Organic cotton systems reduce poverty and food insecurity for African farm families

FIBRE FOOD BEAUTY

Briefing

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A Fibre, Food and Beauty project Briefing

Cover image: **Ploughing a field for cotton, Senegal.**
Credit: ENDA Pronat

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Introduction

Telling ethical consumers about the benefits and challenges of sourcing from African farm families is an important part of linking the production and consumption ends of the chain. This briefing explores some of the livelihood and income generation issues for African organic cotton farmers and the different opportunities to improve their family income and welfare by gaining better market reward for the food crops grown as part of the organic cotton rotation.

Cotton harvest, Palanghé village, Senegal. Credit: ENDA Pronat

Proven benefits of organic cotton for farm families

Growing organic cotton is a very good thing to do for African farm families. It benefits the farmers and their communities in several ways and has proven to be sustainable in the full meaning of the term: social, economic and environmental benefits[1,2].

Health

- Farm family health has greatly improved due to stopping use and exposure to hazardous pesticides.
- Family food security is improving, from being able to grow more food crops safely, without pesticide residues, and increased production of beans and peas in particular.
- A survey of organic cotton projects in 2008 highlighted the contribution farmers make to both family and community food security, by producing safe, diverse and healthy food without harmful or expensive agrochemicals.
- Organic cotton farmers have also achieved greater consistency of produce outputs throughout the year, in comparison with less diverse, conventional farm systems.

> "When using chemicals on our crops, sickness was common. When we grew conventional cotton, we had higher yields, but paying for our inputs, we were using all the extra money on drugs to heal ourselves."
>
> Quote from an organic cotton farmer, Mangassa village, Benin[3]

Wealth

- Farmers escape the vicious cycle of indebtedness as there is no need to purchase expensive farming inputs, such as pesticides and fertilisers, on credit at the start of the season.
- Production costs savings, along with organic and sometimes fair trade premium prices, translate into a better net income for farmers, even with lower yields at the start of organic cultivation.
- Prompter payment by organic cotton companies than conventional companies.
- Increased opportunities and income for women, who are often not permitted to register their own plots under conventional cotton systems.
- Spreading labour requirements and production risks over a wider range of crops than conventional farmers, leading to more flexible and resilient farming enterprises.

> "The maize and cowpeas we grow is much appreciated on the local market by housewives and consumers. Our extra resources help send children to school and to buy us things without depending on husbands."
>
> Viguè Agbomadomlè, organic cotton farmer from Djidja, Benin[1]

Education

- Involved farmers are gaining skills and training through organic farmer associations.
- Farmers' management capacities are improved and strengthened through the required internal control systems for organic certification.
- Involvement in farmers associations ensures that farmers have a bigger say in the changes organic farming families want to see.
- Increased income is often invested in sending children to (secondary) school.

> "Exchange between producers and the confidence of farmers in the farmers association to arrange the supply chain are essential benefits for my quality of life and that of my family."
>
> Guéra Barnabas, organic cotton farmer from Kassakou village, Benin[1]

Environment

- Water resources are preserved from chemical pesticides and fertiliser contamination.
- Soils become healthier and more fertile through composting and planting nitrogen-fixing legume crops.
- Better understanding and use of the natural resources on-farm turns into a win-win-situation. Farmers are making productive use of hedges, farm trees and field borders and at the same time contribute to combat degradation of arable land.
- Crop rotation, intercropping and more on-farm activities stabilise or even increase biodiversity on the fields and in the region.

Pigeonpea intercropped with cotton, Benin. Credit: OBEPAB

Crop husbandry and rotation in the organic cotton system

Organic farming is not just leaving out agrochemicals (pesticides and synthetic fertiliser) – instead it aims to build an ecologically-based farming system that is in balance with nature. Organic farmers will rotate crops year by year, they may also plant intercrops and make and apply compost and farmyard manure. Non-organic cotton farmers may also use some of these crop husbandry practices but in a less consistent and systematic way. In terms of interventions to control insect pests, organic cotton farmers use a range of methods, including botanical extracts of neem seed, chilli or indigenous plants, physical trapping or handpicking of pests. Instead of using herbicides, they only weed by hand or by ox- or tractor-drawn farm equipment.

