

ORGANIC CERTIFICATION SCOPING STUDY IN UGANDA

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TABLE OF CONTENTS

| | |
|------------------------------------------------------------------------------------------------------|-----------|
| 1 EXECUTIVE SUMMARY | 4 |
| 2 INTRODUCTION | 5 |
| 2.1 ORGANIC AGRICULTURE IN UGANDA | 5 |
| 3 PROSPECTS AND CONSTRAINTS OF ORGANIC AGRICULTURE IN UGANDA | 6 |
| 3.1 THE PROSPECTS | 6 |
| 3.2 THE CONSTRAINTS | 7 |
| 4 ORGANIC CERTIFICATION IN UGANDA | 8 |
| 4.1 THE ORGANIC CERTIFICATION PROCESS; HOW TO GET STARTED. | 9 |
| 4.1.1 IDENTIFY THE TARGET/POTENTIAL MARKET BASED ON THEIR MARKET TERMS AND VOLUMES/TONNAGE REQUIRED. | 9 |
| 4.1.2 GET THE FARMERS ORGANISED IN A GROUP/GROUPS | 10 |
| 4.1.3 UNDERTAKE A CONVERSION PROCESS. | 10 |
| 4.1.4 MONITORING COMPLIANCE TO THE INTERNAL CONTROL SYSTEM. | 11 |
| 4.1.5 INVITE EXTERNAL AUDITORS. | 12 |
| 4.1.6 ACQUIRE CERTIFICATE AND ORGANIC MARKER. | 12 |
| 4.1.7 MARKETING. | 12 |
| 4.2 CHALLENGES FACED WHILE PURSUING ORGANIC MARKETS. | 13 |
| 5 THE ACTORS IN ORGANIC CERTIFICATION | 14 |
| 6 MARKET NICHE FOR ORGANICALLY CERTIFIED VANILLA AND COCOA | 15 |
| 7 CRITICAL AREAS OF DEVELOPMENT FOR FARMERS ORGANISATIONS | 17 |
| 7.1 VISION AND BUSINESS IDEA: | 18 |
| 7.2 FIND THE RIGHT PARTNER(S) | 18 |
| 7.3 COMPLIANCE | 18 |
| 7.4 GOOD GOVERNANCE IN THE FARMERS' ORGANISATIONS | 19 |
| 8 COCOA AND VANILLA FARMER ORGANISATIONS THAT ARE CERTIFIED/UNDERTAKING CERTIFICATION. | 19 |
| 8.1 BUNDIKAKEMBA GROWERS CO-OPERATIVE SOCIETY LIMITED-BUNDIBUGYO- ORGANIC CERTIFIED- COCOA. | 20 |
| 8.1.1 BACKGROUND | 20 |

| | | |
|------------|--------------------------------------------------------------------------------------------------|-----------|
| 8.1.2 | BENEFITS OF BEING ORGANICALLY CERTIFIED – THE EXPERIENCE OF BUNDIKAKEMBA GROWERS COOPERATIVE---- | 20 |
| 8.1.3 | MAIN CHALLENGES OF ORGANIC CERTIFICATION - THE EXPERIENCE OF BUNDIKAKEMBA GROWERS COOPERATIVE | 21 |
| 8.2 | SEMULIKI Co-OPERATIVE UNION LIMITED (SEMCU) ----- | 21 |
| 8.2.1 | BACKGROUND----- | 21 |
| 8.2.2 | PROSPECTS OF BEING ORGANICALLY CERTIFIED – SEMCU’S EXPERIENCE.----- | 22 |
| 8.2.3 | CONSTRAINTS OF BEING ORGANICALLY CERTIFIED – SEMCU’S EXPERIENCE.----- | 22 |
| 8.3 | ESCO UGANDA, BUNDIBUGYO----- | 23 |
| 8.3.1 | BACKGROUND----- | 23 |
| 8.3.2 | THE BENEFITS OF BEING ORGANICALLY CERTIFIED – ESCO’S EXPERIENCE.----- | 23 |
| 8.3.3 | CHALLENGES ENCOUNTERED WITH ORGANIC CERTIFICATION – ESCO’S EXPERIENCE. ----- | 23 |
| 8.4 | RWENZORI SUSTAINABLE TRADE CENTRE (RSTC) ----- | 24 |
| 8.4.1 | PROFESSIONAL ADVICE WITH REGARD TO ORGANIC CERTIFICATION----- | 24 |
| 8.4.2 | SYNTHESIS OF THE BENEFITS OF ORGANIC MARKETS - THE COOPERATIVES’ OPINION----- | 25 |
| 9 | AGROFORESTRY AND CLIMATE CHANGE CHALLENGES ----- | 25 |
| 9.1 | SUMMARY OF THE BENEFITS AGROFORESTRY: ADOPTED FROM WORLD AGROFORESTRY CENTRE ----- | 26 |
| 10 | CONCLUSIONS ----- | 27 |
| 11 | REFERENCES ----- | 28 |

List of acronyms

BSO: Business Support Organisations

FoW: Forests of the World

GAP: Good Agronomic Practices

ICS: Internal Control System

JESE: Joint Efforts to save the Environment.

NOGAMU: National Organic Agricultural Movement of Uganda

OA: Organic Agriculture

SFPS: Sustainable Food Production System

T.o.R: Terms of Reference

Ugocert: Uganda National certification and inspection body

1 Executive summary

This study was commissioned by JESE & FoW with a primary goal to provide information for farmers and the private sector actors that have the desire to engage in organic markets/trade, particularly of cocoa and vanilla and how they can undergo the entire certification process. This would help them make informed decisions within the prospects and constraints of organically certified production and trade.

The review begins with an analysis of organic agriculture in Uganda and it is clear that there is a huge potential to promote organic agriculture as the agricultural system is considered largely organic with relatively easier conversion process compared to others, particularly in the northern countries where intensive industrialized agriculture is implemented on large scale.

This is followed by the review of evidence in support of organic agriculture and the constraints. The evidence suggests a long-term transition towards organic agriculture could be encouraged as it can better address important threats to agricultural production especially soil degradation but there are barriers that need to be removed to increase the use of organic methods.

Lastly, the report delves into organic certification starting from a brief recap of organic certification in Uganda and follows through the research questions as provided in the T.o.R. It emerges that organic certification is complex, more so in the context of a predominantly small holder farming systems in Uganda but through technical innovations, continuous support of various stakeholders and the growing demand among consumers for organic products, organic certification has since ceased to be a monopoly it was for Krav in the first decade of the certification regime in Uganda. There are a number of players providing certification services and a growing awareness of opportunities in the sector providing impetus for organic agriculture and organic certification. With regard to the benefits of agroforestry on climate change challenges, the literature and the farmers' views converge on the ecological and economic benefits of agroforestry and in the context of cocoa and vanilla production, agroforestry is a prerequisite.

In conclusion, the study confirms that Uganda has a comparative advantage for organic production, but the certification tied to trading in organic products is a major barrier to tapping into this potential. The conclusion underpins a need for a financing arrangement which can work for sustainable business development and this is where information is less available. Donor support in form of grants has been received for organic certification projects but as it is a very stringent standard, lapses usually caused by logistical limitations of the farmers are costly and partly explains the collapse of these schemes.

2 Introduction

Food production was substantively organic before the intensive application of science to agriculture (i.e. use of synthetic inputs such as chemical fertilizers and pesticides and manipulation of the genetic make-up of living organisms to make or modify agricultural products). Although these technologies have boosted production and productivity, the negative environmental impacts such as pollution from fertilisers and pesticides, degradation of water aquifers, accumulation of toxic compounds and loss of biodiversity are a major concern. Besides the environmental impacts, there are also health concerns with conventionally grown food which is produced with the support of a wide range of synthetic chemicals. Some scientists report that certain residues in conventional food could, over many years, raise the risk of cancer and other diseases in man. Resultantly, the demand for organic foods is constantly increasing mainly due to consumers' perception that they are healthier and safer than conventional foods.

