Certified organic export production – implications for economic welfare and gender equity amongst smallholder farmers in tropical Africa

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Summary report and policy conclusions submitted to the United Nations Conference on Trade and Development

Final draft, 19 June 2007

Introduction

Over the last fifteen years the market for certified organic agricultural products has grown from a very low base to reach 1.5-2.5% of total food sales both in North America and the EU, up to 5% in Denmark and Switzerland (Willer & Yussefi, 2006; Oberholtzer et al., 2005; CBI 2005; Financial Times, 2006). Global organic sales were estimated at US$ 33 billion in 2005, compared to US$ 23 billion in 2002 (Willer & Yussefi, 2007), representing an increase of 43% or about 14% per year.[1] Most of this growth has been satisfied by increases in the area under certified organic production in North America and EU itself. Yet there has been also an increase in certified organic imports into both regions. In the case of the EU these mainly comprise cereals and oilseeds from temperate and semi-temperate countries, but they also include fruit and vegetables (from a much wider range of countries) and tropical beverages. [2]

Rising demand both for organic tropical products and for year-round supply of some organic temperate products has encouraged organic activists, NGOs and some donors to promote certified organic export production in a number of tropical African countries. Also several larger global trading companies, exporters in developing countries, and importers in developed countries have seen the opportunities and embarked on the trade. As a result, the last decade has seen the emergence and rapid growth of certified organic food and beverage exports from Africa.

Evaluations of organic farming in Asia and Latin America found that organic production has a large market potential that can be used in combating poverty in an environmentally sustainable manner (IFAD, 2003; IFAD 2005). In Africa, a recent study of the certified organic sub-sector in Uganda reveals a high performance in terms of growing export volume, revenue and product diversity (Gibbon, 2006) and a similar trend can be observed in Tanzania.

But organic export growth does not necessarily translate into improved welfare for the involved producers and workers, whether measured as higher income, improved food security, better health, higher equity or through other variables. Such impacts must be demonstrated empirically at the level of the participating households and their local communities. A review of the economic literature on organic farming in developing countries, including the IFAD evaluations mentioned above, reveals that little research has been done on these important impact dimensions of organic farming (Gibbon and Bolwig, 2007).[3] Furthermore, few such studies report quantitative data and even fewer

use statistical techniques to analyze them. It is also unclear how the current rapid conversion of farmland into organic management systems will affect food availability and access among the producers and the societies to which they belong (Sciallaba and Hattam, 2002; WWI, 2006; FAO, 2007).[4]

Against this background a number of studies were recently launched on certified organic production in Uganda and Tanzania, focusing on quantifying the economic and social impacts of organic conversion, but also addressing organisational, institutional and technology issues.[5] This paper summarises the results of two of these studies and draws some policy implications. The first study examined the relative profitability in terms of farm income of certified organic and conventional farming operations (Gibbon and Bolwig, 2007). The overall conclusion was that farms that engage in certified organic export production are significantly more profitable in terms of farm income earnings than those that engage only in conventional production. The second study focused on the non-income effects of certified organic farming, specifically food security and gender impacts (Bolwig, Odeke and Gibbon, 2007). This study concluded that conversion to organic export production has not reduced food security but rather improved it by raising cash incomes that have enabled households to increase the amount and quality of food purchased in the market.[6]

Methods

These studies were based on research carried out in 2005-06 in Uganda among smallholder farmers of respectively, certified organic Arabica coffee, cocoa-vanilla, and pineapple and of matching control groups of conventional farmers of these crops.[7] The three organic operations were located in eastern, western and central Uganda, respectively. In all, 172 organic and 159 conventional farmers were interviewed in a formal household survey. Focus group interviews were moreover conducted with organic coffee and pineapple farmers, separately for men and women. They focused on the food security and gender impacts of organic conversion.