As part of the organic certification requirements, cotton farmers must practice comprehensive crop rotation, i.e. growing a series of different crops over different seasons on their different fields. The aim is to prevent the build-up of harmful insect pests or crop disease sources, which is especially important for organic farmers since they do not spray synthetic pesticides.

Organic cotton projects train farmers in pest and soil management methods. Credit: OBEPAB

Food crops grown by African organic cotton smallholders

A survey of 27 organic cotton projects in 2008 revealed an amazing diversity of more than 60 different food and other crops grown organically by cotton farmers as part of their rotation systems[4]. In the six African countries studied farmers produce almost 20 different cereal, legume, oil seed, nut and vegetable crops and other plants or trees to produce a huge range of different foods, drinks and dyestuffs. These are (in order of importance): maize; sesame; sorghum; peanut; faba beans; millet; soybeans; sunflower; hibiscus flowers; cashew; chilli; cowpea; fonio cereal; ginger; capsicum peppers; indigo flowers; mung beans; and sheanut butter.

As an example, organic cotton farmers in eastern Senegal may practice one of five varied crop rotation sequences, usually four years cropping and two or three years under fallow to allow the soil to rest[5]. A popular rotation is Year 1 peanut; followed by two different cereals in Years 2 and 3 (finger millet, sorghum, maize or fonio); cotton in Year 4; and then fallow without crops, to allow the soil to rest. In addition to good crop rotation, many organic cotton farmers plant different crops within one plot, which helps to confuse pests and discourage disease infection. They may also sow specific small plots or borders of so-called 'trap crops' such as sunflower, which are highly attractive to key pests like the cotton bollworm. Pests congregate in the trap crops, leaving the main crops largely pest-free.

Furthermore, farmers often plant economically useful bush and tree crops along their field boundaries, such as hibiscus shrubs or cashew trees. They will also make use of and care for naturally growing native trees like the sheanut, which produces oil-rich fruits used in cooking and as cosmetic butter. Legume (pulses) crops are especially important to organic farmers, who do not use artificial fertiliser, as they fix nitrogen from the air into the root zone, providing essential nutrients for plant growth and improving soil fertility for following crops. Legumes are vital as a source of high protein and nutritious food for families and local consumers, who may not be able to afford meat or dairy forms of protein.

The diverse food crop rotations and farming systems of organic cotton farmers make an invaluable, but often unrecognised, contribution to improving the sustainability of their farming livelihoods, bringing additional sources of income, spreading risk in uncertain weather and economic situations each season and enhancing food production for farm households and consumers in local rural and urban areas.

Options for adding value to food rotation crops

Although African farmers can get a reasonable price for their organic cotton, usually with a small premium above conventional cotton, the other crops they harvest generally don't have access to formal organic markets. When growing organic cotton, farmers audited by external certification agencies are checked to see if all their crops, as well as their entire farm, comply with organic standard requirements. Yet most of the set-up and certification costs of being an organic farm are borne solely by farmers' cotton production, reducing the cost effectiveness and potential income of their farm enterprise. One of organic cotton farmers' top priorities is therefore to add value to their food crops and gain additional income, for example, by processing locally (pickling, pulping, cooking or drying to preserve food) or improving quality grading, packaging and presentation of fresh and dried produce.

Exploring different market outlets

Most food crops grown by African organic cotton farmers are used by the family or sold in local or national markets. Almost one third of sold food crops enter local markets, compared to less than 10% going for export. Growing food for local markets is often a rather unattractive option for smallholder farmers in Africa as prices tend to be low and therefore income earned is unsatisfactory. However, selling to local traders is fairly easy and requires little investment and farmers generally understand the financial risks. Direct retail sale to consumers is also possible but not that easy without the structure of a well-organised producers' association with marketing expertise to attract customers and capital to invest in efficient storage and delivery facilities.

