MARKUP
EU-EAC MARKET ACCESS UPGRADE PROGRAMME

STUDY

Uganda Sector Analysis: Cocoa Production, Supply and Demand

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Authors: Charles Ntale, Shoreline Services Limited and Herma Mulder, Agri Logic

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Abbreviations

CAOBISCO	Association of Chocolate, Biscuits and Confectionery
CAGR	Compound Annual Growth Rate
CFI	Cocoa and Forest Initiative
CMAA	Cocoa Merchants' Association of America, Inc.
EAC	East African Community
ECA	European Cocoa Association
EFSA	European Food Safety Authority
EU	European Union
FCC	Federation of Cocoa Commerce Ltd.
FFA	Free Fatty Acids
FiBL	Research Institute of Organic Agriculture
GFSI	Global Food Safety Initiative
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPG	Gender Pay Gap
HA	Hectares
HACCP	Hazard Analysis and Critical Control Points
ICCO	International Cocoa Association
ITC	International Trade Centre
LIFFE	London International Financial Futures and Options Exchange
MARKUP	Market Access Upgrade Programme
MOH	Mineral Oil hydrocarbon
MT	Metric Ton (1000kg)
NAADs	National Agricultural Advisory Services
NaCORI	National Coffee Research Institute
NYSE	New York Stock Exchange
OEC	Observatory of Economic Complexity
PAH	Polycyclic aromatic hydrocarbons
SDG	Sustainable Development Goals
SME	Small Medium-size Enterprises
UCDA	Uganda Coffee Development Authority
UNBS	Uganda National Bureau of Standards
UNFCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organisation
URA	Uganda Revenue Authority
USDOL	United States Department of Labour
UGX	Ugandan Shillings
VSLA	Village Savings and Loan Association
WCF	World Cocoa Foundation
WINCC	Women in Cocoa and Chocolate

Executive Summary

High demand for cocoa and cocoa by-products makes it a significant crop for Uganda as a producing country, particularly in generating export earnings, increasing employment opportunities and overall incomes of in-country producers. Due to the prospects of long-term profitability of the sector for the country – the ITC, through the MARKUP Project – commissioned diagnostic studies to give an overview of the critical challenges and opportunities where engagement is needed to improve the cocoa value chain and the competitiveness of Ugandan cocoa suppliers.

At the global level, Africa remains the largest cocoa producing region, with its main competitors being Latin America, Asia and Oceania. For the 2017/2018 crop year, it was estimated that the continent produced roughly 3.5 million metric tons (MT) of cocoa, representing 75.2% of global production, with the two leading producing countries being the Ivory Coast and Ghana. In Uganda, cocoa production is currently estimated at 30,700 MT (thousand metric tons) and valued at USD 31 million (URA Database, 2019). The trends for cocoa production, using exports as a proxy, have only increased since 2001, with exports standing at 2,130 MT in 2001, reaching 5,386 MT in 2005 and 14,000 MT in 2009, valuing a total of USD 24 million, with a potential for continuous increases in volume and value if interventions along the cocoa value chain are strategically placed.

In terms of the main destination markets for Uganda cocoa, Asia is a rapidly growing region. According to UNCOMTRADE data, there was a compound annual growth rate in volume of 30% between 2013-2017. Due to low sea freight costs, Malaysia, Indonesia and Singapore are the top three importers. Though value per tonne is higher for beans going to Europe, imports into Europe in 2017 represented only 22% of the total volume imported from Uganda, down from 56% in 2013. The Netherlands and Italy have been growing their import volumes from Uganda, but the overall export trend is downward for the European market. This downward movement is mostly related to Europe's increasing demand of transparency and traceability for premium and/or "fine" and "flavour" cocoa and other forms of product innovations that necessitate cocoa producers and enterprises to adapt to new market trends and requirements.

For cocoa industry players to be able to tap into more business opportunities and access international markets, there is a need for the public and private sector to increase their engagement in various segments of the cocoa value chain. For example, by engaging in improving advisory and extension services at the production level; increasing value-addition of cocoa by integrating protocols for product traceability and product compliance against buyer/market expectations/requirements; increasing access to finance; better marketing and branding; and increasing Business-to-Business (B2B) opportunities as to increase suppliers' market access, among others. Currently, the reality is that the Uganda public sector is under-supplying extension and marketing services due to a lack of resources and human resources. Due to this, first-entry cocoa firms in the private sector have taken on the role in provisioning agro-inputs, trainings for production and processing, the creation of farmer associations, and direct purchasing opportunities. However, in order for the sector to scale up and be durable in international markets, investments into capacity building needs to increase for potential benefits to spill over to Small and Medium Sized enterprises.

The MARKUP Project recognises the need to enable partnerships between the public sector and private sector in order to bolster the cocoa value chain for its increasing role toward livelihood enhancement and the national economy (see Strategic Plans from 2015/16-2019/20[1]). As of current, cocoa is a non-traditional cash crop that supports an estimated 15,000-18,000 smallholder farmers, as well as 40 local cocoa trading companies and more than 20 exporting companies. Thus, more investments into the Uganda cocoa value chain show potential for high returns if course corrections can be implemented in cocoa production and value addition strategies.

[1] Agriculture Sector Strategic Plan (2015/16-2019/20): Ministry of Agriculture, Animal Industry and Fisheries. Agriculture Sector Strategic Plan: http://npa.go.ug/wp-content/uploads/2016/08/ASSP-Final-Draft.pdf

This can begin with more sector-specific research, which this baseline report seeks to provide, and to use this research to guide trainings and activities that may lead to better export strategies. Among the strategies that exist is value addition that could potentially increase the country's revenue through the export of semi-processed products like cocoa powder and butter. This, however, requires high production volumes with a consistent supply of high-quality cocoa. Certification is another method and is particularly important for exports to European markets. Currently, the maximum volume of certified cocoa is estimated at 40%, of which RA/UTZ production volumes represent about 20% of the total volume produced (down from almost 70% in 2014). The decline is likely due to the greater interest of Uganda cocoa from Asian buyers, who have lower costs of compliance and which leads to an offset of costs by the price premiums at which cocoa is sold. In Uganda, FiBL data shows that about 20% of the total production is now fully organic from only about 5% during 2006-2015. Because market trends strongly favour organic products, Uganda will need to be able to capitalise on this niche segment of the market. In the short-and medium-term, Uganda will need to compete with other African countries that are also interested in organic due to the standards' promises of higher premiums and higher access to European markets.

Additionally, *Specialty,* including *fine* and *flavour* cocoa, is another niche market that Uganda is serving, where wet cocoa is generally bought from farmers directly or cooperatives and then centrally fermented. Specialty cocoa is estimated to represent about 5% of the total supply. Lastly, another strategy to increase competitive advantage is to create more robust monitoring and traceability systems for organic certification. Internal Management Systems that can give oversight on cocoa production, processing, storage and transportation, with a strong feedback loop for corrective measures can induce more trust for the product for buyers. This is an important area for the government to come in and where an opportunity exists to address social and environmental challenges in the supply chain. European chocolate makers, which have made public commitments to zero child labour and zero deforestation, consider these sustainability questions when choosing their long-term suppliers.

All in all, as high international demand is pushing up farm gate prices quickly, Uganda's competitive position is at risk, along with the integrity of the product and sustainability of the supply chain. Therefore, the challenge for the Uganda cocoa sector will be to manage growth sustainably while meeting the demands of the markets it serves.

CHAPTER 1: INTRODUCTION

1.1 MARKUP

Jointly designed by the European Union (EU) and the East African Community (EAC) Secretariat, The Market Access Upgrade Programme (MARKUP) is a four-year regional initiative implemented by the International Trade Centre (ITC) that focuses on increasing the participation of Small and Medium-size Enterprises (SMEs) from five EAC partner countries (Burundi, Kenya, Rwanda, Tanzania and Uganda) in intra-regional trade and increased access to the EU markets and African regional markets. The strategic sectors covered in the programme are (1) coffee in all five countries, (2) tea in Kenya, Tanzania and Burundi, (3) selected horticulture in Rwanda, (4) **cocoa in Uganda,** and (5) selected spices in Tanzania.

Over the last few years, many technical activities in development programmes have focused on farmers and production, with little attention given to the market-facing elements of the value chains. Therefore, this cocoa report is commissioned to provide a comprehensive sector report integrates market-oriented assessments of cocoa *production, demand* and *supply*. This report aims to guide the MARKUP activities and support national regulatory and industry bodies in their own cocoa sector strategy, implementation and industry development. It also serves as the first inventory of potential partners to the programme.

1.2 Product & Market

This study will focus on the product *cocoa beans*, known under HS Code[2] 1801, as it is the main cocoa product being traded from Uganda (see **Error! Reference source not found.** below).

Table 1 List of products exported by Uganda in 2017 in the HS code category 18: cocoa and cocoa preparations

HS Code	Product label	Value exported in 2017 (USD x1000)	Trade balance 2017 (USD x1000)	Annual growth in value between 2013-2017 (%, p.a.)	Quantity Exported in 2017 (MT)	Annual growth in quantity between 2013-2017 (%, p.a.)	Annual growth of world imports between 2013-2017 (%, p.a.)	Share in world exports (%)	Ranking in world exports
1801	Cocoa beans, whole or broken, raw or roasted	54.208	53.907	2%	27.528	2%	5%	0.60%	14
1806	Chocolate and other food preparations containing cocoa	539	-1493	25%	79	30%	0%	0	107
1805	Cocoa powder, not containing added sugar or other sweetening matter	155	-121		11		-1%	0	71
1803	Cocoa paste, whether or not defatted		-9				2%		
1804	Cocoa butter, fat and oil		-13				7%		

Source: derived from ITC Trademap

1.3 Methodology

For this report, data collection methods include primary and secondary data collection. The scope of primary data collection focuses on the phases of production, post-harvest handling and processing through the use of (1) Questionnaire Interviews (QIs); (2) Key Informant Interviews (KIIs); and Focus Group Discussions (FGDs). Women, men, various age groups and different categories of actors in the cocoa chain were considered in the selection process for the survey sample, and as such, respondents were purposively chosen to provide a fairly equal representation of views.

Prior to the start of the field surveys, enumerators and survey personnel were trained and prepped on all project objectives, responsibilities and survey content to ensure that all stakeholders fully understood their tasks for data collection. For quantitative data sampling, the following statistical equation has been used to estimate a suitable representative cocoa farmer sample size:

[2] The Harmonized Commodity Description and Coding System (HS code) of the tariff nomenclature is an international standardised system of names and numbers for the classification of commodities (LogisticsGlossary, 2018).

Equation 1: $n = \frac{Z^2 pq}{d^2}$

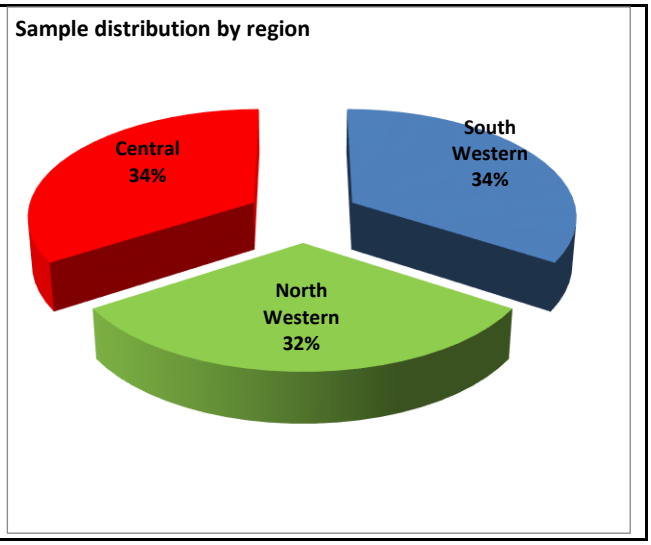
Where; n =refers to the desired sample size; Z =the standard normal deviate usually set at 1.96 which correspondents to the 95% confidence level; p =Population of the target population estimated to have a particular characteristic, 50% is normally used because it is the recommended measure if there is lack of reasonable estimate; q =1.0 – p; and d =degree of accuracy desired; in this context set at 0.05.

By substitution: Equation 1: $n = \frac{Z^2 pq}{d^2} = \frac{(1.96)^2(0.5)(0.5)}{(0.05)^2}$=385 Respondents (Rs).

The sample distribution is 26% female (95 respondents) and 74% male (290 respondents) from South Western, North Western and Central districts of Uganda (see Table 2). Key informants and participants for focus groups were identified by local District Agricultural Officers and included local community-based organisations (CBOs) or Non-Governmental Organisations (NGOs), agro-input dealers, cocoa traders, individual farmers and farmer group leaders, value chain agents and middlemen. *Social demographics of the respondents can be found in Annex 1*.

Table 2 Sample distribution by region and district

Region	District	Sample Size	Percent
South Western	Bundibugyo	85	22%
	Ntoroko	19	5%
	Kasese	28	7%
Sub total		132	34%
North Western	Hoima	41	11%
	Kagadi	40	10%
	Kibale	40	10%
Sub total		121	32%
Central	Buikwe	39	10%
	Mukono	93	24%
Sub total		132	34%
Total		**385**	**100%**



In contrast, nearly all data on market trends, cocoa trading and regional and international exports are derived from statistical databases, including UNCOMTRADE, the Eurostat Database, ICCO; and is supported by what is publicly available from the International Cocoa Association, the Uganda Bureau of Statistics, the National Agricultural Advisory Services, the Ugandan Investment Authority and the Uganda Revenue Authority. It is important to note that secondary data were crosschecked with stakeholder interviews conducted by the two consultants that were commissioned for the report.

1.4 Limitations to the Analysis

The report uses proxy variables for production and export data, which might not necessarily coincide with actual production and/or export figures or ICCO data, as inconsistencies occur due to time lags in registering data and the trade systems used, etc. The figures are, however, estimated to give a relatively accurate indication of sector trends. It should also be noted that, variability in cocoa exports can be high due to the relatively low volumes of cocoa in the market, thus this report aims to give a baseline overview of the sector, its actors, its challenges and potential areas of strategic intervention.

CHAPTER 2: COCOA SECTOR OVERVIEW: PRODUCTION, SUPPLY AND DEMAND

2.1 Cocoa Production

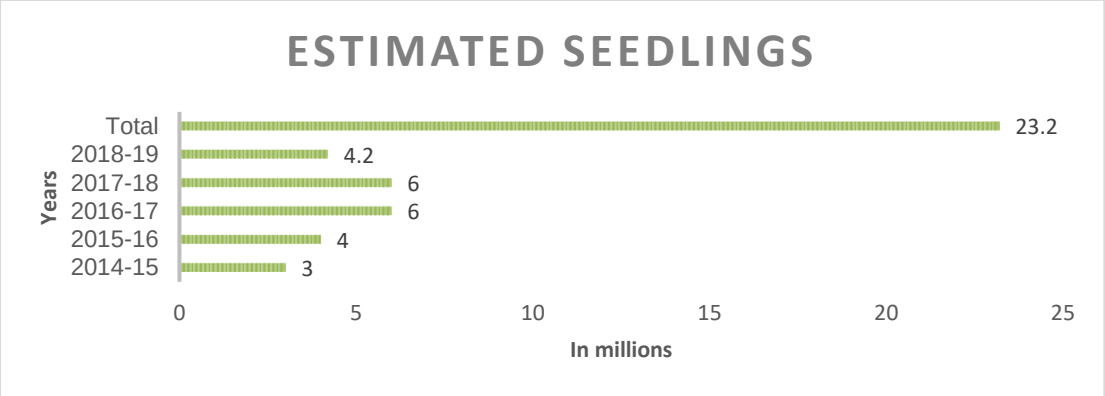
2.1.1 Overview

Cocoa is a tropical crop that is suitable for agro-climatic zones that are within 10^0North and South of the equator. In Uganda, cocoa does well mostly in and around the Lake Victoria region. The crop flourishes in well drained deep loam soils under shady conditions, with a PH range of 4.5-6.0; and an annual rainfall of 1250-3000mm[3].

Based on URA data on cocoa exports, Uganda's total cocoa bean production is estimated at around 30,700 MT annually. Based on the National Coffee Research Institute (NaCORI) - the designated research agency for coffee and cocoa - the total area under production is estimated at 21,000 Hectares (equivalent to 42,500 acres), where the Bundibugyo district is the leading producer[4]. Although no official statistics are available to attest to these figures, anecdotal information from seasoned traders from the Bundibugyo district (i.e. Semliki Co-operative, ICAM and Ugaden, among others) have estimated the area of production to be at 20,000MT per annum, which is about 67% of national production. Mukono; Mayuge; Buikwe; Kibaale; Hoima; Mpigi; Luwero; Masaka; Kamuli; and Mbale are other highly productive districts. Individual farmers and cocoa trading companies are also trying out cocoa production in non-traditional areas like Arua and Koboko in the western Nile region[5], as well as Lamwo and Pader districts of Northern Uganda.

Since 2014/15, the National Agricultural Advisory Services (NAADS) has also been distributing seedlings through the OWC programme to other districts including Jinja, Kalangala, Iganga, Kakumiro, Kamwenga, Mubende, Kiryandongo and Mityana (See Figure 1)[6].

Figure 1 Cocoa seedlings distributed



Source: NAADS 2014/15-2018/19

3 https://www.icco.org/about-cocoa/growing-cocoa.html.
4 Local traders in Bundibugyo estimate that about 20,000MT are traded in the district
5 Cocoa production has been introduced to these districts by leading cocoa traders like ESCO and ICAM
6 It is observed that in the absence of a national cocoa policy, NAADs had no formal basis to guide selection of the districts to receive seedlings; no formal guidelines for selection of authentic nursery operators; nor a scientific basis for allocation of suitable cocoa varieties to the different agro-climatic and soil conditions. In addition, NAADs did not have a monitoring mechanism in place that could indicate the survival rate of the seedlings distributed. Such a mechanism would have provided a good benchmark for projections and planning for anticipated increases in production. Furthermore, seedling distribution was not supported by any extension service delivery. Taking a conservative assumption that up to 50%of the seedlings that were distributed survived, the area under cocoa could have increased by about 10,000Ha. However, without reliable monitoring of data, the effect on production via the new seedlings cannot be readily quantified.

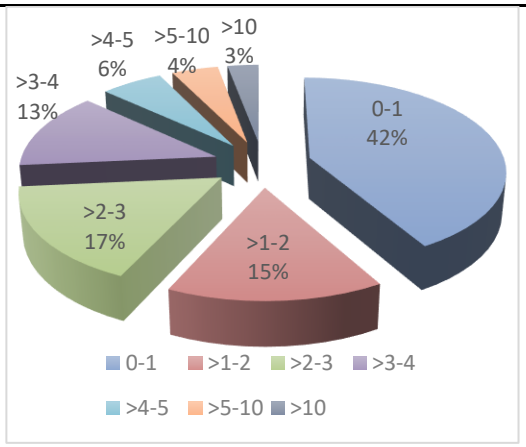
In 2017, NaCORI also estimated that of the 21.000 hectares (Ha) under cocoa, 6.000 Ha (28.6%) has mature productive trees. On the other hand, official statistics from the National Agricultural Advisory Services (NAADS) estimated that 23 million cocoa seedlings have been distributed in the country between 2014/15 to 2018/19 (see Figure 1).

2.1.2 Cocoa productivity and production

Production is predominantly done by small holder farmers. Analysis of the survey data showed that the overall average cocoa farm size is 2.7 acres, although a majority (42%) have <0.5-1.0 acres under cocoa production, as shown in Table 3.

Table 3 Farmers with different cocoa farm sizes

Region	Districts	Cocoa Farm Size (Acres)						
		0-1	>1-2	>2-3	>3-4	>4-5	>5-10	>10
South Western	Bundibugyo	16%	18%	21%	30%	10%	5%	0%
	Ntoroko	50%	17%	17%	11%	6%	0%	0%
	Kasese	42%	33%	25%	0%	0%	0%	0%
North Western	Hoima	67%	17%	17%	0%	0%	0%	0%
	Kagadi	80%	10%	0%	0%	0%	0%	10%
	Kibaale	82%	7%	4%	4%	0%	4%	0%
South Western	Buikwe	68%	12%	12%	0%	4%	0%	4%
	Mukono	20%	14%	23%	14%	9%	11%	9%
Total		42%	15%	17%	13%	6%	4%	3%



All survey interviews were carried out on the cocoa plantations, which allowed enumerators to ask specific questions about cocoa productivity. One of the main observations made in the field was the age of the crop; in the known producing areas of Bundibugyo, Buikwe and Mukonohad, mature productive cocoa trees were more rampant, while in the other districts of Kibaale, Kagadi, Kasese and Ntoroko, younger crops were more rampant. In some areas, cocoa was not yet in production (42 out 385 farmers or 11%).

2.1.2.1 Yield per tree

An attempt to estimate the productivity of trees was done by using the average number of trees per farmer and the average quantity of cocoa harvested in the two productive seasons per year. The first season falls between April-June and the second season falls in September-March, which is also considered the “main” harvest season. Annual yield figures used were derived from summing production for both seasons. Thus, by dividing the annual estimated yield per farmer by the average number of trees per farmer, the yield per tree was derived in the different districts (see Table 4). Output per tree was highest in Bundibugyo (1.06kg per tree) and Mukono (0.98 per tree), and lower in Kagadi (0.7kg per tree) and Hoima (0.6kg per tree). The difference is probably due to the age of the productive tree, as there are more mature trees in Bundibugyo and Mukono, compared to younger trees in Hoima and Kagadi.

Table 4 Average yield per tree (Kg of fermented dry beans)

Region	District	Average Productivity		
		Productive trees	Yield (Kg)	Yield per tree (Kg)
South Western	Bundibugyo	470	502	1.06
	Kasese	177	144	0.80
North Western	Hoima	118	68	0.60
	Kagadi	144	80	0.70

Central	Mukono	65	64	0.98

2.1.2.2 Yield

To estimate the yield per acre, data were analysed by district (see Table 5). The average annual yield reported by farmers per district was divided by the average area under production. The results showed that Bundibugyo had the highest yield at 525 kilograms (kg) per acre, followed by Mukono at 355 kg per acre. Productivity was lowest in the districts of Kasese (195 kg per acre) and Kagadi (83 kg per acre). Differences in climatic conditions, soil, husbandry, breed, age of the plant, etc., may all contribute to the differences observed in productivity. Thus, deeper analysis is required to ascertain scientific reasons for these variations.

Table 5 Average production per acre

Region	District	Av. Production per Farmer		Yield (Kg/Acre)
		Area (Acres)	Yield (Kg)	
South Western	Bundibugyo	1.98	1049	525
	Ntoroko	1.85	440	238
	Kasese	1.20	234	195
North Western	Hoima	1.00	323	323
	Kagadi	0.84	70	83
	Kibuule	1.40	280	200
Central	Buikwe	1.40	342	244
	Mukono	3.20	1139	355

2.1.2.3 Increase in production (i.e. Output)

Increase in cocoa production is mainly measured by the increase in the area that is under production, which usually occurs by transforming lands used for other crops and substituting the land with cocoa. In the course of the survey, many farmers had young unproductive cocoa plantations. Table 6 shows the proportion of farmers that had immature cocoa fields by district; with Kasese (28%) and Mukono (24%) having the highest proportion of farmers with yet-to-mature cocoa plantations, while Kagadi and Mukono (10%) had the lowest proportion of farmers with young cocoa plantations. Depending on the variety, climate, soil conditions and husbandry methods, a cocoa plant may take between 3-4 years (36-48 months) to begin flowering and fruiting. Thus, the young cocoa plantations are still 1-2 years away from maturity.

Table 6 Average production per acre

Region	District	Farmers	Young Cocoa Plantation	Age of Trees
		(%)	(Av. Area)	(Months)
South Western	Bundibugyo	16%	0.6	15
	Ntoroko*	-	-	-
	Kasese	28%	1.1	28
North Western	Hoima	12%	12.0	15
	Kagadi	10%	2.4	24
	Kibaale	10%	0.9	17
Central	Buikwe*	-	-	-
	Mukono	24%	0.8	18

N.B. No reliable data was obtained from the farmers

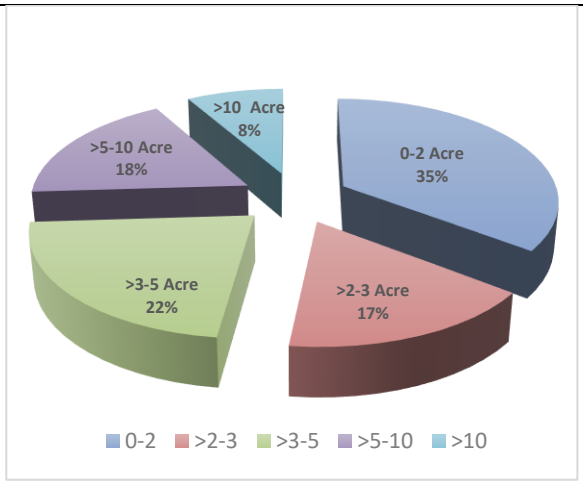
In addition to these plantations, there were several farmers with young cocoa fields in Mukono, Buikwe, Kagadi and Hoima. It is therefore projected that the current production will be sustained, and volumes will increase in the coming years, particularly from non-traditional cocoa production areas.

2.1.2.4 Land availability for cocoa expansion

The study also assessed whether the farmers have land available for expansion of their cocoa plantations. It was found that a majority of farmers were smallholder farmers, who owned between 0-2 acres of land that they also farmed on. Table 7 shows that the farmers in the districts of Kasese and Bundibugy in the South Western region were the most pressed by land. This was followed by the districts of Hoima, Ntoroko, Kagadi and Ntoroko. The farmers in Mukono and Buikwe were least affected by a shortage of land.

Table 7 Average land holding per cocoa farmer by district

Region	District	Land Holding Per Farmer (Acres)					
		N	0-2	>2-3	>3-5	>5-10	>10
South Western	Bundibugyo	85	49%	12%	24%	12%	4%
	Ntoroko	19	42%	21%	37%	0%	0%
	Kasese	28	61%	29%	4%	7%	0%
North Western	Hoima	41	44%	22%	12%	17%	5%
	Kagadi	40	43%	13%	15%	23%	8%
	Kibaale	40	10%	8%	43%	30%	10%
Central	Buikwe	39	36%	21%	13%	13%	18%
	Mukono	93	17%	18%	26%	25%	14%
Total		385	35%	17%	22%	18%	8%



When probed further if farmers had land available for expansion of their cocoa plantations, it was found that up to 20% of them had no more land they could convert to cocoa production. The majority (45%) could allocate no more than 1 acre to expand their current cocoa plantations and were mainly from Bundibugyo (65%), Ntoroko (26%) and Kasese (25%). Farmers in Mukono and Buikwe had more land available they could convert to cocoa production. Among all cocoa producers, Bundibugyo farmers have committed the greatest proportion of their land to cocoa. Table 8 below shows the proportion of farmers' land that was covered by cocoa in the different districts. South western region district farmers had proportionately more land converted to cocoa production, followed by the central and north western region.

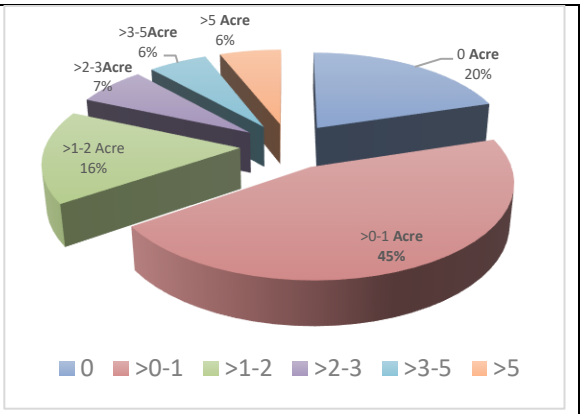
Table 8 Proportion of farmers' land under cocoa production

Region	District	Proportion (%)
South Western	Bundibugyo	81%
	Ntoroko	54%
	Kasese	55%
North Western	Hoima	33%
	Kagadi	22%
	Kibaale	29%
Central	Buikwe	37%
	Mukono	41%

Farmers in Mukono and Buikwe had more land available they could convert to cocoa production (see Table 9). Mukono had the highest proportion of farmers with land for expansion. However, most of the farmers had no more than 5 acres for expansion. The observations suggest that even if more farmers opened up new cocoa fields, it would remain largely on small farm holdings.

Table 9 Available land for cocoa expansion

Region	District	Available Additional land Per Farmer (Acres)						
		N	0	>0-1	>1-2	>2-3	>3-5	>5
South Western	Bundibugyo	85	65%	25%	8%	0%	1%	1%
	Ntoroko	19	26%	63%	11%	0%	0%	0%
	Kasese	28	25%	71%	4%	0%	0%	0%
North Western	Hoima	41	10%	68%	22%	0%	0%	0%
	Kagadi	40	13%	65%	8%	5%	3%	8%
	Kibaale	40	3%	48%	23%	15%	8%	5%
Central	Buikwe	39	3%	51%	13%	15%	8%	10%
	Mukono	93	0%	30%	28%	13%	15%	14%
Total		385	20%	45%	16%	7%	6%	6%



2.1.3 Cocoa profitability vis-a-vis other cash crops

In addition to cocoa, farmers produce other crops for cash, home consumption and food security. Different parts of the country produce different crops suitable for the respective agro-ecological conditions. The survey sought to identify these alternative crops cocoa farmers grew. In all cases, it was found that farmers produced a combination of at least 3 crops.

Table 10 shows that the most common alternative cash crop grown by cocoa farmers is coffee. In addition to cocoa, up to 46% of them were producing coffee as well. Coffee stands out as the most preferred alternative cash crop in Kasese, Mukono and Bundibugyo districts. Vanilla is also grown by a few farmers (12%) in Mukono, Buikwe and Bundibugyo as a high value crop to complement cocoa.

For food crops, the most common food crops were beans grown by 86% of the farmers. Maize (67%), banana (65%) and cassava (60%) were the other common food items produced. Banana was more common in Bundibugyo, Mukono, Buikwe and Kagadi, while cassava, beans and maize were fairly distributed in all districts. The alternative also serves as shades for the cocoa plants especially when coffee and banana intercrops are used.

Table 10 Other crops produced by cocoa farmers

Region	District	Crop Producers (No.)						
		Banana	Cassava	Ground nuts	Maize	Coffee	Beans	N
South Western	Bundibugyo	74	73	2	25	34	67	85
	Ntoroko	15	18	0	11	9	12	19
	Kasese	20	17	0	10	22	21	28
North Western	Hoima	15	34	25	30	19	36	41
	Kagadi	25	34	25	34	17	39	40
	Kibaale	21	34	26	39	17	40	40
Central	Buikwe	26	32	7	29	11	33	39
	Mukono	56	78	17	79	47	84	93
Total		252	320	102	257	176	332	385
Percentage		65%	60%	26%	67%	46%	86%	

A profitability analysis was done to compare cocoa with the other cash crops grown (coffee in this case), based on the expression: ***Gross Income = Sales – (Input costs + Operational costs)***

From the analysis it is important to note that:

Input cost refers to the amount of money the farmer spent in being able to produce what was sold. Therefore, items that did not go into the sales realised are not part of the calculation. For example new cocoa seedlings bought by the farmer have nothing to do with the cocoa harvested/sold in the same season, so such inputs are not part of the input costs. Also, because land and plantation establishment are considered to be a sunk cost in cocoa production (cocoa is a perennial crop), it is not considered as part of the gross margin analysis.

Operational costs are all those costs that the farmer incurs in maintaining the cocoa production fields, production, post-harvest handling as well as costs related to bringing the cocoa produce to the market/buyer. Since cocoa is harvested throughout the year with two peaks (two seasons overlapping the calendar year), gross incomes in this study were analysed for two seasons of 2019, to give an estimate of the annual income. Analysis per acre was also done to provide a standard base for productivity and income analysis.

Gross margin analysis was done based on a traditionally managed cocoa field (no chemical inputs applied) and an improved coffee field (GAPs applied, no chemical inputs applied[7]), both on 1 Acre. Information on cocoa was derived from the field survey[8] while coffee data was based on the Uganda Coffee Platform study[9]. It was found that the operating costs/acre for both cocoa and coffee were not significantly different. The results of the analysis gave indicative figures which indicated that the gross margin of cocoa (Ugx 3,158,000) was higher than coffee (Ugx 2,559,000) as shown in Table 11; this is mainly due to the higher farm gate prices paid for cocoa (Ugx 7,000 per kg) compared to coffee (5,400).

Table 11 Other crops produced by cocoa farmers

Activity	**Enterprise cost (Ugx)**	
	Cocoa	**Coffee**
Labour		
First weeding/Slashing	30,000	30,000
Second weeding/Slashing	30,000	30,000
Field maintenance e.g. pruning,etc	60,000	140,000
Security/Guarding	20,000	-
Harvesting	80,000	60,000
Drying	30,000	25,000
Shelling/Hulling	60,000	40,000
Sub total	310,000	325,000
Materials		
Drying Tarpaulin	20,000	20,000
Packaging Bags	12,000	12,000
Sub total	32,000	32,000
Revenue		
Output (kg)	500	540
Price per kg	7,000	5,400
Gross revenue (Ugx)	3,500,000	2,916,000
Total cost (Ugx)	342,000	357,000
Gross margin (Ugx)	3,158,000	2,559,000

Maize is another common non-traditional crop grown by the cocoa farmers for both household consumption and income. A gross margin analysis as shown in Table 12 was also carried out for the crop grown under different technologies with low input OPV and hybrid maize and high input hybrid maize. The analysis also showed that cocoa profitability was still way higher than maize.

7 Data did not show any difference in net income between the two different management systems

8 Based on Table 10 rounded off to the nearest thousand

9 Uganda National Coffee Platform, The financial viability of coffee farming in Uganda study report, October 2018

Table 12 Maize profitability analysis

Activity / Input	Low External Input (OPV)	Low External Input (Hybrid)	High External Input (Hybrid)
Seed (OPV / Hybrid)	35,000	50,000	50,000
Herbicides	-	-	24,000
DAP fertilizer	-	-	130,000
Urea fertilizer	-	-	120,000
Sub total	**35,000**	**50,000**	**324,000**
Labour			
Slashing / land clearing	30,000	30,000	30,000
First ploughing	70,000	70,000	70,000
Second ploughing	60,000	60,000	-
Herbicide application	-	-	10,000
Planting	20,000	25,000	35,000
Top dressing	-	-	15,000
First weeding	30,000	30,000	30,000
Second weeding	35,000	35,000	-
Picking cobs	24,000	30,000	35,000
Transporting cobs	10,000	15,000	20,000
Drying	15,000	18,000	25,000
Shelling	25,000	35,000	50,000
Sub total	**319,000**	**348,000**	**320,000**
Materials			
Tarpaulin	10,000	10,000	10,000
Bags	9,000	12,000	20,000
Sub total	**19,000**	**22,000**	**30,000**
Revenue			
Output (kg)	900	1,200	2,000
Price per kg	500	500	500
Gross revenue (Ugx)	450,000	600,000	1,000,000
Total cost (Ugx)	373,000	420,000	674,000
Gross margin (Ugx)	77,000	180,000	326,000

The FGD and KI discussions with the cocoa producing communities revealed that although cocoa is apparently more profitable to produce, other crops like maize will still be grown to provide food and income as well. Coffee is still popular even among cocoa farmers because it supplements income from other sources. Coffee has also been actively promoted by government agencies and numerous local and civil organisations working in the communities. The Uganda government is also implementing several programmes through its agencies like NAADS, OWEC, UCDA, MAAIF, among others to encourage coffee production. Increased cocoa production will require similar concerted efforts for production volumes to go up.

