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Certified organic export production

*Implications for economic welfare and gender
equality among smallholder farmers in
tropical Africa*



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Notes

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Introduction

Over the last 15 years the market for certified organic agricultural products has grown from a very low base to reach 1.5 to 2.5 per cent of total food sales in North America and the European Union (EU), and up to 5 per cent in Denmark and Switzerland (Willer and Yussefi, 2006; Oberholtzer, Dimitri and Greene, 2005; CBI 2005; *Financial Times*, 2006). Global organic sales were estimated at \$33 billion in 2005, compared with \$23 billion in 2002 (Willer and Yussefi, 2007) – an increase of 43 per cent, or about 14 per cent a year.¹ Most of that growth has been satisfied by increases in the area under certified organic production in North America and the EU itself. However, there has also been an increase in the volume of certified organic imports into both regions. In the case of the EU, those imports mainly comprise cereals and oilseeds from temperate and semi-temperate countries, but also include fruit and vegetables (from a much wider range of countries) and tropical beverages.²

The growing demand both for organic tropical products and for year-round supply of some organic temperate products has encouraged organic activists, non-governmental organizations and some donors to promote certified organic export production in a number of tropical African countries. Furthermore, several larger global trading companies, exporters in developing countries and importers in developed countries have seen the opportunities and embarked on trade in those products. 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 have 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 subsector in Uganda revealed a strong performance in terms of growing export volume, revenue and product diversity (Gibbon, 2006), and a similar trend can be observed in the United Republic of Tanzania.

But organic export growth does not necessarily translate into improved welfare for the producers and workers involved, whether measured as higher income, improved food security, better health or greater equality, 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 only a very small number of studies have been done on those 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 analyse them. Also, it is unclear how the current rapid conversion of farmland into organic management systems will affect food availability and access among producers and societies (Sciallaba and Hattam, 2002; WWI, 2006).⁴

Against this background a number of studies on certified organic production in Uganda and the United Republic of Tanzania were recently launched: they focus on quantifying the economic and social impacts of organic conversion, but also address organizational, institutional and technology issues.⁵ This paper summarizes the results of two of those studies and sets out 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). It concluded that conversion to organic export production had not reduced food security; rather, it had improved it by augmenting cash incomes, thus enabling households to increase the amount and quality of food purchased in the market.⁶

Methods

The above studies were based on research carried out in 2005 and 2006 in Uganda among smallholder farmers of certified organic Arabica coffee, cocoa-vanilla and pineapple, and matching control groups of conventional farmers of those 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 organized 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 either found almost invariably in that form or is organized 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 as being in compliance with 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 EPOPA⁹ 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 distorting variables into the study of relative profitability. First, 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. Those 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 form of cash transfers, both subsidies and certification costs appear in farm budgets. They make no such appearance, however, 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 normally apply to farmers (including certified organic farmers) not under contract. In organic schemes those 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 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 to input use, while in other cases it will. By the same token, maintaining pre-existing income levels will, in many cases, not require adoption of more labour-intensive farming practices. On the other hand, since schemes may be dependent for funding on the support of organic activists or may even be managed by the latter, members may be expected to follow the spirit as well as the letter of organic certification requirements and thus adopt some "deep" organic farming practices requiring additional labour time. The experience regarding this issue is mixed and poorly documented, but the general impression is that few organic scheme operators demand that their growers adopt very labour-intensive organic practices.

Fourthly, as the smallholders involved in the 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, since the international trading company, the local exporter or the importer may take most or all of those 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. Those techniques may not be strictly organic, but farmers can be obliged to use them so that their output qualifies for an organic price premium, as the organic market in general aims 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 operation of the scheme. 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 those 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

Research has shown 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 those 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 were significantly higher for all CSCs except cocoa. This reflected mainly the fact that organic farmers produced greater volumes of CSCs. Organic price premiums 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 \$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 a function not only of their organic sales but also of a favourable conventional market, local and regional, in which they sold three quarters of their fruits.

It is worth pointing out 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 had higher yields because of more effective farm management, but this could not be verified statistically.