On the other hand, growing for the demanding export markets in Europe has the potential to bring higher prices and better earnings BUT farmer associations need to have considerable technical and marketing 'know-how' to meet the high food safety and quality standards required for foodstuffs by EU regulations and by individual companies. Food manufacturing and retail companies are looking for reliable and consistent volumes, shipped efficiently and quickly, with modern produce traceability and communication systems. This needs significant investment of time, money and capacity-building. Even then, European buyer markets can be high risk, unpredictable and change quality or volume requirements rapidly.

Organic and Fairtrade certification is certainly spreading for dried and fresh produce grown by African smallholders, but while the whole farm has to be certified, all crop produce may not always be sold as such or earn the premiums or minimum prices that these supply chains offer. In the six African countries studied, around 55% of the non-cotton crops are currently certified organic, while only around 15% are certified Fairtrade or in progress. Most organic cotton farmer associations are actively pursuing Fair-trade options.

Mixing local and export market options?

Combining some production or different crops for local and export markets may be the best option, if farmer associations can develop expertise, good contacts, access technical and logistical support. Just as important is for African organic cotton associations to gain more equitable relations with traders and ethically motivated companies, both in Africa and Europe. The Lango farmers' co-operative in Uganda is one example of an organic cotton project that has successfully done both, with considerable long-term support from Swedish development agencies[6]. The co-operative now has doubly certified as organic and Fairtrade not only farmers' cotton but also large amounts of sesame in recent years, most of which is exported. Since sesame is mainly grown by women in Uganda, this has added the benefit of giving farm women access to a valuable export market.

Production of fonio, a type of millet cereal, by organic farmers' federation Yakaar Niani Wulli (YNW) in Senegal, is an example of the potential for enhancing local and export marketing. Fonio is a very hardy crop and grows well on poor soils in the dry savannah lands, where rains are brief and unreliable. Fonio is mainly grown and cooked by women, as a special food at family ceremonies. A major obstacle to increasing fonio production is the long and complex processing and the lack of investment to improve this. The tiny grain makes dehusking and milling, traditionally done by women using pestle

and mortar, highly laborious and currently YNW Federation members only plant fonio on very small plots. The YNW Federation gained useful experience with a French organic/fair trade company in processing techniques to generate a high quality product in taste and nutritional terms. However, the 'value added' by this processing in France was not shared equitably and consequently, the Federation decided to look at national market opportunities and to set up their own processing unit. They are selling pre-cooked fonio in YWN-labelled 1kg packages for urban consumers at several organic and conventional retail outlets in the capital city. To organise more financially attractive direct sales, prefinance arrangements for buying from producers are needed, to help with storage and to ensure the required hygiene levels in the processing unit.

Sesame stalks ready for threshing, Senegal.
Credit: ENDA Pronat

Making sure food security comes first

The Organisation for the Promotion of Organic Agriculture in Benin (OBEPAB) works with over 1,000 organic cotton farmers, almost half of whom are women, in the districts of Glazoué, Dassa and Djidja in central Benin and Kandi district in northern Benin. In Senegal, environmental development NGO Enda Pronat works with the Yakaar Niani Wulli Federation of organic farmers, which has over 2,000 members involved in the Koussanar district of eastern Senegal in organic production and marketing. Both projects in Benin and Senegal started in the mid-1990s and rank among the pioneer organic cotton projects world-wide. The original starting point for OBEPAB and ENDA Pronat projects was the clear need to support alternatives to pesticide-intensive, conventional cotton production, which is hazardous both for humans and the environment. The two projects have grown and positive effects of organic cotton production now reach beyond occupational health and environmental protection into social and economic aspects to improve the livelihoods of rural populations in Benin and Senegal.

Farmers and the NGOs they work with are clear that gaining better markets for some of their food crops can help organic cotton farmers earn more income to improve family welfare and invest in more secure and sustainable farming livelihoods. However, the farmers' associations do not want to pursue export options at any price. For them, ensuring local food security has topmost priority, so they will continue to grow significant volumes of staple cereals and legumes for their households and for sale in local markets. For YNW Federation farmers, their most important crops in food security or income generation terms are millet, maize, sorghum, peanut and cotton. Other food crops are mainly for household use, although they may be sold occasionally, including fonio, rice and cowpea. Ingredients for sauces such as okra, white and red hibiscus leaves, pepper, aubergine, cassava (also as a food security emergency stock) are often grown by the women on small plots near to the house or in the household compound.