2.1.4 Cocoa production trends

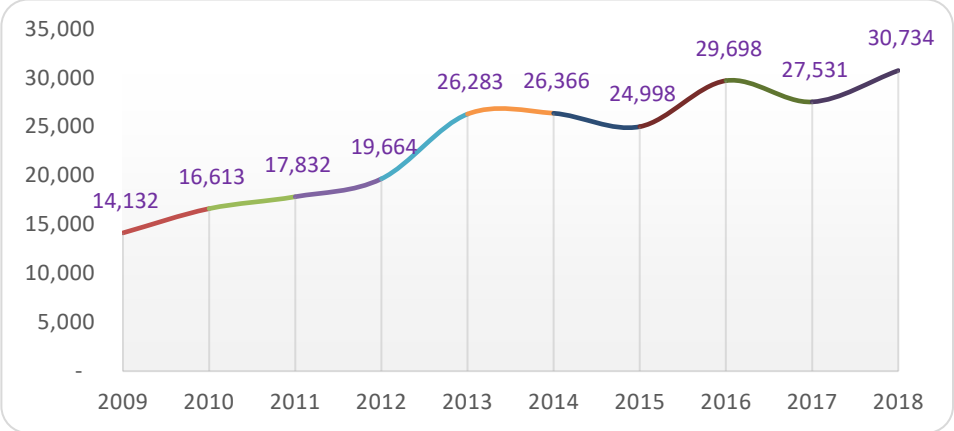
Using exports as a proxy for national production[10], data from URA shows that there has been a general increase in cocoa production of about 16,000MT (54%) over the past 10 years, from 14,000MT in 2009 to 30,000MT in 2018. Fall in production was observed between 2014 and 2015, which also coincided with a reduction in average normal rainfall received in Bundibugyo (southwestern Uganda), which

[10] The assumption is due to negligible cocoa processing in the country

affected overall cocoa production (UBOS Statistical Abstract 2016). Figure 2 shows the annual production trends over the period 2009-2018.

Figure 2 Trends in national cocoa production (Thousand MT) and Table 13

Year	Annual change
2009	-
2010	2,480
2011	1,219
2012	1,832
2013	6,619
2014	83
2015	(1,368)
2016	4,699
2017	(2,166)
2018	3,203



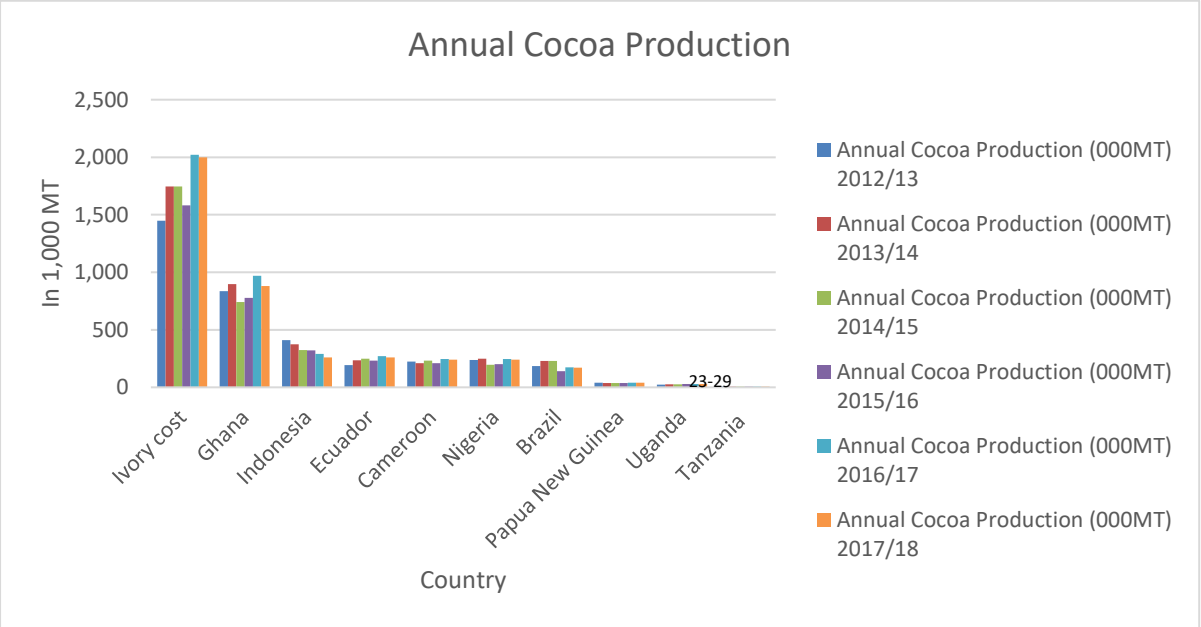
The biggest leap in production increase was observed between 2012 and 2013, when production increased by 6,619 MT over the period from 19,663MT to 26,282MT. The increase was probably due to private sector interventions in the sector. Over that period, leading cocoa trading companies i.e. ESCO, Olam and ICAM; and NGOs like SIDA, Swisscontact; and farmer co-operatives like Semuliki Cocoa Co-operative among others; were active on the ground through the provisions of planting materials, extension services, and trainings in improved production methods for increased productivity.

The other leap in production observed between 2015-2016 and 2016-2018 can be attributed to the new production from mature seedlings. Because production in Bundibugyo stands at about 20,000MT, the additional 10,000MT over that period can be linked to the new production districts promoted by the cocoa traders and NAADs.

By comparison, Uganda's cocoa production is still very low. The gap in production volumes with other producer countries is still wide, yet Uganda's potential to increase cocoa production remains largely untapped. The potential exists to fill the gap created by: increased international demand, stagnation and decline of traditional cocoa producers like Nigeria, Brazil and Papua New Guinea[11]. In Indonesia, cocoa production is actually falling (e.g. 850,000MT in 2012 compared to 260,000MT in 2018, ICCO data). These are potential openings that Uganda can strive to fill. Figure 3 shows the comparative position of Uganda among the top cocoa producing countries, with a range of 23,000 – 29,000 MT on over the years of 2012/13 to 2017/18.

[11] www.stastica.com –World cocoa production by country 2012/13 -2017/18

Figure 3 Comparative cocoa production by selected countries



Source: ICCO - statistics on cocoa industry

2.1.5 National extension service delivery and challenges

As national extension service delivery in the cocoa sector is largely absent, cocoa traders like ESCO, ICAM, Olam, as well as individuals have taken over this role. OLAM, ESCO, and ICAM chocolates are among the leading cocoa export companies in Uganda due to their first entry advantage into the Bundibugyo district. In their quest to increase trade volumes, these companies pooled resources together to promote cocoa production, and succeeded because cocoa offered households a higher priced alternative than coffee, wVerticilihich motivated farmers to adopt the crop[12]. And because there were few market players at the time, these 3 cocoa companies enjoy good farmer loyalty to this day, which has a positive impact on motivating investments and support to production activities. The companies were thus involved in:

- Farmer mobilisation, which included the recruitment of cocoa farmers and formation of farmer groups/ producer organisations. For example, a project report by Swisscontact indicated that ICAM had over 5,000 affiliated farmers in their value chain; while ESCO had 14,000 and Olam had 9,000 in the Bundibugyo district.
- Through the farmer groups, service provisions included increased access to seedlings and other input and regular training in agronomy, post-harvest handling, cocoa fermentation, drying and quality management.
- Providing community development services such as the formation and promotion of Village Saving and Lending Associations (VSLAs), community water projects, access roads, health and food security trainings, among others. The companies have also been at the forefront of cocoa advocacy in the local districts.
- Providing easy market access by setting up village level cocoa central bulking stores, for example, ICAM has over 120 collection centres in Bundibugyo and Olam has 36.
- Providing specialised training in organic cocoa production, and many of them received organic production certification. For example, Olam has over 6,000 certified organic farmers.
- With growing competition for cocoa in Bundibugyo, these companies have pioneered the promotion of new cocoa production areas in Kagadi, Hoima, and Kibale (by ESCO); and in Mukono, Kayunga, Buikwe, Koboko (by ICAM).
- These export companies are also responsible for final quality assessment of the cocoa beans, grading, packaging and labelling before export.

[12] Farm gate price of cocoa is Ugx 6,500 per kg compared to 3,200 per kg of coffee.

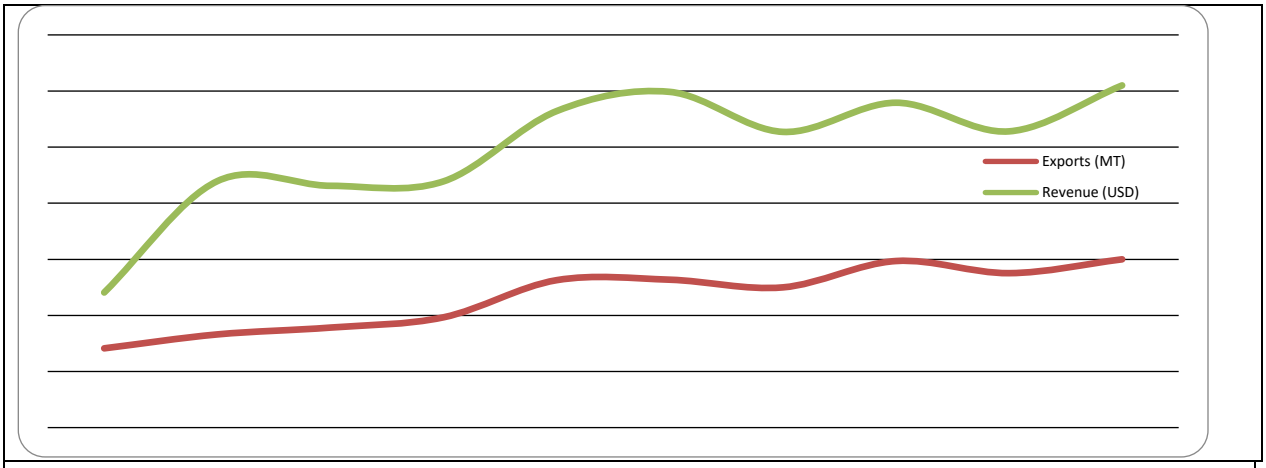
However, without a guiding policy for the cocoa sector in Uganda, the private sector is unable to tackle all the challenges that exist in the sector, which are largely dependent on policy reforms. While technical support for production is under the National Coffee Research Institute (NaCORI), it lacks both financial and human resource capacity to undertake research on cocoa agronomy, breeding, pest and diseases, among other aspects of production-level changes. This has a bearing on the low productivity of cocoa in Uganda. While in the past 3 decades have shown minimal government transfers and development funding dedicated to the promotion of cocoa promote, there is no dedicated budget to the advance the cocoa sector. Gaps in existing research along with low quality planting materials and no approved regimes for disease and pest, can all lead to sunken costs in post-harvest handling and processing. These challenges are compounded by the lack of trained cocoa extension personnel to support the farmers.

2.2 Cocoa Exports

2.2.1 Volume and value of exports

Official records from URA indicate that the volumes exported from Uganda have been increasing over the past 10 years. Table 14 shows in detail the annual volumes exported. Currently national exports stand at about 30,000MT per annum, up from 14,000MT in 2009. The number of export companies has also steadily grown from 9 companies in 2009 to 20 companies in 2018. In the same regard, the value of cocoa exports has risen from USD 24 Million in 2009 to USD 61 Million in 2018.

Figure 4 Uganda's cocoa exports 2009-2018 and Table 14



Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Exports (MT)	14,132	16,612	17,831	19,663	26,282	26,366	24,997	29,697	27,531	30,734
Revenue (USD)	24,083	43,931	43,107	43,897	56,420	59,848	52,716	57,913	52,807	61,307

Source: Uganda Revenue Authority (URA), 2019

2.2.2 Cocoa prices

From the field surveys, an estimation of cocoa sales and income at household level were made for a 12-month (annual) crop cycle. A cocoa crop cycle has 2 harvest seasons usually running from April-June (first season) and September-March (second season).

For cocoa farmers, price is a major contributor to the final sales income. Yet, it is important to note that the farm gate price is determined by the price offered on the international market, and thus, fluctuations in the farm gate prices correspond to the fluctuations in international prices. For example, in the second

season of 2016, the farm gate price farmers received for their dry cocoa were as high as Ugx8,000 per kg, but continuously dropped to Ugx6,000 per Kg in 2017/18 according to international price drops. Table 15 shows the prices of cocoa in the district surveyed, for the past 2 seasons of 2019.

Dry cocoa
Bundibugyo, Hoima and Kibaale get the highest prices (Ugx 7,000 per Kg) compared to the districts in central, for example, Buikwe (Ugx5,000-5,500 per Kg). Kasese and Ntoroko get between Ugx 5,000-6,000) per Kg.

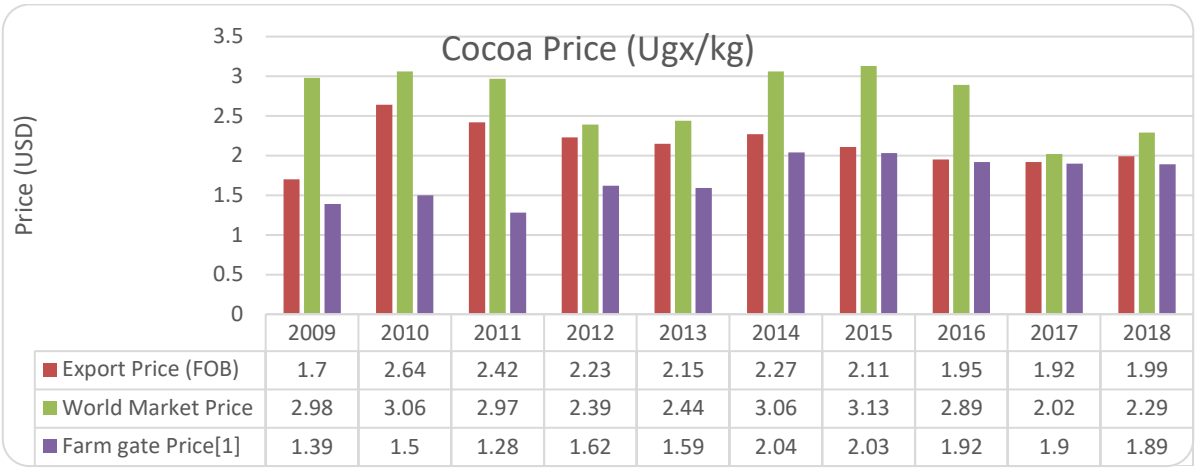
Wet cocoa
The price of wet coco ranged between Ugx 2000-2,3000 in all the districts, with more farmers in Bundibugyo getting Ugx 2,300 per kg compared to farmers in other districts.

Table 15 Cocoa Prices

Region	District	Average Prices- Dry (Ugx) 2019		Average Prices- Wet (Ugx) 2019	
		Season A	Season B	Season A	Season B
South Western	Bundibugyo	7,000	7,000	2,200	2,300
	Ntoroko	6,000	6,000	2,000	2,000
	Kasese	6,000	5,000	2,000	2,000
North Western	Hoima	7,000	7,000	2,300	2,300
	Kagadi	7,000	6,500	2,200	2,300
	Kibaale	7,000	6,500	2,200	2,300
Central	Buikwe	5,500	5,000	2,200	2,300
	Mukono	6,500	6,500	2,200	2,300

Analysis of cocoa prices took into consideration the farmer (farm gate price), trader (village and bulk trader prices) and the exporter (export and world market price). As the world market prices dictate the local cocoa prices, local suppliers of cocoa are price-takers and make their margins based on these world prices. The World Cocoa Foundation explains that cocoa price increases may be attributed to, among other factors, delayed transport of cocoa to ports, limited producer selling, lower stockpiles, extreme weather conditions such as intense rainy or dry periods, and/or political instability in producing countries. Price decreases may be attributed to, among other factors, favourable weather conditions, expectations of a large crop or higher stockpiles, and/or decreased demand expectations among processors. Price movement is also highly influenced by speculative future markets, which serves as a driving force behind short-term volatility. Speculative buying (long position) results in a price increase and selling (short position) results in a price decrease. Arbitrage between the two currency markets is an additional consideration: for example, a weaker British pound relative to the US dollar puts downward pressure on cocoa as the attractiveness of supplies traded in New York decreases. A stronger pound relative to the dollar leads to price increases due to the appeal of cheaper commodities in New York.
Figure 5 shows Uganda's annual comparative cocoa export price (derived from URA data); the farm gate price (paid by cocoa traders to farmers, based on data from the field converted to USD equivalent at that time); and the world price (from ICCO statistics). The data shows a falling price trend between 2010-2013, a rise between 2014-2015, and a decline again in 2016-2018. Both the farm gate and export prices follow this same trend. Further analysis of price shows a growth (between 2011 to 2018 in the share of farm gate margin of the export (FOB) prices.

Figure 5 Cocoa bean prices 2009-2018

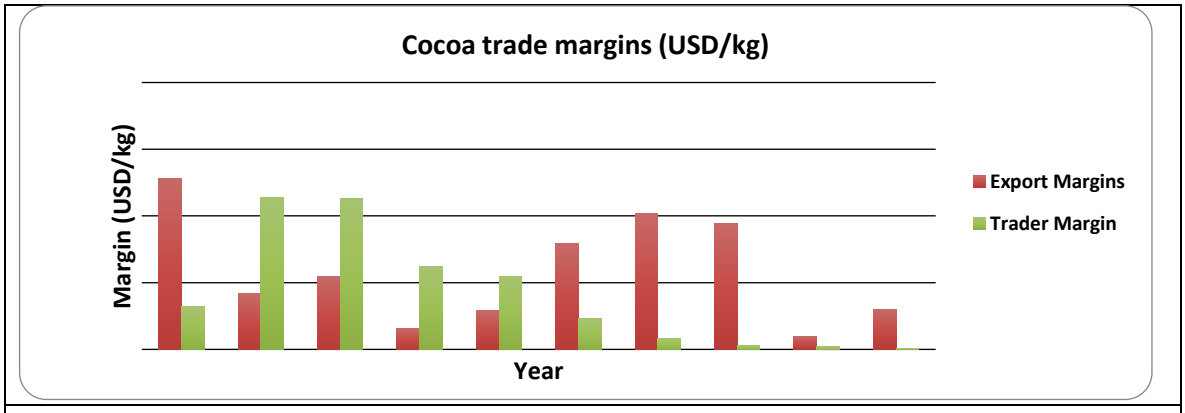


	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Export Price (FOB)	1.7	2.64	2.42	2.23	2.15	2.27	2.11	1.95	1.92	1.99
World Market Price	2.98	3.06	2.97	2.39	2.44	3.06	3.13	2.89	2.02	2.29
Farm gate Price[1]	1.39	1.5	1.28	1.62	1.59	2.04	2.03	1.92	1.9	1.89

NB: Farm gate price was given in USD derived by converting the Ugx price to USD based on the annual USD: Ugx average forex rate for the respective years.

Export and trade margins were derived from further analysis of the price data as shown in Figure 6. The numbers in Table 16 are indicative for illustration purposes.

Figure 6 Export and trade margins (USD/kg) and Table 16



Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Export Margins	1.28	0.42	0.55	0.16	0.29	0.79	1.02	0.94	0.10	0.30
Trader Margin	0.32	1.14	1.13	0.62	0.55	0.23	0.08	0.03	0.02	0.01

It is noted that the export margins (difference between trader and exports prices in USD/kg) were lower than trader margins between 2010 -2013, mainly due to volatility in the world market price. However, from 2014 to 2018 export margins have been higher than trader margins, though on the decline (USD 1.02/kg in 2015 compared to USD 0.3/kg in 2018). While international prices play a commanding role in the overall pricing of cocoa, volatility of the exchange rates at local level also influence the margins traders and exporters get. A weak local currency favours exporters who earn hard currency compared to local traders operating in shillings.

A critical feature in the above data is the consistent decline in trader margins running from 2010 through to 2018. This reduction in margins could, among other factors, be attributed to the increase in the number of cocoa traders in the market competing on price for the small volumes produced. The data also shows that both the export prices and indeed export margins are also falling. In 2017 and 2018,

estimated export margins were USD 0.1 and USD 0.3 per kg respectively, compared to 2009 when export margins were as high as USD 1.28 per kg.

It is also notable, as analysed further in section 3.5, that the village (lowest) level traders may take up 10-30% of the export FOB price, depending on how they position themselves in the supply chain to take advantage of the desperate need for cash and the product type they buy from the farmer i.e. fresh-wet, semi-dry or well dried cocoa beans.

Generally, however, the data suggests that cocoa trade and export are becoming less profitable, thus traders must either sell more, which calls for increased production of the current product (conversional cocoa beans) or sell higher value cocoa beans to keep in business. But is there sufficient demand for high value cocoa beans? This is analysed below.

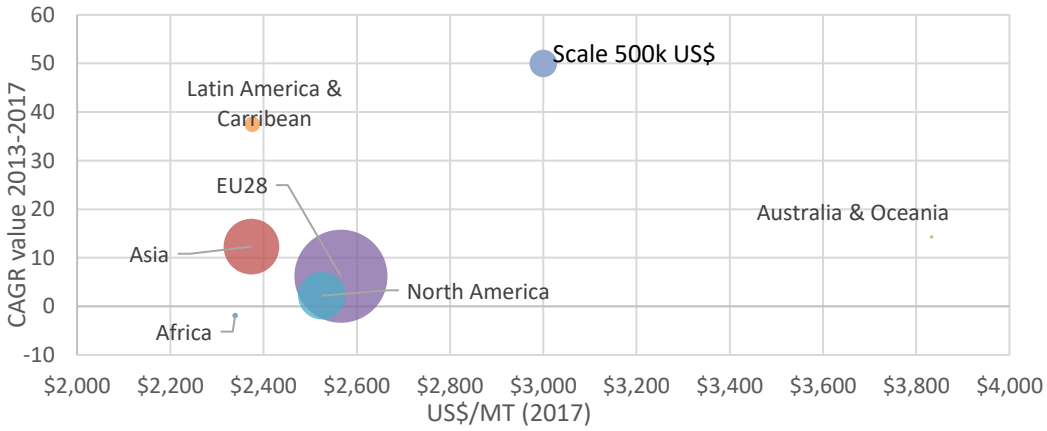
2.3 Cocoa Demand

2.3.1 Major cocoa bean importers in the world

In 2017, Europe imported about 1.8 million MT of the total cocoa produced, valued at 4.5 billion USD (3.9 billion EUR).

As can be seen in the graph below in Figure 7, Europe represented the largest cocoa bean market at 64% of total value imported in 2017. This was followed by Asia (~18%) and North America (~15%). In Asia, the growth is led by a rise in cocoa bean imports by Indonesia. Indonesia's own cocoa production is falling as farmers are switching to other crops[13]. Europe, with a weighted average growth of 7% (2013-2017), shows a steady growth in volume and value compared to North America, which only had a 2% compound annual growth rate over the same period[14]. Overall value growth seems to follow volume growth. The premiumisation trend, which can be observed in the beer and coffee industries, does not seem to have reached the chocolate sector at a significant scale yet[15].

Figure 7 Weighted average value US$/MT of imports 2017 Cocoa beans, whole or broken, raw or roasted CAGR in value USD/MT in 2013-2017, Bubble size represents the total value imported in USD in 2017

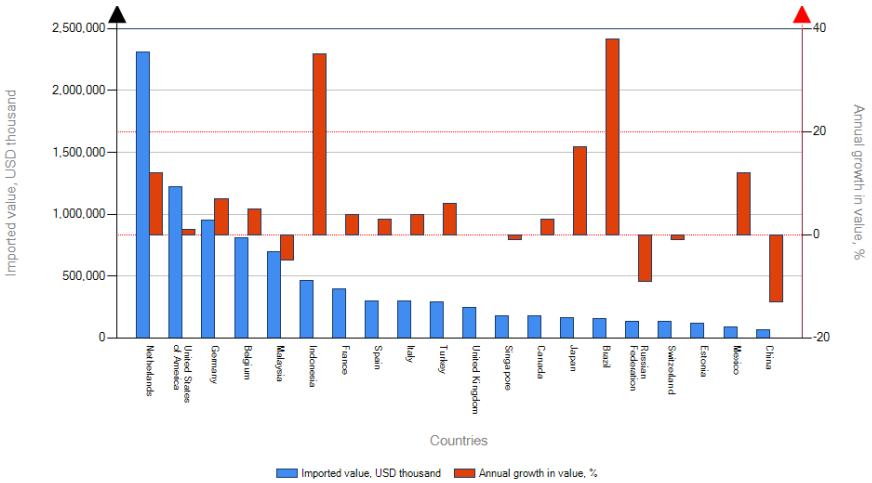


[13] ICCO, "Grinding Statistics," 31 8 2018. Online. Available: https://www.icco.org/statistics/production-and-grindings/grindings.html. [Accessed Februay 2019].
[14] Y. Rusmana, "Indonesian cocoa production shrinks as farmers switch crops, Bloomberg, The Jarkarta Post," 16 July 2018. [Online]. Available: https://www.thejakartapost.com/news/2018/07/16/indonesian-cocoa-production-shrinks-as-farmers-switch-crops.html. [Accessed March 2019]. S. Yuniarni, "The Long Road to Reviving Indonesia's Cacao Industry," 15 July 2018. [Online]. Available: https://jakartaglobe.id/context/the-long-road-to-reviving-indonesias-cacao-industry. [Accessed 2019 March].
[15] I. Almeida and A. Brown, "Big Coffee Has Problem as Craft Raosters Cut Out a Middleman, Bloomberg," 14 March 2019. [Online]. Available: https://www.bloomberg.com/news/articles/2019-03-14/big-coffee-has-a-problem-as-craft-roasters-cut-out-a-middleman. [Accessed March 2019].

Source: derived from ITC Trade Map

The Netherlands is the largest importer of beans worldwide, representing 25% of total imports in value, followed by the US (13%) and Germany (10%)[16].

Figure 8 List of importers of cocoa beans and the value US$ thousand imported and annual growth value % 2017



Source: ITC Trade Map

Processing or grinding figures are important in the cocoa industry, as they are often used as an indicator for demand. Europe, North America and Asia (Malaysia, Indonesia and Singapore) account for about 60% of the grindings (Pipitone, 2018). The ICCO estimated that global grindings rose by +3.9% in 2017/2018 and are estimated to be +2.6% in 2018/2019. According the same source, Europe represents about 35% of the world's cocoa processing capacity (ICCO, 2018), of which Germany and the Netherlands have the largest share, representing about 60%. According to the European Cocoa Association (ECA), the European Cocoa industry ground over a million MTs of cocoa beans during the 2016/2017 season, close to a third of the world cocoa production. The Netherlands alone accounted for 550,000 MT.

[16] A. Simoes and C. Hidalgo, "he Economic Complexity Observatory: An Analytical Tool for Understanding the Dynamics of Economic Development. Workshops at the Twenty-Fifth AAAI Conference on Artificial Intelligence.," 2011. [Online]. Available: https://atlas.media.mit.edu/en/. [Accessed March 2019].

Table 17 Summary of cocoa forecasts and revised estimates from the ICCO

Cocoa year (Oct-Sep)	2017/2018		2018/2019	Year-on-year change	
	Previous estimates a/	Revised estimates	Forecasts		
	(thousand tonnes)				(Per cent)
World production	4 638	4 649	**4 799**	+ 150	+ 3.2%
World grindings	4 570	4 594	**4 712**	+ 118	+ 2.6%
Surplus/deficit b/	+ 22	+ 9	**+ 39**		
End-of-season stocks	1 748	1 734	**1 773**	+ 39	+ 2.2%
Stocks/Grindings ratio	38.2%	37.7%	**37.6%**		

Notes:

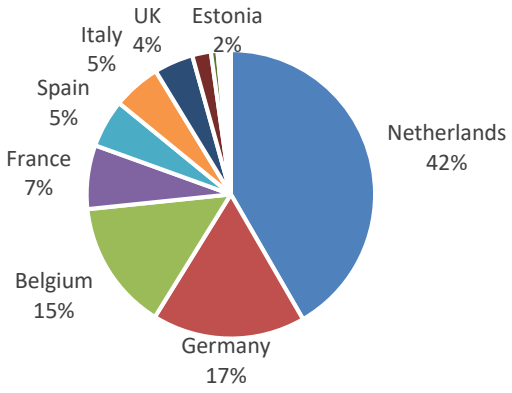
a/ Estimates published in *Quarterly Bulletin of Cocoa Statistics*, Vol. XLIII - No. 4 - Cocoa year 2017/2018

b/ **Surplus/deficit**: Net world crop (gross crop adjusted for loss in weight) minus grindings

Totals may differ due to rounding.

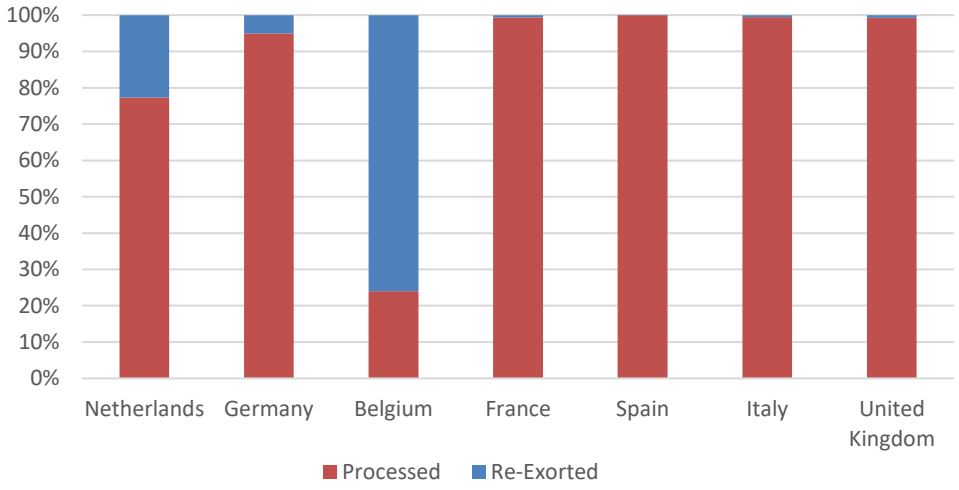
In Europe, Belgium follows the Netherlands and Germany as the biggest importer of beans (see Figure 9). As can be seen in Figure 10, most of the beans in the Netherlands and Germany are processed. These beans are re-exported from the Netherlands and mostly go to Germany (~65%). Belgium has relatively little processing capacity of its own (Figure 10) and its re-exported beans go to the Netherlands, Germany and France.

Figure 9 Share of imports of EU28 in 2017 countries based on value



Source: derived from ITC Trade Map data

Figure 10 Percentage processed versus re-exported 2017

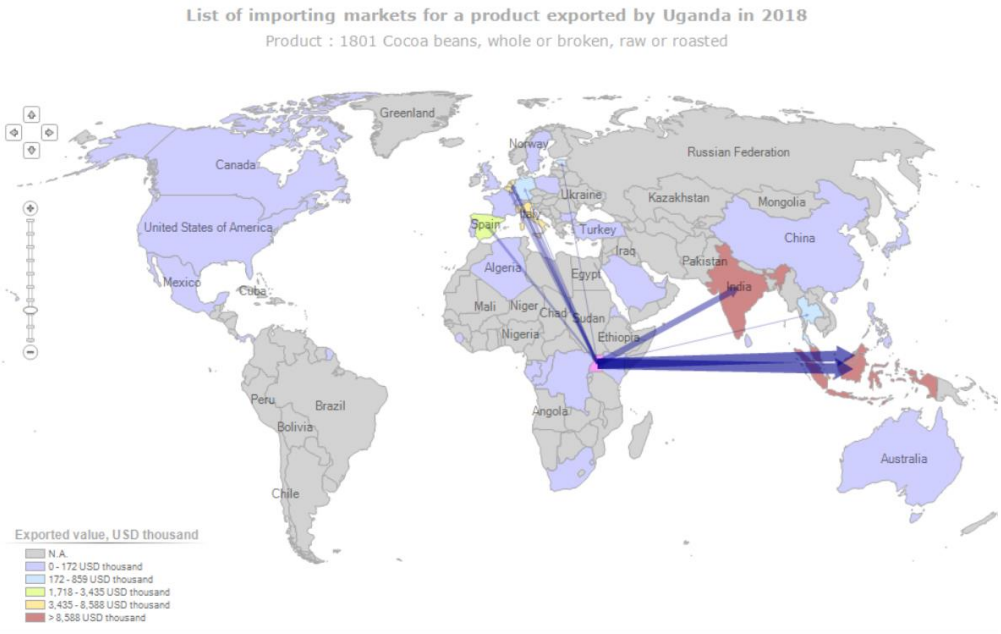


Source: derived from ITC Trade Map data

2.3.2 Major importers of Uganda cocoa beans

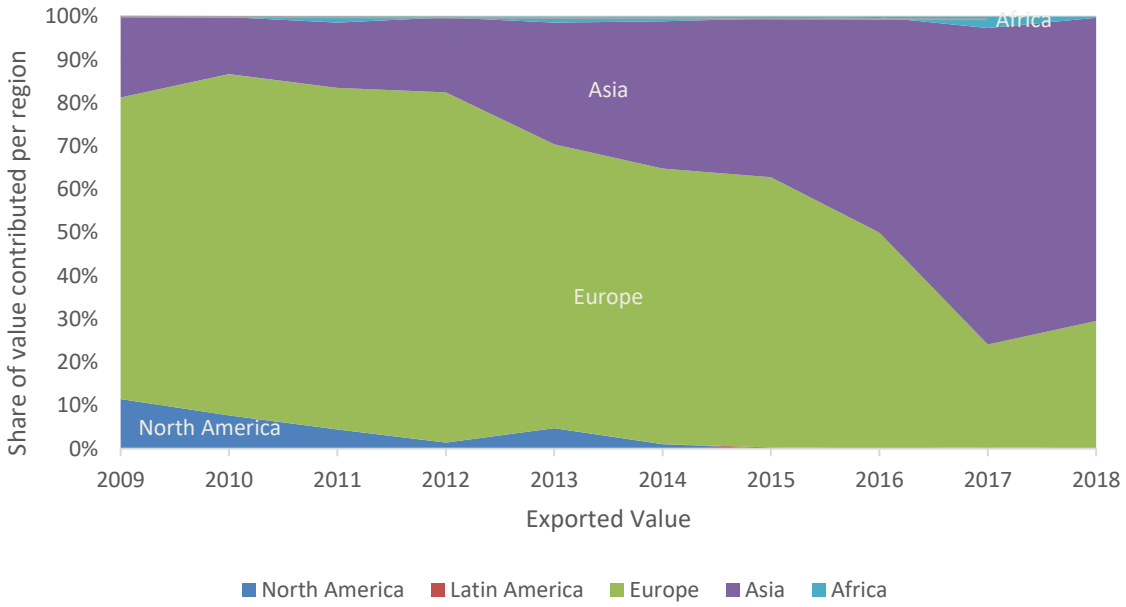
UNCOMTRADE data from 2017 indicated that imports from Uganda equalled about 35,000 MT and about 27,000 MT in exports. Buyers estimated around 30.000 MT, which seems reasonable based on the trade data available. Average annual volume imported between 2013-2017 was 27,000 MT, with an average year-on-year growth since 2013 of 14% (UNCOMTRADE). The top three countries importing Uganda beans in 2017 were India, Malaysia and Indonesia; they represent almost 76% of the total value of imports. This is up from 37% in 2013. Imports into Europe in 2017 represented only 22% of the total volume imported from Uganda, down from 56% in 2013, showing a clear decline. This is depicted in the figures below.