Other key arguments/considerations for organic production are found in climate change mitigation and creating a sustainable food production that guarantees opportunities for safe and nutritious foods. However, much as organic agriculture can better address important threats of food security such as soil degradation, climate change and pest problems, organic yields are still so low at present to meet the global food needs. The transition will therefore be gradual but already, there is a growing market for organic products except information about this market segment is limited. This research presents a critical overview of information on organic markets and organic certification with the objective of providing clear and reliable information for farmers and the private sector actors that have the desire to engage in organic markets/trade and how they can undergo the entire certification process.

2.1 Organic agriculture in Uganda

According to the National Agriculture policy of Uganda, the Organic Agriculture sector in Uganda is still in its formative years even though the agricultural system is considered largely organic due to the very minimal use of external inputs like inorganic fertilizers and pesticides. Elsewhere in the world particularly in the northern countries where intensive industrialized agriculture is implemented on large scale, organic agriculture is clearly differentiated unlike in Uganda where the majority of the farmers practice traditional agriculture which is also seen as organic but simply lacking formal certification although this view is not entirely true as some practices used by the farmers are unsustainable and degrade the resource base, even when conventional agricultural key elements, like chemical inputs, are not used. This situation, nonetheless, presents a huge potential to promote Organic Agriculture, both for increased and sustainable food production to safeguard food security as well as for enhanced income for the farmers.

There are a number of factors that favour organic agriculture in Uganda and these include (i) adequate land and water for agricultural production, (ii) high potential for increasing production and productivity, and (iii) high export potential for organic products to regional and international market but only about 231,157 ha of land in Uganda are managed organically, which is about 1.32% of its total agricultural area. Comparatively however, Uganda has the biggest number of organic farmers in the world, with about 200,000 certified farmers and over 85% of the farmers engaged in non-certified OA (Tumushabe, et al., 2006; Helga and Yussefi, 2006). The key challenges of organic agriculture identified by the national policy as well as other authors are policy gaps, lack of production support, limited promotion and awareness; fragmented and inadequate research and development, extension and capacity inadequacies; and poor market systems. In spite of the challenges, there is a strong argument for organic agriculture in the context of sustainable livelihoods for small-scale farmers who predominantly depend on natural resources.

Organic agriculture fosters sustainable resource use and at the same time, provide a market where more favourable prices can be realized. These prospects as well as the constraints are further explored in the chapter below.

3 Prospects and constraints of organic agriculture in Uganda

3.1 The prospects

A number of factors, mainly food shortages, population growth rate (i.e.3.5%) in excess of agricultural productivity growth rate (i.e. 2.6%) and environmental degradation have compelled a rethinking of the kind of agricultural system that can feed people adequately, contribute to rural development and provide livelihoods to farmers without destroying the natural resource basis. Organic agriculture is proposed as a superior approach for achieving these goals especially when facing natural threats and bio-physical challenges such as soil degradation and water scarcity. In comparison to other agricultural approaches, organic agriculture promotes and enhances agro-ecosystem health, including biodiversity and biological cycles. For the farmer, the perhaps most tangible benefit is the heightened quality of the soil, something that is a constant focus in organic farming. Soils managed with organic methods have a higher organic matter content, which results in soils that can hold more water (Colla et al. 2000; Lotter et al. 2003) and that are less likely to suffer from erosion. Organic management methods can thus potentially provide useful ways of restoring degraded soils or preventing further degradation of soils in regions prone to land degradation. Sustaining of a high soil quality will also ensure that the water retention in the soil is high, making crops more drought resistant, and the land less vulnerable to erosion (UNEP, 2008: 12).

Organic agriculture is comparatively more beneficial towards the development of a sustainable food production system (SFPS) which is high priority globally given the growing challenge to provide sufficient, accessible, and nutritious food at all times due to climate change, scarcer water supply and extending land degradation. The SFPS is holistically defined by the American Public Health Association (APHA, 2007) as “one that provides healthy food to meet current food needs while maintaining healthy ecosystems that can also provide food for generations to come with minimal negative impact to the environment. Organic agriculture was developed as a farming system that is specifically aimed at producing food in a more environmentally friendly way.

Organic agriculture stimulates the use of local seeds (Kilcher, 2007) which are very often more adapted to local climate conditions. It also reduces reliance on costly external inputs thus making it profitable and affordable especially for the rural poor people who do not have sufficient resources.

Organic farmers often receive higher and more stable prices for their products (Bolwig et al. 2009; Valkila 2009). This is because organic products are perceived to be of superior quality compared to conventionally produced food and the consumers of organic products are willing to pay a premium price. Consequent to this point of view, the demand for organic products has been steadily growing. In 2010, the global market for organic produce was worth 59 billion US dollars, growing by almost 300% since 2000 (Willer & Kilcher 2011).

Field interviews with the farmers cooperatives confirmed higher trading margins for organic products in general and the often reported comparative advantage Uganda has over other countries with regard to organic agriculture. Farmers reported good experiences with their current contracts with buyers and were receiving relatively higher prices above conventional products. They also reported incentives offered by

the buyers such as farm tools and an attempt to stabilise the farm gate prices even when market prices drop to historically low. However, these incentives especially the pricing incentive can be very challenging to keep all the time due to extreme conditions in the environment such as economic recessions and now COVID-19. For vanilla, the volatility of prices can be very hard to keep the farm gate prices especially when prices fluctuate extremely.

Organic agriculture stimulates cooperation among small producers which becomes their social capital leading to other benefits such as access to training and extension services, as well as access to health and credit programs (Valkila 2009; Méndez et al. 2010). As 96% of organic sales are made in European and North American markets, it becomes necessary for small producers to use collective strategies to integrate in the international markets.

Organic agriculture also provides health benefit. First to the agricultural workers by reducing the pesticide exposure and secondly to the consumers who consume healthier and safer food compared to conventional foods although the difference in quality is still a subject of research especially in developed countries where pesticide residue levels even on conventional food are low. In developing countries, however, pesticide residues on conventionally produced food are a major issue arising from the wide use of older and more toxic pesticides (Ecobichon 2001). Therefore, organic food might be relatively more important in developing countries than in developed countries with regard to exposure to pesticides.

3.2 The constraints

Barriers to practicing organic agriculture are considerable even in a situation where richer and poorer producers are targeted. In Uganda where organic agriculture is carried out mainly by the poor resourced small holder farmers, the challenges are immense that the promise of organic agriculture products attracting premium price is not incentive enough. According to NOGAMU, almost 2 million farmers could be certifiable as organic (almost 40% of farmers) but only 210,352 are certified organic farmers (National Organic Agriculture Policy, 2019). The key challenges of organic production are discussed below.

The principal constraint is high labour requirements for weed control and nutrient management. Instead of using herbicides, it relies on weeding and ploughing for weed management, and instead of using chemical fertilizers, it relies on incorporation of crop residues, cover cropping and compost for nutrient management. This high labour requirement has often been identified as an important barrier to the adoption of organic management (Anderberg, 2020). The increased labour requirements, especially during the periods of peak labour demands, can often not be met by household resources and thus require additional cash expenditure (Bolwig et al. 2009). This is particularly problematic in areas where availability of agricultural labour is limited due to emigration of work men or due to movement of labour to non-agricultural sectors (Anderberg, 2020).

Secondly, low organic yields. Organic farming cannot meet Uganda's food production needs as the population increases but it offers an opportunity for Uganda to access niche markets (National Organic agriculture Policy, 2019). The share of organically certified and managed farms represents about 1% of the total amount of agriculture land in the country. It is still very difficult for many farmers interested in a shift to organic agriculture to do so due to limited production support on basics such as organic seed.

The third constraint is the high standards of safety and quality which require an extensive certification process (often led by foreign certification bodies and Northern markets) in order to sell under the organic

label. Few farmers have the financial capital to pay all entry costs by themselves nor the information to engage in the process.

The fourth is the dependency on export markets that can become problematic in a situation where demand for organic products drop, hence increasing farmers' vulnerability. The largest markets for organic products are in Europe, North America, Japan and Australia, with North America and Europe accounting for 97% of global revenues (Willer et al., 2008: 53). Countries in the developing world generally have next to no local market for organic products, due to low purchasing power in the population and limited marketing efforts.