Organic production was in all cases organised on a contract farming-type basis, in schemes operated by the firm exporting the organic product.[8] In tropical Africa, certified organic farming involving smallholders is found almost invariably either in this form or is organised through cooperatives. Scheme size ranged from 34 to 3,870 farmers and organic certification took place between 2000 and 2004 in all cases. All schemes were certified compliant with the EU organic regulation 2092/91. The coffee scheme was also certified to the Utz Kapeh sustainability standard. In each case, the

exporting firm provided training in improved production and processing practices as well as a limited range and number of farmer inputs (free or at cost). All the schemes received support from the Swedish International Development Agency (through the EPOPA[9] programme) for feasibility studies, farmer registration, certification, training and marketing.

Organic farming as contract farming

When certified organic farming is contract-based it introduces a series of potentially confounding variables to the study of relative profitability. Firstly, the organizers of organic contract farming schemes may target more established farmers of a specific crop for recruitment to a scheme specializing in that crop. These farmers may be better established because they have superior factor endowments, or greater experience of growing the crop in conventional form, or both.[10] In any case, the result of any subsequent comparison is likely to be different from one undertaken between a group of randomly selected conventional farmers and a group sampled from a population of organic farmers who had recruited themselves.

Secondly, organic contract farming in Africa invariably involves free provision of certification and training to farmers who are scheme members. Subsidies for conversion are also provided in the EU, but because they are provided in the EU in the form of cash transfers, both subsidies and certification costs appear in farm budgets. They make no such appearance in the farm budgets of organic contract farmers in Africa, but may instead be reflected in the price offered to the farmer by the scheme operator (exporter) as a hidden deduction from the organic premium.

Thirdly, contracting allows scheme operators in general to vary production conditions and requirements from those that would be normally followed by farmers (including certified organic farmers) not under contract. In organic schemes these conditions and requirements often refer to obligatory adoption of specific farming methods or post-harvest techniques, and, less often, to the provision of types of input not accessible to farmers outside of contracts. In respect of adoption of specific farming methods, for some crops and areas organic certification in tropical Africa should not require farmers to make major changes in input use, while in other cases it will. By the same token, maintaining pre-existing income levels in many cases will not require adoption of more labour-intensive farming practices. On the other hand, since schemes may be dependent for funding upon the support of organic activists or even may be managed by such activists, members may be expected to follow the spirit as well as the letter of organic certification requirements and thereby adopt some ‘deep’ organic farming

practices requiring additional labour time. The experience on this issue is mixed and poorly documented but it is the general impression that few organic scheme operators demand that their growers adopt very labour intensive organic practices.

Fourthly, as the smallholders involved in these schemes are distant from the market and do not control the certification, there is also the possibility that they will not reap the full benefits of premiums paid by the end consumers, as either the international trading company, the local exporter or the importer may pocket most or all of these premiums. Also there are differences in the marketability of organic products, so that some may attract very attractive and substantial premium prices, while for others the price premium might be very small.

A somewhat different set of considerations applies to harvest and post-harvest techniques, generally considered to be critical for attaining a given level of product quality. These techniques may not be strictly organic in character, but farmers can be obliged to meet them in order for their output to qualify for an organic price premium, as the organic market in general is aiming at the upper market segment. For example, cocoa farmers may be required to ferment and dry beans before sale, and coffee farmers to pulp and dry them. The power to enforce such requirements rests upon the monopsony-type buying status that is conferred by scheme operation. This status may also allow scheme operators to supply inputs on credit with the expectation that credit can be recovered at the point of purchase.

Finally, contract farming schemes may be certified to standards other than organic ones, and the crop they purchase may receive a price premium with both organic and non-organic components. For example, some organic farming schemes in tropical countries incorporate cooperative societies that are also certified Fair Trade, particularly in coffee. In these schemes, to qualify for the organic price premium, members also have to conform to Fair Trade certification requirements. On the other hand, the price premium that they receive should be higher than that received by farmers certified only to organic standards.