Figure 11 List of importing markets for cocoa beans exported by Uganda in 2018



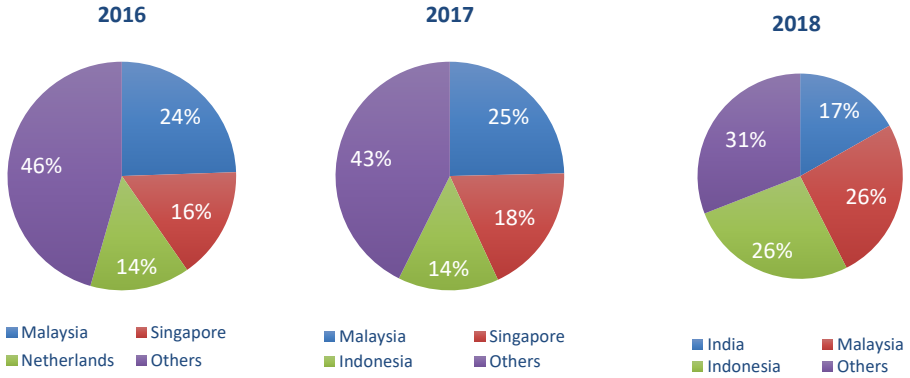
Source: derived from ITC Trade Map

Figure 12 Imports of cocoa beans in EUR from Uganda by its two main importers



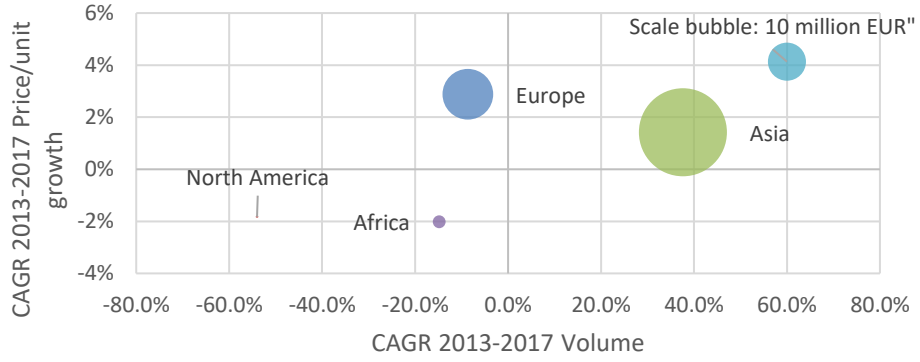
Source: ITC Trademap

Figure 13 Top 3 importers of Uganda beans 2015, 2016 and 2017 based on value



Source: ITC Trademap

Figure 14 CAGR 2013-2017 Price/unit of imports from Uganda (Y-axis); CAGR 2013-2017 Volume of imports from Uganda (X-axis) and Total Value of Imports from Uganda 2017 (bubble size)

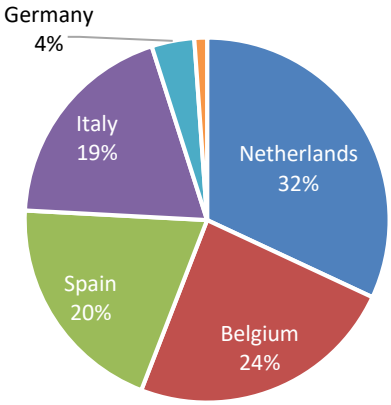


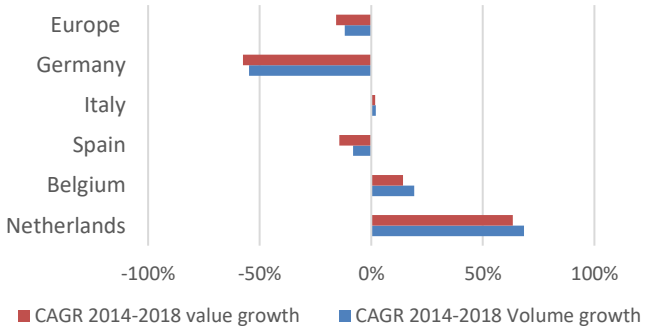
Source: derived from ITC trademap

In 2013 and 2014, Germany and Spain were the number two and three importers; in 2015 and 2016, the Netherlands was number three after Singapore (Figure 13). The variations between the years can be explained by the fact that Uganda is quite a small origin in terms of volumes, and any single buyer that decides to buy a few thousand MTs in a year would significantly impact the statistics.

Main EU importers of Uganda cocoa are Italy, the Netherlands, Germany and Spain. In 2017, it totalled about 8.500 MT, equal to about 20 million USD in value. In terms of unit value, Europe is the more interesting market (see Figure 14). However, with exception to imports to Italy and the Netherlands, imports to the EU of Ugandan cocoa beans show a clear downward trend (Figure 15). The reason for the increased volume to Asia, according to the buyers interviewed, is because of the very low freight costs to Asia and the increase in demand from Indonesia to compensate for the production decline in their own country. The explanation of the growth in Asia could be that it is more difficult to meet the quality (certification) demands of Europe, as was explained in the Executive Summary.

Figure 15 and Figure 16 Cocoa bean imports from Uganda to EU in 2017 and CAGR 2014-2018 of import values and volumes into the EU in %



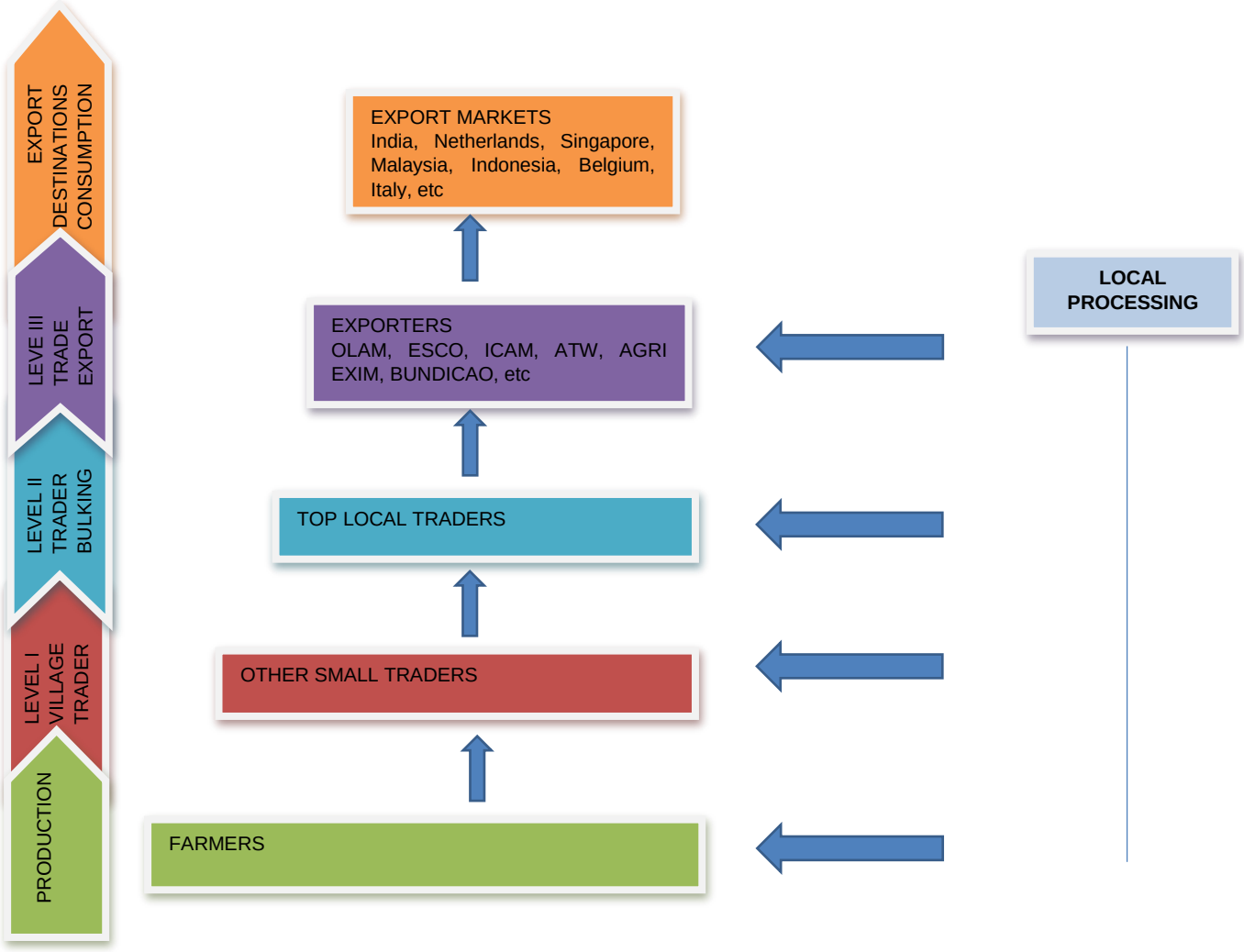


Source: derived from ITC trademap

CHAPTER 3: DETAILED STRUCTURE OF UGANDAN COCOA VALUE CHAIN

In section 3, five stages were identified within the trading structure of the cocoa value chain, as is illustrated in Diagram 1, i.e. Production; Primary trading, Secondary trading/Bulking; Export; and Export destinations. In the sub-sections below, a value chain approach is used to detail the cocoa sector in Uganda, from production, post-harvest handling, processing, to trading and export. Challenges and opportunities in the sector are also detailed as for a better understanding of what the MARKUP programme can do to assist in technical activities and who and how to partner with in improving the cocoa value chain.

Diagram 1 Uganda's Cocoa Trade Value Chain



3.1 Production

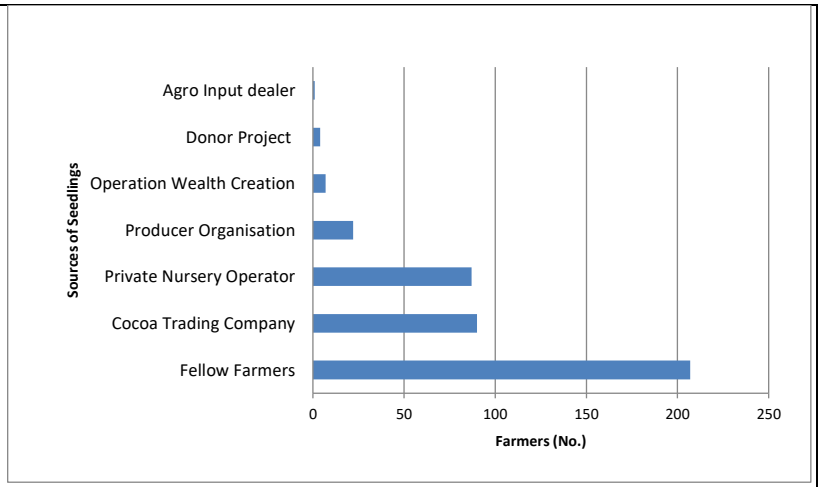
3.1.1 Production level processes

3.1.1.1. Cocoa planting

Cocoa farmers usually propagate the crop from cocoa beans that germinate into seedlings. The germinated seedlings are then planted in polythene bag pots and nurtured in a nursery before they are taken for planting in the fields. Seedlings are obtained from various sources that include: cocoa trading companies, Government agencies (NAADS, OWC), fellow farmers, donor projects, farmer producer organisations and private nursery operators. The survey showed that cocoa seedlings are mainly supplied by fellow farmers, cocoa trading companies and private nursery operators, as shown in Table 18.

Table 18 Sources of Seedlings

Seedling Source	Responses
Fellow Farmers	207
Cocoa Trading Company	90
Private Nursery Operator	87
Producer Organisation	22
Operation Wealth Creation/Government	7
Donor Project	4
Agro input dealer	1



In the FDGs, when asked about sources of planting materials, the cocoa farmers responded that:

"……there are some farmers with mature cocoa trees. We get seeds from them……." – **Farmer FGD, Ndugutu Sub-county, Bundibugyo District**

"…… For us we get pods directly from a tree, split the pod and plant the seeds directly in our gardens just like maize and wait for it to germinate……" "……our farmer group has a nursery. So members can buy seedlings from there……"-**FGD Ndugutu Sub-county, Bundibugyo District**

"……there are some commercial cocoa nurseries in our parish of Kamuyenje owned by women. They markets their seedlings and we buy from them……." **–Farmer FGD, Kyakabadiima sub-county, Kagadi District.**

"……Women groups are most active in producing and marketing cocoa seedlings. …… for example in 2018Katwekambe group sold their seedlings at UGX 10.000.000. Other women groups producing cocoa seedlings in Kagadi include Tukurakurane, Bahindukiremuntekereza and Tumusiime group, all in Kagadi district." ….a cocoa seedling is sold at Ushs500-1,000each …. **-Manager, Bunyoro Cocoa Farmers' Co-op. Society, Kagadi District.**

Agro input dealers, donor project and government (OWC) are among the less important supply sources. This however, presents a challenge to tracing planting materials, which are often not regulated. This exposes farmers and the cocoa sector at large to various risks that include the spreading of diseases, lack of quality control, and breeding selection and promotion, among others.

3.1.1.2. Cocoa fields

Research, and indeed observations from the cocoa farmers in Bundibugyo and Mukono, show that mature cocoa trees (i.e. 30 years of productivity) have a declining yield. The decline can be attributed to several factors, including aging trees, poor soil fertility management, and poor knowledge on diseases and pests coupled with bad agricultural practices. Depending on experiences of local farmers, cocoa is planted in varied planting distances. Majority farmers use measurements of 3m x 3m, while others use 4mX 3m or 4mX 2m. The seedlings are usually intercropped with a high canopy crop to provide shade, as cocoa thrives better in a shaded environment. The images below show young cocoa trees that are intercropped with banana trees in Kibaale District. In Mukono, Kasese and Bundibugyo, cocoa farms are inter-cropped with vanilla plants.

Image 1: examples of cocoa fields intercropped

Source: Charles Ntale

3.1.1.3. Control of pests and diseases

Cocoa is affected by numerous pests and diseases, mainly those causing pod rot and plant wilt. However due to the poor investments in research and development, and the absence of a cocoa extension service in the country, farmers are exposed to losses. They have no known remedies for handling e.g. the common Black Coffee Twig Borer (BCTB) and Verticillium Wilt disease, among others. Below are pictures of diseases that farmers do not have solutions for.

Image 2: Examples of Cocoa affected by pest and diseases in Uganda

Inorganic Spray Chemicals

The use of agro-chemicals to control cocoa disease and pests in Uganda is quite low. Of the 385 farmers interviewed, only 45 (12%) of them used chemical spray, and almost half of them (22 out of 45) were from Mukono. The others were from Bundibugyo (8), Hoima (5), Kagadi (4), Buikwe (4) and Kasese (2) (see Table 19). The most common one is Cypermethrin – a synthetic pyrethroid of low toxicity to humans and animals. Other chemicals used include Dursban – chlorpyrifos, a organophosphate (banned in the USA in 2004)[17]; Phoenix – (a thiourea insecticide); Rocket – (a

[17]The European Union confirmed it will no longer permit sales of the widely-used insecticide chlorpyrifos after Jan. 31, 2020.

combination of Profenofos and Pyrethroid Cypermetrin active ingredients); and DUDU – a non-synthetic pyrethroid based insecticide. See Table 19 for the distribution of chemicals used by district.

Table 19 Farmer Using Chemicals for Pests and Diseases control

Region	District	N	Users (Number)	Percent
South Western	Bundibugyo	85	8	9%
	Ntoroko	19	-	-
	Kasese	28	2	7%
North Western	Hoima	41	5	12%
	Kagadi	40	4	10%
	Kibaale	40	-	-
South Western	Buikwe	39	4	10%
	Mukono	93	22	24%
Total		385	45	12%

Organic Sprays

On the other hand, farmers have been advised by cocoa traders' extension staff to desist from using chemicals in order to protect cocoa from residual contaminants, as this impacts the quality and price of Uganda's cocoa. Indeed, Uganda's cocoa is reputed for being "organic" (i.e. chemical free), as by default cocoa production does not involve much chemical use. Rather, organic substances and preparations are being often used (e.g. a concoction of ash, pepper and animal urine and fermented cocoa pulp/juice). However, adoption of organic sprays is still very low. In the same regard, use of chemical fertilisers is very low: only 11 out of 385 (3%) of farmers interviewed reported the use of fertiliser, see Table 20. The common fertiliser used is NPK.

Table 20 Farmers using fertilisers by district

Region	District	N	Users (Number)	Percent
South Western	Bundibugyo	85	2	2%
	Ntoroko	19	-	-
	Kasese	28	1	4%
North Western	Hoima	41	3	7%
	Kagadi	40	2	5%
	Kibaale	40	-	-
South Western	Buikwe	39	3	8%
	Mukono	93	-	-
Total		385	11	3%

3.1.1.4. Certifications

The common certification programmes among cocoa farmers in Uganda are: Organic, UTZ/Rainforest Certification and Fair Trade Certification. Cocoa beans certified under these programmes fetches premium prices on the international market. It is thus advantageous for farmers and exporters to get certified. However, being qualified to get certification is a rigorous and costly process that ordinary cocoa farmers cannot achieve on their own. In reality, cocoa export companies are undertaking this task for their affiliated farmers, whereby very few farmers interviewed in the Bundibugyo sample (9% or 35 out of 385) have been registered to participate in certification programmes. Of the 35 that had so far been registered, only 24 of them had undergone the relevant training with trainers from ESCO and Semuliki Co-operative Union. Only 13 farmers (3% or 13 out of 385) had ever sold certified cocoa,

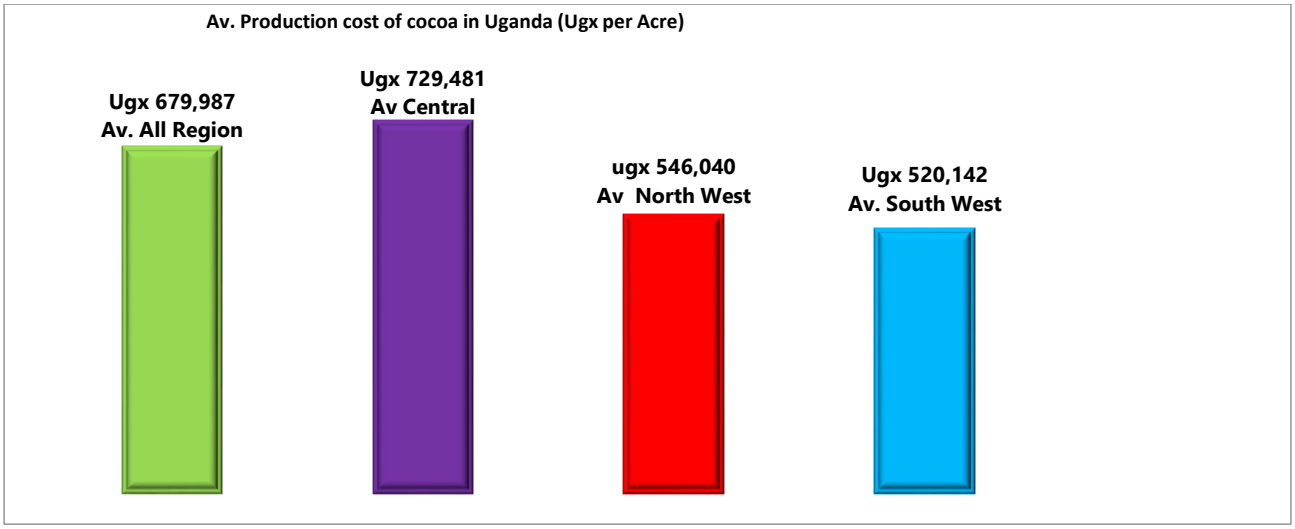
although these farmers could not readily state the benefits of being certified, nor did they have records of the quantities sold nor the prices. These observations suggest that farmer certification has not taken root and farmers are yet to realise its importance, value and benefits. This calls for more farmer sensitisation about the certification programmes.

In addition to the resource-strapped public agencies to provision extension services and cocoa research, other challenges such as production costs hurdles that cocoa producers face. It is important to note that the figures presented in this discussion are indicative in a self-reported nature and cross-checked by peers for verification through FGDs and key informant interviews. The self-reported information is based on farmer recollection and estimations as opposed to scientifically derived figures. The analysis was also done in an attempt to attach costs to the production activities such as labour costs. In most instances however, farmers use family labour for cocoa activities.

3.1.1.5. Production costs

Cocoa production requires several inputs for the plantations to remain sustainably productive. This survey collected data on these requirements and Figure 17 provides a summary of the production cost per acre of cocoa in the respective districts per annum for a productive plantation. Once established, cocoa plantations only require periodic maintenance to keep the fields and crop in good productive state. The costs are analysed below, based on the regions – South western (Bundibugyo, Ntoroko and Kasese); North western (Hoima, Kagadi, and Kibaale); and Central (Mukono and Buikwe).

Figure 17 Average production cost of cocoa (Ugx per Acre)



The overall production costs per acre were estimated at an average of Ugx 679,987 for all districts. The Central region had the highest production costs at Ugx 729,481 per acre, attributed mainly to fertiliser and pesticide costs in Mukono and Buikwe. This was followed by the North Western districts Hoima, Kagadi and Kibaale with Ugx546,040 per acre; and the South Western distrcits Bundibugyo, Ntoroko and Kasese with Ugx 520,142 per acre.
A breakdown of the production cost items is given in Table 21. The highest production cost items in all the districts were weeding/slashing, harvesting and drying costs in the table.

Table 21 Average Cocoa Production Costs (Ugx per Acre)

Production Activities	North West	South West	Central	Overall Average
N	n=102	n=99	n=103	N=304
Weeding, Slashing	77,671	245,231	115,000	93,636
Pruning	57,857	101,667	126,000	63,454
Spraying	.	.	52,114	44,433
Guarding	17,148	.	150,000	19,003
Harvesting	63,571	150,000	95,000	58,265
Splitting Pods	30,000	20,000	37,500	18,158
Fermenting	13,167	.	25,000	14,857
Drying	215,750	.	.	215,750
Tools	18,524	29,143	21,875	35,058
Fertilizer	.	.	48,444	45,600
Pesticides	.	.	58,548	45,319
Others	26,455	.	.	26,455
Total Cost	520,142	546,040	729,481	679,987

Because of its high value, cocoa attracts thieves at all stages, both in the field and after harvest. Thus, theft of cocoa is a threat farmers live with. In south western (Bundibugyo) by-laws have been enacted that allow for cocoa harvesting on only particular days of the month i.e. at mid and end month. Anyone found with fresh cocoa outside the gazetted harvest period commits an offence, as it is assumed he/she stole that cocoa. Similar bye-laws have not yet been adopted in other parts of the country, that is probably why security costs are higher in e.g. the Central region compared to the south western. Weeding/slashing is the other high cost item for keeping out weeds from the plantations.

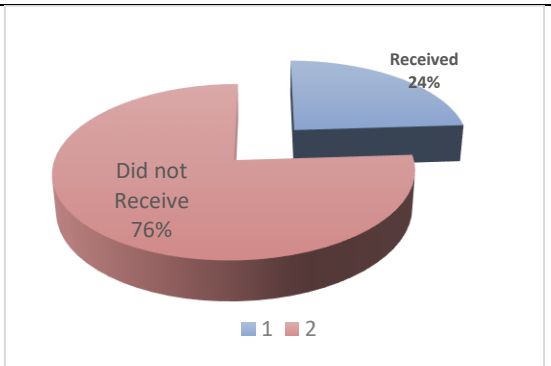
3.1.1.6. Provision of cocoa extension and advisory services

Currently the are no officially designated personnel to carry out cocoa extension and advisory services in Uganda. This is a result of the past strategies that over-shadowed cocoa development in the country, this explains the low access to extension as observed in Table 22. In spite of this, extension services are given in an ad-hoc manner by various sector players, and the survey sought to identify these providers.

From the survey, overall, just over a quarter (24% or 92) of the 385 farmers interviewed had received cocoa extension and advisory services in the past year. A higher proportion of farmers in Ntoroko (95%), Kibaale (98%) and Buikwe (97%), Kasese (86%) and Mukono (85%) had not accessed any extension services. Bundibugyo at 47% access was relatively better served.

Table 22 Farmers receiving cocoa extension services in past year

Region	District	N	Response	
			Yes	No
South Western	Bundibugyo	85	47%	53%
	Ntoroko	19	5%	95%
	Kasese	28	14%	86%
North Western	Hoima	41	37%	63%
	Kagadi	40	40%	60%
	Kibaale	40	3%	98%
Central	Buikwe	39	3%	97%
	Mukono	93	15%	85%
Total		385	24%	76%



3.1.2 Providers of cocoa extension and advisory services

The survey sought to know who the extension and advisory service providers for the cocoa farmers were. The results showed that cocoa farmers receive advisory services from various providers (see Figure 18). Of the 203 farmers that received advisory services, the most commonly mentioned provider were the cocoa buyer companies (See Table 23) followed by NGOs and CBOs. The least mentioned provider was the local government extension service providers. The companies also occasionally provide incentives like transport and lunch to encourage farmers to come for the trainings. These findings provide information on potential channels that the project could leverage on to reach and disseminate the different kinds of information relevant to the cocoa farmers. These observations were confirmed in the FGDs where farmers indicated that:

" ……..we never used to see any cocoa extension workers……..nowadays we see them from ESCO and our Union staff……"

"…….sometimes we receive a transport refund of UGX 5,000 when we go for trainings……."
-FDG Bundibugyo.

"……..Sometimes we get people from Bunyoro Cocoa Co-operative who bring us trainers and extension workers …….The district people are very rare ……"-**FGD Kagadi**

"……it is only Semuliki Co-operative,, ESCO, OLAM, ICAM, Green Organic that provide training……..they usually come during the off- season time…… they advise us how to grow cocoa organically. …..During harvest time, they advise us on post-harvest handling over the radio……." – **FGD Ndungutu Subcounty, Bundibugyo District.**
The training and information provided mainly cover cocoa production good agricultural practices, cocoa agronomy, harvest and post-harvest handling, market and market information (mainly price). Table 23 shows the companies identified that provide the training. These companies could also be potential partners for the MARK UP Project in extension service provision, within the respective districts.

Figure 18 Providers of cocoa extension

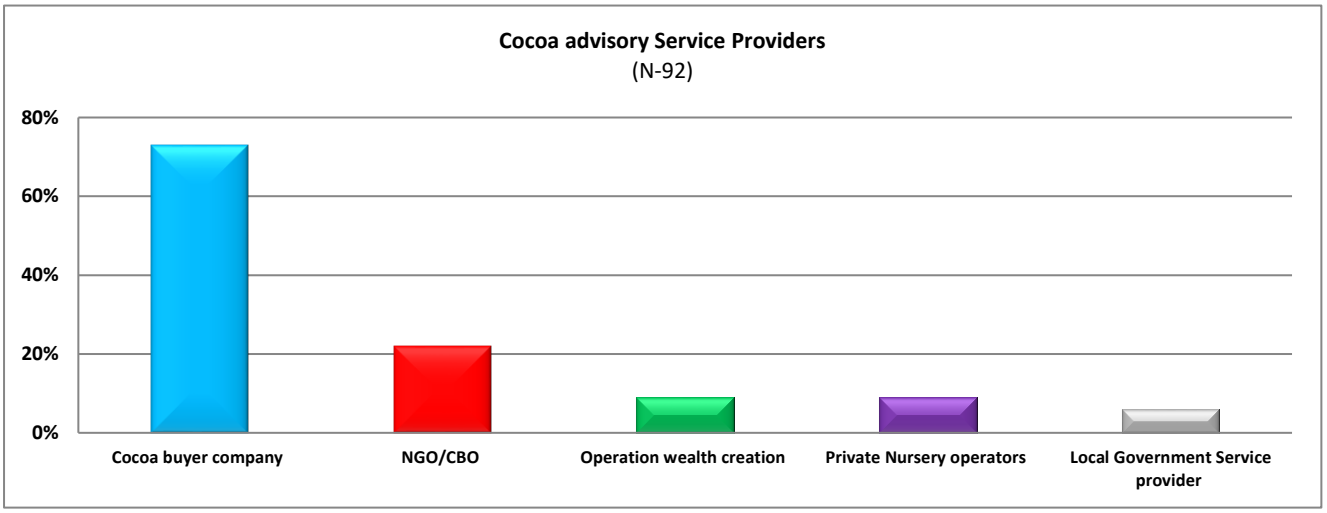


Table 23 Cocoa buyers companies that provide extension services

Cocoa buyer company	Bundibugyo	Kagadi	Hoima	Mukono
Semuliki Co-operative Union	✓	-	-	-
Esco Uganda Limited	✓	✓	✓	✓
ICAM	✓	✓	✓	✓
Bunyoro Cocoa Farmers' Cooperative	-	✓	✓	-

3.2 Post-Harvest Handling

3.2.1 Harvesting

Ripe cocoa pods are harvested by hand. In some places like Bundibugyo, by-laws have been passed that prohibit harvesting outside the gazetted dates. Harvesting is done at the middle or at the end of the month. Harvested pods are carefully pried open with a panga (see Image 1), where fresh cocoa beans are taken out of the pod and piled for either (i) further processing or (ii) marketing.

Image 3: Using a panga to harvest cocoa pods

3.2.2 Marketing fresh wet cocoa beans

Marketing of cocoa can start at this point, depending on the farmer's choice. The decision to sell at this stage is usually driven by the need for immediate cash, and there are cocoa buyers that are primarily interested in fresh cocoa beans. They buy fresh cocoa beans at an agreed price that is usually 30% of that given for dry cocoa beans, and proceed to process them. For some buyers, interest in fresh cocoa beans is motivated by the need to take control of quality of the entire supply chain from farm to final cocoa product (e.g. ICAM Chocolate Industries Ltd, an Italian chocolate making that does bean-bar conversion).

Image 4: Extracting Cocoa Beans from Pod

Image 5: Fresh Wet Cocoa Beans ready for marketing

There are variations of the wet cocoa beans traded. Some farmers attempt to ferment and dry the cocoa, but the need for quick-cash drives them into selling cocoa before completing the recommended fermentation (7 days) and drying (3-4) days. Such cocoa is locally referred to as *"some-some,"* meaning semi-dried cocoa.

Image 6: Some-some or semi dried cocoa

3.2.3 Processing (i.e. Fermentation)

For optimum results, the fresh cocoa beans have to be fermented through a process that takes about 5-7 days. Fermentation of the cocoa beans is crucial to the production of quality cocoa. During the fermentation process the sugars and pulp surrounding the fresh beans ferments into alcohol, caused by yeast and heat in the pile; and the alcohol is turned into lactic and arctic acid. The acids are subsequently oxidised into carbon dioxide and water. Fermentation helps recover the tannins present in the cocoa beans and it brings out that familiar chocolate flavour from the beans. In Uganda, several methods of fermentation are used as illustrated below.

3.2.4 Covering in banana leaves

This is the most common and recommended method of fermentation. Fresh beans are heaped and tied in banana leaves. The heaps may weigh from 2-50kg. This method is quite ideal for small volumes small farmers normally produce. The heaps are turned every 2-3 days for uniform fermentation. For security, the cocoa is kept indoors for fear of theft.

Image 7: Banana-leaf covering

3.2.5 Jute sacs

Although many farmers use this method, it is not recommended, as it does not allow for complete fermentation. Farmers use the method as a short cut to give the beans a brownish color which can be attained in 2-3 days. Similarly, the jute sacs are kept indoors for safety. Because the beans look brownish farmers can then falsely claim for the good prices paid for well fermented cocoa, due to lack of testing equipment that can check for fermentation.

Image 8: Fermentation in jute sacs

3.2.6 Fermentation boxes

Fermentation boxes are the most ideal method of cocoa fermentation. Fresh cocoa beans are heaped and covered in boxes that are arranged in series, beans are also moved into the boxes in the series arrangement as shown in the diagram, every 2 days. While in the boxes, the beans are regularly monitored and corrective action taken against moulding, discoloration, foul smell and other factors that can affect the final quality of the beans. The fermentation process is complete in 6-7 days.

Image 9: Fermentation box

3.2.7 Drying cocoa

From the fermentation process, the cocoa beans still have a moisture content of about 30%, but have to dry to about 10% moisture content. To avoid development of off-flavors, drying should take place slowly, If the beans are dried too quickly some of the chemical reactions started during fermentation are not completed and the beans are still developing an acidic bitter taste. Too slow drying on the other hand flavours development of moulds and off-flavors. Ambient temperature is between 50-60^{0}C. Cocoa producers in Uganda commonly use two methods of drying i.e. sun drying and artificial drying.

3.2.7.1.1 Sun drying

This is the most common method of drying cocoa. Beans from the fermentation process are spread out on a tarpaulin or drying rack under the sum. Depending on the daily sunlight duration and intensity, drying may take 3-4 days. At this point the cocoa beans can then be marketed as dry fermented cocoa beans, at a moisture content of 8-10%.

Image 10: Sun drying

3.2.7.1.2 Artificial drying

Artificial drying is done under constructed structures that consist of a drying rack covered by a heat concentrating material e.g. polythene sheet or polycarbonate roofing sheet. The warm micro-environment that is created allows for faster and more uniform drying conditions.

Image 11: Artificial drying

3.2.8 Post-harvest handling observations

As discussed above, fermentation is a key quality aspect of cocoa. Regrettably, many farmers by-pass the prescribed regime of proper cocoa fermentation for various reasons. It is observed that:

- Majority of the cocoa buyers do not pay attention to fermentation quality because there are very many buyers chasing very few volumes. They buy anything available. Moreover, because there is no differentiated price for well fermented and poorly fermented cocoa, there is no economic deterrent for errant farmers.
- Majority of buyers do not have requisite equipment to check cocoa fermentation levels, and at bulking stage, all cocoa is mixed together without sorting for quality. This affects the overall quality of cocoa exported from Uganda.
- The farms are poor, so they do not hold the patience to wait for crops to ferment well due to pressing needs for cash.
- Theft of cocoa is a threat farmers live with, and the sooner they dispose of the cocoa, the safer they are.
- The inability of the market (buyers) to reward (pay more) for well fermented cocoa (differentiated prices), due to too many buyers willing to buy anything irrespective of quality, is a disincentive for farmers to properly process their cocoa, this also affects the overall national product.

Marketing wet cocoa presents challenges:

- There is extensive arbitrary pricing done for cocoa sold as wet. Usually because moisture meters are not used at this stage of trading, the farmer has low negotiating power.

- Most of the cocoa sold as partially dry ("some-some") has not undergone the prerequisite stages of fermentation. This affects the ultimate quality of cocoa.
- Currently, training on cocoa production, post-harvest handling and marketing are spearheaded by the private sector, i.e. Cocoa traders, with minimal government involvement.
- Below are pictures to illustrate the inconsistencies in the quality of the cocoa presented on the world market from Uganda.

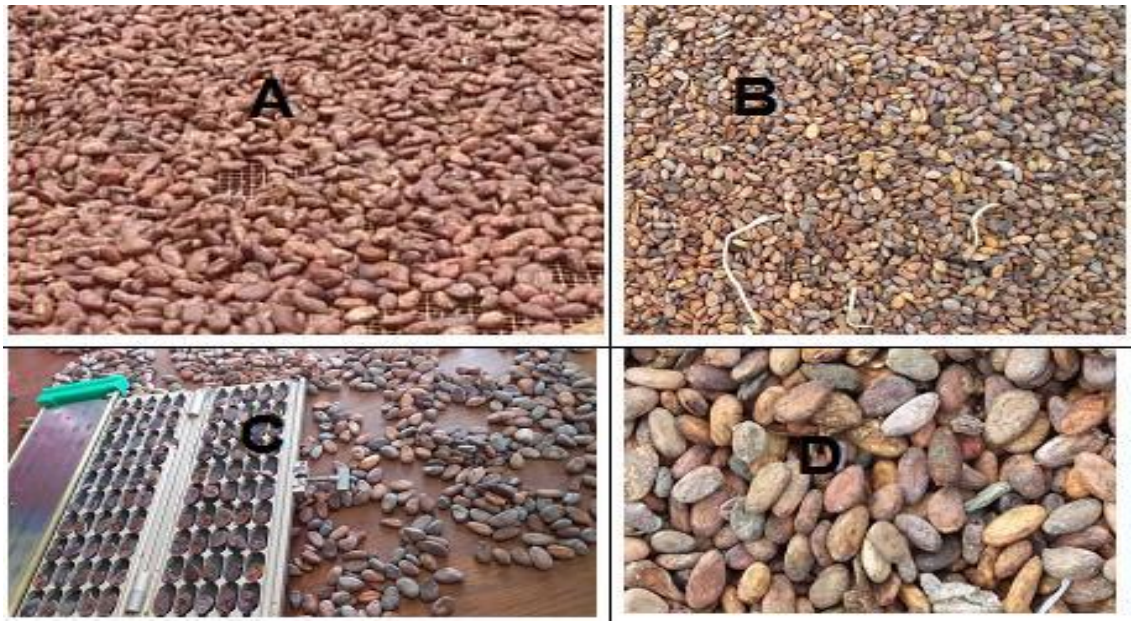


Image A: Well fermented dry cocoa beans of good quality
Image B: Dry cocoa beans of mixed quality
Image C: Testing cocoa for mould and fermentation, pigmentation shows quality variations
Image D: Improperly fermented dry cocoa beans packaged in the same lot

3.3 Cocoa Marketing

The survey analysed the following cocoa market and marketing aspects for farmers at household level:

- Cocoa sales and household income
- Membership in Cocoa marketing group
- Cocoa marketing group Membership Benefits
- Methods of selling cocoa
- Cocoa Buyers
- Main sources of Market information
- Preferred Sources Of Market Information
- Cocoa Marketing Challenges

3.3.1 Cocoa marketing group membership benefits

107 out of 385 cocoa farmers, 28% mentioned that they belonged to an association. Of the various benefits cocoa farmers enjoyed from their association memberships, price information was the most common benefit mentioned followed by better prices and trainings (especially by farmers in Kagadi); and credit facilities. The other benefits included information about buyers, transport and extension services. Table 24 summarises the number of responses from the farmers.