4 Organic Certification in Uganda

Certification is a system that guarantees to the consumer that a product (or a service) has been produced according to some specified standards and/or that it is of the specified quality. Quality is defined as "the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs" or simply "fitness for use, customer satisfaction" (CBI 1999).

In an overview about organic certification in Uganda by Peter Gibbon (2006), Organic certification started in 1994 with support from Swedecorp, the Swedish certification body. One of the early focal crops was cotton and in particular production of organic cotton which was produced by the Lango cotton project with approval from Krav – the Swedish Certification body. This was followed by the fruit and vegetable exporter Suntrade (now known as Amfri) gaining certification. These two operations remained the only certified organic exporters until 1997 when the Sudanese-owned coffee company Kofti gained approval for a cocoa project in Bundibugyo, which because of security reasons only came into production in 2002-03 under the ownership of Esco (U) Ltd.

Further developments in the certified organic were wholly or partly for traditional cash crops. They included a second project focusing on sesame and cotton (in Ochero), which since 1999 has been under the ownership of Outspan Enterprises Ltd, and coffee projects for arabica in Nebbi and robusta in Bushenyi, both of which have been under the ownership of Kawacom (U) Ltd since 1999.

In the 2000s however, other value chains besides the traditional cash crops start to emerge in the certification regime, thanks to the continuous and generous Swedish support through its Export Promotion of Organic Production in Africa (EPOPA) pro-gramme and a growing narrative on the relevance of organic farming for poverty alleviation and livelihoods. Following the groundbreaking work of EPOPA program in organic certification¹ including the support to the development of Uganda's wider institutional environment for organic agriculture, the task has been to expand organic production and trade with organic produce.

In Uganda, there are two key local organisations with regard to organic certification and these are: the National Organic Agricultural Movement of Uganda (NOGAMU) and the national certification and inspection body, Ugocert.

¹Subsidising certification and providing technical assistance for setting up internal control systems (ICs), training of project personnel and marketing.

NOGAMU is an umbrella organization which unites producers, processors, exporters, NGOs and other institutions and organizations that are involved in the promotion and development of the organic sector in Uganda. Established in 2001, it is now one of the highly esteemed Business Support Organisations (BSOs) providing a range of services to the sector.” NOGAMU also owns Ugocert, which is a local certification company for organic products. It was formed against the limitations of foreign based certification bodies which tend to be expensive for local farmers especially on the aspect of bringing an international expert in the country to verify their farms. Ugocert was therefore started to enable farmers access affordable certification services which in turn would help them market their products locally and internationally. Ugocert is currently working in cooperation with IMO and CERES, both international organic certifiers to provide international certification. However, international certification bodies still handle the vast majority of organic certification in Uganda and as already indicated, some in cooperation with UgoCert and others in competition with it.

4.1 The organic certification process; how to get started.

Prior to pursuing organic certification, producers must have decided to shift from conventional to organic production. According to the Organic agriculture manual of FAO, conversion consists of learning and implementation of changes on the farm towards a more sustainable and natural way of farming. The form the process takes depends on the local circumstances and the predisposition of the farmer or the community, and it varies from farm to farm. The more knowledge a farmer has about the concepts and practices of organic farming, the easier conversion process to organic farming will be. Even if organic farming does not depend on specific land conditions to start with, if soils are depleted for example, it may need greater efforts and require more patience to establish a sustainable production system and realize satisfying harvests. According to Chiputwa, et al (2014), organic certification is one of the most stringent among the voluntary standards. It requires farmers to strictly follow organic production guidelines for a minimum period of three years (referred to as the conversion period) before getting full certification.

Due to the complexity of regulations and the cost of certification in a predominantly small holder farming systems in Uganda, normally, Smallholder farmers are organic certified through contract production for export companies using a group certification scheme (internal control system- ICS). The typical starting point is an operator who plans to export organic goods initiating contact with farmer groups. The operator signs the contract with the certification body and is responsible for management of the ICS. This however doesn't mean farmers cannot initiate their integration and would therefore follow the steps discussed below.

4.1.1 Identify the target/potential market based on their market terms and volumes/tonnage required.

There are different organic markets, and each market has its requirements which have to be followed. Currently, there are four main markets-the European Union, United States of America, Canada, and Japan. The choice of the market will determine the certification. Additionally, there are certifying bodies in each of these markets who certify, and the exporter/producer must comply with the standards of the certifying body in the importing country.

4.1.2 Get the farmers organised in a group/groups-

The organization of farmers into groups is not required for the certification process, rather it has been promoted for its merits (i.e. it simplifies purchasing, training, and inspection of large numbers of small-scale farmers) and the cooperative level is a more preferred stage of registration when farmers want to get organically certified. Once they get organised, the cooperative/group needs to register and profile all their members who have accepted to go organic and keep individual profiles detailing the bio data, location, and farm size.

4.1.3 Undertake a conversion process.

This requires the cooperative to develop an internal control system (ICS) or an organic standard manual that they will work towards achieving. This standard details all aspects of organic principles that must be strictly followed and adhered to by all the members and should be inspired by the choice of the potential market such as the EU, NOP or Japanese or a combination of 2 or more. The EU, NOP or Japanese standards can be found online. In the case of contract production, the contracting company's ICS manuals specify the ICS procedures and organic production rules which are formulated according to the requirements of importing countries but adapted to the local situation and the companies' specific quality demands. The producers are given the responsibility to follow these production rules.

It is advisable to develop the ICS with the assistance an expert in organic agriculture and its implementation requires the group to put in place internal trainers and compliance monitors. These could be members of the Cooperative but charged with those extra responsibilities or they can be externally sourced persons and paid to do the work. In summary, the Internal Control System takes a whole system thinking and defines in details the code of practice at various levels farm layout, production systems, harvesting and post-harvest handling and quality management processes, storage, processing and selling of the final organic product. It clearly spells out what sort of inputs can be used on the farm and exclusively prohibits any use of manufactured chemicals such fertilisers, herbicides, pesticides, fungicides etc. and allows farmers to make/use their own/ organically certified bio-fertilisers and bio-pesticides. The ICS further defines the stakeholders within and outside the cooperative in form of the different committees, field workers and other regulations in terms of who qualifies and who does not qualify to be certified organic. The ICS inherently also details the expected yield from the farm per harvest and caters for expected yield increases over time. All these are arranged into a contracts/agreement signed between the cooperative and the individual farmers, which include the Farm Entry form, Internal Inspection and the contract (detailing the provisions of the ICS). These contracts/agreements are made in duplicates where one copy is left with the farmers and another copy kept by the cooperative. This is the “**bible**” and must be adhered to by all the members.

Intercropping is central to the ICS and forms a major part of the external audit. Intercropping is also important for diversifying farm resources as well as enhancing household food security and nutrition- which is critical for a whole system thinking.

Note: The period of conversion differs depending on the level of the group in terms of their knowledge about organic production and whether they have ever undertaken the process before. For beginners, the conversion period may take up to 2-3 years while those that have ever been certified (in case of multiple certifications) the period may be as short as 1 year which is also known as **Retrospective Certification**.

Below are the characteristics of an organic farm and what is contained in the ICS/contracts with the farmers.