Most studies of organic agriculture in developed countries find few differences in fixed costs between organic and conventional farmers, except that organic farmers incur some additional short-term costs associated with conversion-related diversification. The economic drama lies 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, is of a completely different nature. Expenditure on fixed costs represented a remarkably low share of organic farmers' revenues – and in most cases also of conventional farmers' revenues.

Overall expenditure on variable cost items was greater than on fixed-cost¹¹ ones for organic farmers. This was not due to greater expenditure on hired labour by those farmers than by conventional farmers (family labour was not costed); rather,

organic farmers incurred higher variable costs on post-harvest handling and processing activities required in order 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 that in some cases), this occurred mainly through increased family labour inputs rather than through the hiring of 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 as compared with those 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 as a result of additional investments in land and hired labour, rather than as a result of the diversion of household resources away from food crops. Those 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 owing 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 resulting from expansion of the coffee crop on land previously cultivated with food crops. The very small average farm size combined with low capacity for buying more land meant that expansion of the coffee crop had occurred at the expense of land planted with, in particular, 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. First, while land scarcity had eliminated mono-cropping of beans in the area, improved weed management in coffee brought about 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 bananas.

Organic conversion of coffee had also caused a change in the use of family labour, but without, it seemed, seriously impacting on food production. 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 the extra labour was supplied by women, who were largely 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 (thus 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 indicated that food security, instead of having worsened, had 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 to their food crops, and there was some reinvestment of organic revenues in 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.¹² But the benefits of conversion in terms of higher organic crop revenues far outweighed the extra costs, and this resulted in significant income increases, especially in the case of pineapple.

Gender equality impacts

The effects of 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.¹³ It was thus also the women who performed most of the extra farming and processing tasks needed for meeting the organic standards and the exporter's additional demands in respect of quality and farm management. As a result, women had had an increased workload in farming since organic conversion, which increased their total work burden and reduced the time available for earning individual incomes. However, they still found that organic farming was well worth the extra effort because of the income benefits for the household as a whole, and this despite the fact that in most cases they had no or little control over the use of the 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 in the case of pineapple. This seemed to be the result of differences in gender relations, in land availability, in market conditions and in commodity characteristics. First, gender relations were generally more equal among pineapple farmers, this greater equality giving women better access to pineapple incomes and men less control over their labour for the purpose of pineapple growing. This was in contrast to the situation in the coffee farming community, where the role of women in cash crop production resembled that of hired labourers. Secondly, the sexual division of labour appeared less strict in pineapple than in coffee farming, possibly because pineapple was a crop that was new to the area. Thirdly, pineapple farmers earned very high incomes, which allowed them to hire more labour, as a result of which the demand for women's household labour was reduced.

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 required few, if any, fixed investments. Further research is needed, however, in order to assess whether this is also true for systems that are initially more dependent on external inputs and where schemes are operated by cooperatives. That said, on balance the evidence presented here strongly suggests that organic farming is a useful measure for increasing incomes among poor farmers in Africa. The projects studied were all supported by the Swedish International Development Corporation Agency (Sida) through the Export Promotion of Organic Exports from Africa programme. Because it quantifies the costs and benefits of organic conversion at the farm level in a comparative framework, the study is one of the few to document the fact that such support is consistent with the poverty reduction goals of Sida and like-minded agencies.

Conversion to organic export production has not reduced food security in the cases examined; rather, it has improved it by augmenting cash incomes, which have enabled households to increase the amount and quality of food purchased in the market. This suggests the importance of considering changes in the capacity to access food through the market as well as through one's own production when assessing the household food security impacts of organic export production. Another insight is that technology and investment spillovers from the organic export crop to food crop farming, as well as more efficient use of available land and labour resources achieved through farmer adaptations, may lessen the competition between food crops and the organic cash crop in respect of factors of production. In general, where local food markets are functioning and organic conversion does not involve major risk-taking by farmers, the integration of smallholders into 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 women interviewed found that organic farming was well worth the extra work effort because of the income benefits for the household as a whole, even if they had little or no control over the use of that 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 oriented organic export projects are a useful measure for increasing 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 that. For certified organic agriculture to be recognized and supported by donors and Governments in Africa, it must show to policymakers that it is able to contribute to the reduction of poverty and bring smallholder farmers into more commercial forms of production.¹⁴ With that in mind, what do we see as possible policy interventions generated from the outputs of the research?