Table 24 Number of responses on cocoa marketing group membership benefits

Benefits	Number of Responses
Price information	79
Better prices	73
Trainings	61
Information about buyers	5
Credit	17
Transport	27
Extension services	10
Others	23
Information about inputs	1

There are indeed benefits farmers can potentially enjoy when mobilized into a group as illustrated by the FGD statements below:

"……..ESCO is the main buyer in our area……..the company can provide advance payment to organized group members" **FGD Kagadi**

"….Semuliki Co-operative offers better prices……however; they only give credit to their SACCO members. Also when you sell to Semuliki, they may delay to pay……."**-FGD Bundibugyo**

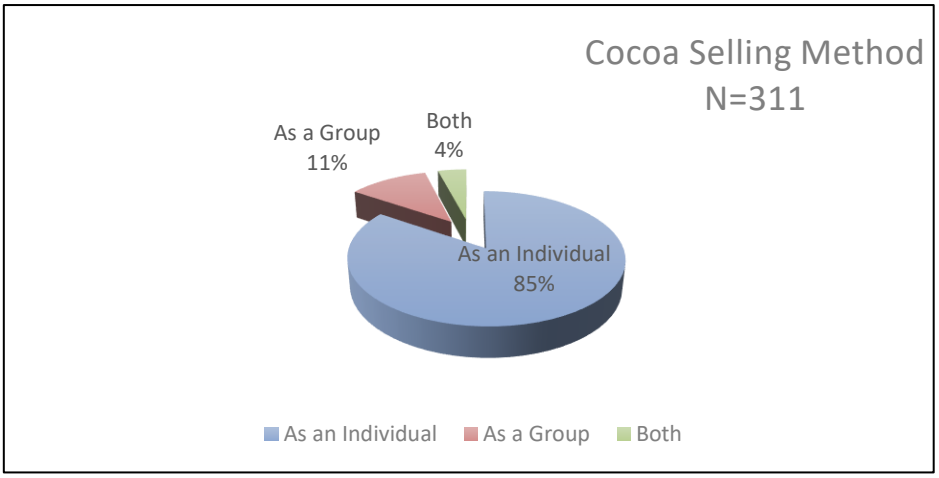
3.3.2 Methods of selling cocoa

In all the districts, the most common method by which farmers sold cocoa was individually. Even in the districts of Bundibugyo and Mukono where there is a proportionately high number of farmers belonging to a marketing association, individual marketing was high. On the whole the survey found that 84.5% of the farmers sold individually while only 11.4% sold as group. 4.1% sold both through their marketing groups and as individuals.

The motivation to sell individually is due to various reasons as mentioned by the farmers during the FDGs. These include:

- Ability to make own choice of the highest available price
- Lack of trust in group selling
- The need for immediate cash and
- Inadequate information on benefits of collective selling.

Figure 19 Selling methods

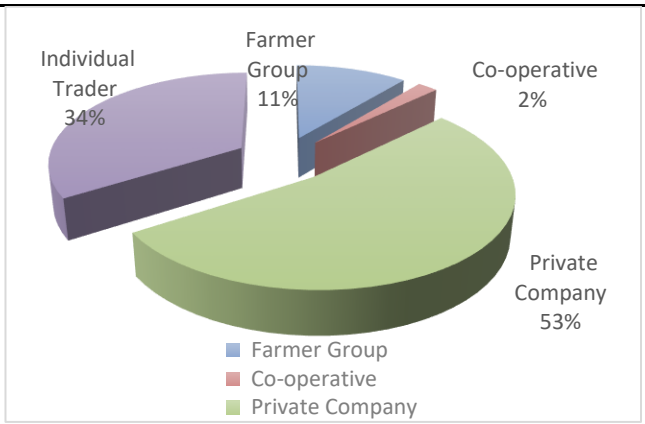


3.3.3 Cocoa buyers

Farmers have several off-take options for their cocoa. Table 25 shows the different main cocoa buyers farmers sold their cocoa to in all the districts. The data show that private companies were the leading buyers (59%), followed by individual traders (or businessmen buying directly from the farmers) - 38%.

Table 25 Responses on Where Farmers Sold Cocoa

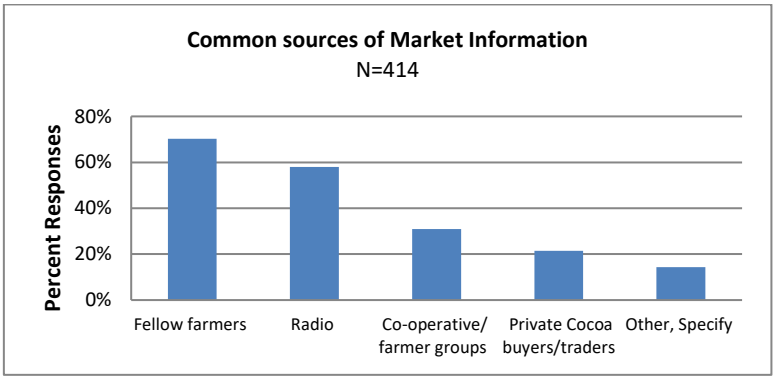
Main Buyer	Farmers (%) N=311
Farmer Group	11%
Co-operative	2%
Private Company	53%
Individual Trader	34%



Farmers also mentioned that they received some services from their buyers. The most common services received were: Market information (mainly on price), premium prices, and transportation of their produce to the market and credit facilities.

3.3.4 Main sources of cocoa market information

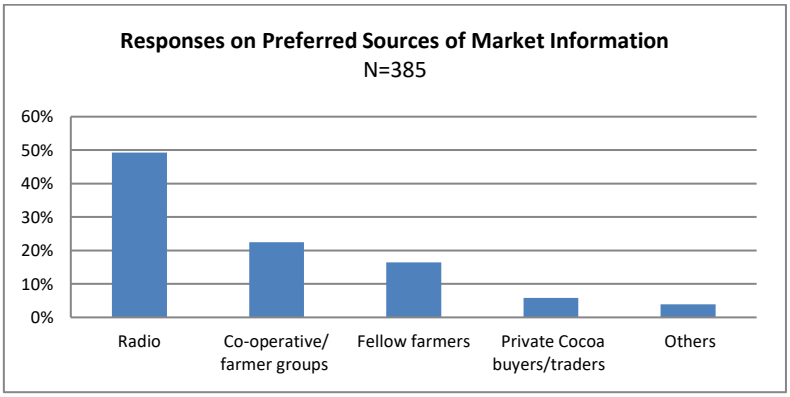
Figure 20 Common sources of market information



There are various channels through which farmers can access market information. Of these, fellow farmers stood out as the most common source (70.3% responses, especially in Mukono), followed by radio (58% responses) farmer groups (30.9%, especially in Bundibugyo), and cocoa buyers (21.5%, especially in Kagadi). Other sources that included community functions and meetings, poster, etc, accounted for 14.3% of responses.

3.3.5 Preferred sources of market information

Figure 21 Preferred sources of market information



The survey showed that the farmers' most preferred channel for market information was radio (49.3% responses), followed by farmer groups (22.5 % responses), fellow farmers (16.4% responses) and cocoa buyers (5.8% responses). Other sources like SMS accounted for 5.9% responses.

3.3.6 Cocoa marketing challenges

Figure 22 Cocoa marketing challenges identified by respondents

In marketing their cocoa, farmers struggle through various challenges in taking the cocoa to the markets and the earnings received. The most pressing challenge mentioned by all the cocoa farmers was price fluctuations (94.9%). This was distantly followed by other challenges that included poor roads (28.3%), long distances to markets (26.6%), inability to meet quality standards (19.3%), high transport costs (17.9%) and lack of value addition options (10.4%).

The local marketing challenges of farmers are greatly alleviated by the cocoa traders. Traders are aggressive to raise volumes. In addition to competing on price, they have set up buying centres in the communities as well as a network of buying agents that traverse the villages buying cocoa at the farm gate.

Traders have in the past attempted to develop relationships with farmers through provision of incentives and extension services among others. Although there are no written agreements between them, many traders have reported disappointments as farmers continuously fail to honour the traders' expectations of selling cocoa to them. Many traders have draft lists of supposedly affiliated members, in practice however, the farmers rarely ever sell cocoa to them. It is also common to find the same farmer on the list of several traders. Thus, farmer allegiance to buyers is dwindling. This disloyalty is in part due to the

high cocoa demand from the numerous cocoa traders who are competing on price. Farmers have several off-taker choices and tend to choose the highest price offers.

3.4 Financial Services

To better understand the cocoa farmer financial needs and behaviour, the survey collected data on the following aspects:

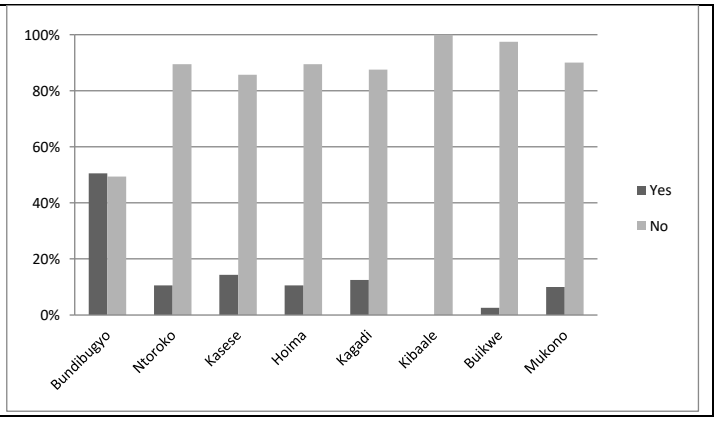
- Training in Financial Literacy
- Savings Practices
- Membership in Cocoa farmer Saving group
- Sources of borrowing
- Selected Financial products

3.4.1 Training in financial literacy

Data from the baseline survey showed that the majority (82%) of cocoa farmers have never received any training in financial literacy, apart from Bundibugyo where about half (51%) of them had received. The Bundibugyo cocoa farmers indicated that they had received some training in financial literacy from Semliki Co-operative Union and locally active NGOs/CBOs e.g. World Vision, VSLAs and the district local governments.

Table 26 Farmers that got training in financial literacy

Region	District	Received Training	
		Yes	No
SouthWestern	Bundibugyo	51%	49%
	Ntoroko	11%	89%
	Kasese	14%	86%
North Western	Hoima	11%	89%
	Kagadi	13%	88%
	Kibaale	0%	100 %
Central	Buikwe	3%	97%
	Mukono	10%	90%



"…….....ESCO has been encouraging us to save with them…….they gave us Pass books, you can redeem your savings after 3 months……"

"……..ESCO has been giving us financial literacy training. They have also encouraged us on planning cocoa earnings as a family ……..."-FGD Bundibugyo District.

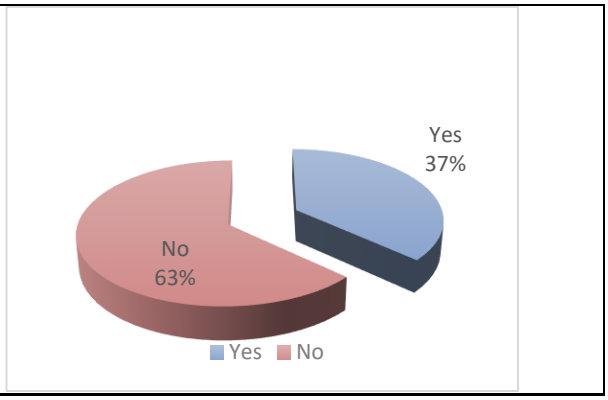
"……Our co-operative BCC provides these services ……FDG Kagadi District

3.4.2 Savings practices

The saving habits and practices of the cocoa farmers are still poor. The survey showed that on the overall the majority (63%) of the cocoa farmers do not save. Of the 385 farmers interviewed, only 37% of them reported that they saved part of their cash incomes. The farmers in Bundibugyo were the best at saving (79%) followed by Ntoroko (53%). The details of the savings habits in the other districts are in Table 27. The main reason given from the FGDs, for the poor savings is the money earned is too little to save, in the face of other urgent domestic needs.

Table 27 Farmers that save

Region	District	Yes	No
South Western	Bundibugyo	79%	21%
	Ntoroko	53%	47%
	Kasese	18%	82%
North Western	Hoima	33%	68%
	Kagadi	23%	78%
	Kibaale	28%	72%
Central	Buikwe	13%	87%
	Mukono	22%	78%
Total	**N=385**	**37%**	**63%**



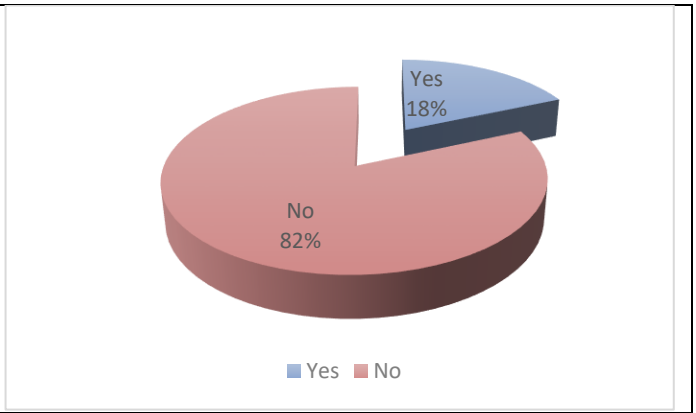
The survey showed that for the 141 farmers that saved, the average amounts saved per month ranged between UGX 87,000–303,000. Although they earn the highest from cocoa, the farmers in Bundibugyo reported the lowest savings averaging UGX 87,000 per month, while the highest were reported in Mukono averaging UGX 302,400 per month. The overall average was however Ugx 172,700 per month.

3.4.3 Membership in cocoa farmer saving group

Membership to saving groups was not common. The survey found that of the 385 cocoa farmers interviewed, the majority (88%) of them did not belong to a saving or credit group. Only 12% were members of a group. Among the farmers at district level, only Bundibugyo had up to half of the farmers belonging to a savings group.

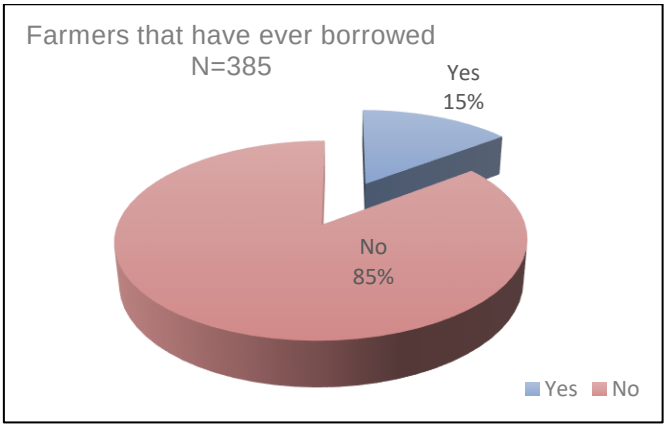
Table 28 Farmers belonging to a saving group

Region	District	Yes	No
South Western	Bundibugyo	41	44
	Ntoroko	0	19
	Kasese	0	28
North Western	Hoima	9	32
	Kagadi	6	34
	Kibaale	10	30
Central	Buikwe	3	36
	Mukono	2	91
Total	**N = 385**	**18%**	**82%**



3.4.4 Experience in borrowing and providers of credit

Figure 23 Farmers that have ever borrowed



The 385 cocoa farmers in the baseline survey were asked if they had ever borrowed money to invest in their cocoa enterprises. The results showed that the majority of them (84%) had never borrowed. Only 16% of them reported that they had ever borrowed, and most of these were from Bundibugyo.

The main provider of credit in Bundibugyo was Semliki Co-operative Union. The other major source were the local village savings and lending associations. The other sources of credit were micro-financial institutions, relatives and friends.

3.5 Challenges of Women in Cocoa Producing Households

Below is a general description challenges of women in cocoa producing households. Much as the information was collected from cocoa producing households, the trend cuts across other agricultural enterprises farmers engage-in in Uganda. Women provide a bulk of the household labour both on the farm and in the household, yet they have limited rights and access to factors of production like land, as well as the proceeds from sale of agricultural produce. The gender challenges among the cocoa communities studied are briefly elaborated below.

3.5.1 Social norms and roles

Among the cocoa producing communities, women's roles are centered around household activities like childcare, cooking, and farming for household food security purposes, while men are in charge of economic activities like farming for marketing purposes and other income generating endeavours. Women have little control over economic resources, limited involvement in politics, and restrictive gender roles. Women are engaged in time intensive labor both at home and in the fields producing food and cash crops like cocoa. They put in most of the agricultural labor for the household, but their control over the household economic outputs from their labor is minimal. They are socially confined to household roles and have difficulty engaging in income generating activities, whether for agricultural production or alternative income generating activities. Despite efforts by Government and NGOs, some husbands still condone their wives' participation in community and social activities.

3.5.2 Lack of access to capital

Due to limited access to capital and credit, women are unable to purchase or rent land, buy agricultural inputs like seeds and fertilizer, hire labor, or transport their goods to markets. Social norms and expected gender roles play an important role in women's lack of access to capital. Men are typically in charge of the cocoa proceeds and other monetary matters in the households. This means women lack

the collateral necessary to take out loans, either from commercial banks or from microfinance institutions. Some women participate in VSLAs, although usually women have relatively restricted movement, meaning not only do they earn less (if anything) from casual day labor than men, but they may have trouble even attending VSLA meetings.

3.5.3 Lack of access to improved agro-inputs

The current high levels of population growth in the country have led to increased population density and the need to farm smaller pieces of land more intensively. This calls for increased production efficiency, a solution that improved inputs could provide. However, economic and social factors in among the cocoa communities make it difficult for women to access agricultural inputs like seeds, fertilizers, ox plows, and other technologies that would reduce the burden of labor and increase yields. Most women do not have the capital to purchase agricultural inputs, particularly higher technology inputs. This makes the traditional women's role of feeding the household even more difficult.

3.5.4 Lack of access to land

Economic, political, and social norms limit women's access to land particularly now when productive land is becoming more and more scarce. While women legally have the right to purchase and own land, societal norms often outweigh legal rights and prevent women from accessing land. Cultural and societal norms hold precedence in most cases and women struggle to have autonomous, or even collaborative access to land. Women are therefore frequently confined to working on small plots of land that are owned and controlled by their husbands.

3.5.5 Lack of access to markets

Women in cocoa households have relatively constrained access to markets. This is because most women sell small amounts of cocoa produce directly from their gardens or homes to traders who move around the villages instead of transporting their goods to markets with higher purchasing prices. From an economic perspective, women cannot afford the transportation costs associated with taking their produce to larger markets, particularly due to their low yields. From a social perspective, men are traditionally the ones in charge of marketing produce, although it is common also to see women participating in cocoa marketing.

3.6 Cocoa Trading

3.6.1 Factors influencing local cocoa trading

In 1987, Government of Uganda adopted domestic economic reform programs that included economic liberalisation and free market policies which allowed for free trade. While similar commodity sectors like coffee quickly caught the attention of Government for policy guidance and regulation, the cocoa did not receive much attention owing to low activity in the sector. Without a policy, the cocoa sector is yet to reap the full benefits of liberalisation.

Uganda's cocoa trade comprises 3 interdependent trade levels, that feed into each other as illustrated in Diagram 2. In addition, to better understand the intricacies of cocoa trading in Uganda, it would be prudent to note the following aspects that shape and influence trading activities, behavior and decisions.

1. The cocoa sector is not regulated right from production through to commodity export, with unrestricted free entry and exit of players.
2. The main cocoa production area is Bundibugyo district, located in south western Uganda. Bundibugyo accounts for about 70% of the national production, and likewise cocoa trade is concentrated in this district. For that reason, this study's analysis of the lower level trade activities was done here as activity in the other production areas only mirror what happens in Bundibugyo.
3. Cocoa has two peak production seasons. September-March is the main season, while April-June is the lighter season. Very low output is recorded in the months of July-August. Correspondingly, trade activity is at its peak between September and March when the

cocoa bean count is lower (signifying better quality) and volume much higher – 60 to70% of Uganda's annual cocoa exports are made during this period. The lighter months account for 40-30% of exports based on URA export data 2009-2018.

4. Bundibugyo district has by-laws whose objective is to secure cocoa gardens from thieves and enforcing quality, among others. The salient features of the by-laws are that cocoa is harvested only on specific dates gazette by the district. The dates are usually 2 weeks apart and normally fall during mid and at end of month; and no cocoa should be dried on the bare ground. Anybody found harvesting cocoa or with fresh cocoa beans outside these dates commits an offence. Enforcement of the above by-laws is by the local vigilante youth groups. However, although fermentation is also among the quality by-laws, its enforcement has been weak. Similar by laws are yet to be adopted in other cocoa producing areas.
5. Cocoa at the lowest/village level can be marketed as fresh wet beans, measured in arbitrary units e.g. cups, jugs and basins. Other traders also buy semi-dry cocoa popularly referred to as "*some-some*"; usually measured in jugs. Prices at this level are all usually arbitrary determined. The generally agreed conversion rate for fresh cocoa to dry cocoa fermented beans (at about 10%MC) is: 1Kg of dry: 3kg of fresh-wet cocoa.

3.6.2 Products traded

Cocoa products traded are:

1. *Fermented dry cocoa beans:* These are beans that have ideally been fermented for 7 days and dried for about 4-6 days by the farmer. Such cocoa beans reach a moisture content of between 8-10% at farmer level.
2. *Fresh- wet cocoa beans*: These are beans that are, extracted from freshly harvested cocoa pods the pods. The beans are immediately marketed in that form. Moisture content is over 70%.
3. *Semi-dry cocoa beans:* These are beans that have been freshly extracted from the pods; they may or may not be fermented; but have been exposed for a few days (2-5) in the sunshine and then marketed. Such cocoa is also referred to as "*some-some"* in the market. Because of the uncertainty about its moisture content the units of measure and prices paid for it are very arbitrary.
4. *Chocolates:* There is minimal chocolate manufacturing by a few processors. Chocolate manufacturing is discussed later in Section 3.4 of this report.

3.6.3 Cocoa trading activities

Cocoa trading is completely liberalised, and three (3) interdependent levels can be identified, i.e. primary trading; secondary trading; and export. While it is common for larger traders to engage in trade at lower levels, the reverse does not hold: lower level traders can only graduate to higher trading levels over time. The discussions below on trade mentions prices given in Ugx. For ease of conversion the current exchange rate of USD 1: Ugx3750 can be used.

3.6.3.1 Level I / Village trading

This is the initial stage of cocoa trade engaged in by a multitude of individuals with small amounts of cash, buying any amounts of cocoa beans they come a cross. The buyers at this level may be acting on their own (using own cash) or on behalf of a high level trader (using their cash of both). Below are some of the methods used by the primary traders. Typical values as of May 2019 have been used to illustrate.

1. Fellow- farmer buyers

These farmers produce some small volumes of cocoa (about 10-20kg wet beans) that they augment with purchase from their neighbors. The neighbors usually produce equal or even less volumes than the buyer. Cocoa traded at this level is usually fresh wet beans, and is measured in arbitrary units i.e. cups, jugs, basins and sacs. Table 29 shows the generally agreed unit measurements.

Table 29 Units of wet cocoa measurements

Smaller Units	Larger Unit Equivalent
4 Cups	1 Jug
10jugs	1Basin
6 basins	1 sac (sealed)
8basins	1 sac (unsealed)

Figure 24 Units of wet cocoa measurements


Cup


Jug


Basin


Jug and Cup Compared

Usually the buyers of wet cocoa beans go ahead to further process the beans through fermentation and drying. This process takes about 7-10 days depending on available sunshine, and following this, the dry cocoa is marketed. Typically, a trader at this level may sell 200-400kg per month of dry cocoa beans during the low season months (April- June) and doubles to 400-800kg a month during the main season (September-March).

Currently these traders pay Ugx2,000-2,500 (USD 0.55-0.60)[18] per kg of fresh wet cocoa; between Ugx4,000-6000 per jug semi-dry cocoa *("some-some")* depending on the perceived moisture content. On the other hand, they sell a kg of fermented dry cocoa (8-10%MC) for Ugx6,500-7,200 per kg delivered to the store. The variation in price is mainly due to the dryness (% moisture content) of the delivered cocoa.

2. "Some-some" Traders

These are cocoa buyers that specialise in buying semi-dry cocoa beans usually in jugs. They either use their own cash or cash from higher level traders, thus acting as agents. The semi-dry cocoa is normally further fermented at his premises for 3-4 days and later dried for 3-5 days depending on sunshine intensity, and following this it is marketed.

Semi-dry cocoa is bought at a lower price than the prevailing price for properly fermented dry cocoa. For example, currently the prevailing price for well dried cocoa (8-10% MC) is Ugx6,500 per kg, *some-some* cocoa goes for between Ugx4000-5000 per kg depending on perceived level of dryness. In arbitrary unit terms, the trader's cost price for *some-some* is currently Ugx4,000-5,500 per jug. The selling price of fermented dry cocoa is currently Ugx7,200 per kg delivered to the buyer. A typical *some-some* trader may sell 600-800 kg of dry cocoa beans per month in the low supply season. In the high supply season volumes traded may reach 1000-1500kg per month.

3. Motorcycle/Bicycle Traders

Another category of *"some-some"* buyers move on motorbikes, which enables them to reach more distant farmers. The motor bike may be owned or hired (at Ugx10,000 per day) and fueled for Ugx15,000 per day. Similarly, the trader may use his own cash to trade or use cash from a higher level trader. The

[18] Exchange rate: 1USD: 3,750 Ugx, June 2019

purchased cocoa is further fermented at his premises for about 4-5 days then sun dried to a moisture content of about 10% before marketing it. A motorbike trader may sell up to 500kg of dry cocoa beans per month in the low season, and reach up to 2,000 kg per month in the high supply season.

4. Village co-operative traders

The village co-operative mode of trading is a unique model currently implemented by Mulungi-Tanwa II Cocoa Farmers' Association. The members came together with a motive of getting more value from their produce, control of the sales to get the highest possible price, timely payment and minimising middlemen in their cocoa sales.

In this model, each member is responsible for ensuring that they deliver good quality cocoa that fetches the best price. Thus they each harvest, ferment and dry their cocoa to the best recommended standards. They look out and support each other throughout the process until the cocoa is dry (up to 8%MC). While in their respective premises, they weigh, pack and prepare it for sale. For fear of theft (or spreading the risk), the cocoa is kept by the respective individual owners, and information of what is held by each member is secretly guarded by the chairman who knows the association's total volumes.

Marketing is a responsibility of each of the members. Using their individual networks, members get to know the prevailing prices offered by the different cocoa buyers, and based on that they set a price for their cocoa. They then call the different traders and auction it. The highest bidder willing to buy on their terms takes it. The individual farmers then bring out their stocks and hand over to the buyer.

The association began operations in 2018. They started with a membership of less than 10 persons and sales of about 400kg. To date membership is 78 persons and sales are in the range of 20,000kg per month during the high supply months. Their current selling price is Ugx7,200 per kg of well fermented dry cocoa beans.

5. Store traders

These are cocoa traders usually located close to the farming communities. They are well supplied with cash (own or higher level traders) and they ordinarily operate a network of buying agents who traverse the villages in search of cocoa. They procure all cocoa types i.e., *some-some* and dry cocoa. Those with fermentation facilities at their premises buy fresh-wet cocoa. The field purchasing team may typically have 5-15 persons who collect and deliver cocoa to the trader stores. The store also receives cocoa from walk –in sellers e.g. farmers, other traders, farmer groups, among others.

The cocoa received will usually require further drying for 1-3 days, thus buying stores are usually equipped with outdoor drying facilities. Because store traders are usually middlemen or buyer agents of higher level traders, they usually offer the lowest prices in order to maximise their margins when they on-sell to higher level traders.

This mode of trading is extremely risky as it is dependent on other people to purchase cocoa from the field on their behalf, which calls or high levels of trust and integrity in the individuals hired. Indeed, many stores traders complained about dishonesty of their employees.

3.6.3.2 Level II / Bulking Trader

At this level cocoa trading begins to get organised: there are fewer players; operating in known locations; have better quality facilities like cemented stores, digital weighing scales, moisture metres, some record of business transaction, armed security, transport facilities, drying racks and tarpaulins for further drying of cocoa among other facilities. There are an estimated 30-40 cocoa traders in Uganda operating at this level, handling large volumes – several MTs. These traders usually do not have direct linkages with farmers, apart from those traders that own or sell to cocoa processors. Cocoa processing companies are motivated to be linked to farmers to gain control over the quality and traceability of the raw material or are involved in cocoa certification schemes. In Uganda, traders that would be interested in farmer linkages include ICAM chocolates, Olam, Esco, Agro-Exim, Equator chocolates, Gourmet

gardens, Latitude Trade Limited. Table 30 is a list of the leading cocoa bulk traders (and exporters) in Uganda, their contact details are in Appendix 3.

Table 30 Leading cocoa bulk traders in Uganda

Company	Company	Company
Semuliki Co-operative Union Ltd	Bundibugyo Improved Cocoa Farmers co-op	Monday Charles and Sons
MR &C agro business Company Limited	Kisubampei co-operative society	BakandozCo.ltd
Sonia Kyatoko Enterprises	Bukwa Uganda Ltd	Baguma and Sons trading company
Inea and sons	Kenare Enterprises Ltd	Moris and sons company Ltd
Native Group of Companies	Kakande Enterprises	True cocoa Uganda Limited
Tropical Trade international	Monday Charles and Sons	Care with Care cocoa Ltd
Bakwanye Trading Company Ltd	Sunshine Agro products Ltd	Latitude Company Limited
Pink foods industries Limited	Promised land	Henry Lwanga and sons
Gourmet gardens	BTM commodities	

Traders at this level normally operate through other parties to purchase cocoa from farmers using the channels described below. Other business and trader activities are also described.

6. Bulk trading activities
- Agent supplies
    - These receive cash from the traders with instructions to purchase cocoa on their behalf from the field at a given price per kg. Agents make profits by either buying at lower than the instructed price (price difference) or receiving a commission for every kg purchased. The cocoa bought is then bulked and transported to the bulking traders' premises.
- Farmer co-operatives and individual farmer supplies
    - The bulking traders may also provide incentives to the farmers, and these are also provided through the agents. Incentives may include: tarpaulins, extension services, credit and farm inputs, among others. Farmers and co-operatives selling to bulk traders are either loyal farmers that received incentives or are lured by higher prices offered.
- Fellow Trader supplies
    - This refers to other traders that have large volumes of cocoa and are willing to supply them to another trader, usually a bigger trader or an exporter in a horizontal relationship.

7. Trader collusion and cartels

While the general average price paid by traders in the cocoa market is dictated by the international cocoa market, the operational margins at the local level are determined by the cost of the goods and services used in the value chain, as well as the price local cocoa dealers are willing to give. By varying these costs, traders may collude or form cartels to influence commodity prices. For example Bundibugyo based traders may decide to deliberately offer farmers higher prices similar to those given in Kampala as a ploy to discourage Kampala-based traders that relocate to make quick profits in Bundibugyo.

8. Trade contracts

On a lighter note, traders at this level may offer their services to fellow traders (horizontal relationship) and exporters (vertical relationship) who may want to raise quick volumes. Typically, in such relationships, the contracting company gives targets to a contract buyer for: a given volume (MTs); to be purchased in a given time period (usually 1-2 weeks); and at a given price. The contactor receives a fraction of the contract sum in advance, and paid the balance along the way when more cocoa is delivered as per the contract. Contracts are however not common. Only a few trusted and tested traders can engage each other on such formal contracts.

3.6.3.3 Export

All the cocoa produced in Uganda is destined for export save for a few insignificant volumes that are processes into semi-finished cocoa products and chocolates. Table 7 shows the list of cocoa exporting companies as well as total volume and value of exports. The number of exporters rose from 10 companies in 2009 to 20 companies between 2009 to 2018. All the cocoa bought by the lower level traders ultimately lands in the hands of the exporters. Total volume exported increased from 14.132 MT valued at USD 24 million in 2009 to 30.7 MT valued at USD 61.3 Million in 2018 (see Table 8, Appendix 3).

The top exporters in 2009 were ESCO(U) Ltd, OLAM (U)Ltd, Bakwanye Trading Company, Kahembe enterprise Ltd and UGACOF. Over the years the top exporters have been changing but the most consistent ones in the past 3 years have been ESCO, OLAM, African Trade Winds, BUNDICAO, ICAM, Uganda Cocoa Trading Ltd and Agri-Exim Ltd. All these are international companies and they together accounted for 95% (29,000 out of 30,000MT) of Uganda's cocoa exports in 2018. This clear shows that Uganda's cocoa export is currently dominated by international companies, with very minimal local exporter participation.

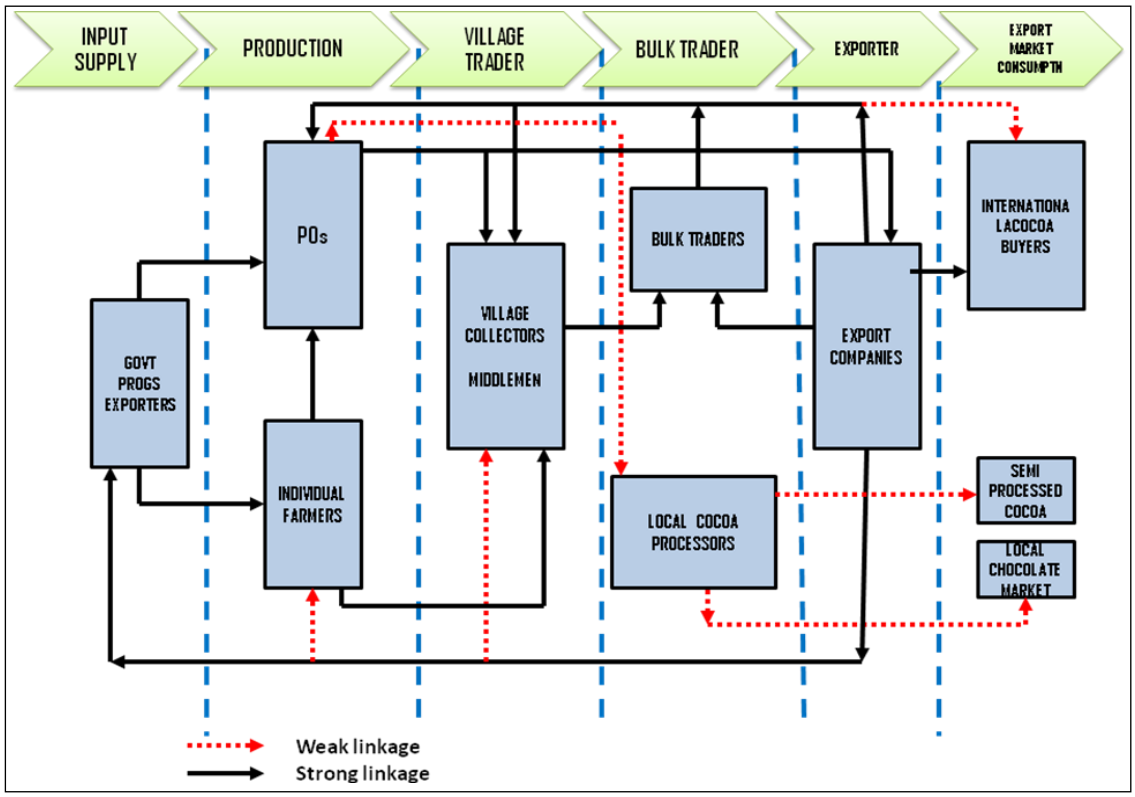
As discussed in Section 2 it is observed that while in the past (2009-2012) the main export destinations of Uganda's' cocoa were west Europeans countries –UK, Spain, Switzerland, Netherlands, Belgium, among others, in the recent past Asian countries- Indonesia, Malaysia and India have become the dominant importers of cocoa from Uganda. The EU has more stringent food safety regulations pertaining to food contaminants, heavy metals (e.g. Cadmium), pesticides, mycotoxins, poly-cyclic aromatic compounds, microbes e.g. Salmonera, foreign matter, labeling, and packaging, among others.