- ✦ The farm should have native tree species for shade and soil and water conservation. Cocoa is a forest crop and flourishes well under forest cool temperatures requiring 50% shade and 50% sunshine. Other Good Agronomic Practices (GAPs) such as mulching, trenches, cover cropping, and recycling of materials is encouraged. Recommended trees in cocoa are Musizi, calliandra and Misopsis (musambya) i.e. tree with light leaves. Shade trees are important for soil fertility management through nutrient recycling, control soil erosion, are fodder for livestock, and provide timber and firewood for the farm.
- ✦ No chemical use on farm
- ✦ Has improved household hygiene and sanitation. The home must have a clean latrine equipped with cleaning materials such as soap and water.
- ✦ Uses clean materials for handling of produce during harvesting, after harvest-drying and for storage. Cocoa is fragile crops and requires careful handling to avoid contamination.
- ✦ Use clean drying materials. It is advisable to dry the produce on tarpaulins and on raised beds for easy handling.
- ✦ All the drying must take place under shades.
- ✦ While harvesting, farmers must ensure they harvest ripe crops and no cutting of cocoa pods with a pangas to avoid damaging the beans. It is advisable to open the pods by gently hitting with a stick.
- ✦ All organic cocoa should be fermented before drying. Fermentation takes place in well-designed boxes and takes up to 7 days to ferment and it is turned every 3 days to ensure uniform fermentation.
- ✦ Sort cocoa during drying and before storage to remove flat beans and other foreign matter.
- ✦ All the produce must be dried to the recommended moisture content of 7%. This ensures long produce shelf life and controlling molds that may contaminate the produce with aflatoxins. Use a moisture to measure the moisture content.
- ✦ Before storage, all the produce must be weighed, and the rights weights recorded. Stores must be clean, spacious, rodent proof and free of animal dung and birds/bird droppings. The stores should also be equipped with pallets and well ventilated. Cocoa should be packed in sisal gunny bags and pallets should never touch the walls.
- ✦ Should not use children and prisoners for any farm activities. This does not exclude children from undertaking their normal household chores, but care must be taken not to exploit children during the entire process of production, post-harvest handling and marketing.
- ✦ During the marketing, farmers should reweigh their produce and the cooperative should ensure that only members produce is marketed.
- ✦ Must put in place proper waste management system which also caters for separation of biodegradable and plastic/metallic/hazardous wastes.

4.1.4 Monitoring compliance to the Internal Control System.

This process aims to ensure that all the registered farmers who are undertaking a conversion period are complying with the production standards. This stage requires intensive trainings and thorough follow up of the farmers to ensure they adhere and work towards undertaking full conversion to organic. Like explained above, the monitoring can be done by internally identified persons, but it is advisable to work with an external expert or contracted technical staff.

4.1.5 Invite external auditors.

This is also called Third Party Audit; once the cooperative through its monitoring processes is convinced that they have undertaken all the necessary steps of conversion, they can invite a certified external auditor to monitor and assess whether they have truly converted to organic. These external auditors can also be called certifiers and are available online. There are many certified and the choice depend on the target niche market and the price quotation for the audit. Prior to the external audit, the internal auditors are required to submit internal audit reports about each individual farmer and those found to be non-compliant are forwarded to the Certification Committee and can be dropped based on their assessment of the situation and their names will be dropped and not forwarded for external audit. The Auditor will sample the farmers to undergo the audit and the cooperative is required to support the auditors to undertake the audit process. The whole audit process is based on assessing whether the registered members that have been undergoing conversion are adhering and abiding to the ICS. All the key parameters of assessment are based on the provisions of the ICS.

Depending on the results of the external audit, the certifier will issue or decline issuance of the certificate and a code. If they are unconvinced, they will recommend a set of the necessary adjustments and then the cooperative works towards fulfilling the identified gaps/recommendations and the re-invite them for auditing again. This might also require a training program for trainers as well. The farmers need to know that the audit process is expensive and done on a yearly basis. Its therefore recommended that they should undertake the external audit once they are very convinced that they have really adhered to the ICS.

Note: The following are the current certifiers with liaison offices in Uganda-Ceres, Control Union, Ecocert and UTZ

4.1.6 Acquire certificate and organic Marker.

The certificate is a confirmation that the cooperative is organically certified, and the code is posted on the website of the certifier. A cooperative can acquire more than one certificate depending on the target market and certifier engaged for the external audit. These include:

- ✚ The European Union standard-for the farmers targeting markets in the European Union countries
- ✚ North America Organic Program (NOP) for the farmers targeting the United States of American markets.
- ✚ Japanese Agriculture Standard (JAS) for the farmers targeting the Japanese markets.
- ✚ Canadian Standard

Note: there is also another emerging certification standard called Bird Friendly Certification that requires 40% canopy. This certification is hinged on creating conducive environment for birds on the farm.

4.1.7 Marketing.

Once the Cooperative has acquired the certificate and the code, they enter the preferred market and begin to search for potential buyers and signing contract agreements. Currently the are four main markets (standards) that include the following;

- The European Union standard-for the farmers targeting markets in the European Union countries
- North America Organic Program (NOP) for the farmers targeting the United States of American markets.

- Japanese Agriculture Standard (JAS) for the farmers targeting the Japanese markets.
- Canadian Standard

All registered groups are flagged on the websites of certifiers, but this does not guarantee a market. There are many groups that are organically certified and have struggled to penetrate the organic market and find the right buyers. Besides, the organic market is not permanent. It is therefore always advisable to furnish the potential buyers with all the necessary information about the group and the product, governance. This is especially important for specialty markets/Fairtrade where governance is critical factor for the Fairtrade premium.

Below is some field based peer advice for farmers intending to integrate in organic markets.

- ✚ Conduct organic certification concurrently with market searches rather than wait for completion of the process and then do market search.
- ✚ Work through an intermediary who has a good experience and contacts in organic markets while searching for the markets and the right buyers. This is especially important since most of the market search is online and requires a skilled person to undertake it.
- ✚ Work patiently to build rapport with buyers and this is important in building trust that is a prerequisite for any business deals. Potential buyers always need to know.
- ✚ Participate in international expos based on the product/market of interest/for which the group/company is certified.
- ✚ Allow strive to meet the right tonnages as required by the buyers. Volumes and buyers are the 2 main factors that keep an organically certified cooperative in the organic market.

4.2 Challenges faced while pursuing organic markets.













- ✚ Registration of farmers is difficult especially at the initial stages of getting the farmers organised. This requires dedication from the initiators of the ideas and commitment to ensure the process gets started and completed. This coupled with highly intensive training makes organic certification process a potentially draining process for the for the farmers and trainers. The cost of training is also high and sometime requires external support-one to carry the burden of trainings in terms of the cost.
- ✚ High external audit fees (recurrent). Certification process is a very expensive process, and the farmers are not willing to bear the costs. The costs vary depending on the number of farmers being certified and the cost can go up to 60 million for a large group. There are other costs on internal audits that are also a constant cost to the cooperative in a bid to maintain and regularly audit compliance to the ICS.
- ✚ Laborious/tedious certification process that requires high level of expertise and sometimes an external consultant. It requires lots of proper writing and coordination of information and summarizing the various information into appropriate reports. This is hard for the local farmers and requires support of an intermediary. This challenge is compounded by the limited availability of competent trainers on organic certification within the region.
- ✚ High levels on non-compliance that leads to low uniformity and compromising of product quality. This is mainly due to non-compliance to the ICS and affects adherence to maintaining volumes as required in contract agreements.

- ✦ Competition-due to many organic actors in the market, normally farmers get multiple certifications and fail to honor their commitments in terms of yield remittance to their groups. Conventional cocoa as well has a good price, and this is tempting for the farmers.

5 The actors in organic certification

The actors in organic certification have been already alluded to. In the section below, they are presented in matrix and grouped according to the nature of their role (s)

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| <p>Government</p> <ul style="list-style-type: none"> ✦ Ministry of Agriculture Animal Industry and Fisheries (MAAIF) ✦ Ministry of Trade, Tourism and Industry Enabling and monitoring trade related issues | <p>Policy reform processes and maintaining an enabling macro-economic policy environment conducive for private sector participation.</p> <ul style="list-style-type: none"> ii. Provide support services needed for realization of the policy objectives. iii. Provide regulatory services, capacity building, research, and security. iv. Establish and maintain an effective ICT to ensure information gathering, packaging, storage, and dissemination. v. Awareness creation of the actors vi. Monitoring and Evaluation vii. Resource mobilization viii. Support establishment of associations for value chain actors in Organic Agriculture ix. Awareness creation of the actors <p>Negotiating trade opportunities</p> <ul style="list-style-type: none"> ii. Export Licensing through the UEPB iii. Provide guidelines and standards to support Organic Agriculture. iv. Support establishment of associations for value chain actors in Organic Agriculture. v. Support Organic Agriculture products processing and value addition. |
| <p>Government institutions.</p> <ul style="list-style-type: none"> ✦ Ministry of Trade, Industry and Cooperatives (MTIC) ✦ Uganda Export Promotion Board (UEPB) ✦ Uganda Investment Authority (UIA) ✦ Uganda National Bureau of Standards | <p>Negotiating trade opportunities</p> <ul style="list-style-type: none"> ii. Export Licensing through the UEPB iii. Provide guidelines and standards to support Organic Agriculture. iv. Support establishment of associations for value chain actors in Organic Agriculture. v. Support Organic Agriculture products processing and value addition. |
| <p>Educational Institutions</p> | <p>Training and research</p> |
| <p>Civil Society Organizations</p> <ul style="list-style-type: none"> ✦ SATNET ✦ Vesco | <ul style="list-style-type: none"> i. Organize farmers for production. ii. Delivery of extension services, fund raising for training and awareness promotion. |
| <p>Certification bodies:</p> <ul style="list-style-type: none"> ✦ UGOCERT ✦ SGS | <ul style="list-style-type: none"> i. Inspection and certification services ii. Bird Friendly Certification –if the canopy of the tree is 40% |