Both organic farmer associations in Benin and Senegal are now exploring export opportunities for some of their food crops, focussing on five specific crops: cashew; hibiscus; sesame; fonio cereal; and sheanut[7]. These crops have been selected because they are:

- easy to grow and do not divert labour from growing family food supplies
- fit well into the organic cotton crop rotation and farming system
- do not form part of the staple diet, so growing volumes for export will not undermine local food security
- there is market demand or commercial interest in Europe for sourcing raw or processed forms of these crops if they are organic and high quality
- available in amounts exceeding local and regional needs.

The sheanut tree is a good example of an abundant and useful native tree, numbers of sheanuts are far higher than currently harvested for household use as cooking oil and home-made skin care ointment in rural areas. Good quality butter from the sheanut is highly prized for cosmetic purposes and can fetch a high price as it is currently hard to obtain on European markets. Sesame seed and cashew nuts command good prices in Europe and the farmers would like to increase their production and improve their processing capacity for extracting oil or shelling nuts. Hibiscus flowers are used to make a delicious fruit juice known as bissap in West Africa and a few companies in Europe are starting to sell packaged versions to the health food sector. Fonio, a type of millet, is virtually unknown outside Africa but has potential as an ingredient in rice or wheat flour recipes, with the advantage of being gluten-free and therefore of interest to consumers allergic to wheat gluten.

Farmer with harvested fonio, Senegal.
Credit: ENDA Pronat

Can export markets respect truly sustainable development?

From the point of view of the organic farmer associations in Senegal and Benin and their partner NGOs, exporting crops can benefit poor, farming households if exports:

- generate sufficient income to support investment in sustainable development for organic farm families and processing groups
- enable household food crops to be grown at the same time
- enable farmers who want to become more entrepreneurial to diversify into suitable cash crops and earn income to buy food in local markets
- enable crop processing units to invest in equipment maintenance and renewal
- enable equitable sharing of benefits among supply chain actors
- enable farmers associations or associated exporters to build long-term, reliable and transparent partnership with specific European companies

Sacks of certified organic cotton labeled for ginning, Senegal. Credit: ENDA Pronat

The Fibre, Food & Beauty project

The Fibre, Food & Beauty project brings together African and European NGOs and organic farmer associations to explore better marketing for five food crops. Partners are PAN Germany, PAN UK, Enda Pronat in Senegal and OBEPAB in Benin.

This 3 year project (2008-2010) aims to raise awareness among European businesses, donors, civil society and consumers about more equitable and environmentally sustainable market models which can help raise incomes and welfare in rural Africa. Partners are seeking ethical trading relations between West African organic cotton projects and European food and cosmetic companies interested in high quality, organic ingredients which can also 'tell a good development story' about sustainable livelihoods. The project goal is to promote the contribution that organic cotton systems, with their associated food crops, can make to the Millennium Development Goals to eradicate extreme poverty and hunger; promote gender equality and empower women; and ensure environmental sustainability[8].

By purchasing food products made with organic and Fairtrade ingredients sourced from African cotton smallholders, European consumers can make a positive contribution to improving farm family income, welfare, food security and women's empowerment in rural communities in the Sahel savannah lands.

Sifting sesame grains, Senegal. Credit: ENDA Pronat

References and further reading

Visit the Fibre, Food & Beauty website at **www.pan-uk.org/foodAfrica** to find out more, including a consumer leaflet *Hibiscus, cashew and cotton- what's the common thread?*

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Find out more about organic cotton production in Africa and its benefits at PAN UK's one-stop information centre at **www.WearOrganic.org**

Find out where you can buy organic clothing and textiles in stores and on-line via PAN UK's Shop for organic cotton consumer directory at **www.WearOrganic.org**

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