3.6.4 Horizontal and vertical linkages of cocoa value chain actors

This section attempts to illustrate the intra value chain relationships between chain level actors. Their linkages and operations influence effectiveness of the chain as shown in Diagram 2.

In the interaction, it is observed that input supplies (usually cocoa seedlings) are through either export company networks, or recently, Government's Operation Wealth Creation (OWC) programme and NAADS. The seedlings are supplied to either individual farmers or farmer organisations (Producer Organisations).

Diagram 2 Linkages Between Cocoa Value Chain Actors



Producer Organisations produce cocoa beans or procure from individuals and then sell either to the village collectors, bulk traders or even the export companies. Some producer organisations have developed links with bulk traders and export companies through which they receive incentives like credit, extension services and other inputs. Local processors have also identified selected producer organisations and individual farmers to supply them high quality cocoa beans. However, this is not common, since the local processors are few.

Village collectors constitute the primary marketing stage for cocoa. They obtain most of their cocoa from either individual farmers of the producer organisations, which they on sell predominantly to bulk traders and export companies. The local traders and exporters may at times use village collectors as their agents.

The bulk traders form the secondary bulking stage in the cocoa trade value chain. They receive cocoa from the village collectors, producer organisations, and individual farmers, in addition to their buying agents. These traders are sometimes supported with cash for trading by the export companies. Some of them have exported cocoa in the past but these are quite few and the exports are not regular.

Export companies (usually international) mainly receive cocoa from the local bulk traders, in addition to producer organisation and village collectors. The cocoa is mainly exported to Asian and European processing companies.

There is very limited local cocoa processing activity and products are consumed either in the local market or on order by individual buyers in Europe. Cocoa processing is still in its nascent stages and is probably why trade linkages are still weak.

3.6.5 Key observations in cocoa trading

3.6.5.1 Village traders

Use of arbitrary units for volume and pricing: Primary traders use arbitrary units to determine the cocoa volume and price they give farmers.

Use of moisture meters: Moisture content is a key price determinant factor for cocoa buyers. But at the primary trading levels, moisture-meters are not used. This exposes the buyers and traders to losses, although it is traders that exploit the uncertainty.

Fermentation, drying and quality cocoa beans: The fresh cocoa beans bought from farmers is expected to be fermented by the traders. However, for most of these traders they do not have adequate facilities, i.e., fermentation equipment and drying space for proper post-harvest handling of cocoa.

Quality mixing: Primary traders buy from different farmers that have harvested and fermented their cocoa differently, or even not fermented at all. This cocoa of varying quality is all mixed and bulked by the trader and sold in the same batch, which affects the overall cocoa quality.

Storage facilities: Furthermore, the primary traders do not have adequate space for storage of cocoa still under processing, and that ready for marketing. They resort to keeping it in their dwelling places, which compromises the cocoa quality, exposes household to toxic gases of fermentation as well as foreign materials in the cocoa.

Transportation: Transporting cocoa from the hilly producing areas to the buying centres on the slopes is a challenge for traders at this level who mainly move on bicycles, motorcycles and on foot.

Volumes traded: There are numerous traders operating at the primary level, too many traders competing for small volumes from the farmers. The traders devise different incentives to encourage farmers to sell to them. Incentives include; higher prices, buying from the farm gate, community cash advances, community service engagements, among others.

Insecurity and theft: Cocoa produce sells for comparatively higher prices, and any bulked volumes are attractive to thieves. This exposes the traders to insecurity of both their lives and the cocoa while still in their possession. Traders therefore dispose of their cocoa at the earliest opportunity, lest it is stolen.

3.6.5.2 Bulk traders

Bulking: Traders at this stage compete aggressively to raise volumes. All possible methods are used to achieve this objective. Price however, is the overriding factor; the higher the price offered the better the chances of raising volumes. The price setters are the largest trading and exporting companies, and these are: ESCO, ICAM and Olam. The other traders' prices are on average Ugx50-100 below or above that set by ESCO, ICAM or Olam.

Quality control: It is also at this stage that traders test the quality of cocoa and though not strict, quality prices can be determined based on these quality parameters. The key parameters tested are summarised below and all traders at this level at least have moisture metres and digital weighing scales.

Table 31 Cocoa bean quality parameters

Parameter	Permissible range
Moisture Content	1. 7-8%
Impurities	2. <2%
Molding	3. <3%
Bean count (100mg)	4. 100-110
Fermentation	5. Adequately Fermented

The quality standards are set by the export companies. In practice however, because of the high demand for cocoa traders do not adhere to the quality standards. If it is rejected by one trader another trader willingly receives it irrespective of the quality.

3.6.5.3 Trader-farmer relations

Traders have in the past attempted to develop relationships with farmers through provision of incentives and extension services among others. Although there are no written agreements between them, many traders have reported disappointments as farmers continuously fail to honor the trades' expectations of selling cocoa to them. Thus many traders have lists of supposedly affiliated members, in practice however, the farmers rarely ever sell cocoa to them. It is also common to find the same farmer on the list of several traders. Thus farmer allegiance to buyers is dwindling. This disloyalty is in part due to the high cocoa demand from the numerous cocoa traders who are competing on price. Farmers have several off-taker choices and tend to choose the highest price offers.

3.6.5.4 Exporters

The main challenge expressed by the international exporting companies were:

1. Poor quality of cocoa, mainly arising from poor fermentation;
2. Low volumes of cocoa produced in Uganda.

The local traders and exporters on the other hand expressed the following as hindrances to exporting cocoa:

1. Lack of access to affordable finance – current commercial bank lending rates are in the range of 25-29%;
2. Lack of information about international buyers – are there buyers that can import small volumes (1-10 container) of high quality cocoa;
3. Lack of experience in international trading and export logistics handling.
4. Not conversant with cocoa quality parameters, standards and grading. Indeed, the country lacks a national standard to guide setting up of a national quality grading and certification system. In spite of that, there are internationally recognised standards (e.g. the ISO 2452: 2017 and the ICCO quality certification for cocoa dry beans, national standards of the respective countries, among others). These specify the requirements for cocoa bean classification, sampling, test methods, packaging and marking details traders need to familiarise with on cocoa standards and quality that include: -merchantable quality beans; cocoa grades; cocoa marking and sealing; shipment and handling; the code of practice for consignment inspection, sampling; optimum storage and infestation management.
5. The traders need to regularly implement these measures in their work schedules, get acquainted with the tools, methods and protocols used in adhering to the standards and parameters, with training support. As traders become more aware, conversant and compliant with these standards, their capacity to participate in international trading will be enhanced.

3.6.5.5 The changing landscape of cocoa trading

Over the past 5 years, there have been changes in the cocoa business that has seen farmers getting a larger share of the cocoa export (FOB) prices. It has been observed that:

1. In the local market, due to the stiff competition for cocoa beans, traders are offering higher prices that are in some cases not in tandem with the world cocoa price movements. Thus, trader margins are diminishing, while farmer margins are increasing.
2. Unlike in the past, farmers are now more aware about cocoa prices through information exchange over the mobile phone and some are exposed to the internet.
3. Farmers are more assured of market for their cocoa. In fact, there are too many traders targeting very small volumes of cocoa produce.
4. In addition, because farmer loyalty and allegiance to traders is diminishing, trader willingness to invest in farmers' capacity building at producer level is likewise diminishing. This widens the extension service delivery gap that the cocoa exporters have been plugging, in the absence of government extension services.

This market system that lacks structures for rewarding good quality cocoa producers and punish errant ones, promotes apathy among farmers who are the primary custodians of cocoa quality. It is imperative therefore that a cocoa policy that will among other things address quality issues is expeditiously enacted if Uganda is to compete in the international market.

3.7 Cocoa Bean Value Addition

The most common value addition activity traders engage in is further drying and packaging. Most of the traders have raised racks and tarpaulins at their premises where further sun drying can be done to get uniform moisture content of the bulk. Farmers and trader agents delivering cocoa are also allowed to freely access these drying facilities. Only one trader, ESCO has cocoa drying and grading machinery at their premises.

Processing of cocoa beans into chocolates is yet to take root. 3 companies are reported to be manufacturers of chocolate products in Uganda, and these are: Latitude trading company, Equator chocolates and Pink foods (U) Limited.

Latitude Trading Company is located in Bundibugyo district and currently also involved in cocoa trading. It was not possible to verify the production as the consultant team was not allowed to enter the company premises to confirm the cocoa processing activity. However, their website (www.latitudetrade.co) indicates that they are a producer and supplier of fine Ugandan cocoa beans and bean-to-bar dark chocolate. A sample of the Latitude chocolate products found in the local market is in the picture below. The chocolates are distributed in a few selected up market outlets targeting high-end clients. A chocolate bar is sold at Ugx 13,000 (USD 3.50).

Image 12: Latitude Trade Company chocolate bar made in Uganda

Equator chocolates: The company is the most active local chocolate manufacturer, albeit on small scale. Its current production capacity is 20 - 25kgs of chocolate per day from 30kgs of fermented dry cocoa beans. Different chocolate varieties are produced as shown below.

Image 13: Equator Chocolate bar made in Uganda

Installed capacity is 50kgs of chocolate per day from 60kgs of cocoa beans. Additional equipment has been procured and plans are underway to increase output capacity to 500kgs per day over the next 2-3 months. A chocolate bar of Equator brand is sold at Ugx6,000 (USD 1.60).

Current investment stands at between USD 10,000-15,000, and the main challenges this manufacturer is currently faced with are:

- Lack of skilled manpower in chocolate production,
- High cost of packaging materials that raises the overall production costs, and
- Lack of working capital

Pink foods: is involved in cocoa production, trade and processing on a small scale. The promoters are passionate about commercial cocoa processing and to date have secured premises and a building in Kyanja-Kampala where the proposed cocoa processing machinery will be installed. Currently the company is using a mini cocoa processing unit to make chocolates branded as Uganda chocolates. Other products include cocoa powder and cocoa butter. All products are made on order for individual customers.

3.8 Share of Value in the Cocoa Value Chain

The share in value took into consideration prices paid at the key cocoa value chain stages, i.e., Village trading, bulk trading, exports and export market prices. The analysis focused on the trade and margins which was the core of this study, and these are summarised in Table 32. The figures used are indicative, based on the typical values reported by cocoa traders interacted with during the study. Moisture content has been included as it is a critical factor in determining prices and trade margins.

Table 32 Buying prices (Ugx) paid by traders in the cocoa trade value chain

Actor	Producer	Village Trader Price (paid to farmer)			Bulk Trader Price	Exporter Price	Export Price (FOB)
		Wet cocoa	"Some-some"	Dry fermented	Ugx/kg	Ugx/Kg	Ugx/kg
Prevailing market price (Ugx/kg	6.500	2,000	4,000	6,500	7,200	7,500	8,400
Estimated (MC%) at purchase	10%	50%-60%	30%-40%	10%	10%	8%	7-8%
Dry cocoa price equivalent (Ugx/ kg)	6,500	6,600	5000-5,500	6,500	7,200	7,500	8.400
Trader Margins(%)	-	8%	23-31%	10%	4%	17%	-
Price as % of FOB price	77%	78%	60-65%	77%	85%	89%	-

For village level traders, the products traded are wet cocoa, semi-dry cocoa and fermented dry cocoa beans. All these products are bought at different prices, based on the "perceived or estimated" moisture content. The price for fermented dry cocoa beans are clear and standard (currently Ugx 6,500 per Kg). All traders in a given area will buy cocoa from farmers at that price, as long as it meets the minimum requirements; moisture content (10%), fermentation, mould, cleanliness, among others. If sold at the prevailing price of Ugx7,200 kg, village trader margins would be about 10%.
Ambiguities however occur in the purchase and trade of wet and semi dry ("*some some"*) cocoa as described below.

I. Fresh wet cocoa

Freshly harvested cocoa contains 50-60% moisture. If sold at this stage, a farmer is paid Ugx2000 per kg by reputable companies like ICAM. ICAM is the largest company in Uganda that trades in wet cocoa. As such, ICAM is the price setter for wet cocoa bean trade in the Ugandan market.
However, the smaller traders that deal in fresh cocoa use arbitrary unit (cups, jugs, basins, tins, etc.) to measure wet cocoa they purchase from farmers. The units are usually screwed to the farmers'

disadvantage. For example, a jug of fresh wet cocoa which may weigh about 2.5kg or more is currently bought at Ugx4,000 from the farmer, compared to

ICAM's price of Ugx 200 per kg of wet cocoa where it would fetch Ugx5,000.
The rule of thumb is that fresh wet cocoa moisture content to dry fermented cocoa is 1:3. Thus, wet cocoa purchased at UGx 2000 per kg will translate into Ugx 6600 per Kg of dry fermented cocoa. A trader like ICAM whose primary objective is to export this cocoa will get a margin of about 8% at this level and an additional 11% when they ferment and dry the cocoa for export. Total margins reach 29%. Because other wet cocoa traders at village level do not get that extra income from exports, they could resort to using under-handed methods described above to earn higher margins.

II. "Some-some" cocoa

The average moisture content reached by some-some cocoa beans is 30-40%, and the current price paid is Ugx 4,000 per kg. If dried to 10% moisture content, the effective cost price per kg will have been about Ugx 5,000-5,500 per kg. Village level traders that deal in *some-some* stand to get margins of between 23%-31% depending on the price they pay farmers.

Bulk traders deliver fairly standard cocoa beans that meet the minimum quality requirements set by their buyers i.e. the export companies. In addition, for this reason, some of them invest heavily in additional cocoa drying infrastructure like drying yards, drying racks, sorting, cleaning and grading. The main value-adding role of bulk traders is to raise volumes and bulking. Thus much as their percent margins may be low (about 4%) they earn more by selling large volumes.

Exporters are the final players in the local trade value chain. Majority of them are international companies. These companies earn margins of about 17%, which is higher than that of the bulking traders (majority local companies). In addition to final bulking and packaging, the exporters also do the final labeling and grading of cocoa before export. However only ESCO has cocoa drying, grading and packaging machinery, among the exporters in Uganda, the others use manual methods.

3.9 Chocolate Market Size and Value

The cocoa market is characterised by a few large international companies. There is a strong dominance of large downstream processors, such as Olam, Cargill and Barry Callebaut, in trading, grinding and manufacturing activities. Major chocolate manufacturers include Mars, Ferrero, Mondelez and Nestlé.

Table 33 Top global confectionary companies producing chocolate bars, biscuits and wafers

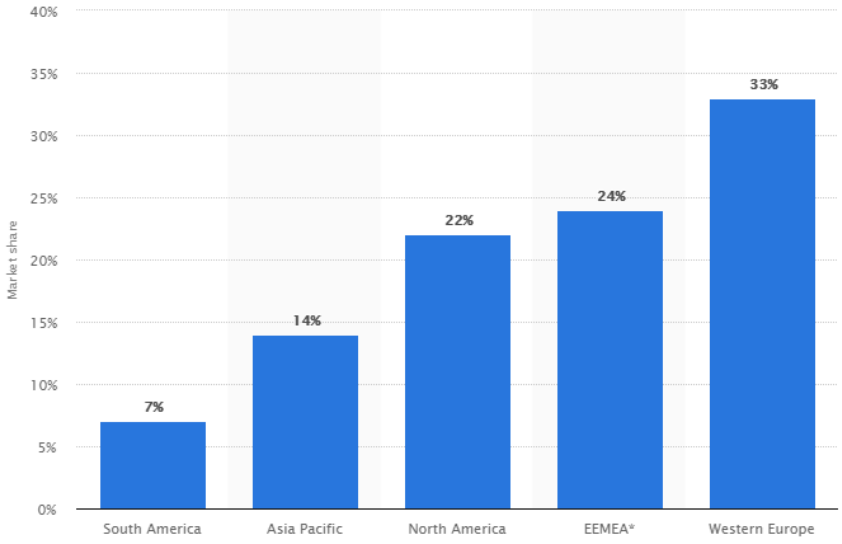
Company	Net Sales 2018 (US$ millions)
Mars Wrigley Confectionery, division of Mars Inc (USA)	18,000
Ferrero Group (Luxembourg / Italy)	12,390
Mondelēz International (USA)	11,792
Meiji Co Ltd (Japan)	9,662
Hershey Co (USA)	7,779
Nestlé SA (Switzerland)	6,135
Chocoladenfabriken Lindt & Sprüngli AG (Switzerland)	4,374
Ezaki Glico Co Ltd (Japan)	3,327

Pladis (UK)	2,816
Kellogg Co (USA)	1,890

Source (CandyIndustry, 2019)

Western Europe has a market share of 33% in chocolate confectionary worldwide. Equal to about 17,341 million EUR (PRODCOM Eurostat, 2017), hereby following CAOBISCO's product definition (CAOBISCO, 2018).

Figure 25 Market share of chocolate confectionery worldwide in 2019, by region (Statista)



Source: (Statista, 2019)

Out of the EU 28, Germany, Belgium and the Netherlands are the largest exporters of chocolate confectionary products. Germany, Italy and the UK lead in production value (PRODCOM Eurostat, 2017). Chocolate consumption per capita is highest in Switzerland, followed by Germany, Ireland, UK and Sweden (World Atlas, 2018).

Figure 26 EU trade balance of chocolate products 2017 and production value

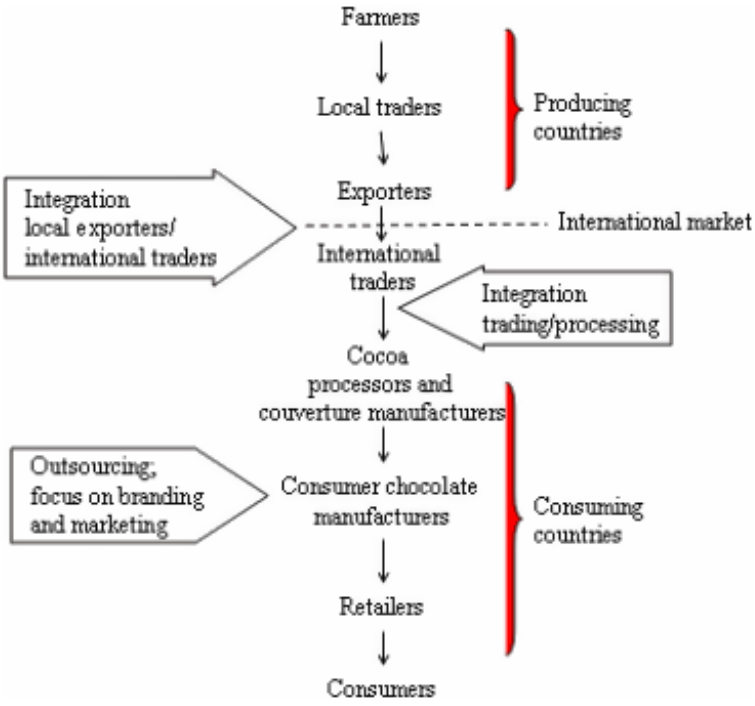
Source (PRODCOM Eurostat, 2017)

It cannot be said that there is one single European market that would be of interest to Uganda, as it is used in large quantities of chocolate blends. For single origin, the Uganda bean is very suitable for the darker milk chocolates, which would appeal to the tastes of the Northern European and UK market, according to the industry stakeholders.

3.10 Trade Structure, Quality and Pricing

3.10.1 General

Figure 27 Cocoa Supply Chain



Source (UNCTAD Secretariat, 2008)

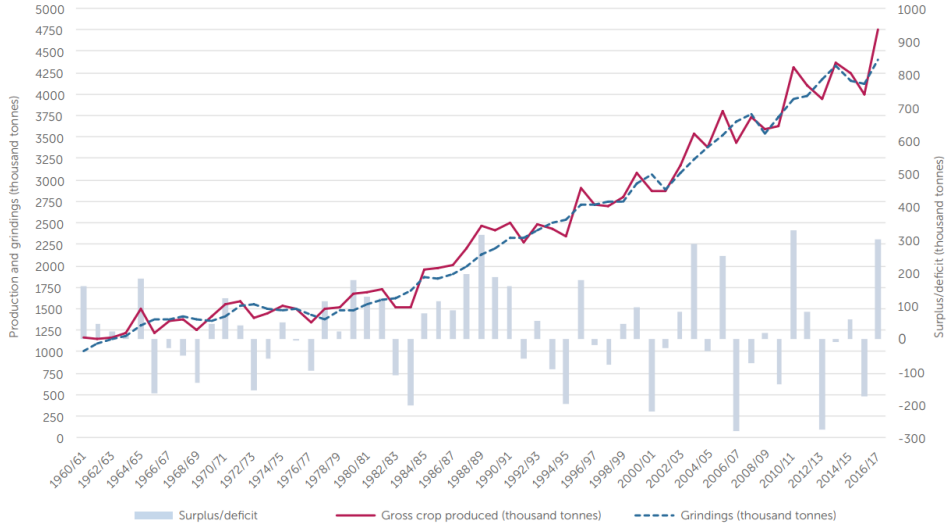
Based on conversations with the buyers from Uganda, it is clear that there are two distinct markets for Uganda cocoa: the specialty niche bean-to-bar and the bulk market. Both markets can have a certified or non-certified supply chain. Current certification standards are UTZ/RA, Organic and Fairtrade, though the last is available in only very small quantities.

Cocoa is either traded on the spot or the futures market. The spot market is for immediate delivery and immediate payments (ITC UNCTAD/WTO, 2001). Specialty buyers generally buy spot, as do some of the smaller traders. The larger buyers hedge against the London or New York futures market, also called the exchange market or the terminal market, to offset the risk of adverse price movements. The trade in cocoa futures in London is operated by the London International Financial Futures and Options Exchange (LIFFE) and in New York by Intercontinental Exchange (ICE) (Dand, 2011). Contracts for beans destined for Europe follow the contract terms set by the Federation of Cocoa Commerce Ltd. (FCC), which is based in London. Contracts include quality specifications, terms of sale, shipment, insurance and arbitration.

The graphs on the following page provide an illustration of the supply and demand developments (8) (Bymolt, Laven, & Tyszler, 2018), as well as price developments over time (**Error! Reference source n ot found.**, **Error! Reference source not found.**0). Though production (supply) is more volatile than the grind (demand), the two have followed each other over the years, growing about 3% year-on-year. The stocks-to-grindings ratio is used as an indicator of price levels and trends, as it is seen as most closely representing the market's view on supply and demand (**Error! Reference source not found.** a nd **Error! Reference source not found.**0) (Bymolt, Laven, & Tyszler, 2018), whereby a lower stock-to-grindings ratio results in a positive effect on price trends.

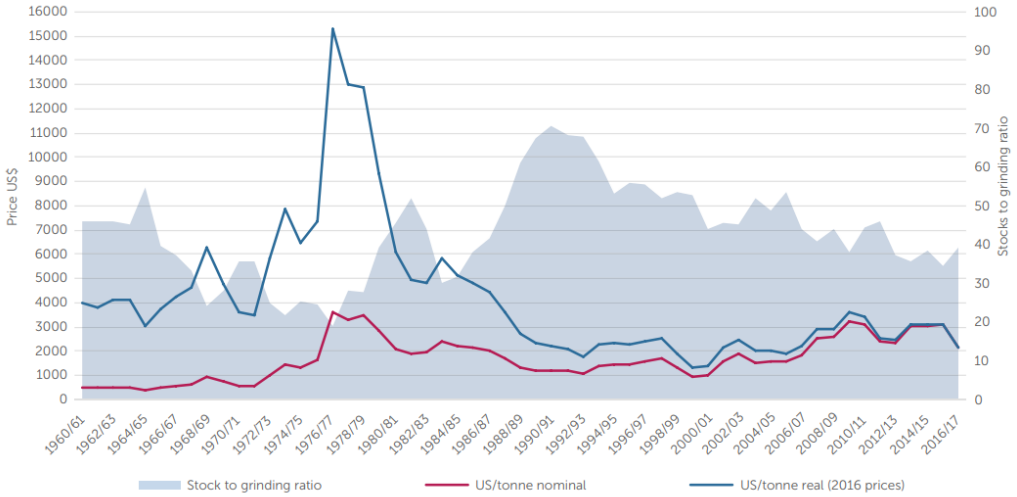
In 2016/17, the market saw a considerable price drop that is believed to be caused by a bumper crop and weakening demand (Bymolt, Laven, & Tyszler, 2018) (Terazono, 2017) (Monnier, 2017). Côte d'Ivoire even halted the distribution of high-yielding seeds and other yield improvement measures in an effort to tackle oversupply (Ionova & Aboa, 2018). However, the overall trend shows that the cocoa market generally follows the economic principles of supply and demand, and the 16/17 crop can be seen as an outlier. It is recommended to read the KIT (2018) publication *Demystifying the Cocoa Sector,* Chapter 11, for a more elaborate historical analysis on price development.

Figure 28 Global Increases in production and grindings



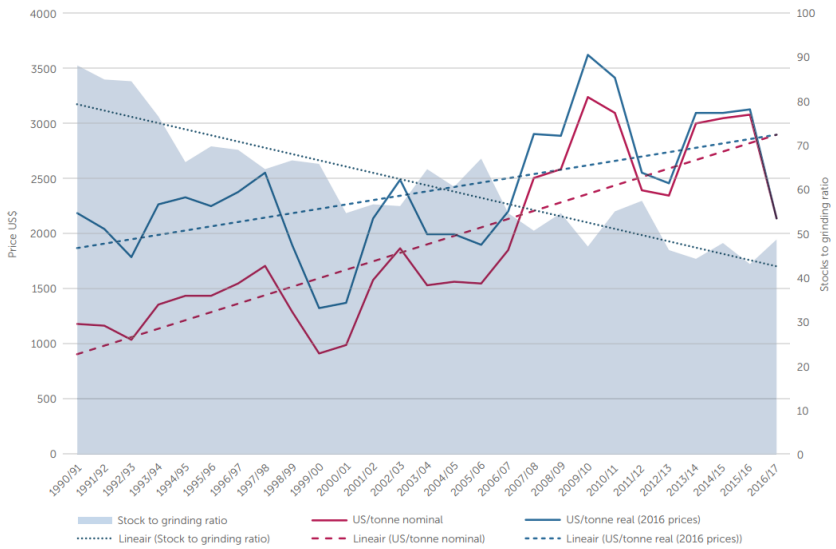
Source: KIT derived from ICCO data (Bymolt, Laven, & Tyszler, 2018)

Figure 29 Global Cocoa Prices US$/MT (nominal and real 2016), and stocks to grindings ratio 1960/61 to 2016/17



Source: KIT derived from ICCO data) (Bymolt, Laven, & Tyszler, 2018)

Figure 30 Global Cocoa prices US$/MT (nominal and real 2016), and stocks to grinding ratio 1990/91 to 2016/17



Source: KIT derived from ICCO data (Bymolt, Laven, & Tyszler, 2018)

3.10.2 Uganda

Uganda trades in conventional cocoa; certified UTZ/RA, Fairtrade, Organic (or combination of the certifications); and specialty cocoa, including fine flavour. Specialty cocoa can also be traded certified.

Conventional

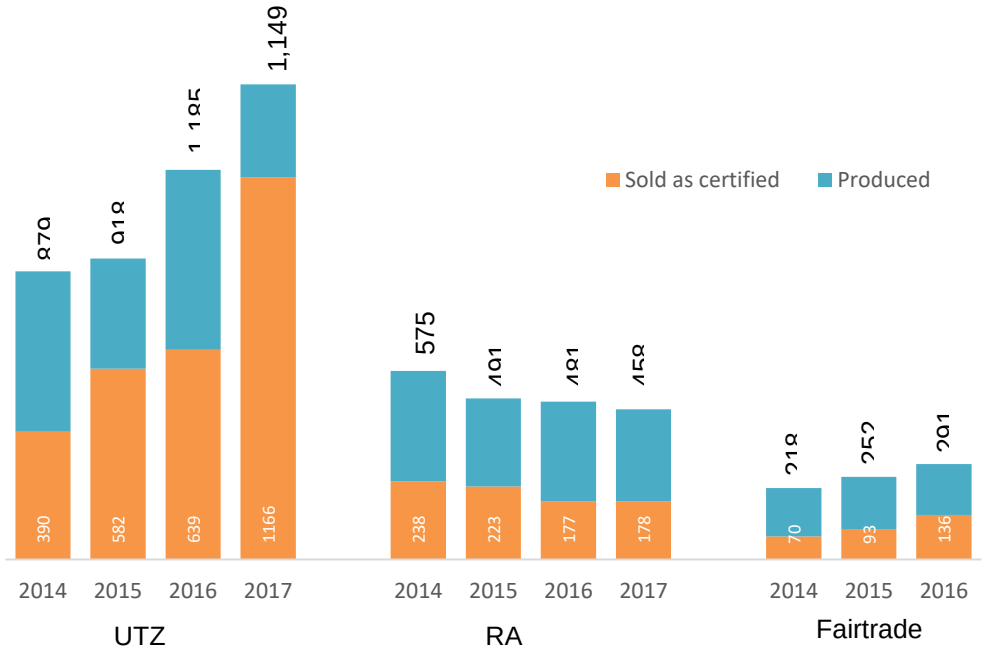
Conventional Uganda beans are used by the processing industry most commonly as a substitute for Ivory Coast cocoa beans. For Uganda beans to be interesting to the processing industry, they need to trade at a discount and at least a few percent under Ivory Coast FOB prices. This has lately been more challenging as farm gate prices have gone up considerably over the last few years due to increased competition. Farm gate prices are said to lie around or even above 80% FOB. Uganda has the reputation of being 'expensive' in this market segment.

Certified cocoa

European buyers in interviews mentioned that all Ugandan production is certified, likely because the traders they deal with will only offer certified and the percentages of certified beans on offer have historically been high (**Error! Reference source not found.**). However, total volume of certified product i s currently estimated at a maximum of 40%; this does not include double certification, which would bring the number down further.

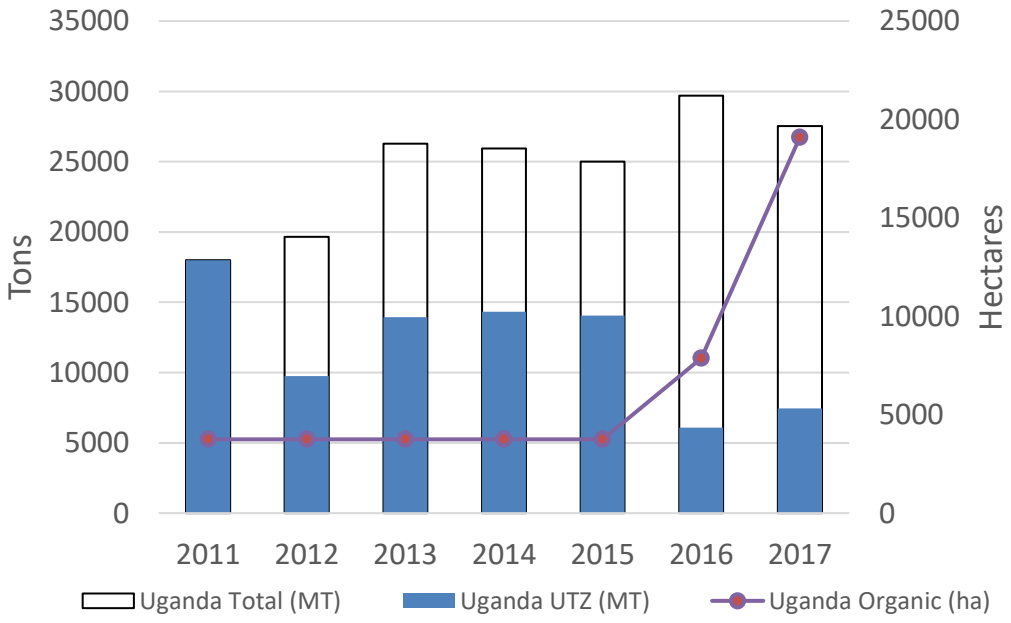
The most common certifications in cocoa are Rainforest Alliance/UTZ, Fairtrade and Organic. The figure below shows global figures of what is sold as certified and produced as certified UTZ, Rainforest Alliance (RA) and Fairtrade.

Figure 31 Produced and Sold as Certified for UTZ, RA (Rainforest Alliance) and Fairtrade



Source: (Fountain & Heutz-Adams, 2018)

Figure 32 UTZ Certified production of cocoa beans in MT for Uganda, growth in hectares under organic cocoa



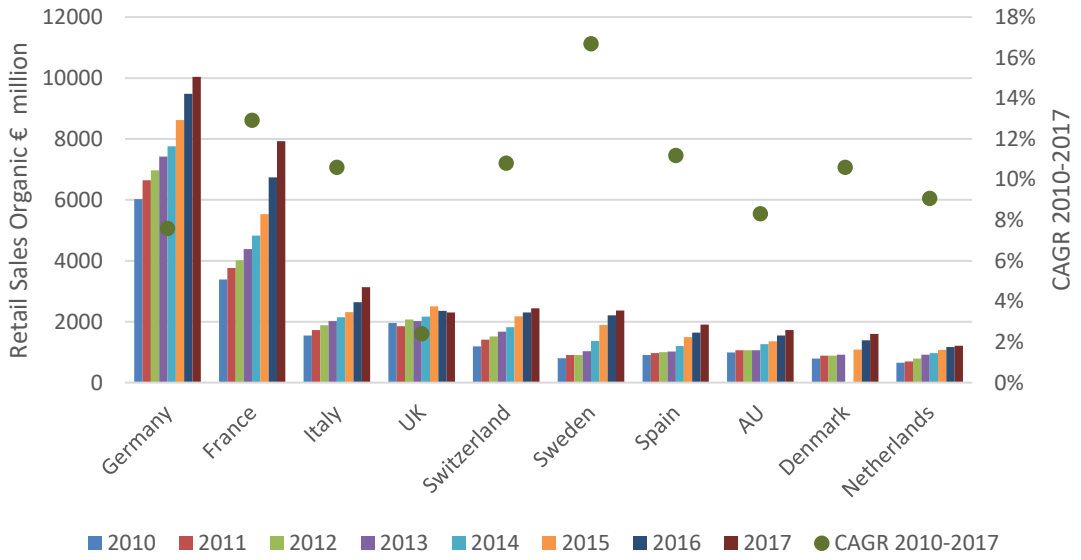
Source: UTZ

Rainforest Alliance and **UTZ** joined forces and merged in January 2018, continuing under the brand name Rainforest Alliance. By mid-2019, the two standards will be operating under one standard.

Uganda has only known UTZ certified cocoa farms (not Rainforest Alliance). There used to be two certificate holders, though there is currently only one. The production figures (**Error! Reference source not found.**) are based on a yield estimate of more than 700kg/ha, which seems on the high side. However, there has been a loss of interest for producing certified, as depicted in the figure above. This could very likely be due to increased demand from Asia for non-certified conventional and because of the relatively low premiums for certified compared to the cost of production of certified. Most of the UTZ/RA certified is said to be sold as mass balance, which currently brings in a premium of 70-80 USD per MT. For segregated, premiums can go up an additional 50-100%, though these quantities seem to be very limited in Uganda.

Organic has seen a continuous growth over the previous year's globally as well as in Europe. This is due to the trend of healthy living and the increasing desire for natural products. The European organic retail food market has a value of about 34.3 billion EUR (2017); including EFTA, this is 37.1 billion EUR (FiBL & IFOAM, 2018). Organic has shown a compound annual growth rate (CAGR) of 9.6% between 2010 and 2017. It is expected to reach a value of 45.0 billion EUR in 2021. Germany and France represent almost 50% of the European market, with retail sales of 10 billion EUR and 7.9 billion EUR in 2017, respectively (FiBL & IFOAM, 2018).