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">  IMO  Krav  EcoCert  Bird Friendly Certification | <ul style="list-style-type: none"> iii. Ugacert-local certification body based on Uganda Organic Standards (UOS) but this is not an internationally recognized standard. However, they work with IMO and CERES, both international organic certifiers to provide international certification |
| Development Partners: | <ul style="list-style-type: none"> i. Assistance through funding, technical assistance, international lobbying and recognitions and consultancy. |
| Organic Business development service providers <ul style="list-style-type: none">  NOGAMU  IRST  Kahangi estate  Bio Nile Organic certification  TJX Rwenzori Sustainable Trade centre (RSTC) | <ul style="list-style-type: none"> i. NOGAMU-offer training to internal control systems officers, advocacy, policy influencing and promoting organic farming in Uganda. ii. IRST-local consultancy that has in built capacity in organic certification process and assist the local certified producer groups in access to markets and building their internal control systems Kahangi estate- offer consultancy in organic certification processes and ensures the producers are finally certified. iii. Bio Nile organic certification-offer certifications in Busoga region iv. TJX Rwenzori Sustainable Trade centre (RSTC) part of organic product trade linkages to outside markets |
| Farmers organisations <ul style="list-style-type: none">  Vesco  Bundikakemba farmers' cooperative | Uptake of modern technologies to improve Organic Agriculture investments <ul style="list-style-type: none"> ii. Mobilization of farmers and resources iii. Farmer institutional development iv. Record keeping and provision of agricultural statistics |
| Companies <ul style="list-style-type: none">  BUNDI Cocoa/Bundi cow | <ul style="list-style-type: none"> i. Operators, processing, packaging, and exporter ii. BUNDI COCOA/BUNDI COW a new entrant in cocoa buying for export |

6 Market niche for organically certified vanilla and cocoa

Where is the market niche for the organically certified vanilla and cocoa in Uganda and at the international level? What are the price premiums in the various markets?

Organically certified Vanilla and cocoa are predominantly targeted for the export market with the leading destinations being the EU, USA and Japan. The domestic market for certified vanilla and cocoa is very small partly because we do not perform significant value addition on these commodities; the only processes carried out in Uganda are those necessary to render the products concerned into the forms in which they are internationally traded. Buyers will generally prefer to process these premium products themselves and thus exercise more control over the process. On the other hand, the local market is not very demanding of standards and quality and the civil society consumer rights movement is still very weak compared to the West.

Europe is the leading market for certified cocoa. In 2017, 48% of the total global cocoa production of about 2.5 million tonnes was certified as UTZ, Rainforest Alliance, Fairtrade and organic. Although the

certification scheme of interest in this paper is organic, it's important to mention that Rainforest Alliance, which merged with UTZ in 2018 into one organisation under the name Rainforest Alliance, is the main certification scheme for the bulk market for commodity cocoa beans. In this market, certification is mainly used as an entry requirement, making it increasingly difficult for non-certified suppliers to access the European market.

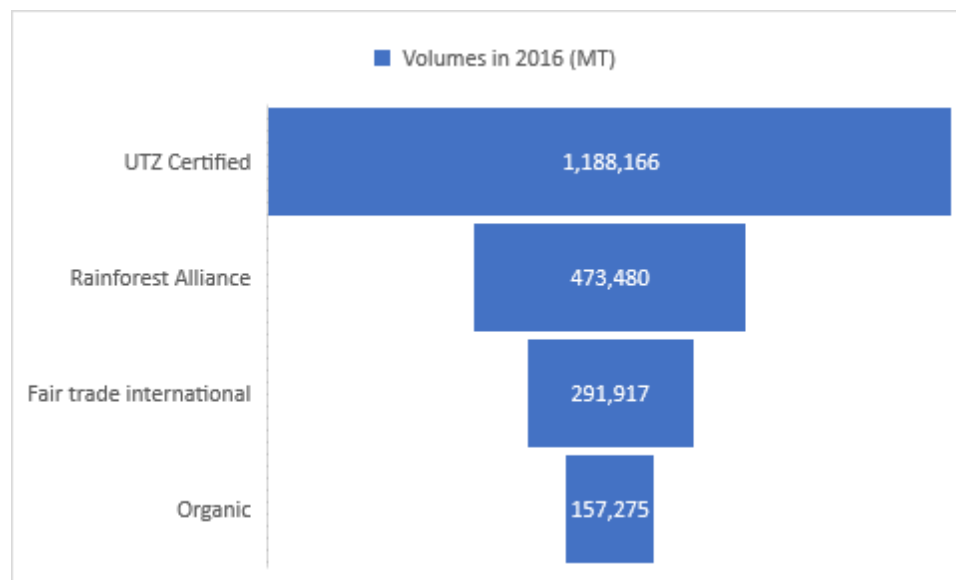


Figure 1: Source Global market report: cocoa (IISD, 2019)

Nonetheless, Europe remains an important market destination for organic products in general and the demand for organic certified cocoa follows the general market for organic products in Europe. Besides Europe, the other important global markets include: North America, Asia-Pacific, and the rest of the world. The North American market consists of US, Canada, and Mexico. The Asia-Pacific market consists of China, India, Japan, Australia and New Zealand, and the rest of Asia-Pacific. The rest of the world market has been segmented into South America, the Middle East, and Africa.

Processing and trading companies are very important players for the farmers to participate in these markets and contract farming is considered the most successful model in market-oriented organic agriculture in Uganda (Bolwig, 2012). On the local scene, NOGAMU is very helpful on information regarding organic markets as well as a series of training programs to support penetration into the global organic market.

In terms of market share, the organic cocoa market represents only a very small share of the total cocoa market – estimated at less than 0.5 percent of total production but growing, driven mainly by end consumer preferences to purchase more sustainable and healthier products. Recent evidence suggests that organic cocoa is expected to have a 9.5 per cent CAGR in the period 2019 to 2025 and to reach USD 620 million in retail value by 2025 (IISD, 2019).

In terms of prices, usually a margin of 15-30% over the baseline prices is paid for organic-certified cocoa beans (CBI, 2020). However, organic cocoa is subject to strong price fluctuations, which are mainly due to the small volumes traded, the lack of consistency in quality and the irregularity of supplies.

For translation of these premiums to bear meaning on a local farmer in the Rwenzori region, see Bundikakemba trade numbers below.

An export consignment of 1000kgs of organic cocoa as a maiden export sale by Bundikakemba Growers cooperative earned them a premium of 300USD dollar (1,080,000). For its 317 farmers, it translated to 3406.94 UGX per farmer but certification for the first time costed them 16 million and the second one, 12 million with each farmer paying 50,473.18 UGX and 37,854.89 UGX for the two cycles of certification, respectively.

Other cost centres besides the certification externally procured include internal audits, about 8M UGX on stationery, file copy for year audit, traceability of each farmer and personnel for for this work.

Currently Bundikakemba has a contract to supply 25 metric tonnes (190 million UGX). When shared, each of the 317 farmers earns (599,369.08 UGX) as base earnings. This same sale will earn a premium of 27 million and when shared with each of the 317 farmers, each earns (85,173.5 UGX). In the end, the total earning on average is 684,542.6 UGX per farmer. This goes to show farmers don't earn that much far from conventional sales as the costs of certification eat into the profits.

