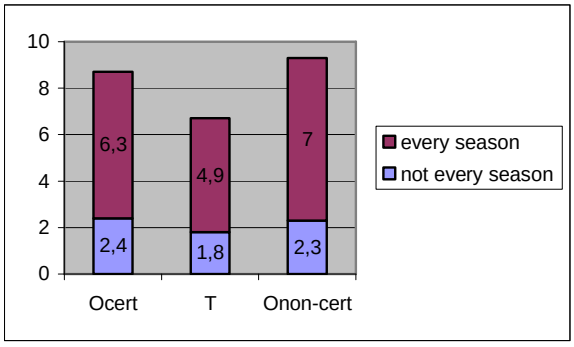
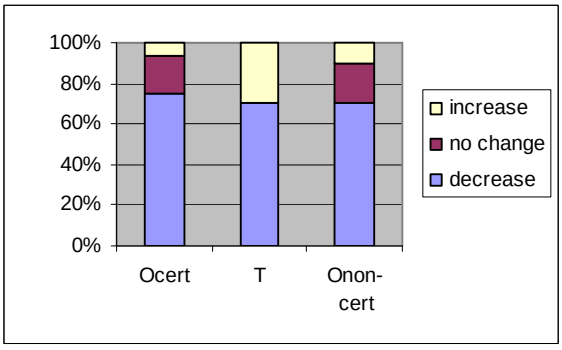


Figure 1b: Perceived change of soil fertility in the last five years (in % of households)



Strategic diversification of natural capital, i.e. enhancing on-farm biodiversity, is reflected in higher crop diversity on organic farms (2a). This strategy was one major lesson communicated through organic trainings in order to reduce the risk of crops failure. Higher crop diversity is also pursued in a diversification of food stocks. This is expressed in the fact that significantly more households store millet and cassava for bridging times of food shortages, additionally to beans and maize which represent the usual food stocks across all samples.

As deducted from farmers' perceptions, however, the higher crop diversity does not translate into increased dietary diversity (Figure 2b). As underlying reason farmers mentioned that reduced farm productivity is caused by climatic changes which increasingly affect their food crops.

Figure 2a: Average number of crops grown per household, aggregated by purpose

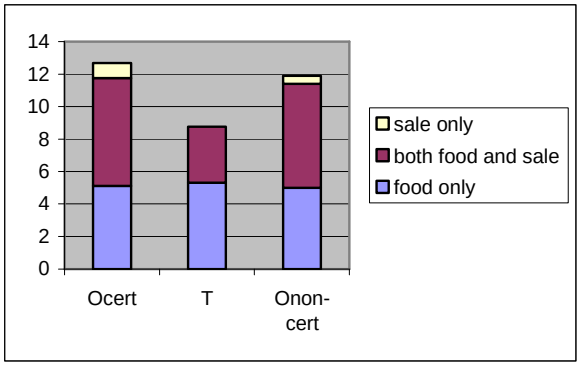
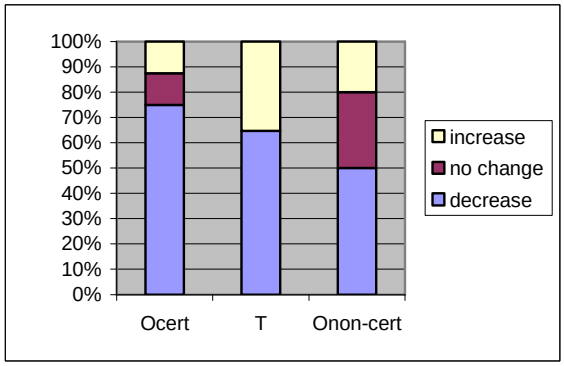


Figure 2b: Perceived change of diversity of food in the last five years (in % of households)



Emerging from increased financial capital invested into livestock production, also a broader livestock portfolio contributes to higher biodiversity on organic farms. Figures show that certified organic households own a higher number and higher diversity of livestock. This contributes to improved food security as organic farmers manage to keep more animal products for consumption (above all eggs and milk which are valuable nutrient-dense foods in an otherwise mainly carbohydrate-based diet). However, farmers also reported that the frequencies of consumption of livestock products are still at a low level.