Figure 33 Top 10 countries in EU & EFTA based on organic retail sales 2010-2017



Source: FiBL statistics

Organic cocoa sales are estimated at less than 0.5% of total production (ICCO, 2019). When looking at total cocoa area under fully converted organic, one would come to theoretically 2% of the production according to FiBL statistics, when taking an average yield of 300kg/ha (FiBL Statistics, 2017).

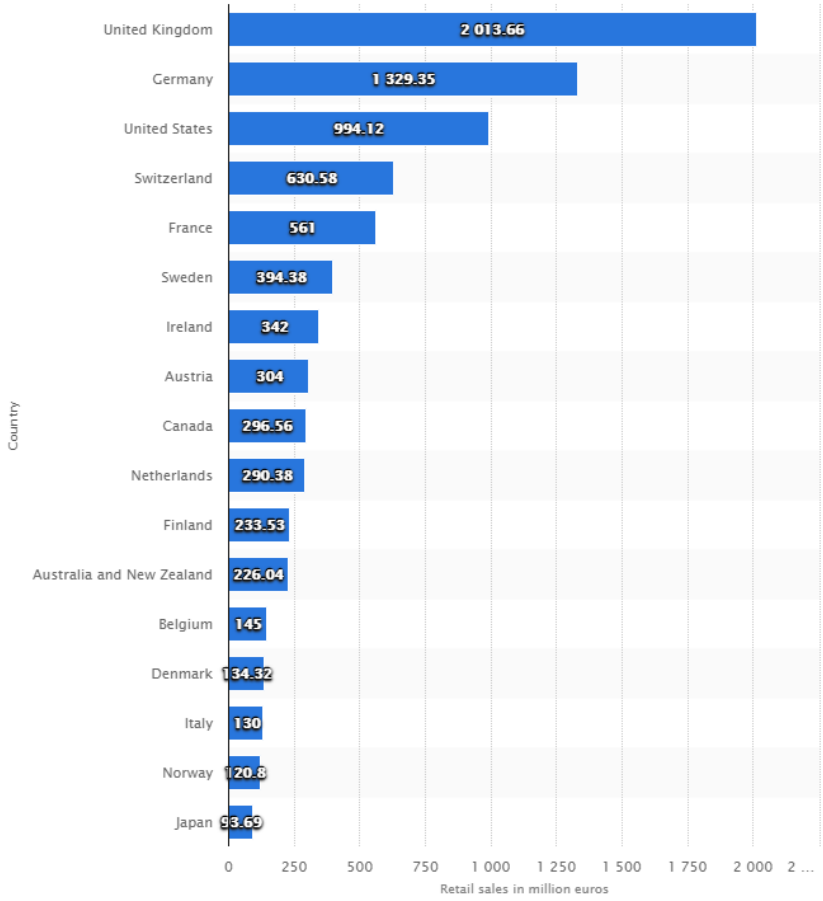
For Africa, it is indicated that 127.114ha has been fully converted, which, in theory, could produce a quantity of about 38.000 MT of organic. This would come to 0.8% of total global cocoa production, or 40% of the total organic cocoa production worldwide (FiBL Statistics, 2017). The compound annual growth rate in the Organic Area (fully converted) between 2007 and 2017 for Africa, according to the FiBL stats, has been 34% (FiBL & IFOAM, 2018).

Uganda, according to the same statistics, has a bit over 17.000ha of fully converted organic area for cocoa. Theoretically, 400kg/ha would mean a production of 6.800 MT, or about 20% of the total Ugandan production. Premiums lie around 200-300 USD; this is often in combination already with UTZ or Fairtrade certifications.

The main concern for buyers is related to the product integrity, which has known to be problem in cocoa. Buyers are concerned if the product is '*real organic*' and if it can be proven that it's from Uganda and not DRC. Investing in a more robust food integrity system, possibly supported by government regulations, would help address these concerns.

Fairtrade, out of three main certification standards, is the only one that applies a minimum price, which was recently adjusted to 2,400 USD/MT from 2,000 USD/MT FOB. There is also a fixed premium of 240 and 300 USD for organic cocoa, paid above the market price or the Fairtrade Minimum Price, whichever is higher at the time of sale (Coffee & Cocoa International, 2018). Fairtrade, in combination with Organic, are import certified when aiming for the specialty/flavour market. Important Fairtrade markets are the UK, Germany, Ireland and Sweden.

Figure 34 Estimated Retail Sales of Fairtrade International products in selected countries in 2017, by leading country (in million Euros)



Source (Statista, 2017)

Individual company sustainability commitments, such as those by Mars, Ferrero, Barry Callebaut, has led next to increased investment in certification projects and/or **company programs**. Examples of such programs are the Cocoa Horizons Programme of Barry Callebaut, Nestlé's Cocoa Plan and Mondelez's Cocoa Life. These programs are set up for companies to differentiate their product on the market and also to come up with more cost-effective alternatives to the current certification systems in place. Most of the company programs are rolled out in the larger origins where the companies also have offices, as this is where the most impact can be obtained. Programs in Uganda, as a small origin, will probably be limited and will focus on the monitoring and control of (sustainability) risks.

As for specialty flavour cocoa, buyers and traders, such as Uncommon Cacao, Meridian Cacao, Daarnhouwer, Tradin Organic, Twin Trading, Cocoasource, Cocoanect, York House and ICAM, search for high-quality cocoa. They buy directly from the farmers through cooperatives or dedicated traders. Beans can either be bought dry or wet (unfermented).

Olam, ICAM and Latitude Trade buy wet beans to centralise fermentation in order to develop the flavour profiles of the beans, allowing it to be of such a quality that it can be used for single origin chocolate. It is estimated that about 5% (industry estimate) of the total beans are bought wet. The buying of wet beans allows farmers to obtain higher prices for their cocoa. Prices of wet beans at farm gate are at almost 95% FOB when taking dry/weight equivalent. It is difficult to maintain margins at these prices, even in the fine flavour chocolate market.

The development of the wet bean market also excludes certain buyers. For example, the bean-to-bar chocolate makers, interested in small quantities of quality (dry) cocoa directly from a coop, find it difficult to get the beans, as they are not able to compete at the wet bean price levels. It might be worth investigating if this market can be served better, as the wet bean flavour market is such a niche market.

CHAPTER 4: TREND ANALYSIS CONSUMER MARKET

4.1 Trends

4.1.1 Social

Food trends

Current food trends are all about healthy living (i.e. organic, low in sugars, lactose free, fat, sodium), product personalisation (i.e. direct consumer engagement, convenience, luxury, higher service levels), ethical/sustainable living, global influences (i.e. Middle Eastern flavours, Asian fusion), as well as tech developments (Food Navigator, 2018; Mintel, 2017; GlobalTrade, 2017).

For cocoa, this means different things. First of all, consumption in Europe might slow down since mainstream chocolate, especially milk chocolate, is considered unhealthy due to its high sugar and fat content. On the other hand, dark chocolate with high (>70%) cocoa content, in addition to organic or vegan production, has been associated with health benefits (Drayer, 2018) (Joseph, 2018). These chocolates would often fall into the specialty segment. Uganda cocoa beans would be especially suitable for the darker milk chocolates, which would fall between the two. It would serve the taste of consumers, especially those from northern Europe and the UK. Uganda as a single origin would also be considered an *exotic* product to western consumers who are continuously in search of new flavours and experiences in food. The specialty segment is where most growth is expected to rise, but it also has the highest cost of production.

Industry and multi-stakeholder collaborations

Collaborations within the industry exists in tackling issues on the production side, such as CocoaAction of the World Cocoa Foundation or International Cocoa Initiative (ICI), with the latter promoting child protection in cocoa communities.

Next to individual company commitments and industry collaborations, there are also **national cocoa platforms** in Germany, Switzerland, the Netherlands and recently Belgium, that strive towards a 100% sustainable chocolate industry. In Belgium, the charter 'Beyond Chocolate' was signed December 2018, striving for 100% sustainable chocolate by 2025 (The Brussels Times , 2018). The platform is a group of national actors from the chocolate industry, retail, government, NGOs, trade unions, investors, research institutes, etc. Though the commitments made in the charter are voluntary, they do represent the long-term goal of the industry and the consumers in Europe and is something to consider when targeting the European market.

Child labour

Within the scope of sustainability, child labour is the most prominent social issue in the cocoa supply chain in West Africa. It first came up in 2000 and 2001 in documentary and multiple articles showing widespread child slavery and child trafficking in the production of cocoa. This led to the Harkin Engel Protocol, a voluntary public-private agreement aimed at ending the Worst Forms of Child Labour and Forced Labour in the cocoa sector. The goal was to eliminate 70% of such labor by 2020.

In relation to this, the NORC research centre of Chicago has been asked to conduct a research on the current prevalence of Child Labour compared to that of 2008/2009. The report will come out around march 2020 showing that absolute numbers of child labour incidences have increased. This will obtain a lot of media attention resulting in a further push towards stricter import regulations and stricter compliance rules for the brands.

Britain adopted a Modern Slavery Act in 2015, requiring businesses with more than £36 million in sales to disclose annually steps they have taken to identify and address the risk of forced labor in their supply chains. Australia adopted a similar act in 2018.

In 2016 the US Tariff Act was expanded to also including products such as coffee and cocoa. The act prohibits the importation of goods mined, produced or manufactured in any foreign country by forced, indentured, convict or child labor. Such merchandise is subject to exclusion and/or seizure, and may lead to criminal investigation of the importer(s).

In May 2019, the Netherlands adopted a law that requires any company that sells goods or services to Dutch consumers to identify and prevent child labor in their supply chains. The statute requires a regulator to publish corporate responses in a public online registry, and is the first such law anywhere that introduces criminal sanctions for those that fail to comply.

Separately, the Dutch government, banks and other groups have joined forces in a pact that aims to prevent or end human rights violations by companies that borrow from Dutch banks. It identifies specific areas in the cocoa supply chain where banks can usefully intervene — and several have responded.

According to UNICEF's Children's Right Atlas, Uganda scores below average on many of the children's rights indicators, and companies are advised to do an enhanced level of due diligence on the severity and likelihood of adverse children's rights violations. *The right to education, right to health and nutrition* and *right to protection* score low. The 2017 report of USDOL indicated that 30,9% of the children ages 5-14 are working in Uganda - this is for all sectors -, of which over more than 95% occur in agriculture. Note that in 2016, the government approved the Children (Amendment) Act, which establishes age 16 as the minimum age for work and children in Uganda are required to attend school only up to age 13. This makes children ages 13 to 15 vulnerable to child labor because they are not required to attend school but are not legally permitted to work

Even though the focus has been mainly on cocoa from Cote d'Ivoire and Ghana, it's an opportunity for Uganda to learn from this experience. For the European market it's important that these social risks are contained.

Gender equality

In cocoa, the gender discussion is mostly industry-driven and focuses on the critical role women play in livelihoods and communities. Investing in women in cocoa makes sense, as women make up a large part of the labour associated with food production and are more likely to reinvest household income in expenses related to education, health and food security (Ulrike & Lescornec, 2018). A World Bank Report (2012) argues that closing the gender gap among cocoa producers can generate significantly higher yields and improve the quality of cocoa beans because women are involved in almost all stages of cocoa production. The cocoa sector has therefore also developed different programs such as the Village Savings and Loans Associations (VSLAs) and platforms such as Women in Cocoa and Chocolate network (WINCC).

Women's equality and women's rights have gained importance in the political and business arena. The high profile cases within the #MeToo movement, and the introduction of new gender pay gap (GPG) transparency regulations by the UK government in April 2017, have also further increased media attention among consumers to women's rights. It is therefore a momentum that could be tapped into. Hereby think about women-grown cocoa and chocolate brands that aim to empower women. More common in coffee, but also visible in cocoa, women's empowerment is also being used in marketing and brand positioning. Some examples are the Femmes de Virunga of Original Beans which empowers the women cacao farmers and their community leadership for peace and prosperity in Eastern Congo, and the Rokbar chocolate bar that is made and owned by women.

The table below shows how Uganda scores in different gender-related rankings compared to some of the other smaller cocoa-producing countries. Though in comparison Uganda does not score that bad compared to other neighbouring and cocoa producing countries, there is still room for improvement. It is unlikely that gender inequality in the cocoa value chain will negatively influence trade volumes; however, it might have an impact on the perceived risk of a buyer when sourcing from and intervening in Uganda, especially for buyers with consumer brands.

Table 34 Ranking from the Human Development Reports UNDP

Rankings	Uganda	DRC	Tanzania	Madagascar
2017 Human Development Index (HDI)	162/189	176/189	154/189	161/189
2017-18 Women Peace and Security Index *(inclusion, justice and security)*	100/153	148/153	85/153	132/153
2017 Gender Inequality Index (GII)	126/160	152/160	130/160	..
2017 Gender Development Index (GDI) 19	Group 5	Group 5	Group 3	Group 2

Living income

Living income is a topic that has been hotly debated within the sector for the last couple of years. Large industry players are especially criticised because farmers continue to live in poverty while the sector is profiting. The *Living Income Community of Practice*, a partnership between The Sustainable Food Lab, GIZ and the ISEAL Alliance, is actively working on providing methods and guidance on measuring and reporting existing and living incomes and to identify and discuss strategies to help actors take actions that can contribute to closing income gaps. These discussions are especially prevalent in the European markets.

Supply chain integrity

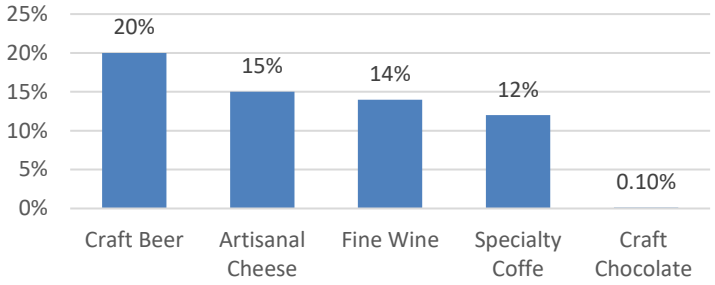
All European buyers interviewed agree that traceability is key to ensuring integrity of the cocoa product. Ensuring traceability is an important risk management tool in terms food safety, but also when it comes to compliance with regards to environmental and social standards. A credible traceability system is becoming almost a mandatory requirement from the markets in the EU and US. Different tools have been developed to facilitate this, and digitisation is where the trend seems to go. More on this also in the following section.

Bean-to-Bar movement and specialty chocolate

According to research done by CBI (CBI, 2017), specialty chocolate, including fine flavour, single-origin, terroir and craft, accounts for about 5% of the market. Specialty chocolate is said to be the fastest growing segment in the chocolate market (Yu, 2017) (Shanker, 2017). Demand for specialty chocolate can be found in Belgium, France, Germany, Italy, Switzerland and the UK according to the CBI report. Compared to the US, this 5% does seem quite high. A recent blog by Hyman (2019) shows an estimated penetration of craft chocolate only to be 0.10%.

[19] Group 1 comprises countries with high equality in HDI achievements between women and men (absolute deviation of less than 2.5 percent), group 2 comprises countries with medium to high equality in HDI achievements between women and men (absolute deviation of 2.5-5 percent), group 3 comprises countries with medium equality in HDI achievements between women and men (absolute deviation of 5-7.5 percent), group 4 comprises countries with medium to low equality in HDI achievements between women and men (absolute deviation of 7.5-10 percent) and group 5 comprises countries with low equality in HDI achievements between women and men (absolute deviation from gender parity of more than 10 percent)

Figure 35 US craft penetration levels (best estimate value)



Source: (Hyman, 2019)

Buyers from Uganda, more focused on specialty market, do see opportunities for Uganda in this premium market. Next to single-origin, terroir was also mentioned. Terroir is an all-encompassing term to describe how the various environmental and habitat factors can affect and/or enhance the flavour of a crop (T is for Terroir Chocolate, 2016).

4.1.2 Technological

Traceability

The future of traceability is most likely digital. In order manage and mitigate risks, more and more insight into the supply chain is needed and is being requested by the market, especially the European and the US markets. Brands are held accountable by consumers and policy makers for any supply chain related issues, which can be social, such as child labour, or environmental, such as deforestation. Traceability in Uganda is important because of its border with DRC, which evacuates much of its (organic) cocoa via Uganda. Ensuring the cocoa is indeed from Uganda and not from DRC is of great importance to some of the major chocolate industry brands.

Different technological solutions are offered by private companies for traceability, as such, some are developed under Olam or are developed by a certification standard, such as the Good Inside Portal of RA/UTZ. Another platform is blockchain, with the promise of offering traceability, risk reduction, accountability, audibility, sustainability, performance improvements and all-round business efficiency for all participants in a given chain (PWC, 2018) (Myers, 2019). There is definitely a lot of interest in this technology. However, investments of blockchain technology in agriculture are still in its early stages.

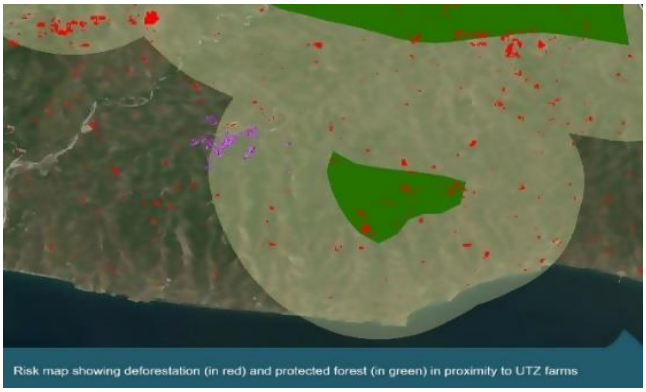
Most initiatives are less than two years old, with none currently reach more than 1.000 beneficiaries, and 93% are either in concept stage or have started a small pilot. In both coffee and cocoa, players like Starbucks with its *Bean to Cup* pilot (Starbucks, 2018), Mars chocolate (Cosgrove, 2018) and Dutch chocolate maker Tony Chocolonely (Alberda, 2018) have been piloting blockchain. A Ugandan firm, Carico Café Connoisseur, also recently started using blockchain to certify shipments of coffee (Forbes, 2019). York Cocoa works with Satoshi as a blockchain/traceability solution. Other examples are Beyco, set up by Progreso (Brown, 2018), and an interesting, successful example of blockchain from a completely other sector is Fishcoin. Blockchain and related smart contracts especially holds an opportunity for all the paperwork related to shipping and financing of goods that are ex-/imported, which is traditionally still very much paper-based.

There are, however, still many hurdles with regards to blockchain. The fact that the raw material generally comes from developing and/or emerging markets increases complexity due to challenges such as poor connectivity, lack of computing power, low penetration of devices that can interact with blockchain technology (e.g. smartphones), (digital) literacy, as well as limited technological skills. Thereby to have the system work and be trusted, it needs to be adopted by all stakeholders in the supply chain and enough people need to use it. Then, there is the disconnect between physical and digital flow; this also goes back to the reliability of the data input. Cocoa is a natural ingredient, and it will not be possible to tag every individual bean. It is definitely much easier to follow a sealed barcoded package than it is to follow a physical flow of an agricultural commodity like coffee and cocoa.

Farm and community performance measurement

Ethical and sustainable products are a food trend in Europe, further incited by media coverage during seasonal holidays when it is tradition to give chocolate. In cocoa, it translated into the chocolate industry showing consumers that they are able to increase incomes, that farmers are not encroaching on protected forest areas, that children are attending schools, etc. Proof of any impact has always been difficult, therefore data collection at farm level, nowadays often via mobile phones and tablets, is becoming increasingly important. In addition to the earlier mentioned traceability systems in the previous section, which to a certain extend can also monitor farm data, other tools are also used such Farmer Field Book, Green Fingers Mobile and OFIS by Olam. The main concern with these systems are related to data privacy of the farmers registered in these different systems.

Figure 36 UTZ Risk ap



Source (Rikxoort, 2017)

Another development is the increased use of Nano-satellites. These can provide information on crop yields and test interventions. Risk mapping is now being tested by different actors in industry, such as by RA/UTZ (Rikxoort, 2017). When combined with weather, soil and other big data, it could be used to create crop disease and weather alerts, for example, allowing crop monitoring and forecasting, crop insurance and certification. Quite a few organisations, such as WaterWatch, are already experimenting with this, often in collaboration with the European Space Agency (ESA).

4.1.3 Ecological

Cocoa Forest Initiative (CFI)

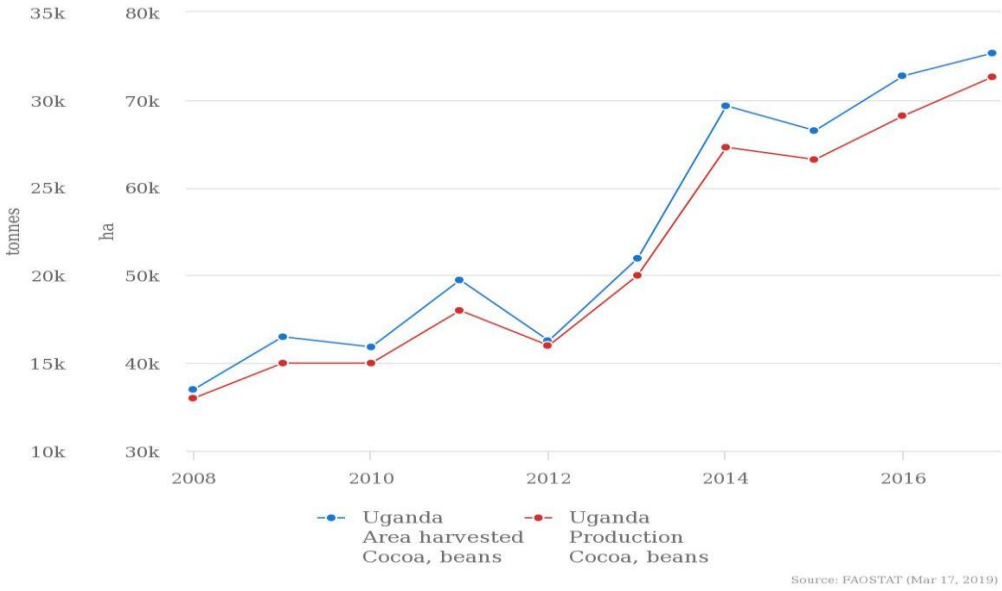
Following the 2017 UN Climate Change Conference (COP23), top cocoa-producing countries Côte d'Ivoire and Ghana, alongside leading chocolate and cocoa companies, announced far-reaching Cocoa & Forests Initiative (CFI) Frameworks for Action. Central to the frameworks is a commitment to allow no new conversion of forest land for cocoa production (WCF, 2017). The initiative has been signed by 33 industry partners. In 2018, the Colombian government and the largest local cocoa and chocolate companies signed the Cocoa, Forest & Peace Initiative to eliminate cocoa-related deforestation (WCF, 2017). Traceability and satellite data imagery are key strategies to mitigate risk of deforestation.

In January of 2019, the European commission launched an open public consultation on *Stepping up EU Action against Deforestation and Forest Degradation.* This initiative aims to present an integrated EU approach to combat deforestation, protect forests and promote sustainable supply chains (European Comission, 2019). It follows a European Commission study on "*The impact of EU consumption on deforestation*" (2013), the follow up publication of the "*Feasibility study on options to step up EU Action against deforestation*" (2018), which laid out several options on concrete action that could be taken by the European (European Comission, 2019).

Much of Uganda cocoa comes from the Rwenzori area, close to Virunga National Park. Some chocolate makers are reluctant about sourcing from these regions because of their sustainability commitments. Extra care ought to be taken by the cocoa stakeholders to prevent forest encroachment for new plantations.

FAO stats show that the increase in production follows the increase in production area. Also, the UNDP Human Development Reports show that , from 1990 to 2015, the forest area has decreased in Uganda with -56.4%, which is a very high percentage compared to DRC (-4.9%), Tanzania (-17,6%) and Madagascar (8.9%) (UNDP , 2018). Uganda is part of the bottom-third of the list.

Figure 37 Area harvested in ha and production of Uganda Cocoa 2008-2017



Source: (FAOSTAT, n.d.)

Climate change

Climate change affects the cocoa sector at two levels. First, climate change is high priority of the consuming countries. This is led by the Paris Agreement signed within the United Nations Framework Convention on Climate Change (UNFCCC), which has the long-term goal to keep the increase in global average temperature to well below 2 °C, above pre-industrial levels; and to limit the increase to 1.5 °C, since this would substantially reduce the risks and effects of climate change (Wikipedia, n.d.). Thereby it falls under the Sustainable Development Goal (SDG) 13: *Take urgent action to combat climate change and its impacts* (UN, n.d.). The cocoa industry is very much part of this and is being pressured into reduce the environmental footprint of the products put on the market. Second, climate change is shown to negatively impacting cocoa production (CGIAR, 2015) (Schroth, Läderach, Martinez-Valle, Bunn, & Jassogne, 2016), and thus there is a direct interest of industry in the topic.

Different mitigation and adaption strategies are applied within certification and company programs. This includes crop diversification, promotion of shade trees and linked to this REDD+ certification, and the promotion of improved cookstoves and solar solutions for lighting on the community level.

The 2018 Environmental Performance Index (EPI) ranks 180 countries on 24 performance indicators across 10 issue categories covering environmental health and ecosystem vitality (**Error! Reference s ource not found.**). On Forest and Water and Sanitation. This data shows that Uganda has not been able to keep its rank and has further dropped on the list, when comparing it to its baseline rank.

Table 35 Environmental Performance Index Ranking 2018

	Uganda	DRC	Tanzania	Madagascar
2018 Environmental Performance Index (Regional Standing)	145 (23)	178 (45)	119 (10)	175 (44)

Source: (EPI, 2018)

Europe is heading towards an economic slowdown, though growth is still foreseen. Forecasts by the European commission predict that the Euro area GDP will grow 1.3% in 2019, down from 1.9% projection in November, and for 2020, it predicts a growth of 1.6% (Look & Dendrinou, 2019) (European Commission, 2019). The European Commission indicated in their Winter 2019 Economic Forecast that there is a high level of uncertainty in the projections and are therefore subject to downside risks. Trade tensions, Brexit and the slowing down of the Chinese economy all contribute to this uncertainty.

4.1.4 Political

Brexit

Brexit is one of the major European political developments creating uncertainty in the market. The price of cocoa has a strong correlation with the British pound versus the US dollar currency relationship. The physical market tends to use the pound to price cocoa, particularly in Europe. The historical correlation between the currency and the commodity shows that a stronger pound, versus the dollar, tends to lead to a higher price of cocoa over time (Hecht, 2019).

Though Brexit will influence imports and exports to and from UK from the EU27 countries, the country itself is not a relevant market to Uganda in terms of bean trade volumes.

Ghana and Côte d'Ivoire

In 2017, Ghana and Côte d'Ivoire set out to develop a joint cocoa body, including members of Côte d'Ivoire's Coffee and Cocoa Council (CCC) and the Ghana Cocobod, with the objective to set farmer prices in order to discourage cross-border smuggling and to enhance collaboration between the two countries' cocoa marketing departments (Reuters, 2017). In June 2018, these two top-producing countries announced that they would harmonise forward sales for the 2019/2020 season (Reuters, 2018). The collaboration will increase supplier power of these two countries. This is potentially beneficial to Uganda, as buyers will seek to further diversify their suppliers.

CHAPTER 5: EUROPEAN REQUIREMENTS

5.1 Food Safety

CAOBISCO/ECA/FCC state in their cocoa bean quality manual that the principal food safety concerns for the cocoa industry are (CAOBISCO/ECA/FCC, 2015):

- ✓ Allergens
- ✓ Dioxins & polychlorinated biphenyls
- ✓ Bacteria
- ✓ Foreign matter
- ✓ Heavy metals
- ✓ Infestation
- ✓ Mineral oil hydrocarbons
- ✓ Polycyclic aromatic hydrocarbons
- ✓ Mycotoxins including Ochratoxin A
- ✓ Pesticide residues

The list above is compiled by the industry, and these concerns are not new or recent developments. European buyers have different food safety management systems, such as hazard analysis and critical control points (HACCP). These systems include measures (allergen control programs, contaminant monitoring, sterilisation, etc) to manage the above-mentioned risks.

For sellers entering the European market, it is advised to implement one of the recognised Global Food Safety Initiative (GFSI) standards.

There are two food safety concerns for which regulations have recently changed. This has been the case for the heavy metal: *cadmium* as well as *mineral oils*. These are elaborated on in the sections below.

5.1.1 Cadmium

Recent European legislation was enacted on January 1, 2019, specifying limits for different cocoa preparations, which has an implication on cadmium levels in products (EUR-Lex, 2014). Cadmium is a heavy metal and an environmental contaminant commonly found in volcanic soils. Origins such as Ecuador and Peru are most affected by this regulation. Concerns, however, were also put forward by some industry stakeholders with regards to Uganda, as the volcanic Rwenzori mountain range in western Uganda is an area where much of the cocoa is sourced from.

Cocoa trees absorb cadmium from the soil through their roots and the metal accumulates in the leaves and beans. Several factors influence the presence of cadmium in cocoa beans, such as variety of the tree, cadmium levels in the soil and post-harvest practices.

Cadmium is classified as a human carcinogen by the European Food Safety Authority (EFSA). A large scale dietary assessment in 2012 identified the main sources of cadmium in the human diet. Cocoa and chocolate products accounted for approximately 4.3% of total cadmium exposure through diet across different age groups. This research and the lowered tolerable weekly intake (TWI) levels for cadmium eventually led to new EU regulations and limits in 2014, which began being enacted in January of this year (Efsa, 2009) (Efsa, 2009).

Table 36 Maximum permitted levels of cadmium in cocoa and derived products

Specific cocoa and chocolate products as listed below	**Maximum permitted levels (ppm) as from 1st of January 2019**
Milk chocolate with <30% total dry cocoa solids	0.10
Chocolate with <50% total dry cocoa solids; milk chocolate with >=30% total dry cocoa solids	0.30
Chocolate with >=50% total dry cocoa solids	0.80
Cocoa powder sold to the final consumer or as an ingredient in sweetened cocoa powder sold to the final consumer (drinking chocolate)	0.60

Source: (EUR-Lex, 2014)

For exact definitions, it is best to refer to the cocoa directive *2000/36/EC* (EUR-Lex, 2000).

The cadmium limits are defined for cocoa powder and chocolate preparations but are not easily translated to limits for cocoa beans. Cadmium is associated with the fat-free parts of cocoa beans, which means that levels will be higher in chocolates that contain higher cocoa solid contents. Cocoa *mass (ground cocoa nibs, coming from deshelled* and *roasted cocoa beans)* typically consist of 50-55% cocoa butter and 45-50% cocoa solids, whereas fat-reduced cocoa powder contains only 11% cocoa butter and 89% cocoa solids. This has led to a lot of discussion on the chosen levels per product category and the practical implementation for the sector since these levels are not easy to work with.

European importers consider beans with a cadmium level <0,5 ppm to be good. Up to 0,8 ppm is still be accepted, but cocoa beans with levels above that value are likely to be rejected, depending on the proposed product application.

Specialty chocolate typically has a high cocoa solid contents (>50%), which means that the cadmium limit for these chocolates is 0,8 ppm. Also with these chocolates often being single origin, the risk is higher (CBI, 2018) (Santvoort, 2018).

According to a soil sampling done by the CODEX Committee on Contaminants in foods in 2016 in Uganda, cadmium levels in the beans range from 0.065 – 0.355 mg/kg (CODEX Alimentarius Commission, 2018). In interviews it was indicated that it could go up to 0.45 mg/kg, which are levels higher than in other West-African countries, but lower when compared to the South American beans. It does depend on the region.

Figure 38 Cadmium content in dried cocoa beans in various cocoa growing regions of Uganda

	Location where sample was obtained	Result (mg/kg)
1	Bundibujjo	0.208
2	Bundibujjo	0.308
3	Mpigi	0.065
4	Jinja	0.111
5	Bundibujjo	0.226
6	Bundibujjo	0.183
7	Bundibujjo	0.179
8	Jinja	0.243
9	Jinja	0.099
10	Jinja	0.133
11	Budukwanga	0.243
12	Kitara	0.108
13	Bugamikere	0.084
14	Bundimaya	0.307
15	Katumba	0.166
16	Pickfare	0.151
17	Bumadu	0.124
18	Humya	0.220
19	Mpigi	0.068
20	Burondo	0.179
21	Kirumya	0.191
22	Butama	0.159
23	Mukono	0.088
24	Masaka	0.103
25	Bundikahungu	0.156
26	Kabutabure	0.204
27	Rwamabare	0.160
28	Bubandi	0.355
29	Busaru	0.138
30	Butogo	0.116
31	Busunga	0.146
32	Bundimasori	0.223
33	Bundimurombi	0.287
Range		**0.065 to 0.355**

The higher ranges are suitable for chocolate, but cannot be used for powder as cadmium levels would double. Some of the smaller chocolate makers producing single-origin Uganda have indicated that their lab results on cadmium levels did not give direct rise to concern. Suggestion was to look into relevant legislation for Uganda related to this particular issue.

5.1.2 Mineral oils

An EFSA opinion published in 2012 classified some mineral oil hydrocarbons (MOH) as potentially carcinogenic (Efsa, 2013). MOH is a complex group of substances, and the potential human health impact varies widely. Sources of MOH in foods include food packaging materials made from recycled paper and board, printing inks applied to paper and board, lubricants used in industrial processing, adhesives used in food packaging and jute or sisal bags with mineral batching oil.

In recent years, Foodwatch has put pressure on the confectionary industry and policy makers to set EU regulations and limits on mineral oils in foods and specifically chocolate. The consumer group tested a large number of Easter chocolates and found 8 out of 20 to be positive for specific MOHs (Withworth, 2016) (Foodwatch, 2017).

There is no legislation currently in place on MOH in foods, but because of consumer pressure, cocoa processing companies are actively working on contamination prevention. For Uganda this means that when exporting cocoa beans to the EU, caution should be taken and proof may be needed to show that no recycled cardboard or mineral oil containing printing inks were used within the supply chain.

The topic of mineral oils in chocolate is on the agenda of European industry organisations CAOBISCO and ECA, and it can be expected that monitoring systems will improve in coming years, ambiguity ion lab tests and potential human health effects will be clarified, and regulations (either industry standards

or European legislations) will come into play. Managing packaging and transport must to be taken care of in origin in such a way that contamination with MOH is prevented.

5.2 Quality

5.2.1 Conventional

For bulk cocoa, the physical market has developed standardised practices set out by international trade associations such as the Federation of Cocoa Commerce London (FCC) and the Cocoa Merchants' Association of America, Inc. (CMAA).

The FCC distinguishes two grades: good fermented cocoa beans and fair fermented cocoa beans. Samples of good fermented cocoa beans must have less than 5% mould, less than 5% slate and less than 1.5% foreign matter. A sample of fair fermented cocoa beans must have less than 10% mould, less than 10% slate and less than 1.5% foreign matter. These tests are carried out through the so-called cut test. Such a test involves counting off a given number or weight of cocoa beans, cutting them lengthwise through the middle, and then examining them. Separate counts are made of the number of beans that are mouldy, slaty, insect damaged, germinated or flat (ICCO, 2015).

Bean size standards, per ISO 2451, is defined by bean count and is expressed as the number of beans per 100g.

i) Large beans: bean count of less or equal to 100
ii) Medium beans: bean count of 101 to 120
iii) Small beans: bean count greater than 120

The Uganda bean quality is considered average but has been improving. Defects are on the low side. There are some indications of a high bean count of the Uganda beans, signifying medium to small beans following the definitions above. The beans from Uganda have relatively low free fatty acid (FFA) levels when compared to, for example, Nigeria. High FFA levels reduce the technical and economic value of the cocoa beans.