Just like organic cocoa, Europe is still the biggest market for organic vanilla accepting suppliers from all countries who can deliver high-quality vanilla. A special opportunity exists for suppliers who apply sustainable practices or who hold organic or Fairtrade certification. According to the CBI- an agency of the Ministry of Foreign Affairs of the Netherlands for the promotion of imports, If you supply good-quality vanilla that complies with food safety requirements in Europe, you will not have problems finding buyers. Your challenge and added value for European buyers will be to secure supply.

In terms of prices, prices for organic vanilla closely relate to conventional and this is mainly because vanilla production is often organic by default or perceived as natural in itself where the added value of certification may appear limited. The average global market price for vanilla in May 2018 was between US\$ 600 and US\$ 700 per kg (CBI, 2018) but it was only \$ 100 in 2015 which is typical of vanilla as a highly volatile commodity. However, a small organic premium can be expected to the tune of of 15\$, or 20 percent above a base price but when prices are volatile, or very high, the organic premium tends to evaporate (F. J. Koekoek, 2005).

7 Critical areas of development for Farmers Organisations

What have been the critical areas of development for farmer organizations to become part of the value chain?

Farmers in Uganda have a long tradition of working together in farmers' groups/organisations as a means to get more out the commodities they produce. This behaviour is even more needed when it comes to the organic market which is predominantly international. The stringent standards and the cost of certification is just unaffordable for a regular farmer; certification alone would be disproportionately high in relation to the sales. Working in farmers' organisations therefore, makes it possible for small holder farmers to participate in these markets as they are able to gain certification together as a "Smallholder group" which is a major prerequisite to trade in these markets.

Based on the author's own analysis of primary data and other publications, the critical areas of development for farmer organisations to become part of the value chain are discussed below.

7.1 Vision and business idea:

The starting point of an initiative is a vision which describes what the company or producer group or any other initiator(s) want to achieve. This is very important for organic production as the process of conversion can be long and complicated, often requiring additional manual work on the farm and expensive certification processes. Additional obstacles are technical like the knowledge on how to farm organically and the limited availability of extension workers to teach organic production. With hindsight of these numerous challenges, the objective of the farmers' organisation to choose organic should be motivating for all and there must be a buy in by all members. The key incentive to conversion usually is a promise of better incomes generated off the organic price premiums, but it can also be out of concern for own health and a general environmental awareness of organic systems.

7.2 Find the right partner(s)

Beyond the complexity of the regulations, there are a number of value-added activities such as product development, branding and effective promotion that a local farmer organisation may not manage in a foreign market. This makes it necessary to find the right partners with the logistics and the capacity to assess and understand demands from export markets to cooperate with. Most farmers organisations interviewed owe their integration into the organic market to the support of a partner(s) providing any or all the following: training, access to inputs and finance, support to become organic certified and a direct market. The farmers organisations, however should not be passive in the partnership, they need to bring in their own visions and ideas regarding the cooperation and participate in decision making and aim to also become competent business operators as well.

The experience of Bundikakemba cooperative in Bundibugyo confirms the need for a right partner. Despite being certified and being listed among the organic producer as early as 2012, it took them 4 years to get a buyer. They intimated that having an organic certificate does not guarantee market unless you have a strong relationship with the buyers or someone to pass on to you a business deal. It is in 2017 with better connections that the cooperative started to sale, starting 15MT in 2017, 17MT in 2018 and 25MT in 2019.

7.3 Compliance

The backbone of organic production is the maintenance of the Internal Control System, but this is not easy work or cheap. Without strict follow up, breaches of the practices by the farmers can lead to costly external audits and limited production which can be quite a logistical challenge for an exporter to meet larger orders on a consistent basis and in turn, rendering the farmers' organisation in question less competitive. Its therefore very important to adhere to the ICS in place, comply with external audits and implement all the recommendations of the auditors even amidst challenges of its costs and sometimes lack of markets yet the costs are recurrent on a yearly basis. This sometimes requires external support in terms of donor funded projects or commitment from the buyer to support the prospective supplier undertake all the necessary steps for the certification process.

Markers of a complaint organic cocoa farm/farmer – observable aspects from the field

- Possession of an organic contract to supply organic cocoa/vanilla with standards to follow
- Post-harvest handling acceptable standards and apparatus such as a green house or raised racks under the shades
- Good storage facilities with pallets
- Non-participation in direct trading of cocoa, rather, all cocoa is collected and stored by the farmers' cooperative which markets on behalf of its members.
- Fore knowledge of the expected yield through estimates done during routine inspections.
- Sorting and grading performed by the farmer
- Agro forestry practices on the farm.
- Presence of sanitation and hygiene infrastructures at farmer's home

7.4 Good governance in the farmers' organisations

Good governance with democratic, participative structures is very important not only for a possible extension into the Fairtrade scheme but also provides the necessary enthusiasm and interest of the members to continue organic farming to ensure a specified quality is met by all.

Practical field based tips shared by the cooperatives pointed out the following:

- Build a strong and stable farmer base through relevant programs such as trainings and extension services. Occasionally, gift the farmers to reward them for adoption of recommended practices with gifts like seedlings. This will lead to increased farmer loyalty and willingness to adopt further.
- Gradual growth: start with few farmers and small coverage area and keep expanding, while maintaining the standards.
- Flexibility and adaptability be prepared for several scenarios and be able to adapt quickly. For example, when the competition is high you can sell organic cocoa as conventional cocoa until the market stabilizes.

8 Cocoa and vanilla farmer organisations that are certified/undertaking certification.

Who are the cocoa and vanilla farmer organisations that are certified/undertaking certification processes in the Rwenzori region of Uganda (Kasese and Bundibugyo)?

One way to demonstrate organic certification is possible despite the many obstacles already discussed above is to provide information about local farmers' organisations that are certified or undertaking certification process in the Rwenzori region. The profile below is based on the information shared by the members of these organisations and helps to elaborate further the prospects and constraints of organic certification culled from the literature.

8.1 Bundikakemba Growers Co-Operative Society Limited-Bundibugyo- Organic Certified- Cocoa.

8.1.1 Background

The cooperative's journey to certification started with training small numbers of farmers on good agronomic practices and discouraging them from using chemicals on their farms. The message spread in a snowball manner with more farmers adopting organic practices after being trained by their fellow farmers. An assessment was conducted in 2012 and the adoption rates were promising. The farmers received further training by TJX and at the same time, the cooperative established demonstration gardens. It took one year covering topics on pest management and handling, child labour, preventing pod damaging, use of organic measures such as the neem, omubirizi, maintaining good sanitation, drying, harvesting, using clean tools, sorting out stones and bird droppings, having well protected gardens with tree shades and use of mulching. All these efforts paid off and currently, the cooperative sells its cocoa beans to ICAM Italy and Bundi cocoa volumes in the range of 25-23 MT. According to the cooperative management, there are practices they had to drop and more importantly, practices they had to adapt with regard to organic certification. On the latter, key practices/steps they undertook included:

- ✚ Planting of trees
- ✚ Mulching
- ✚ Harvesting cocoa when its ripe
- ✚ Good post-harvest handling
- ✚ Fermentation of cocoa for 7 days
- ✚ No use of child labour
- ✚ Non use of chemicals
- ✚ No use of prison/inmates
- ✚ Non use of sharp objects which lead to decay or broken beans.
- ✚ Sorting and removing of all broken seeds.
- ✚ Appropriate fermentation procedures (i.e. putting seeds into a box to enable it go for fermentation and limiting each box to 1 tonne and turning it every 2- 3 days)
- ✚ Drying the beans on a raised structure in a green house
- ✚ Taking moisture readings to ensure that it remain at 7% moisture level which is a recommended drying percentage and if not attained, the beans should be dried under the shade so as to maintain the flavour.
- ✚ Sorting and re-weighing after drying as the loss after drying is between 63% and 65% of the wet weight.
- ✚ Storage using gunny, sisal bags in a storage facility with pallets and free from rodents and domestic animals like goats.
- ✚ Finally, the bags are re-weighed at the time of selling after consensus is reached on price with the buyer. Only members are allowed, and no child or inmate is allowed at any point in the value chain.

8.1.2 Benefits of being organically certified – the experience of Bundikakemba Growers cooperative

The members confirmed the following key benefits from being certified.