Income and yield impacts

The research showed that farms which engaged in certified organic export production were significantly more profitable than the control group of farmers engaged only in conventional production. Significant or close to significant differences in farm revenue (from land and crop sales) in favour of three cohorts of organic farmers in tropical Africa generated uniformly significant higher farm income (revenue minus fixed and

variable costs) for these cohorts relative to the conventional farmers. The revenues earned by organic farmers resulted primarily from higher revenues from the crop subject to organic certification (CSC), which was significantly higher for all CSCs except cocoa. This reflected mainly the fact that organic farmers produced higher volumes of CSCs. Organic price premia also contributed to higher revenues, but their effect was reduced by the fact that a proportion of the organic produce was sold off-scheme (side selling) at conventional prices.

The results for average income also revealed enormous differences in profitability between organic farmers of different cash crops. At over US$2,000 a year, the average income of organic pineapple farmers was three times higher than for organic cocoa-vanilla farmers and more than five times higher than for organic coffee farmers. It is noteworthy that the high incomes earned by the pineapple farmers were not only a function of their organic sales but also of a favourable conventional market, local and regional, into which they sold three-quarters of their fruits.

It is worth underlining that, in contrast to the experience in developed countries, organic conversion in tropical Africa is associated with increases rather than reductions in yield. The absence of yield loss relates mainly to the low-input characteristics and general low productivity of conventional farming on the continent. Focus group interviews suggest that organic farmers enjoyed higher yields due to more effective farm management, but this could not be verified statistically.

Most studies of organic agriculture in developed countries observe few differences in fixed costs between organic and conventional farmers, except for organic farmers incurring some additional short-term costs associated with conversion-related diversification. The economic drama lays in differences in variable cost structures, with organic farmers spending more than conventional farmers on hired labour and less on fertilizers, pesticides and herbicides. Organic farmers' cost structure in tropical Africa, as reflected in this study, has a completely different character. Expenditure on fixed costs represented a remarkably low share of organic farmers' revenues – and in most cases also of conventional farmers'.

Overall expenditure on variable cost items was higher than on fixed cost ones for organic farmers. This was not due to higher expenditure on hired labour compared to conventional farmers (family labour was not costed); instead, organic farmers incurred higher variable costs on post-harvest handling and processing activities required to meet the higher quality standards of the organic exporter. Where organic farmers adopted more labour-intensive recommended organic and other improved farming

practices (and focus group interviews indicated this in some cases), this occurred mainly through increased family labour inputs rather than hiring in more labour. Meanwhile, the prohibition on using synthetic inputs was financially neutral, since their level of use in conventional agriculture was generally negligible. As a result, differences between conventional and organic farmers' costs had little impact on differences in income. If anything, income differences in favour of organic farmers were amplified by their lower costs compared to conventional farmers.

Food security impacts

Organic pineapple farmers enjoyed high levels of food self-sufficiency and organic conversion did not appear to have reduced food production. This was mainly because the expansion of pineapple farms and their improved management had occurred through additional investments in land and hired labour rather than through the diversion of household resources away from food crops. These positive dynamics were related to the high incomes earned in pineapple farming as well as to large average farm size. Hence most organic farmers could satisfy their calorie needs through own production and moreover purchase higher value foods such as meat, fish, sugar, tea, and rice. Food purchases ranked only fifth in household expenditures due to the combination of high food self-sufficiency and high cash income.

In the case of organic coffee, the general trend has been a reduction in local food production since organic conversion, mainly due to the expansion of coffee on land previously cultivated with food crops. Very small average farm size combined with low capacity for buying more land meant that the expansion of coffee had occurred at the expense of land planted with especially maize and its intercrop, sweet potatoes. But farmers had adapted their farming strategies in ways that mitigated the intensified competition for land between coffee and food crops. Firstly, while land scarcity had eliminated mono-cropping of beans in the area, improved weed management in coffee induced by the organic project had created new opportunities for intercropping beans with coffee. Secondly, some farmers invested coffee incomes in renting land for maize and rice farming outside their home area where land was more abundant. Other causes of reduced per capita food output that were unrelated to organic conversion included intensified population pressure, declining soil fertility, and plant health problems with cooking banana.