Contract farming. This is not a traditional type of marketing arrangement, particularly for smallholders, and in Africa there has been greater policy focus on cooperatives and, more recently, on farmers' associations. With regard to contract farming arrangements, it may be interesting for policymakers to consider how commitments can be enforced on both sides of such an arrangement and, where those arrangements actually exist, how they could be formally recognized and thus benefit from some of the government support services that are available to farmers' cooperatives and associations. Another factor relating to the "official" recognition of organic contract farming is the opportunity to promote other improved farming practices and post-harvest techniques. Within such practices and techniques the operator-exporter invariably provides internal extension and inspection services to the outgrowers by way of field officers employed by the export company. Those 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 with regard to required inputs, and that where needed they should be provided by the private sector. In reality, however, some public input support is provided through demonstration farms and similar initiatives. Organic agriculture emphasizes the use of locally available and on-farm inputs but rarely benefits from such them; however, 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 certified export companies and cooperatives in developing such inputs and disseminating them to 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 upon 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 that. 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 supporting certification initiatives.

Food security. African government policy such as Uganda's Plan for the Modernisation of Agriculture increasingly recognizes 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 certified organic export projects studied.

Gender. African government policy generally seeks equity between the sexes, including the Ugandan gender policy that 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 men and women within the crop production cycle persist, and not always to the collective benefit of the household. Although policies are in place to support gender equity, it is clear that they are not yet breaking through to bring about the fundamental changes required in order to create a more equitable distribution of burdens and benefits. The question for policymakers 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 United Nations 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, for example, 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 UNCTAD–UNEP study on best practices for organic policy (UNCTAD–UNEP, forthcoming).

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Notes

¹ Sales were expected to reach \$40 billion in 2006 (Willer and Yussefi, 2007). This would mean an increase of 21 per cent since 2005, which would signify a substantial increase in the annual growth rate over the previous period.

² Estimates of annual certified organic imports into the EU in 2001 (Hamm, Gronefeld and Halpin, 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 of oilseeds, 80,000 tons of bananas, 14,000 tons of cocoa, 13,000 tons of coffee and 1,000 tons of meat.

³ In terms of health effects, research on 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 worldwide suffer from hunger due to acute food shortages, and 90 per cent of them are chronically undernourished. Those food shortages reflect higher levels of food insecurity and have resulted in chronic undernourishment, which is responsible for high mortality and morbidity rates (United Nations Millennium Project, 2005).

⁵ The research is part of the Standards and Agro-Food Exports: Identifying Challenges and Outcomes for Developing Countries (SAFE) programme, which began in 2005. It will continue until 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 in the United Republic of Tanzania.

⁶ It is important to note that non-certified organic farming exists on a fairly large scale in Africa, parallel to certified organic farming, both forms being promoted by non-governmental organizations as sustainable and environmentally benign forms of production focusing on food security and improved farming practices. Non-certified organic farming, however, is outside the scope of this paper.

⁷ Uganda is one of the largest exporters of organic produce in Africa, together with Egypt and South Africa. There were 17 certified organic export operations in Uganda in 2005 and 11 operations in the process of being converted. The estimated value of certified organic exports was \$6.2 million in 2004–2005.

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 pineapple scheme examined, but for coffee and cocoa anyone who wanted to join the scheme could, although they did have to have some of the crop.

¹¹ The term "fixed costs" refers to costs spread over more than one year – namely, investments in land, buildings and implements, as well as interest payments.

¹² However, the household survey showed that organic farmers' variable costs were still lower than those recorded for conventional farmers. Family labour was not measured by the survey.

¹³ 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 were 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.

¹⁴ 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 those plans. The aim of both plans is to eradicate poverty. The PEAP describes how this can be achieved across all sectors, and the PMA focuses on how it could be achieved with regard to agriculture and rural communities.