- ✦ Additional money in form of premium price as an appreciation for selling organic products to organic consumers.
- ✦ Guaranteed market for cocoa/vanilla produced organically consistence in demand.
- ✦ In-house knowledge where they are able to train their fellow farmers on the organic standards guidelines.
- ✦ Improved home sanitation and hygiene including personal cleanness.
- ✦ Farmers' gardens are well protected with trees planted in cocoa gardens.
- ✦ Received free farm tools through the fair-trade system.
- ✦ Have a greenhouse for drying their cocoa.

8.1.3 Main challenges of organic certification - the experience of Bundikakemba Growers cooperative

The farmers highlighted the following main challenges encountered under the certification scheme:

- ✦ Training fatigue due to numerous training
- ✦ The process of certification is tiresome and costly and undertaken on a yearly basis.
- ✦ The fees to consultants is too high and sometimes, the payments to the consultants are met before any organic sales.
- ✦ Food insecurity as non of the crops is a food crop; the farmers largely depend on the market for their regular food needs.
- ✦ Contamination of organic products by Permethrine found in mosquito nets as it was the case in Bukabwedera farmers' co-operative. Such incidences may affect the sales once traced.

8.2 Semuliki Co-Operative Union Limited (SEMUCU)

8.2.1 Background

SEMUCU is a local farmers' cooperative in the cocoa value chain and has certification from Control Union based in Kenya with 2000 farmers enrolled on the scheme. The future aspiration of SEMUCU is to start making coco wine and attain certification from UNBS. This will be an additional product line following cocoa powder which is already under production locally at SEMUCU. The insights shared by SEMUCU for farmers who intend to acquire organic certification were as follows:

First identify a market for your produce cocoa/vanilla

- ✦ Following the market requirements in terms of quality and volumes, determine the number of farmers you want to fulfil these requirements. These farmers should also decide to go organic.
- ✦ Get the help of a consultant to undertake farmer profiling.
- ✦ Begin by training the lead farmers on certification and the linkage with their farm practices. This will increase the rate of adoption as the lead farmers train others.
- ✦ Build a team of trainers and ensure they are committed to the standards.
- ✦ Carry out regular internal audits with the farmers and enter into contract with the farmers that will be part of the program and make terms of reference for them in the local language.
- ✦ Continue to give them more training and conducting inspection.
- ✦ Prepare for an external audit by visiting audit bodies (usually in Kampala) for pricing information (i.e. invoice) to enable you eventually select the best who can fit your pockets.
- ✦ Provide standards which are guiding tools for farmers against which farmers are trained to do/follow.

- ✚ Attaining organic certification takes about 3 years but it can be shorter depending on the training the farmers organisation has received and previous engagements with certification bodies.
- ✚ An external auditor usually works with a sample of the farmers and provides feedback on compliance and non-compliance, advises on areas for improvement and gives overall performance percentage. Usually, the mark is at 50% and failure to meet this minimum may necessitate a total repeat of the whole process and invites a much closer supervision by the certification body to ensure compliance.
- ✚ Certification fees is paid annually and the fee is determined among other factors, the number of farmers; the higher the number, the higher the fees but it still gives the benefits of economies of scale. In their particular case, SEMCU pays 30M UGX for its 2000 farmers which is about 15,000shs per farmer.
- ✚ After the certification process is completed, you are given the certificate and become recognized as an organic certified.

8.2.2 Prospects of being organically certified – SEMCU’s experience.

Based on the lived experience of SEMCU, the prospects and constraints of being organically certified are summarized below:

- ✚ Good prices for organic produce at internal market hence more incomes to the farmers
- ✚ Prices are negotiated based on prevailing international market demand.
- ✚ Inbuilt skills that remain with the farmers in organic farming process
- ✚ Collective marketing enables the farmers meet the buyer’s quantity demands.
- ✚ Certification comes with added benefits to farmers such as farm tools, education bursaries and warehouse construction.
- ✚ Farmers receive additional money through fair trade as an appreciation for selling organic products to organic consumers.
- ✚ There is a guaranteed market for cocoa/vanilla produced organically and there is consistence in trade, supply and demand.

8.2.3 Constraints of being organically certified – SEMCU’s experience.

- ✚ Cash flow challenges among farmers pushes them to sell to other buyers rather than wait for the maturation of their trade process with a designated buyer.
- ✚ Certification is costly requiring the organisation to pay annual fees regardless of whether they have sold or not.
- ✚ There is limited room for value addition on the products of the farmers.
- ✚ Sometimes the buyer’s preference and conditions may change, and this will require a repeat of activities to meet new demands.
- ✚ Sometimes, these processes require donor support to undertake and without external funding, some farmers withdraw, and the system also collapses.
- ✚ It is also possible to be organically certified but fail to get the market since the certifier does not look for market for your produce, it’s the farmers organisation to do so.
- ✚ Contamination from within the environment especially from the use of mosquito treated nets, hence denying farmers the premium organic price.

- ✦ Organic certification can lead to losses if one fails to repeat the entire process.
- ✦ Farmers want alternative incomes as they wait for three years to get certified which is always difficult.

8.3 ESCO Uganda, Bundibugyo

8.3.1 Background

ESCO is among the pioneers in organic certified cocoa trade dating back to 1994. They intimated that it was not easy then; they invested heavily in audits and certification and this took about 80% of their time. Over time, however, they have been able to progress from 300 MT in 1994 raised from 700 farmers to the current 15,000 farmers raising over 1000MT although this number fluctuates due to competition. They pay in a range 37 to 40 million in certification fees. They further assert that the organic market is not permanent, but it can further be limited if your certificate limits you to a few countries.

According to ESCO, there are a number of preparatory steps farmers' organisations have to take and these include:

- ✦ Training in best agricultural practices
- ✦ Tree planting
- ✦ Research on the best trees for cocoa like musizi because it has deep root system.
- ✦ Establishment of nursery beds
- ✦ Sensitization on trees and their future use like providing timber and building materials.
- ✦ The appropriate way to do fermentation for quality organic cocoa.
- ✦ The appropriate way to handle cocoa after harvesting (i.e. drying it on raised rack sacks)
- ✦ Introduction to organic certification body standards procedures.
- ✦ Hiring of consultants/ experts to train staff and the farmers on organic certification as a company.
- ✦ Recruitment of extension workers to support farmers.
- ✦ Auditing by an external consultant and by a certification body.
- ✦ Development of the control systems.
- ✦ Readiness to pay annual certification costs regardless of your market participation, fees ranging from 37 to 40M. A failure to do so takes you back to conversion stage of 2-3 years again.
- ✦ The amount of money you pay in certification fees is commensurate with the number of farmers registered on the scheme.

8.3.2 The benefits of being organically certified – ESCO's experience.

- ✦ Increase in yields per tree.
- ✦ Better income of the farmers which translates into better welfare (i.e. better housing, health and education access) of the farmers.
- ✦ Improvement in sanitation and hygiene structures.
- ✦ Farmers have the knowledge and skills to produce organic cocoa.
- ✦ More food varieties due to tree planting.
- ✦ Increased soil fertility management through organic recycling.

8.3.3 Challenges encountered with organic certification – ESCO's experience.

- ✦ Increased competition among the buyers making it difficult for some companies to trade.

- ✦ Competition from the leading producer - Madagascar where the prices are very low compared to Ugandan cocoa.
- ✦ Limited value addition: most of the value that would have accrued from cocoa is lost to importing countries.
- ✦ Price instability of organically produced cocoa especially in Asian countries where conventional cocoa also trades favourably.
- ✦ Financial loss in incidents where organic cocoa is sold as conventional cocoa. ESCO once sold 80% of its 1000 metric tonnes of organic cocoa as conventional cocoa leading to a huge loss.
- ✦ Many buyers limit the quantities required leaving the rest of the organic cocoa to be traded as conventional cocoa.
- ✦ The regulations and standards in developed countries are too high and costly to meet which reduces the profit margin.
- ✦ Organic markets are not permanent and whenever there is a shift, the farmers' organisation has start all over again, negotiating new markets that have emerged due to the collapse of other markets.
- ✦ The process of certification is tiresome and costly with the farmers' organisation doing it every year.