5.2.2 Specialty including fine and flavour

Specialty coffee has Q graders and a clear grading system; this is absent in cocoa. As a generalisation, fine or flavour cocoa beans are produced from Criollo or Trinitario cocoa tree varieties, while bulk (or ordinary) cocoa beans come from Forastero trees (ICCO, 2019), though the distinction mostly lies in the flavour. High-grade (fine flavour) cocoa beans are generally of higher quality than common-grade cocoa beans, as their distinctive flavour is popular among manufacturers of high-quality chocolate.

Ugandan cocoa is typically associated with the Forastero variety. The cocoa trees in Uganda, according to the buyers, are not of the best genetic varieties, limiting the possibilities of unique flavours to develop, as would be the case in some of the South American varieties. On the other hand, with strict control on post-harvest processes using centralised box fermentation, the flavours developed using the Ugandan bean are much appreciated by the specialty industry. The flavour of the beans is described as *rich* and *chocolaty*, low in *astringency* and *bitterness*, and '*a perfect bean to just roast and eat*'.

The characteristics make it a bean that has potential for high-quality milk chocolate in countries such as UK, Northern Europe and Scandinavia. According to those developing the flavour cocoa from Uganda, the farm gate prices are so high that the cost of production is covered by the higher retail prices that can be fetched for this niche product.

CHAPTER 6: COMPARATIVE AND COMPETITIVE ADVANTAGE

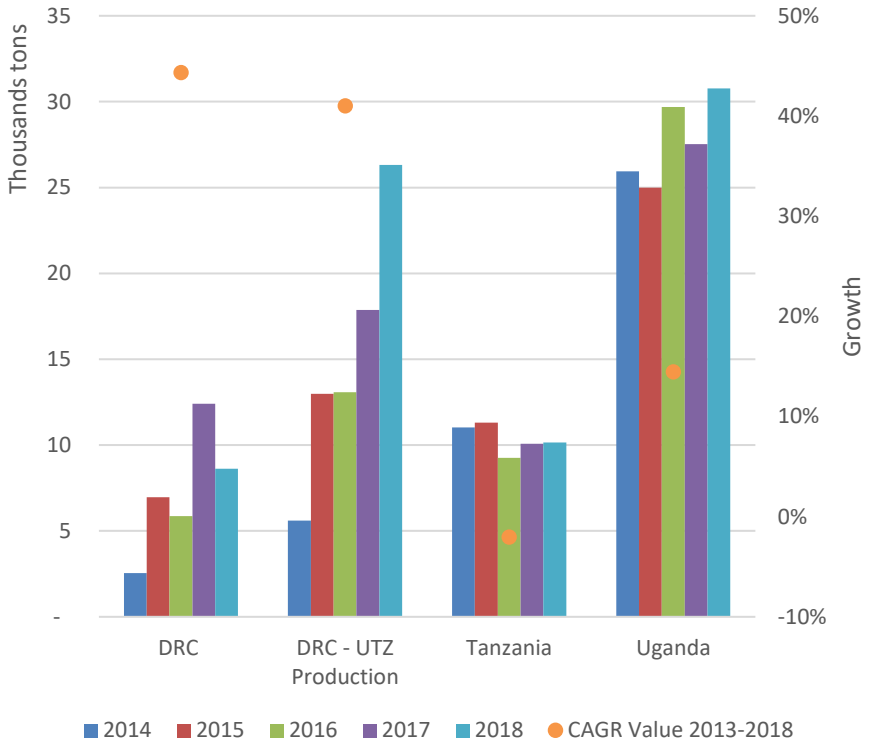
6.1 Sector Organisation

In more general terms, when asking buyers what they consider the largest potential of sourcing cocoa from Uganda, many answer that they see it especially in the organisation of the sector, based upon they have seen and heard from how the coffee sector has been organised. The experience already obtained in different processing techniques, such as box fermentation, is considered by some of the more niche players as a major benefit. An advantage that Uganda has over some other cocoa-producing countries is that it is Anglophone, making it a much easier origin in terms of communication for some non-French speaking European buyers.

6.2 Volumes

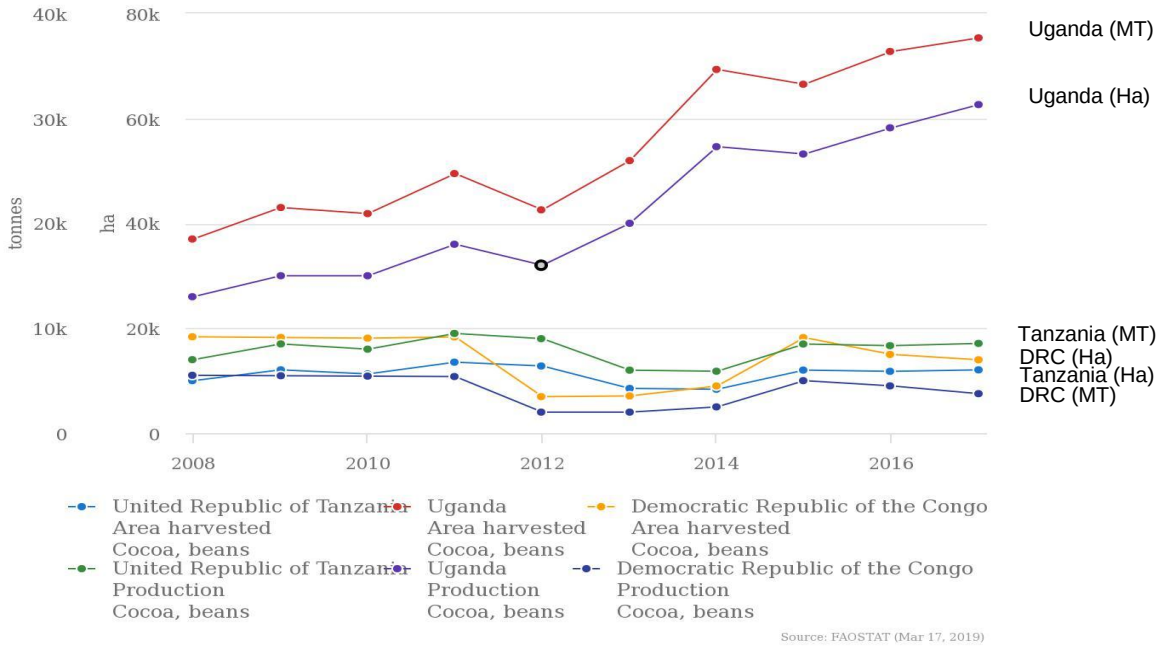
When comparing cocoa volumes to DRC and Tanzania, Uganda is clearly leading (see graphs below), when taking ITC data which is derived from UNCOMTRADE or import data (mirror) in case of DRC. Taking UTZ on production volumes reach up to 26,000 MT.

Figure 39 Imports to the World from DRC, Tanzania and Uganda and CAGR growth in value 2013-2017



Source (ITC Trademap, 2018)

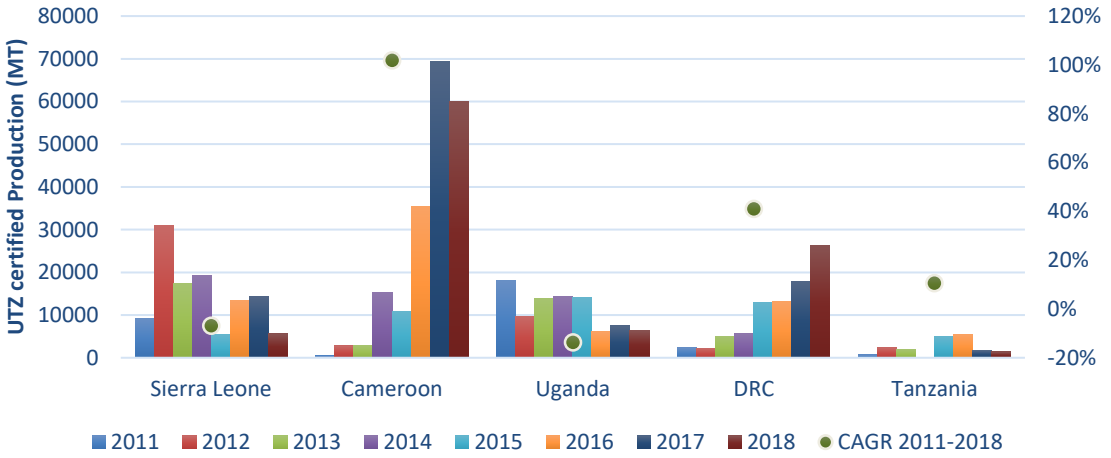
Figure 40 Production and hectares of cocoa in Uganda, DRC and Tanzania



Source (FAOSTAT, n.d.)

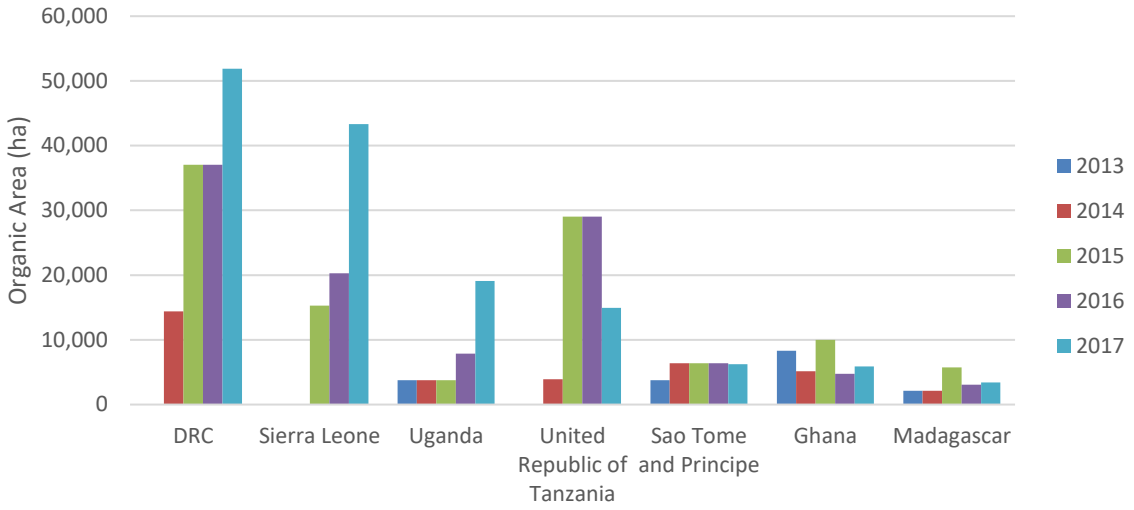
When it comes to certified, a clear decline can be seen in the production of UTZ/RA (**Error! Reference source not found.**) in Uganda. Organic seems to have replaced the UTZ/RA, with the promise of high premiums and European market uptake (Figure 42).

Figure 41 UTZ Certified Production of cocoa beans in MT for selected African cocoa producing countries



Source: UTZ

Figure 42 Organic area in hectares for 2013 to 2017



Source: FiBL stats

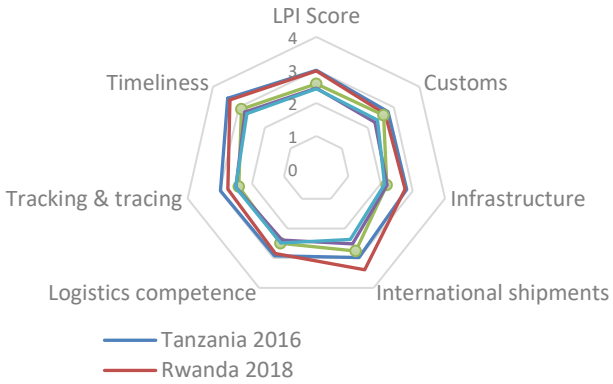
Some of the buyers indicated an oversupply of organic cocoa in Uganda, which can be due to the fast growth of organic in DRC, which when evacuated from the Kivu area, goes through Uganda. Key in obtaining a competitive advantage in the organic market is ensuring traceability and integrity of the product. This seems to be the biggest concern expressed by (potential) organic buyers. A high level of organisation of the sector would address this concern.

6.3 Logistics

Being a landlocked country and having only the port in Mombasa, Kenya, logistical costs are relatively high. From interviews, the main constraints encountered by buyers seem to have been delays at the port. In-country is thought to be less of an issue, with the exception of one of the buyers mentioning that the freight trains had stopped running.

There is, however, room for improvement (see the figure below). Compared to the Sub-Sahara region, Uganda scores low on Infrastructure (*quality of trade* and *transport related infrastructure)* and it scores relatively low on Tracking & Tracing compared to the region. The latter, also indicated in the trends, increases the risk for buyers considerably. It is also at the level of logistics that Uganda could improve upon its competitive position compared to its cocoa-growing neighbours.

Figure 43 Logistics Performance Index (LPI) The World Bank



Source (The World Bank, 2018)

CHAPTER 7: NATIONAL LEVEL PLAYERS IN COCOA SECTOR POLICY DEVELOPMENT

7.1 Uganda Coffee Development authority (UCDA)

Before Uganda adopted the commodity trade liberalisation policy in the1990s, the Coffee Marketing Board served as the national regulator for both coffee and cocoa production, postharvest handling, local marketing and export. With the enactment and promulgation of the Coffee Act of 1994, the Uganda Coffee Development Authority (UCDA) was formed to take over the roles and functions of Coffee Marketing Board. A cocoa desk was formed in UCDA, but due to limited cocoa activity and shortage of resources, the desk was moved to the Ministry of Agriculture Animal Industry and Fisheries (MAAIF), in the crops Department, under the Cash Crops Desk Officer.

Unlike coffee, the cocoa sector in Uganda is currently unregulated. The reduced focus on cocoa was partly due to the sector's inactivity during the 1980s through to the early 2000s. Later in the 2000s when coffee shambas were severely affected by the coffee wilt disease nationwide, farmers in Bundibugyo were encouraged and promoted to grow cocoa as an alternative. This paid off as more farmers took up cocoa production. To date, cocoa is the 4th leading national foreign exchange earner after coffee, tea and fish.

With growing importance of cocoa, government realised the need to have a policy and regulation for the sector. Efforts to this end have been on-going since 2016. Moreover, to date: a cabinet memo to develop a national cocoa policy was passed in 2016; and in 2017, the MAAIF senior management committee appointed UCDA to be the regulator of the cocoa sector in Uganda. MAAIF's approval was based on the observations that:

- UCDA would provide a seamless entry into cocoa regulatory interventions given its experience and record dealing with coffee, a crop that has similar natural environment, ecosystem, business and trade activities with cocoa.
- UCDA has a standing institutional structure that can be leveraged to develop the cocoa sector like human resource capacity, technical expertise i.e. laboratory, expert personnel and an input management system for seedlings, nurseries and extension service personnel.
- To follow-up on MAAIF's appointment, UCDA has since developed and presented a background paper on Uganda's cocoa sector to cabinet. The paper (i) presented the rationale for cocoa sector regulation with UCDA as the regulator and (ii) provided guidelines for political, technical and legal discussions on the proposed cocoa policy.

To date, a Regulatory Impact Assessment (RIA) is yet to be commissioned to identify the sector players, their roles and implementation arrangements of the policy. UCDA has also secured donor support from the ongoing MARKUP project to support its cocoa policy development initiative.

In the proposed policy, UCDA envisages collaboration and shared responsibility from national expert agencies in the areas of: cocoa standards - to be implemented in collaboration with UNBS; production - to be implemented in collaboration with district local Governments; research- to be implemented in collaboration with the NaCORI; and marketing to be done in collaboration with the private sector i.e. local cocoa traders and exporters.

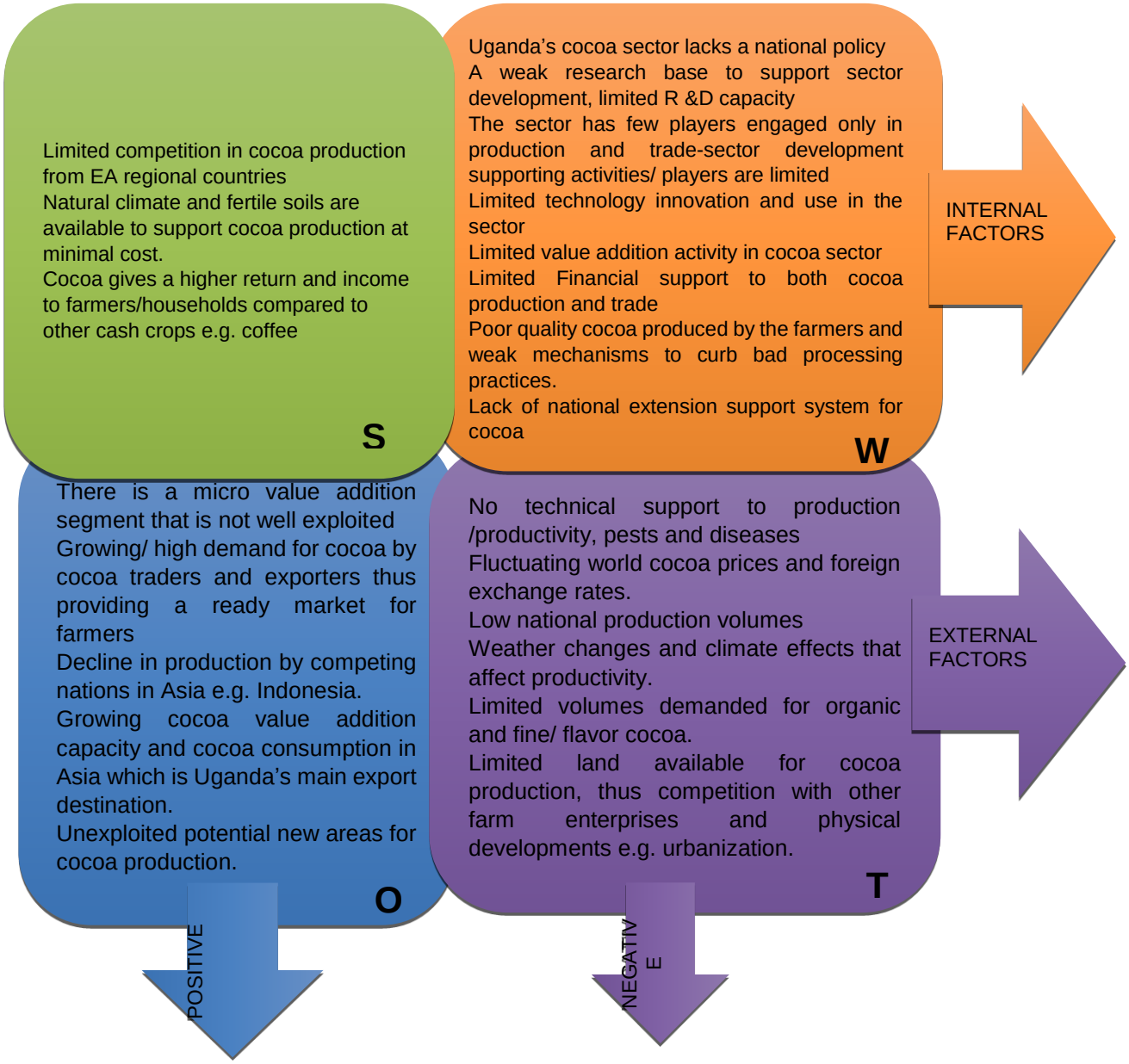
In the consultant's discussion with UCDA top management, the following were expressed as the institution's needs for building capacity to execute its policy and regulatory roles;

- Developing and dissemination of a national cocoa standard
- Establishment of a cocoa laboratory, well equipped with cocoa quality testing tools; certifying and training of the laboratory quality control personnel.
- Training specialised cocoa personnel like graders, cuppers, extension staff, post-harvest and agronomy experts.

- Training and equipping personnel to assess, monitor, synthesise and dissemination of international cocoa market information.
- Support UCDA and value chain players participate in international exhibitions and accreditation by international bodies like ICCCO, World cocoa Foundation, etc.

CHAPTER 8: CONCLUSIONS

Having assessed the cocoa value chain, the study identified a number of strengths, weaknesses, opportunities and threats in the cocoa sector as listed below.



8.1 Summary Conclusions and Recommendations

8.1.1 Cocoa production

Conclusions

1. There has been minimal resource allocation from government to cocoa production, which has over time stifled overall progress of the sector. The sector lacks national production level guidance, specialised personnel and local knowledge resources on cocoa production. In spite of these however, cocoa production in Uganda is growing albeit slowly. This trend is expected to continue provided no major price falls or other market shocks are

experienced that could discourage farmers. Additional production is also expected as newly planted trees mature.
2. There is a ready potential market that Uganda could tap into due to the substantial production decline in Indonesia and other competing countries, as well as growing international demand for cocoa.
3. The overall volumes produced are still low. NAADS provided an opportunity to contribute to substantial increase in national production but lacked a well-structured system and a policy to guide its interventions.
4. Cocoa research has been inactive for a long time, while farmers continuously grapple with current and new production challenges. In addition, extension services provision in the cocoa sector is wanting.

Recommendations

It is recommended that deliberate investments are made to systematically increase Uganda's cocoa production. The country needs more production volumes for international recognition as a cocoa producer, and to attract substantive cocoa processing investments. Additionally, short term gains from research should be developed and disseminated to the cocoa farming communities to at least be able to augment their current plantation production and productivity. The gains from research that can quickly be disseminated are:

1. Mapping of common cocoa plant pests and diseases in the country as well as their recommended scientific management regimes.
2. Development of the cocoa crop management manual to guide current and future cocoa farming investors.
3. Training cocoa-specific extension workers to support farm production. Rapid extension models e.g. training of trainers and farmer field schools, among others could be used.
4. Concerted cocoa promotion efforts in the mass media e.g., national and FM radio stations, print media and other platforms could be utilised to promote national cocoa production.

8.1.2 Post-harvest handling and primary marketing

Conclusions

Post-harvest handling is the most critical stage in cocoa bean quality determination, yet due attention is not given to it. The village traders (primary marketing) are the first market level that interfaces with farmers. Thus, both farmers and village traders as discussed in Section 3.3 are equally responsible for cocoa post-harvest handling. It was noted that:

1. The recommended good post harvest handling practices for proper cocoa fermentation are not adhered to by many farmers for reasons that include: indiscriminate buying by cocoa traders, lack of a price incentive for good quality cocoa at farm level, and the need of quick cash which compels farmers to sell improperly fermented and wet cocoa. Theft is also a challenge farmers face.
2. Both farmers and primary/village cocoa traders lack appropriate equipment to check cocoa fermentation, moisture content, mould, among other quality parameters. Thus, they buy "anything" which is mixed together without sorting, thereby affecting the overall cocoa quality.
3. In marketing wet cocoa, there is extensive arbitrary pricing and most of the cocoa sold as partially dry ("some-some") has not undergone the prerequisite stages of fermentation.
4. There is minimal government involvement in cocoa production, post-harvest handling and marketing. These roles are currently done by the private sector/cocoa traders.

Recommendations

1. There is need to regulate selling wet-cocoa beans, with a view to maintain and sustain quality bean production; protecting farmers from trader malpractices and arbitrary prices. To alleviate the challenges encountered in cocoa bean fermentation, a multi-pronged approach is recommended consisting of:

2. Policy and regulatory intervention to guide the cocoa sector on who is primarily responsible for fermentation of cocoa - is it the farmer or trader? In the view of some, farmers are better placed to manage and handle fermentation of their cocoa, however, this should be supported by consistent farmer training and research to identify and disseminate the most appropriate technology for their smallholdings.
3. The policy should also set standards for cocoa quality. There are efforts already in this direction by the UNBS, and a Uganda cocoa bean standard is yet to be released.
4. To enhance uniform fermentation, quality and standards, provision of centralised cocoa fermentation and drying facilities in major production areas is recommended. Centralised fermentation should be supported by a sustainability strategy that may consist of placing the facilities under the management of a cocoa co-operative or a private sector entity that will be responsible for the day-to-day management of the facility. As a proxy, there are numerous produce collection stores that are managed by producer organisations and private sector in the country, such success models could be benchmarked and adopted. In addition, a clear policy on cocoa post harvest handling should be enacted as one of the measures of increasing Uganda's cocoa quality and competitiveness in the international market.
5. On post harvest handling, while internal capacity is yet to be built, it would be prudent in the short run, for Government (Ministry of Agriculture) to at least get involved in development of training manuals and standards for training as well as certifying the training personnel/entities.
6. Development of area specific bye-laws should be supported targeting security of cocoa farm/farmers and producers as well as enhancing cocoa quality. The Budibugyo bye-law model for cocoa security could be adopted and further refined.

8.1.3 Trade and trade policy

Conclusions

1. At village trader level, the key challenges observed were use of arbitrary units to measure weight/volume and pricing; minimal use of moisture meters and other quality assessment equipment, which exposes traders to losses; inadequate storage facilities; low volumes traded and competed for, as a result of low farmer output.
2. Bulk traders compete aggressively to raise volumes, and price is the overriding factor in this competition. The price setters are cocoa export companies particularly ESCO, ICAM and Olam. The other traders' prices are on average Ugx50-100 below or above that set price. In addition to the low volumes traded, quality is also a major challenge the these traders are faced with. But because of the high demand for cocoa, traders do not adhere to the quality standards. Bulk traders have in the past attempted to develop relationships with farmers through provision of incentives and extension services among others. In practice however, have several off-taker choices and they tend to sell to the highest price offers. This tendency is gradually discouraging cocoa traders from providing farmer services.
3. Cocoa exporters expressed the following challenges - poor quality of cocoa, mainly arising from poor fermentation; and low volumes of cocoa produced in Uganda. The local traders and exporters on the other hand expressed the following as hindrances to exporting cocoa: lack of access to affordable finance; lack of information about international buyers; lack of experience in international trading and export logistics, handling, and export market quality requirements.
4. The study observed a change in the local cocoa market dynamics driven by the international trends. While in the past 5 years, there have been changes in the cocoa business that have seen farmers getting a larger share of the cocoa export (FOB) prices - due to the stiff competition for cocoa beans, traders are offering higher prices that are in some cases not in tandem with the world cocoa price movements. Thus trader margins are diminishing, while farmer margins are increasing.

5. In value addition, processing of cocoa beans into chocolates is yet to take root. 3 companies were reported to be manufacturers of chocolate products on small scale in Uganda, and these are: Latitude trading company, Equator chocolates and Pink foods (U) Limited. The main challenges manufacturers currently are faced with include: shortage of skilled manpower in chocolate production, high cost of packaging materials that raises the overall production costs, and lack of working capital.

Recommendations

The wide spread arbitrary measurements during trading should be addressed through policy intervention measures to standardise and regulate cocoa trading relations particularly with the farmers. Bulk traders (usually local traders) play an enormous role of raising volumes and bulking, many of them use borrowed capital from local commercial banks charging interest rates of up to 29%. There is need to rationalise this difference in margins by supporting the bulk traders to become exporters through deliberate interventions. The interventions should be multi-pronged targeting the entire cocoa value chain, where;

1. There is increased cocoa production, high enough to attract investment in value addition
2. The bulk traders are supported and encouraged to enter the cocoa export market
3. The current international cocoa exporters are supported and encouraged to invest in cocoa value addition (see the Indonesian model[20]) for export of processed and semi-processed cocoa.

Such a strategy would have an overall multiplier effect and an upward shift in Uganda's cocoa industry. In order to have wider local trader participation in cocoa export deliberate concerted efforts need to be made aimed at:

1. Capacity building of the local traders to comply and implement cocoa quality standards
2. Cocoa traders' exposure to international forums on international best practices
3. In experience in international business operations and practices, was also common among the local traders. In order to function effectively and gain trust and acceptance by clients in the international market, the local traders need to adopt a more pragmatic professional ethic focused on efficiency, transparency and consistence. There are several lessons and experiences the local traders have to learn as they build their capacity to operate on the international scene. It would therefore be prudent to initially support them to travel and participate in cocoa international events e.g. trade fairs, conferences, workshops etc. They will not only get first-hand information and experiences in cocoa trading but also gradually learn how to interact and negotiate confidently and professionally.
4. Increasing access to finance and Business Development Services (BDS)
    a. Working capital is a challenge for most business and the leading factor limiting business growth. Operating businesses professionally with competent staff, proper financial and business research and overall professionalism in doing business is a challenge to majority of the local traders. Such businesses cannot attract funding from financial institutions nor co-investors. Traders need hands-on training in business management so that they can attract and effectively absorb funding. And to help the businesses attract financing, it would be necessary to provide business support services e.g. export business coaching, financial management skills and tools, Institutional management capacity, corporate governance among others.
5. Formation of strong business associations for meaningful private sector engagement strategy
    a. The private sector is a key player in driving Uganda's cocoa sector agenda. However for effectiveness, a public-private partnership strategy should be struck. While the public sector already has its structures in place, the cocoa private sector is still disjointed, yet getting recognition in policy action will require a strong lobby and advocacy front. This can best be achieved through respectable, competent and professionally run cocoa business associations. To have complete buy-in it is

[20] Read about the Indonesian experience on deliberate policy measures turning from a net raw cocoa bean exporter to processed cocoa exporter by attracting increased investments in cocoa value addition- www.gbgindonesia.com

recommended that the association is developed from the grassroots, with a nationwide outreach so that all the members feel well represented. Further consultations and support could be given on how to develop such an association or bench marked from other successful ones like the National Union of coffee Agribusinesses and farm enterprises (NUCAFE) and the Uganda Coffee Trade Federation (UCTF), among others.

6. ICCO membership
    a. Becoming a member of the International Cocoa Organisation (ICCO), is a prerequisite to accessing different forms of international cocoa information, that traders can use for business decisions, and increasing their participation in the international cocoa activities. It is only through ICCO membership can Uganda contribute or influence any international decision on cocoa. Thus the need for a cocoa policy to guide such a national undertaking cannot be over emphasised.

8.1.4 Cocoa exports

Conclusions

1. In the years 2009-2016, there was consistent increase in both the value and quantity of cocoa exported from Uganda. The growth however, slowed down in 2017, which resurged again in 2018. In spite of the growth, increase in cocoa export volume has been slow, having grown from 30,000MT to 74,000MT in 10 years. This trend is not expected to change significantly over the next 5 years because there is minimal government investment targeting increased cocoa production and productivity. Interventions to improve the current methods of cocoa post-harvest handling, improving cocoa quality and market access are wanting. Without policy guidelines, cocoa production, quality and revenues will remain too low to attractive value addition investments and expertise necessary for promoting Uganda's cocoa sector.
2. The trend is changing for exports of Uganda's cocoa; Europe which was the top destination of Uganda's cocoa has in the past 3 years began to reduce volumes imported. Asia, on the other hand has become the dominant importer of Uganda's cocoa. This changing trend is mainly because:
3. European major industries utilise semi-processed products like cocoa powder and cocoa paste. Processing operations to produce these products are generally shifting to the cocoa bean producing regions where governments give incentives and tax cuts for cocoa value addition investment. For example, Switzerland based cocoa and chocolate maker Barry Callebaut expanded its Indonesia operation by establishing a plant in Makassar- South Sulawesi in 2013 and another in Gressik-central Java in 2016. Cargill- a USA international giant also set up a cocoa processing in Gresik. Other cocoa processors like Olam also have processing facilities in Malaysia and Indonesia, among other investments.
4. There is a wide market potential for Uganda to supply the Asian cocoa market due to the following factors:
5. Indonesia, once the third leading cocoa producer had 1.3 million Ha of cocoa, producing 850,000MT by 2011. The country adopted the value addition policy for its cocoa in 2010 which spurred growth in cocoa processing investments. Following this however, the country was hit by a cocoa crop disease that continues to wiped out cocoa plantations, most of which are aging trees, planted in the 1990s. Indonesia's fall in production has left a supply vacuum for the factories that are now contributing to Uganda's exports. This trend is expected to continue in the mid-long term.
6. In view of the available cocoa processing investments in Asia, Asia is much cheaper destination for Uganda's cocoa. In addition to reduced time and distance, freight costs are lower: for example, the average freight cost to Europe is USD 75 per ton compared to USD 25 per ton to Asia. This puts Uganda in a more competitive position compared to cocoa producers in West Africa, and South America to access the Asian markets.
7. The incomes and tastes of the Asians is changing. Chocolate products are becoming regular ingredients in their parties and dishes. This too contributes to increased cocoa demand in Asia.

Recommendations

From the observations above, it is clear that Asia is currently the leading buyer of cocoa from Uganda, and because of reasons highlighted above, this market is bound to grow in the short-medium term. Asia's quality demands and requirements are less stringent and easy to meet, given Uganda's production, post-harvest handling and fermentation systems that are still inadequate. These inadequacies automatically preclude Uganda from participating in fine and flavour cocoa export.

The European market on the other hand is strict on quality standards and focusing more on the specialised fine flavour cocoa, a market Uganda currently has little competencies in. However, certified fine cocoa and organic products have a growing market and are rewarding. Fine cocoa can sell for 2-3 times the price of conventional cocoa, and organic cocoa can fetch USD 100-300/MT above conventional prices. Currently however, the available demand for organic and fine cocoa is only about 5% of the world cocoa production. This market is currently supplied by well-established cocoa producers from South America and West Africa. Indeed, attempts by Uganda's exporters to sell organic cocoa to these markets have not yielded much. They receive very low premiums (less than USD 100 per MT) if they ever secure buyers for it, due to inferior quality. This leaves limited options and they end up selling it as conventional cocoa . These observations pre-suppose that currently the chances for Uganda's organic and fine specialised cocoa to sell in the European market are quite marginal.

With the hind sight of the sub-optimal production, post-harvest handling and drying of Uganda's cocoa, the standards and quality that can fetch premium prices in the European markets cannot be attained in the short-medium term without active government involvement in the cocoa sector. By setting policies, roles and regulations as well as enforcing them, only then can Uganda favorably compete for cocoa markets in Europe. In the short-medium term therefore, it is recommended that, the country concentrates on increasing cocoa volumes that have a ready market in Asia, while at the same time build local capacity and experience in the production of organic and other fine cocoa beans that can ultimately gain acceptance in European markets later in the medium to long term.

8.2 Summary of Recommendations in Comparison to MARKUP Project Activity Plan

This section presents a summary of recommendation following the value chain stages. In the following table, recommendations are compared against the MARKUP Project activity plan that was reviewed as part of the project documents – it is important to note that these recommendations should not be viewed as final and will be shared with industry stakeholders for feedback and review.

It would be prudent to give attention to those issues that are not catered for as part of the proposed project implementation and relevant strategies developed on how to address them under the current or future projects. Those issues and recommendations covered within the proposed project interventions/activities may also need to be sharpened and focused more on the cocoa sector, as opposed to general intervention for both cocoa and coffee.