Organic conversion of coffee had also caused a change in the utilisation of family labour, but without seriously impacting food production, it seemed. Farmers had clearly increased their labour efforts in coffee farming and processing. This was due in

part to higher and more stable coffee prices and to the stricter quality requirements of the organic exporter. Most of this extra labour was supplied by women who were the main responsible for food production, but because land was the dominant production constraint, this change in labour use did not significantly reduce efforts in food production. Instead, the women had adapted by working longer hours and by reducing the time spent in off-farm activities (reducing their access to personal incomes).

Few organic coffee farmers were self-sufficient in calories and proteins and food purchases thus ranked high in household budgets. This was probably also the situation before organic conversion when land was also a major production constraint. In this context it is worth emphasizing that despite reduced food production after conversion, the interviewees observed that food security had not worsened but rather improved. This was because the higher coffee incomes more than compensated for the loss in food production by improving the capacity for accessing food through the market.

Both pineapple and coffee farmers had applied some of the improved farming practices acquired through the organic project on their food crops and there was some reinvestment of organic revenues into food crop farming. In both cases organic certification was associated with moderate increases in production costs, especially in respect of inputs of family and hired labour, according to the focus group interviews.[11] But the benefits of conversion in terms of higher organic crop revenues far outweighed the extra costs, resulting in significant income increases, especially in the case of pineapple.

Gender equity impacts

The effects on organic conversion on gender inequality were mixed. Increased labour inputs in coffee related to organic certification occurred in a context where women supplied the major part of labour inputs in both coffee and food crop farming and where the use of hired labour was limited.[12] It was thus also the women who performed most of the extra farming and processing tasks needed to meet the organic standards and the exporter’s additional demands in respect of quality and farm management. As a result, women had experienced an increased work load in farming since organic conversion, which increased their total work burden and reduced the time available for earning individual incomes. Yet the women still found that organic farming was well worth the extra effort due to the income benefits for the household as a whole, and this in spite of the fact that in most cases they had no or little control over the use of this income.

The distribution of the additional costs and benefits associated with organic conversion was much more biased against women in the case of coffee than for pineapple. This seemed to be the result of differences in gender relations, in land availability, in market conditions, and in commodity characteristics. Firstly, gender relations were generally more equal among pineapple farmers thus giving women better access to pineapple incomes and the men weaker command over their labour for the purpose of pineapple growing. This was in contrast to the coffee farming community, where the role of women in cash crop production resembled that of hired labourers. Secondly, the sexual division of labour seemed less strict in pineapple than in coffee farming, possibly because pineapple was a new crop to the area. Thirdly, pineapple farmers earned very high incomes, which allowed them to hire in more labour – thereby relaxing the demand for household labour by women.

Conclusions

Farms that engaged in certified organic export production were significantly more profitable in terms of income than those that engaged only in conventional production. The study also indicated that conversion to organic export farming was fairly easy, involved little risk, and demanded few if any fixed investments. Further research is needed though to assess whether this is also true for systems initially more dependent on external inputs and where schemes are operated by cooperatives. This said, on balance the evidence presented here strongly suggests that organic farming is a useful measure to increase incomes among poor farmers in Africa. The studied projects were all supported by the Swedish International Development Corporation Agency (Sida) through the EPOPA programme. By quantifying the costs and benefits of organic conversion at the farm level in a comparative framework, the study is one of the few to document that such support is consistent with the poverty reduction goals of Sida and likeminded agencies.

Conversion to organic export production has not reduced food security in the examined cases but rather improved it by raising cash incomes that have enabled households to increase the amount and quality of food purchased in the market. This suggests the importance of considering changes in capacity to access food through the market as well as through own production when assessing household food security impacts of organic export production. Another insight is that technology and investment spill-overs from the organic export crop to food crop farming, as well as a more efficient use of available land and labour resources achieved through farmer adaptations, may mitigate the competition over factors of production between food

crops and the organic cash crop. In general, where local food markets are functioning and organic conversion does not involve major risk-taking by farmers, the integration of smallholders in international value chains for organic products does not normally constitute a threat to food security.