8.4 Rwenzori Sustainable Trade Centre (RSTC)

8.4.1 Professional advice with regard to organic certification

RSTCU through its expert (Lazaras Bwambale) has supported two co-operatives especially Bundikakemba growers' co-operative to attain organic certification. During the interview with Lazaras, he advised on the following aspects in pursuit of organic certification:

- ✦ Farmers must be practicing organic with no chemical use and where chemicals are in use, farmers have to undergo a conversion for 3 years.
- ✦ Small holder farmers must be organised in groups, practicing organic farming and using the internal control manual as guide towards farm development.
- ✦ Roles and responsibilities of the different stakeholders should be known, and forms part of the documentation received by the farmers.
- ✦ Farmers need to have a farm entry agreement and followed up through farm inspection and audits to check if what they were trained on is put into practice.
- ✦ Suspension and exclusion are applied when farmers' cooperatives do not follow the agreed terms and conditions with a buyer or certifier. It is also possible to be pushed back to conversion stage and required to re-apply to begin the process for 3 fresh years.
- ✦ Farmers must have all the documents and the co-operatives too in the duplicate. Proof of certification is key in order to sell in organic markets.
- ✦ You need to have the 4 major standards (i.e. EU, NOP - North America organic programs, JAS - Japanese Agriculture Standards and the Canadians standards) to be competitive.
- ✦ Procuring certification services is easy as most certification bodies are represented in Uganda such as Ecocert, Ceres and control union and a google search can bring you up many others that are represented in Uganda and in the region.

- ✦ If you are listed among organic certified, its one way to flag your business because you have the capacity to supply.
- ✦ Ability to sustain supply is very key to maintaining trade relationships with buyers.
- ✦ Marketing of the organic produce is the responsibility of the farmers' organisations; being listed as organic certified is not enough to get you the market, there is need to undertake sufficient marketing.
- ✦ It is very important to secure a market before you embark on the certification process. With fore knowledge of the market being targeted, you are in the best position to align your production to the needs of the market.

8.4.2 Synthesis of the main benefits of organic markets - the farmers cooperatives' opinion

- ✦ Premium prices-there are a variety of premiums that farmers/groups certified organically can benefit from. These include (1) organic premiums calculated as 30 cents per pound; these are shared with the farmers and a percentage is retained at the group/company level depending on the agreements made in the Annual General Meeting and (2) Fairtrade premium calculated as 20 cents per pound; this money is given to individual cooperatives to plan for and invest it in their social projects based on their common interests. Other benefits such as quality, climate change can be paid for but they highly depend on the capacity of the group to negotiate and find the right buyers. Organic products are highly competitive on the world market. Bundibugyo organic cocoa has a higher demand on the world market due to the unique soils in the area.
- ✦ There are social projects tied to all sustainability voluntary standards especially Fairtrade certification. Common projects reported were improving road infrastructure, store construction, toilets, boreholes, gravity water flow schemes, clean energy equipment and supporting climate change adaptation. This benefit also extends to input support to members e.g. tools, gumboots, PHH materials.
- ✦ Opportunities for crop financing and engagement in local savings and credit initiatives that empower farmers to take better control and management of their crops. This empowerment is important for also enhancing the compliance of members to the ICS.
- ✦ Health benefits on the side of the consumers and the farmers themselves. This is critical in the context of sustainable food diets and the principle of diversification that is important for the ICS and a clear stand on no chemical use ensures that farmers and the consumers eat healthy foods free of residual chemicals.

9 Agroforestry and climate change challenges

What are the benefits of agroforestry in relation to contributing to conservation and climate change challenges?

Agroforestry is presented in the literature as a time immemorial practice with a multitude of goods and services and hence the capacity to address different constraints. Many studies show that agroforestry practices can slow or reverse land degradation, sequester carbon from the atmosphere and secure rural livelihoods through provision of ecological and economic benefits (i.e. fuelwood, poles, fruits, medicines, and timber). These services are of particular importance to farmers and the farming system in Uganda which is largely nature dependent. Moreover, with the current levels of deforestation against a growing demand for tree products, tree planting on farms becomes necessary to ease pressure on traditional forest plantations.

Farmers interviewed highly placed agroforestry as a major practice in mitigating climate sensitive risks in agriculture production in agreement with Zizinga et al(2015) whose field based ranking of major climate change adaptation practices with farmers in the Rwenzori region placed agroforestry second to using resistant varieties.

9.1 Summary of the benefits agroforestry: Adopted from World Agroforestry Centre

- ✦ Trees control runoff and soil erosion, thereby reducing losses of water, soil material, organic matter, and nutrients.
- ✦ They can maintain soil organic matter and biological activity at levels satisfactory for soil fertility. This depends on an adequate proportion of trees in the system- normally at least 20% crown cover of trees to maintain organic matter over systems as a whole.
- ✦ They can maintain more favourable soil physical properties than agriculture, through organic matter maintenance and the effects of tree roots.
- ✦ They can lead to more closed nutrient cycling than agriculture and hence to more efficient use of nutrients. This is true to an impressive degree for forest garden/farming systems.
- ✦ They can check the development of soil toxicities or reduce existing toxicities-both soil acidification and salinization can be checked and trees can be employed in the reclamation of polluted soils.
- ✦ They utilize solar energy more efficiently than monocultural systems different height plants; leaf shapes and alignments all contribute.
- ✦ They can lead to reduced insect pests and associated diseases.
- ✦ They can be employed to reclaim eroded and degraded land.
- ✦ Agro forestry can augment soil water availability to land use systems. In dry regions, though, competition between trees and crops is a major problem.
- ✦ Nitrogen-fixing trees and shrubs can substantially increase nitrogen inputs to agro forestry systems.
- ✦ Trees can probably increase nutrient inputs to agro forestry systems by retrieval from lower soil horizons and weathering rock.
- ✦ The decomposition of tree and pruning can substantially contribute to maintenance of soil fertility. The addition of high-quality tree pruning leads to large increase in crop yields.
- ✦ The release of nutrients from the decomposition of tree residues can be synchronized with the requirements for nutrient uptake of associated crops. While different trees and crops will all have different requirements, and there will always be some imbalance, the addition of high-quality pruning to the soil at the time of crop planting usually leads to a good degree of synchrony between nutrient release and demand.
- ✦ In the maintenance of soil fertility under agro forestry, the role of roots is at least as important as that of above-ground biomass.

The farmers' views did not differ from what is discussed above except the context it adds with illustrations.

- ✦ The need for companion planting in areas or farms where organic agriculture is to be introduced creates a conducive environment in form of a shade which is necessary for cocoa growing, promotes nutrient recycling and delays unwanted crops. The trees recommended for intercropping with cocoa are the type with deep roots, light leaves and can grow at a height comparable to cocoa and these include: musizi, caliandra, emisambya, Albazia, Greaveria and omusisa

- ✦ With agroforestry practices, the conversion period can reduce from the mandatory 3 years to 2 years.
- ✦ Agroforestry contributes to stabilization of temperature at homes and in the area(microclimate)
- ✦ Agroforestry can attract bird friendly certification if it has 40% canopy, which can bring in an additional stream of income for the farmers.

10 Conclusions

No doubt, Uganda has a comparative advantage for organic production but at the same time, the domestic market is still very small, meaning, the majority of certified organic produce is destined for export markets. However, the high cost of certification and not just the certification fees but the whole process of mobilizing, organizing and establishing an "Internal Control System" is a major barrier to tapping into this potential given the poorly resourced small holder farming population of Uganda. Its therefore, no surprise that with our comparative advantage, our contribution is estimated at only USD 50 million out of the USD 15.6 billion global organic market (World of Organic Agriculture Report 2018). According to NOGAMU, almost 2 million farmers could be certifiable as organic (almost 40% of farmers) but only 210,352 are certified organic farmers (National Organic Agriculture Policy, 2019). This situation underpins a need for a financing arrangement which can work for sustainable business development and this is where information is less available. Donor support in form of grants has been received for organic certification projects but it is not guaranteed all the time and as SEMCU intimated, without external funding to undertake these processes, some farmers withdraw, and the system also collapses.

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