	RECOMMENDATIONS DRAWN FROM ANALYSIS	ITC MARKUP REGIONAL ACTIVITY
COCOA PRODUCTION	• Promotion of seedling distribution for new and replacing old plantations in all production areas; Build on synergy with NAADs Private companies for seedling distribution	• Not under the ITC project activity areas
	• Build local capacity of technical support for farmers relating to productivity increases e.g training extension staff, proper agronomy, post-harvest, fermentation, drying, and handling techniques. • Develop a cocoa production manual • Train farmers on fine and organic cocoa production	• There is an activity under the output “enhanced export competitiveness for SMEs” relating to the training of SMEs on more effective farmer service delivery systems. SMEs such as companies and cooperatives will be trained on the management systems and structure needed to maintain effective, mutually beneficial relationships with farmers – this includes being more effective in delivering information on productivity and processing.. This can include development of basic cocoa production manuals to be used by agronomists and extension officers. • Also under this output is an activity on training SMEs to implement Internal Control Systems needed for the management, implementation and certification of private voluntary standards such as organic but also a s a basis for traceability systems in line with EU requirements for sustainable, traceable cocoa.
	• Support Dissemination of cocoa production in mass media	• Not under the ITC project activity areas

	• Support NACORI carry out a baseline assessment of cocoa pests and diseases • Support research in appropriate post-harvest handling and fermentation of cocoa. • Training of scientists and technical personnel in specialised cocoa research fields	• Not under the ITC project activity areas
POST-HARVEST HANDLING	Development of standards for cocoa post-harvest handling in • Wet cocoa • Fermentation • Drying	• Under the output "enhanced export competitiveness for SMEs" particularly in relation to increasing value addition, best practices manuals and trainings can be delivered to SMEs for own implementation or for knowledge transfer to farmers.
	• To meet EU market expectations, train SMEs to run cocoa post-harvest handling as a business, encouraging the growth in value addition through higher and consistent quality produced by centralised processing • Support SMEs to develop bankable business plans and assistance in connecting to finance for entrepreneurs investing in PHH as a business • Set up centralised cocoa fermentation and drying facilities run by private entrepreneurs.	• Under the output "enhanced export competitiveness for SMEs", there will be some work on coaching SMEs on business financial management and connection to financiers for trade and capital finance. • This same output has activities for the training of SMEs on value addition techniques which applies to centralised cocoa processing (fermentation and drying) in the sense of producing higher quality, consistent cocoa.
	• Support availing of affordable hand held moisture meters and digital weighing scales.	• Moisture meters will be purchased and distributed.
	• Policy regulations and standards set for cocoa post-harvest handling and quality.	• Not under the ITC project activity areas
	• Support enactment of local bye laws on harvesting regimes of cocoa • Support dissemination of bye laws and PHH standards in mass media	• Not under the ITC project activity areas

VILLAGE AND BULK LEVEL TRADING **Arbitrary pricing and weighing of wet cocoa** **Access to finance** **Acquisition of processing machinery** **Lack of skills/experience in export trade**	• Support development of policy regulation on trading in wet fresh and semi-dry cocoa, discouragement of trading in "some-some"	• Not under the ITC project activity areas
	• Support VSLAs develop capacity to avail cash for trade at village level. • Create a revolving fund at the lower levels to support trade finance • Avail low interest finance through financial institutions for trade finance. • Avail funds through development banks for capital and infrastructure developments at low interest rates for cocoa bean quality improvement through improved cocoa processing facilities and equipment	• Under the output "enhanced export competitiveness for SMEs", there will be some work on coaching SMEs on business financial management and connection to financiers for trade and capital finance
	• Support handholding and building capacity of local traders to export cocoa • Support trainings in international trade for the traders e.g. export procedures, logistics, documentation, market intelligence, risk management, pricing, buyer negotiation, etc.	• The output "Improved business development capacities for SMEs" includes activities to support SMEs on cocoa trading business skills development
	• Support exposure visits, participation in international conferences and exhibitions of Traders.	• The output "Improved business development capacities for SMEs" includes activities for market linkages.
EXPORT AND VALUE ADDITION (Intermediate products and chocolate)	• Support formation of strong viable and respectable cocoa trader associations at local, regional and national levels. • Support training of private sector personnel in effective lobbying and advocacy	• Not under the ITC project activity areas except for the output "Strengthened capacity to advocate for the removal of sector trade barriers" where support to training on advocacy and lobbying for associations is an activity for active associations.

	• Promotion of Uganda cocoa in target markets for buyer awareness and investment	• The output “Improved business development capacities for SMEs” does have activities relating to this particularly relating to SME connection to markets. Some non-traditional buyers in EU have expressed interest to start engaging in Ugandan cocoa sector if initial promotion is made.
	• Support to SMEs in knowledge relating to market requirements for food safety standards, particular buyer requirements in terms of quality, volumes, pricing, voluntary standards (organic) etc. Of particular importance also for EU markets is emphasis on social (child labour, gender equality) and environmental aspects in sourcing	• The output “Improved business development capacities for SMEs” includes activities relating to building SMEs capacities for market requirements. The output “enhanced export competitiveness for SMEs” contains activities relating to private voluntary standards and traceability systems as well as farmer service delivery and relationship management which are the structures that can be part of solutions to social and environmental issues.
	• Support to SMEs for development of skills in value added products – intermediate products and chocolate • Avail low interest capital for purchase of processing machinery	• Under the output “enhanced export competitiveness for SMEs”, activities can be conducted on the introduction to requirements, skills, process of creating value added products. This output also includes the afore-mentioned Access to Finance activity in relation to assistance in connections to trade and capital finance providers.
POLICY INTERVENTIONS	• Support development of a national cocoa policy • Support development of a national cocoa standard • Support dissemination of relevant enacted policies	• Not under the ITC project activity areas – except to include technical personnel in trainings directed for SMEs in areas mentioned above.

	• Support training of technical personnel in cocoa quality and other • Support equipment acquisition, personnel training to analyse and disseminate international cocoa information • Support participation of UCDA and stakeholders in international fora, exposure visits and trade fairs • Support accreditation with the ICCO	

All in all, cocoa from Uganda has a lot of potential if it keeps up consistency, quality and sustainable volume growth. Its bean is appreciated for its relatively good quality and its rich, chocolaty flavour. It has therefore been able to serve different market segments, from conventional to specialty, and should certainly continue to do so. Uganda has a good reputation in the way it has organised its coffee sector, and is seen as a very promising *new* cocoa origin.

Export growth over the last few years has mainly been to Asia. There are different reasons for this: low freight costs to Asia, the high demand for beans from the Indonesian grind, and the relatively high cost of compliance and production of European quality and certification specifications.

In order to grow its exports to Europe, Uganda should focus on continuing to develop its supply in specialty, organic and (third-party verified) sustainable cocoa in addition to strengthening the overall organisation of the sector to ensure better product integrity and food safety and reduce logistical costs.

Attention should be given to addressing challenges that exist both on the social side as well as the environmental side. Not doing so would increase the perception of risk regarding origin for European chocolate industry, and it would be a threat to its own future cocoa production and the livelihoods of the people contributing to professionalisation of the sector.

CHAPTER 9: APPENDICES

9.1 Appendix 1 - Persons Interviewed

NAME	ORGANISATION	CONTACT
Denis Luiken Nunez	Olam (U) Limited	0707555259/0414271440
Batura Jackson	Kisubampei cooperative society	0785525718
Balyesima Methodius	Semuliki cooperative Union limited	0772861416/0392178624
Stephen Sembuya	Pink Foods Limited	0774133427
Paul Walube	Promised Land Limited	0772670703
Murungi Patrick	ICAM chocolate Uganda Limited	0774106615
Mukwasibwe Julius	Bukwa Uganda Limited	0772420957
Bagonza Ali	BTM commodities Limited	0771371223/ 0787083291
Muhindo Morris John	Moris and Sons Company Limited	0771845607
Kenganzi Angella	Kenganzi Agencies Co (U) Ltd	0772860451
Sharon Irene Alebo	Sunshine Agro Products Ltd	0702 352255
Lwanga Henry	Lwanga and sons ltd	0774121885/ 0757510267
Dumba Charles	Bundibugyo Improved Cocoa Farmers' Coop Ltd	0789927232
Bosco O Lawino	Tropical Trade International	0773259180/ 0704385811
Clemens Fehr	Gourmet Gardens	0772 481 158
ConstatineBwambale	Bakwanye Trading Company Limited	0752 796 445/ 0483 444 068
Bent Anderson	African Trade winds	777678788
Sonia Kyatoko	Sonia Kyatoko Enterprise	0704745474/ 0782620547
Kakande Godfrey	Kankande Enterprise	0782203004
Kandore John	Bakandos Company Limited	0782400110
Baguma John	Baguma& Sons Trading Company	0772969043
Monday Abdullah	Care With Care Cocoa Limited	0773177115
Ngonzi Moses	Mabu Enterprise	0772840546
Yokonea Papa Yoka	AINEA & Sons	0392548920
MuhumuzaLaston	Sseco Company Limited	0783595509
Kenneth Arinaitwe	Kennare Enterprises Limited	0785530462
Emmanuel Maniregula	Olam	0772439245/ 0704444450
Musiimenta Henry	MR & C Agro business Company Ltd	0772434603
Tony Mugalu	Ugaden	0772 342 525
EdrisaSerunkuma	Native Group of companies	0772020692
Julius Kugonza	URA	0772 140330
OlogoAkendo	URA	0772140330
Hope Waira	UIA	0772432710
Sam Karuhanga	Export promotion Board	0772933010
Dr. Godfrey Kagezi	NACCORI	0752882788
Mulumba Everest	NAADS	0772663522
Wilfred Alinganyira	ESCO Uganda Limited	0772540337/ 0701112008
Dr. Emmanuel Iyamulemye	Uganda Coffee Development Authority	0772926614
Akankiza Samson M.	Uganda Coffee Development Authority	0772692200/ 0701692200
Monday Charles	Monday Charles and Sons Enterprise	0772585506
Obale Joseph	ICAM chocolate Uganda Limited	0782126111

9.2 Appendix 2 - Cocoa Traders and Exporters List

Traders	
Company	**Phone Contact**
Semuliki Co-operative Union Ltd	0772861416/ 0392178624
MR &C agro business Company Limited	0772434603
Sonia Kyatoko Enterprises	0704745474/ 0782620547
Inea and sons	0392548920
Native Group of Companies	0772020692
Tropical Trade international	0773259180/ 0704385811
Sunshine Agro products Ltd	0702 352255
Bakwanye Trading Company Ltd	0752 796 445
Pink foods industries Limited	0774133427
Promised land	0772670703
Henry Lwanga and sons	0774121885/ 0757510267
Gourmet gardens	0772 481158
BTM commodities	0771371223/ 0787083291
Company	Phone Contact
Bundibugyo Improved Cocoa Farmers' Cooperative	0789927232
Kisubampei co-operative society	0785525718
Bukwa Uganda Ltd	0772420957
Kenare Enterprises Ltd	0785530462
Kakande Enterprises	0782203004
Monday Charles and Sons	0772358506
BakandozCo.ltd	0782400110
Baguma and Sons trading company	0772969043
Moris and sons company Ltd	0771845607
True cocoa Uganda Limited	0772439245/ 0704444450
Care with Care cocoa Ltd	0773177115
Latitude Company Limited	0783185287

Exporters (have exported cocoa in the past)					
Last Year of Exports	**Exporter Name**	**Contact Person Name**	**Contact Person Email**	**Mobile Phone**	**Landline**
2018	AFRICAN TRADE WINDS LIMITED	ANDERSEN BENT	bent.andersen@africantradewindslimited.com	777678788	414695978
2018	AGRI EXIM LIMITED	BHASSIN VARUN VINOD	varun@agrieximfze.com	756895610	312175858
2018	BAKWANYE TRADING CO. LIMITED	BWAMBALE CONSTANTINE	cobwa@yahoo.co.uk	772482248	483444068
2018	BUNDICAO LIMITED	AKELLO EVELYN	akello@minkascs.ch	704943374	
2018	BUNDIKAKEMBA GROWERS CO OPERATIVE	BWAMBALE LAZAROUS	bundikakembabug@gmail.com	775230808	
2018	DISCOVERY TRADING LIMITED	MUSTAFA HASHIM	discoverytrdltd@gmail.com	754577688	754577688
2018	ESCO UGANDA LIMITED	KATABALWA RICHARD	info@escouganda.com	772430327	312261601
2018	FRERICH FORWARDERS (U) LIMITED	KASOMA FRED	frerichforwarders121@gmail.com	772563345	
2018	FRONTIER LOGISTICS INTERNATIONAL	NKURUNUNGI MONTE	daniels@fli.co.ug	750643331	
2018	GOURMET GARDENS (U) LIMITED.	CLEMENS FEHR	info@gourmet-gardens.net	772481158	
2018	ICAM CHOCOLATE UGANDA LIMITED	GIOMO FABIO	apalonghiro@yahoo.com	782656921	
2018	KALVIC COMMODITIES LIMITED	KALYESUBULA VICTOR	kalvic2003@yahoo.com	772698004	
2018	LATITUDE TRADE COMPANY LIMITED	STEINBERG JEFFREY	finance@latitudetrade.co	783185287	783185287
2018	METL UGANDA LIMITED	ARPITKUMAR PANCHAL	panchal@metl.net	751330073	751330073
2018	MORA INVESTMENTS LIMITED	OKELLO ADRIAN	adrokeyou@gmail.com	787702293	
2018	OLAM UGANDA LIMITED	SACHDEVA MANISH	manish.sachdeva@olamnet.com	700220018	414271440
2018	SPRIMA INTERNATIONAL LIMITED	SILIBERTI MATTEO	sprimaltd@hotmail.com	789080777	777580144
2018	TOP VEGS LIMITED	SCHRIER JACOBUS	maxime@vanpee.net	772765555	772765555
2018	UGADAN COCOA TRADING LIMITED	KALYESUBULA VICTOR	victor@ugaden.com	772698004	
2018	UGANDA COCOA AND COMMODITIES LIMITED	KALYANA RAMAN	admin@ugandacocoa.com	759987561	772222501

2017	AFRICA AGRO SOLUTIONS LIMITED	KATENDA JOSEPH	accounts1@picfare.com	757445056	
2017	ARTISANS FARM LIMITED	ASAMI OKANO	asami@farm-of-africa.com	784844545	
2017	BOLLORE AFRICA LOGISTICS UGANDA LIMITED	WELLS OLIVER	oliver.wells@bollore.com	752722650	414336000
2017	CHARMS (UGANDA) LIMITED	DAWDA TINA	tina@charmsuganda.com	776766965	414285137
2017	KAHEMBE ENTERPRISES LIMITED	MUHINDO LAWRENCE	kahembeenterprisesltd@yahoo.com	772472188	706472188
2017	LINK N GLOBAL COMMODITY U LIMITED	JADEJA SHAKTISINH	shaktijadeja74@gmail.com	753801177	
2017	SEAPEAS TRADING LIMITED	JAT KHEMRAJ	khemraj@gacommodities.com	757956663	752580112
2017	STRAINA UGANDA LIMITED	NAVEEN KUMAR	naveen@straina.ug	750555667	
2017	THREEWORLD COMMODITIES (EAST AFRIC	JADEJA SHAKTISINH	shaktijadeja74@gmail.com	753801177	
2017	WORLD BOTANICAL EXTRACTS LIMITED	MASIGA KENNETH	kampala@wbotanical.com	782679172	703406884
2016	AFRICOT TRADING CO. LIMITED	SAYID ABUBAKAR	africotmbale@gmail.com	751629129	751629129
2016	RWENZORI FARMERS COOPERATIVE UNION	BAGONZA POLICE	pobaji@gmail.com	782466226	782466226
2016	SAVANNAH COMMODITIES COMPANY LIMITED	MWANGI ALFRED	alfred@savannah.co.ug	752557818	414252541
2015	ANKOLE COFFEE PRODUCERS CO-OPERATIVE	NUWAGABA JOHN	acpcufin@gmail.com	772461876	
2015	BRUKAM LIMITED	WAUMANS PETER	Petermariawaumans@gmail.com	772330308	779289493
2015	SHARES U LIMITED	VAN ESCH	marck@sharesuganda.com	772464110	772464110
2015	UGACOF LIMITED	KASAMBA MICHAEL	mk@sucafina.com	772120043	204280000
2014	AGROCROP (U) LIMITED	LAM SAU YUE	christineau1688@gmail.com	784820875	784820875
2014	EXPORT TRADING COMPANY (U) LIMITED	THOMBRE SHRIDHAR	SHRIDHAR.THOMBRE@etgworld.com	759260991	759250815
2014	GULU AGRICULTURAL DEV COMPANY	OPENY DOUGLAS	openydouglas@gmail.com	782820027	
2014	IGARA GROWERS TEA FACTORY LIMITED	MURAMUZI JONES	igaraaccounts@ugatea.com	772700797	772650826
2014	JOB COFFEE LIMITED	SUNDAY ROSELLA	accounts@jobcoffee.co.ug	772418166	782900361
2013	COFFEE SERVICES INTERNATIONAL LIMITED	BWAMBALE RONALD	csil@infocom.co.ug	782566512	312113955

2013	FLOURISH COMMODITIS (U) LIMITED	SANJEEVI ILLA	isanjeevi@hotmail.com	774700818	414578380
2013	KANAKULA EXPORT AGENCY LIMITED	BWAMBALE CONSTANTINE	cobwa@yahoo.co.uk	772482248	
2013	KAWACOM (U) LIMITED	BAGUMA RICHARD	rbaguma@ecomtrading.com	772744964	414222612
2013	LOTUS CHOCO UGANDA LIMITED	MANGALP. RAVISHANKAR	ravishankar.shenoy72@gmail.com	751345000	
2013	TROPICAL TRADE INTERNATIONAL CO. LIMITED	OCHIRA BOSCO	itropicaltrade@yahoo.com	773259280	
2013	UGADEN CHOCOLATE LIMITED	KALYESUBULA VICTOR	kvictor@greenorganicwatch.com	772698004	
2012	MITCHELL COTTS UGANDA LIMITED	PRINSLOO JOHN	tea@tamteco.com		414259885
2012	UGANDA BREWERIES LIMITED	JJUMBA PROSSIE	Prossie.Jjumba@diageo.com	771896436	312210011
2011	GREEN ORGANIC WATCH LIMITED	LUBEGA BRIAN	greenorganicwatch@yahoo.com	782838270	414234341
2010	COFFEE WORLD LIMITED	MIGADDE MINOVIA	mino.migs@gmail.com	782891048	772424049
2010	GREAT LAKES COFFEE COMPANY LIMITED	NANSAMBA RITAH	info@greatlakescoffee.co.ug	772310126	414286961
2010	NAKANA COFFEE FACTORY LIMITED.	Kawooya George William	info@nakanacoffeefactoryltd.com	752743430	752743430
2010	OUTSPAN ENTERPRISES LIMITED.	Kayondo Kenneth	kkayondo@outspanagric.com	772414204	

9.3 Appendix 3 - Export Total Volumes and Values

Table 8 Cocoa Exporting companies in Uganda 2013-2018 (individual totals and values withheld)

Exporter 2013	MT	Value(USD)	Exporter 2014	Weight MT	Value(USD)	Exporter 2015	Net Weight M	Value(USD)
ESCO			ESCO			ESCO		
OLAM			OLAM			AFRICAN TRADE WINDS LTD		
ICAM			AFRICAN TRADE WINDS			OLAM D		
THREE FARMERS			ICAM			UGANDA COCOA		
UGANDA COCOA			THREE FARMERS I			ICAM		
BAKWANYE			UGANDA COCOA			THREE FARMERS		
AFRICAN TRADE WINDS LTD			UGADAN COCOA			METL UGANDA LIMITED		
UGADAN COCOA			METL UGANDA LIMITED			KAHEMBE ENTERPRISES		
WORLD BOTANICAL			AGROCROP (U) LIMITED			FRONTIER LOGISTICS		
KAHEMBE ENTERPRISES			BAKWANYE TRADING			BAKWANYE		
EXPORT TRADING			WORLD BOTANICAL			BRUKAM LIMITED		
COFFEE SERVICES			BRUKAM LIMITED			WORLD BOTANICAL		
KANAKULA EXPORT			EXPORT TRADING			ANKOLE COFFEE		
AGROCROP (U) LIMITED			SHARES U LTD			UGACOF LIMITED		
TROPICAL TRADE			JOB COFFEE LIMITED			RWENZORI FARMERS		
UGADEN CHOCOLATE LIMITED			KAHEMBE ENTERPRISES			SHARES U LTD		
KAWACOM (U) LIMITED			IGARA GROWERS			Mr. DANIEL BAKAKI		
FLOURISH COMMODITIS LTD			GULU AGRICULTURAL			LOTUS CHOCO		
LOTUS CHOCO UGANDA LIMITED			GOURMET GARDENS			SHARES U LTD		
SHARES U LTD						GOURMET GARDENS		
GOURMET GARDENS.								
Total	**26,282**	**56,420,576**	**Total**	**26,366**	**59,848,452**	**Total**	**18,919**	**36,178,476**

Exporter 2016	Weight MT	Value(USD)	Exporter 2017	Weight MT	Value(USD)	Exporter 2018	Weight MT	Value(USD)
ESCO UGANDA LIMITED			ESCO			ESCO		
OLAM			OLAM			OLAM		
AFRICAN TRADE WINDS			AFRICAN TRADE WINDS			BUNDICAO LIMITED		
UGADAN COCOA			BUNDICAO LIMITED			AFRICAN TRADE WINDS		
UGANDA COCOA			ICAM			UGADAN COCOA		
ICAM			UGADAN COCOA L			ICAM		
BAKWANYE			BAKWANYE			AGRI EXIM LIMITED		
METL UGANDA			UGANDA COCOA			BAKWANYE		
FRONTIER LOGISTICS			AGRI EXIM LIMITED			UGANDA COCOA		
AGRI EXIM LIMITED			METL UGANDA LIMITED			METL UGANDA LIMITED		
WORLD BOTANICAL			WORLD BOTANICAL			FRERICH FORWARDERS		
KAHEMBE ENTERPRISES			AFRICA AGRO SOLUTIONS			DISCOVERY TRADING		
AFRICOT TRADING CO.			LINK N GLOBAL			FRONTIER LOGISTICS		
RWENZORI FARMERS			SEAPEAS TRADING			TOP VEGS LTD		
SAVANNAH COMMODITIES			KAHEMBE ENTERPRISES			GOURMET GARDENS		
GOURMET GARDENS			BOLLORE AFRICA			SPRIMA		
			FRONTIER LOGISTICS			KALVIC		
			THREEWORLD			BUNDIKAKEMBA COOP		
			RWENZORI FARMERS			MORA INVESTMENTS		
			MORA INVESTMENTS			LATITUDE TRADE		
			GOURMET GARDENS (U) LTD.					
			CHARMS (UGANDA) LIMITED					
			CHARMS UGANDA LTD					
			ARTISANS FARM LIMITED					
			STRAINA UGANDA					
Total	**29,697**	**57,913,620**	**Total**	**27,531**	**52,807,610**	**Total**	**30,734**	**61,307,718**

CHAPTER 10: ANNEXES

Annex 1: Farmer Social Demographics from Field Surveys

The study made analyses on the following cocoa farmer social demographics: Household size, type of household heads, age group, education level of household head as well as their literacy levels.

10.1 Household Size

There were slight differences in the household sizes of cocoa farmers. The south western districts had higher household sizes of 6-7 members, north western districts had 5-6 members while the central districts had an average of 4 members. Cocoa farmers in the north western and south western district households were higher than the national average of 4.5 members. The central region household are close to the urban centres and are thus more exposed to the negative economic and social impact of a large family size, as well as rural-urban migration, leading smaller household numbers compared to the more rural districts of south western and north western regions. Table 1 shows the average household size of the farmers by region and district.

Table 1: Farmer household size

Region	District	Number of household members by district												Weighted Average HH Size
		1	2	3	4	5	6	7	8	9	10	11	12	
South Western	Bundibugyo	1	6	8	13	16	12	11	8	7	1	2	0	7
	Ntoroko	0	1	2	3	4	3	2	2	2	0	0	0	6
	Kasese	0	2	3	4	5	4	4	3	2	0	1	0	6
North Western	Hoima	1	4	3	6	10	8	3	3	1	1	0	1	5
	Kagadi	1	0	3	7	5	5	6	5	4	2	1	1	6
	Kibaale	2	6	6	7	4	3	5	4	1	1	1	0	5
Central	Buikwe	6	4	6	4	5	7	1	4	1	1	0	0	4
	Mukono	9	16	18	19	16	7	5	1	0	1	0	1	4

10.2 Age of the Farmers

The overall trend shows that most of the cocoa farmers are aged between 31-70 years, although more are concentrated in the aged group of 41-70 years. There are also age variations in the specific regions and the districts. It is observed for example that Kagadi, Mukono and Buikwe districts had the highest proportion of farmers in the range of 31-40 years. Among the districts in the south western region, the majority of farmers are above 40 years. However, the north western and central districts have a more even distribution of farmers in the age ranges of 31-70.

During the focus group discussions, it was mentioned that being a perennial crop, cocoa is largely grown on own land. But the youth, particularly because they have lower incomes, are less likely to own-land for cocoa production. This probably explains why there are less cocoa farmers aged below 30. Table 2 shows the ages of the cocoa farmer interviewed at household level.

Table 2: Age of cocoa farmers

Region	District	N	Age Range of farmers (Years)							Total
			21-30	31-40	41-50	51-60	61-70	71-80	over 80	
South Western	Bundibugyo	85	2%	16%	44%	25%	6%	4%	3%	100%
	Ntoroko	19	1%	18%	41%	22%	10%	5%	3%	100%
	Kasese	28	4%	14%	39%	28%	8%	5%	3%	100%
North Western	Hoima	41	17%	17%	22%	17%	12%	12%	2%	100%
	Kagadi	40	18%	33%	18%	18%	10%	5%	0%	100%
	Kibaale	40	8%	15%	38%	23%	13%	3%	3%	100%
Central	Buikwe	39	10%	21%	23%	10%	15%	15%	5%	100%
	Mukono	93	8%	22%	16%	28%	16%	9%	2%	100%
	Total	385								100%

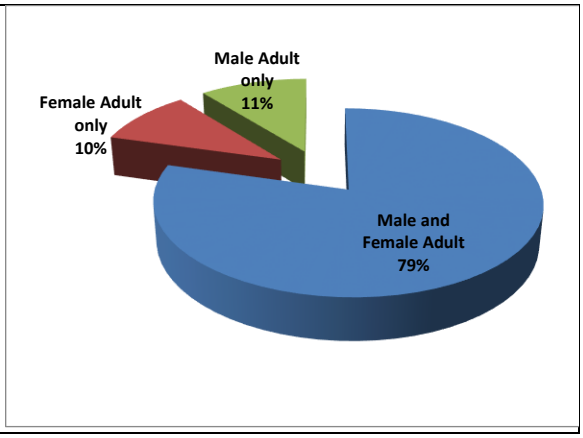
10.3 Type of Household

Of the 365 cocoa households interviewed, majority 79%, (304 of them) had both male and female heads. 10% of the households had a female-only head while 11% had a male-only head. Single parenthood is a result o many factors that include death of a spouse, family neglect, domestic conflicts and choice, among other. Table 3 shows the household head types by district.

The focus group discussions however revealed that in the male-female headed households, it is usually the men that owned the cocoa produce and the proceeds thereof. Women and children however provided labour in maintenance of the cocoa fields as well as harvesting and post harvest handling, but the male household head usually made the decisions regarding selling and the use of the cocoa income.

Table 3: Household head types by district

Region	District	N	Male and Female Adult	Female Adult only	Male Adult only
South Western	Bundibugyo	85	76%	7%	16%
	Ntoroko	19	89%	11%	0%
	Kasese	28	82%	4%	14%
North Western	Hoima	41	83%	10%	7%
	Kagadi	40	83%	15%	3%
	Kibaale	40	88%	8%	5%
Central	Buikwe	39	72%	13%	15%
	Mukono	93	76%	12%	12%
Total		385	79%	10%	11%



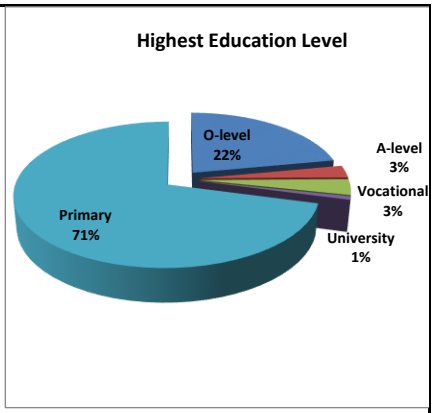
10.4 Education Level

Of the 385 cocoa farmers interviewed, majority (85% or 327 of them) had ever attended school. 15% (or 58 of them) had never received any formal education at all. Table 4 summarises the findings on the highest education attained by the cocoa farmers, by district. From the table it is observed, however, that the majority (71%) that had formal education did not go beyond primary school level; 22% attained O'level education; 3% attained A'level; while only 2% attained University education. These observations indicate that on the overall, the education levels of cocoa farmers are indeed low. Interventions at farm level should therefore be made cautiously and appropriately, taking into consideration these low formal education levels of the cocoa farmers.

Table 4: Highest education level of farmers

10.5 Household Resilience and Food Security

Region	District	N	Primary	O-level	A-level	Vocational	University
South Western	Bundibugyo	85	75%	22%	1%	2%	0%
	Ntoroko	19	72%	21%	1%	5%	0%
	Kasese	28	75%	22%	1%	2%	0%
North Western	Hoima	41	71%	20%	5%	5%	0%
	Kagadi	40	73%	18%	3%	5%	3%
	Kibaale	40	78%	13%	3%	8%	0%
Central	Buikwe	39	85%	15%	0%	0%	0%
	Mukono	93	57%	32%	5%	3%	2%
Total Average		385	71%	22%	3%	4%	1%



'Food security' defines a situation in which all people at all times have physical and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life (FAO, 1996). Food security depends upon three main factors:

(i) **Availability of food** -This is the extent to which sufficient quantity and quality of food is physically present in an area. This includes food found in markets, produced on local farms or own farms or provided as food aid or gifts.

(ii) **Access to food** - Even if food is available, people cannot always access it. Food access is ensured when communities, households and all individuals have enough resources to obtain sufficient quantity and quality of food for a nutritious diet through a combination of home production, stocks, purchase, barter, gifts, borrowing or food aid.

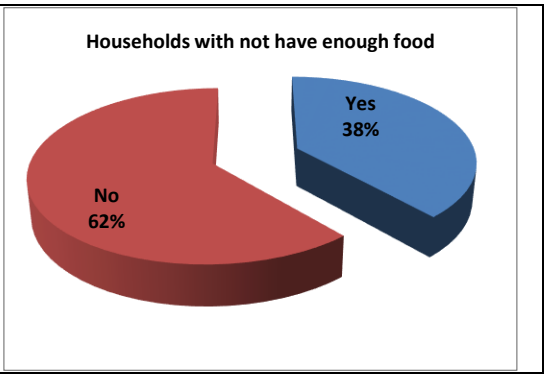
(iii) **Utilization of food** - Even if food is available and can be accessed, inefficient absorption of food by the body will lead to malnutrition. Food utilisation may be affected by endemic disease, unsafe drinking water, poor sanitation or lack of appropriate nutritional knowledge, especially child feeding practices.

The coca farmers in districts studied are agricultural, and they derive their livelihood from it. This evaluation study sought to find out the food security situation of the cocoa farmers. The study focused on food availability and access, and the following were analysed at household level: food quantity produced/productivity, varieties produced, food shortages/adequacy and food purchasing as a coping mechanisms.

"Was there a period in the past year when you did not have enough food in your household (produced or purchased)?" The responses are summarised in Table 5.

Table 5: Household food availability

Region	District	N	Yes	No
South Western	Bundibugyo	85	88%	12%
	Ntoroko	19	79%	21%
	Kasese	28	54%	46%
North Western	Hoima	41	20%	80%
	Kagadi	40	30%	70%
	Kibaale	40	13%	88%
Central	Buikwe	39	15%	85%
	Mukono	93	13%	87%
Total		385	38%	62%



On the overall, although the majority of farmers (62%) had not experienced any day of food shortage, there was indeed a serious burden of food shortage (38%) among other cocoa framers in the past year. The intensity varied by region, with farmers in the south western reporting the highest incidences of

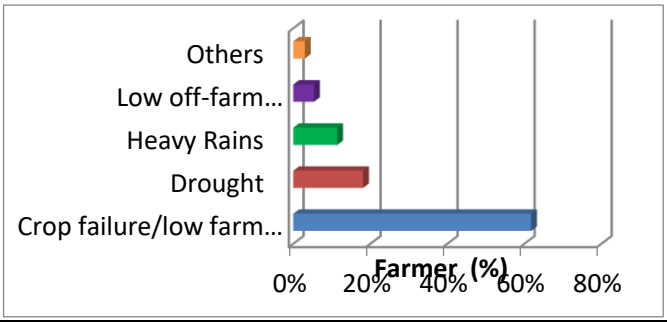
food shortages in the past year (Bundibugyo 88%; Ntoroko 79%; and Kasese 54%). The intensity was less in the north western districts (Kagadi 30%; Hoima 20%; and Kibaale 13%). Shortages were least intense in the central region with no more than 15% households reporting food shortages.

10.6 Reasons for Food Shortage

149 respondents out of the 385 households interviewed reported about the causes of food shortages. Table 6 summarizes the reasons that led to the food shortage. Crop failure and adverse weather (drought and heavy rains) were the main reasons.

Table 6: Reasons for food shortage

Reasons	Percent
Crop failure/low farm produce	62%
Drought	18%
Heavy Rains	11%
Low off-income/insufficient income	5%
Others	3%
Total (N=149)	100%



The incidences of crop failure as well as drought and excess rains were more common in the south western districts (Bundibugyo, Ntoroko and Kasese), which also reported the highest incidences of food shortages in the past year. The food availability and scarcity reported by the farmers followed the bi-modal rainfall seasonal calendar of the country. Food is more available from the months of harvest on-set (July-Sept and Dec-Jan), and reduces again as the rains/planting season sets in (Mar-Apr and Sept-Oct). However, in the south western districts the first rains running from March-June are unreliable, with limited crop production. As a consequence, the cocoa farmers in the districts of Bundibugyo, Ntoroko and Kasese usually experience food shortage in the months of June, July and August.

10.7 Reasons for Food Shortage

Using the questions summarized in Table 7, we asked respondents a combination of questions on whether their households had nothing to eat because there was no food and no resources to obtain food for any household member in the past 4 weeks. Up to 62% (235 out of 385) households indicated that they had indeed been exposed to hunger in the past 4 weeks as shown below. Again, the districts of Bundibugyo and Ntoroko had a higher percentage of farmers being exposed to hunger based on the criteria. In most of the cases however, the situation did not persist as the affected farmers also reported that the shortages were rarely experienced (between 1-2 times) in the last 4 weeks.

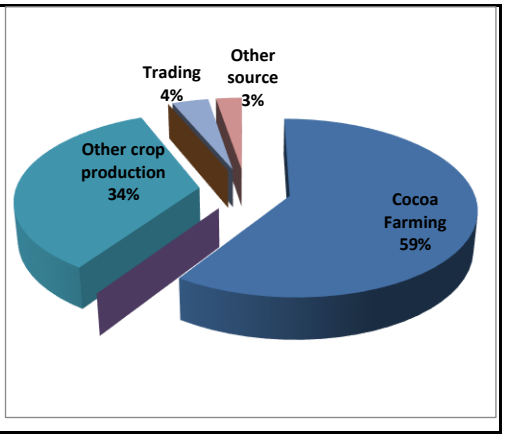
Table 7: Exposure to hunger

Degree of hunger Criteria	Districts								Total
	Bundibugyo	Ntoroko	Kasese	Hoima	Kagadi	Kibaale	Buikwe	Mukono	
	N= 85	N= 19	N= 28	N= 41	N= 40	N= 40	N= 39	N= 93	
Households often lacking resources to provide enough food	38%	42%	29%	22%	40%	18%	28%	20%	110
Households with members going to bed without food in the past month because there was not enough food.	28%	26%	25%	15%	15%	5%	15%	19%	74
Households with members going for up to 24 hours without food because there was not enough to eat in past month	24%	26%	21%	12%	8%	0%	8%	13%	54
Total									238

Overall assessment of the cocoa farmers on hunger showed that Bundibugyo and Ntoroko districts were the most prone to hunger, followed by the Hoima and Kagadi. The districts of Kibaale, Buikwe and Mukono were the most secure against hunger. Further analysis also showed that Bundibugyo and Ntoroko districts also had more farmers that depended on cocoa only as the main source of income, compared to Mukono, Hoima, Buikwe and Kagadi where farmers had a variety of other sources of income. Table 8 shows the other household income sources for the cocoa farmers by district.

Table 8: Household income sources

Region	District	Cocoa Farming	Other crop production	Trading	Other	N
South Western	Bundibugyo	96%	0%	4%	0%	85
	Ntoroko	79%	21%	0%	0%	19
	Kasese	43%	32%	11%	14%	28
North Western	Hoima	41%	49%	2%	7%	41
	Kagadi	13%	80%	8%	0%	40
	Kibaale	18%	83%	0%	0%	40
Central	Buikwe	46%	41%	0%	13%	39
	Mukono	75%	17%	3%	4%	93
Overall		**59%**	**34%**	**4%**	**3%**	**385**



The common alternative cash crops grown are vanilla (Bundibugyo and Ntoroko) while coffee is more common in Kasese, Kagadi, Kibaale, Mukono and Buikwe. Tobacco can also be found in Hoima.

CHAPTER 11: REFERENCES

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