Pathway 2: Building on financial capital towards improved access to food through economic specialisation

Certified organic farmers enjoy a premium price for their organic produce, resulting in higher income and purchasing power compared to their counterfactuals. This allows certified households to follow the strategy of purchasing food security. As shown in Figure 3a, the share of income invested into food is more than double as high compared to traditional and non-certified organic households, with 55 percent of their household income being spent on food. Farmers, however, stated that they not always invest into food deliberately, but that they are rather forced to do so as unpredictable climate conditions increasingly affect their food crops. Another explanation for the need to invest the comparably high share of income into food is the certified organic households' high market orientation with a cash crop focus Nevertheless, certified organic farmers manage to have more meals a day compared to traditional farmers (significantly in periods of food shortages) (Figure 3b). In other words, higher income through premium prices as well as a minimised need for sale of food in order to generate income translates into a more stable food intake.

Limiting meals in terms of quality and quantity are risky coping mechanisms commonly practised among all interviewed households. These give rise to micronutrient deficiencies which put food security at risk by impacting people's nutrition and health status.

Apart from food purchase, enhanced income enables further investments into land, wage labour, livestock, storage facilities and health care, all of which positively impact on food security.

Figure 3a: Percentage of income spent on food

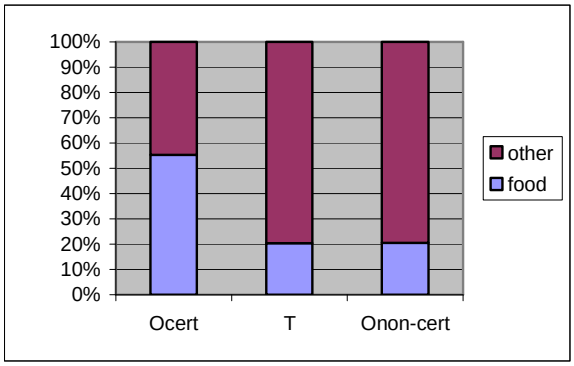
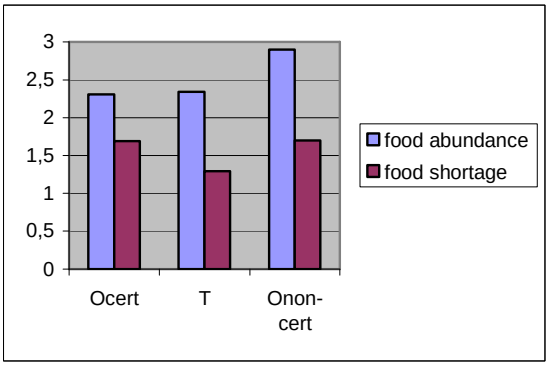


Figure 3b: Average number of meals consumed during food abundance and food shortage



The forgotten pathway: Building on human capital towards improved utilisation of food through knowledge intensification

When it comes to nutritional knowledge and practices, the study revealed no difference between organic and traditional farmers, neither were differences in care practices, family planning or nutritional behaviour identified.

The sources of nutritional information are extremely limited, and also organic trainings (which are otherwise the starting point for many of the positive changes in farmers' livelihoods) do not address the knowledge dimension of food and nutrition. One interesting observation was that even in families of a high wealth status forms of severe malnutrition occur. Concluding from this, the core hindrance for a translation of enhanced economic well-being into proper utilisation of food is seen in the knowledge barrier (hence human capital development).

Farmers' understanding of food security is limited to the food security dimensions of availability or access and farmers lack a deeper understanding of the importance of appropriate use of food. Leaving out the dimension of appropriate utilisation of food, however, means lacking the link to nutrition security. In fact, nutrition security is the ultimate determinant for physical conditions of integrity, enabling an 'active and healthy life' as claimed in the definition of food security.

All in all, there are gaps in the household food security equation, notably because improved access and availability of food do not always translate into proper utilisation of food – a missing pathway which could not yet have been realised by organic agriculture interventions.

Conclusion and Recommendations

It can be shown that commercial organic agriculture positively addresses several household food security dimensions, hence supporting farmers to improve their livelihoods. Starting from social and human capital development, commercial organic agriculture gives rise to enterprise intensification and diversification as well as to economic specialisation by building on natural and financial resources. However, the discussed pathways towards improved household food security are largely restricted to the dimensions of availability and access.

The study concludes that these potentials need to gain more recognition. Building on the knowledge dimension through the implementation of holistic training guidelines could be one powerful way to address all food security dimensions equally. Nutritional education in combination with other important livelihood strategies for improving dietary diversity as cross-cutting themes could establish the missing link between organic agriculture and nutrition security. Generally, the partly low awareness about organic agriculture and nutrition (security) at all stakeholder levels needs to be improved.

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