The effects of organic conversion on gender inequality were mixed and depended to a large extent on the local context and on commodity characteristics. The distribution of the additional costs and benefits associated with organic conversion was much more biased against women for coffee than for pineapple. But it is worth underlining that all the interviewed women found that organic farming was well worth the extra work effort due the income benefits for the household as a whole, even if they had little or no control over the use of this income. The need for gender sensitivity in cost – benefit analyses of organic farming is evident from the studies presented in this paper.

Implications for policy and programme design

The research provides evidence to suggest that commercially orientated organic export projects is a useful measure to increase incomes among smallholder farmers in Africa. Such projects should therefore be supported and promoted. It also suggests that the integration of smallholders into international organic value chains should not normally be seen as a threat to food security unless it involves considerable risk-taking by farmers. All commercial agricultural projects are likely to affect the sexes differently, however, and gender analyses should be undertaken to assess how proposed organic programmes influence this. For certified organic agriculture to be recognised and supported by donors and governments in Africa it must show to policy makers that it is able to contribute to the reduction of poverty and bring smallholder farmers into more commercial forms of production.[13] With this in mind, what do we see as possible policy interventions generated from the outputs of the research?

Contract Farming – This is not a traditional form of marketing arrangement, particularly for smallholders, and in Africa greater policy focus has been put on cooperatives and, more recently, on farmer associations. Within contract farming arrangements it may be interesting for policy makers to consider how commitments can be enforced on both sides of the arrangement and, where such arrangements exist, how they could be formally recognised and so benefit from some of the government support services that are available to farmer coops and associations. Another factor relating to the “official” recognition of organic contract farming is the opportunity for promoting other improved farming practices and post-harvest techniques. Within these schemes the operator-exporter invariably provides internal extension and inspection services to the

outgrowers by way of field officers employed by the export company. These field officers offer organic and other farm management advice to the outgrowers and regularly monitor each farm in the scheme. They thus become valuable extension agents and with government support (capacity building, employment incentives, etc.) their skilled services could be extended to other farmers in the local communities.

Input provision – Government policy in Africa today is that farmers should be largely self-reliant in regard to required inputs and that where needed these should be provided by the private sector. In reality however some public input support is provided through demonstration farms and other similar initiatives. Organic agriculture emphasises the use of locally available and on-farm inputs and rarely benefits from such services, but the provision of organically relevant seeds and planting materials would certainly benefit organic farmers. Government could support the organic sector by working with and supporting the certified export companies and cooperatives in developing and disseminating such inputs to the organic farmers. An example would be the provision of coffee varieties suited to organic management conditions, particularly with respect to pest and disease resistance.

Multiple standards – The discipline of organic certification and the associated documentation and inspection processes create an ideal foundation on which to add other quality standards. Common examples are Utz Kapeh for Coffee, EurepGap for fresh produce, and Fair Trade for a variety of products. Many African governments are promoting increased value addition and organic certification is a good start for achieving this. But other sustainability or quality certifications can add further value to the export product and increase the premium paid to the farmer. Policies should therefore be directed to support such certification initiatives.

Food security – African government policy such as the PMA in Uganda increasingly recognises that food security may be achieved through profitable market engagement. It is interesting to note that the research indicates that this is exactly what is happening in some of the studied certified organic export projects.

Gender – African government policy generally seeks equity amongst the sexes, including the Ugandan gender policy which seeks to ensure proper representation and access for women in all areas of life (GoU, 1997a). The research shows that this is easier said than done, especially in the context of traditional cash crops such as coffee. In such systems the traditional roles of mean and women within the crop production cycle persist and not always to the collective benefit of the household. Policies are in place to support gender equity and yet it is clear that they are not yet

breaking through to cause the fundamental changes required to create a more equitable distribution of burdens and benefits. The question for policy makers is how they can create the environment for change, especially within the 'traditional' rural sectors.

In summary, the results of this study clearly support the point that UNCTAD and other UN agencies have been making in recent years, namely that organic agriculture is a promising trade and sustainable development opportunity for developing countries and worthy of public support (see, e.g., UNCTAD, 2006; UNCTAD, 2007). How Governments can best promote the further development of this sector is the subject of a number of UNCTAD studies, including most recently the UNEP-UNCTAD study on Best Practices for Organic Policy (UNCTAD-UNEP, forthcoming).

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Acknowledgements

This brief is based on research funded by the following institutions and programmes: the United Nations Conference on Trade and Development (UNCTAD), the Danish Council for Development Research (funded by the Danish International Development Agency), the Export Promotion of Organic Exports from Africa (EPOPA) programme (funded by the Swedish International Development Cooperation Agency).

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Endnotes

[1] Sales were expected to reach US$ 40 billion in 2006 (Willer & Yussefi, 2007). This would mean an increase of 21% since 2005, signifying a significant increase in the annual growth rate compared to the previous period.

[2] Estimates of annual certified organic imports into the EU in 2001 (Hamm et al 2002) and 2002 (CBI 2005) are for 200,000-550,000 tons of cereals, 50,000-208,000 tons of vegetables, 30,000-50,000 tons oilseeds, 80,000 tons bananas, 14,000 tons cocoa, 13,000 tons coffee and 1,000 tons meat.

[3] In terms of health effects, research in organic cotton shows that the families of organic farmers are less sick and that this is attributed mainly to the absence of agrochemicals (Ton, 2002; Ferrigno et al. 2005).

[4] About 850 million people world wide suffer from hunger due to acute food shortages, and 90 % of these are chronically undernourished. These food shortages reflect higher levels of food insecurity and have resulted in chronic under-nourishment which is responsible for high mortality and morbidity rates (UN Millennium Project, 2005).

[5] The research is part of 'Standards and Agro-Food Exports: Identifying Challenges and Outcomes for Developing Countries' (SAFE) programme. The project is running from 2005 to 2010 and is carried out jointly by the Danish Institute for International Studies and the Department of Agricultural Economics and Agri-business at Sokoine University, Tanzania.

[6] It is important to note that parallel to certified organic farming, there is also non-certified organic farming on a fairly large scale in Africa, promoted by NGOs as sustainable and environmentally benign

forms of production focussing on food security and improved farming practices. This form of organic farming is outside the scope of this paper.

[7] Uganda is one of the largest exporters of organic produce in Africa, alongside Egypt and South Africa. There were 17 certified organic export operations in Uganda in 2005 and 11 operations under conversion. The estimated value of certified organic exports was US$ 6.2 million in 2004-05.

[8] These were the Sipi Organic and Utz Kapeh Arabica Coffee Project operated by Kawacom (U) Ltd. (Kapchorwa district), the Bundibugyo cocoa-vanilla scheme operated by Esco (U) Ltd. and the Luwero-Kayunga pineapple scheme operated by Biofresh (U) Ltd.

[9] Export Promotion of Organic Products from Africa, implemented by Agro Eco and Grolink.

[10] This was true in the examined pineapple scheme, but for coffee and cocoa anyone who wanted to join could, although they did have to have some of the crop.

[11] Yet the household survey showed that the variable costs of organic farmers were still lower than those recorded for conventional farmers. Family labour was not measured by the survey.

[12] Low use of hired labour was related to its high cost relative to coffee revenues (the fact that a large proportion of the farmers in the organic project area was certified may have increased the local farm labour wage rate, which in turn would lead to better food security for farm labourers) and to competing demands on household cash resources from school fees and food purchases.

[13] In the case of Uganda, Government policy in regard to agriculture is guided by two main documents, The Poverty Eradication Action Plan (PEAP) (GOU, 1997b) and The Plan for the Modernisation of Agriculture PMA (GOU, 2000). For any rural intervention to be sanctioned by the Government it must be “compliant” with these to plans. The aim of the both plans is to eradicate poverty. The PEAP describes how this can be achieved across all sectors and then the PMA focuses on how this could be achieved in regard to agriculture and rural communities.