

Beans Sector Strategy – Uganda

CASA UGANDA COUNTRY TEAM

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Abbreviations

ASSP	Agricultural Sector Strategic Development Plan
CASA	Commercial Agriculture for Smallholders and Agribusiness
CIAT	International Centre for Tropical Agriculture
CSO	Civil Society Organisation
DFID	Department for International Development
DSIP	Development Strategy and Investment Plan
EAC	East African Community
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
FAOSTAT	FAO Statistics
FBO	Farmer Based Organisation
FSP	Financial Service Provider
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GMO	Genetically Modified Organism
GoU	Government of Uganda
ha	Hectare
ITC	International Trade Centre
LSB	Local Seed Business
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MT	Metric Ton/Tonne
MTIC	Ministry of Trade Industry and Cooperates
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organisation
NGO	Non-Governmental Organisation
NU-TEC	Northern Uganda – Transforming the Economy through Climate-Smart Agriculture
PABRA	Pan Africa Bean Research Alliance
QDS	Quality Declared Seed
SHF	Small Holder Farmer
TGCU	The Uganda Grain Council of Uganda
UBOS	Uganda Bureau of Statistics
UCA	Uganda Cooperative Alliance
UNBS	Uganda National Bureau of Standards
UNFFE	Uganda National Farmers Federation
USHS	Ugandan Shilling

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Executive summary

The bean sector is of significant importance in Uganda and has tremendous potential to contribute to the achievement of the sustainable development goals (SDGs) in food security, nutrition, health, and poverty reduction among small landholders.

Sector Description

- Beans form part of the staple diet in Uganda, contributing to nutrition and food security. They are widely consumed as a substitute for more-expensive protein products and they are important for the nutritionally challenged diets of the poor. Bean consumption per capita is higher in Uganda than in other EAC countries. The crops' short growing cycle and adaptability to a wide range of growing conditions, makes them a vital source of income for many families, contributing up to 9% of household income in some areas.
- Uganda is Africa's second largest bean producer after Tanzania (1,008,410 tonnes produced on 670,737 ha in 2016), and production has been increasing. The country is a net exporter of dried beans to interregional markets, notably South Sudan, Kenya and the Democratic Republic of Congo. Bean exports increased from 157,152 tonnes in 2015 to 200,000 tonnes in 2017.
- Most bean production is done on small farms ranging in size from 0.4 to 4 ha. With over two million SHF households engaged in production, including an estimated 25% stepping-up farmers, the potential for CASA outreach and impact from working in the bean sector is likely to be materially significant. As women are the primary producers of beans in Uganda, and despite challenges surrounding social norms, there is high potential for their economic empowerment given the sector growth potential for SHFs.
- Although many SMEs face challenges in accessing commercial finance to exploit opportunities, the agribusiness investment landscape in Uganda is diverse. There is a strong presence and substantial capital in SMEs, as well as a big commitment to smallholder farmer engagement in the agriculture value chain. Opportunity to add further value for domestic and export markets (pre-cooked beans, for example) has not yet been taken-up. The export trade is both formal and informal.

Analysis

On the **production side**, several challenges impede the commercialisation of smallholders and limit their incomes. At the production level, the main constraints are low productivity (especially lack of foundation seed use), high post-harvest losses and inadequate access to commercial markets. Producers also have limited access to finance to upgrade production. Yields are about 0.8 tonne/ha, compared with a potential of 2.5 tonnes/ha.

At the **postproduction level**, smallholder farmers suffer high post-harvest losses due to poor handling practices. This is a result of a lack of information on appropriate post-harvest handling (PHH) technologies, including quality standards and equipment. They also lack access to PHH business services such as drying, threshing and cleaning of beans. The trading of bean grains in Uganda is highly informal and unstructured, with limited product differentiation and value addition. Smallholder farmers are not integrated into markets because they either operate individually or are part of weak farmer organisations characterised by poor leadership, lack of trust among members and very low management capacity and business acumen. This in turn increases the transaction costs of SME offtakers involved in aggregating and processing beans and results in farmers receiving low prices.

Finally, to **accelerate the commercialisation** of the bean sector requires: (1) increased SHF aggregation of quality beans for commercial markets; (2) increased SME growth and expansion in the sector; and (3) an enabling environment for inclusive sector growth.

Responsive strategy

The beans strategy is founded on optimising engagement with SMEs seeking investment to drive growth, while addressing binding constraints to commercialisation, which in many cases are business opportunities that are not taken up. This is typically expected to involve a journey with partner SMEs, from preparations for receiving investment (such as business model development and BDS support) through to matchmaking with commercial finance providers and impact investors. This in turn is expected to generate several success stories that will contribute to CASA's overall evidence base for convincing donors and investors to channel more finance to SMEs, which will also engage large numbers of producers in their supply chains. The strategy also focuses on strengthening producer aggregation to access commercial markets, as well as supporting key improvements in the business environment.

To implement the strategy, three broad project areas have been identified as drivers of inclusive commercialisation. In projects defined under the current intervention areas, we estimate that we will reach 62,000 smallholders. We anticipate it will be possible to scale out to approximately 71,250 beneficiaries by expanding existing projects and identifying new intervention areas in future years.

1 Background

1.1 CASA programme overview

DFID's approach to economic development and agriculture relies on an increasingly commercial approach to agricultural programming by:

- Boosting agri-business investment, financing agricultural infrastructure and supporting smallholder-farmer access to markets;
- Helping farmers and their families to have opportunities and jobs outside their farms, and supporting SMEs in rural areas;
- Supporting subsistence farmers without other economic opportunities, so that they avoid hunger, malnutrition and extreme poverty;
- Encouraging commercial approaches that reduce the cost of nutritious diets.

In support of this approach, DFID has launched the five-year, flagship Commercial Agriculture for Smallholders and Agribusiness (CASA) programme which seeks to change how investors, donors and governments view and invest in agribusinesses that work with smallholder supply chains. In doing so, CASA will increase economic opportunities for smallholders by:

- a) Demonstrating the commercial viability of small and medium-sized (SME) agribusinesses with significant smallholder supply chains and attracting more investment into these businesses;
- b) Deepening the smallholder impact of existing investments made by development finance institutions (DFIs, notably CDC), and impact investors;
- c) Enabling poor smallholder farmers to engage with and trade in commercial markets;
- d) Researching and communicating the case for successful engagement with smallholder-linked agribusiness.

CASA has three components, two of which (Components A and C) are managed out of Nairobi, Kenya by NIRAS-LTS in partnership with Swisscontact and CABI. CASA's component B is separately implemented by Technoserve and focuses on technical assistance and investment promotion for larger agri-enterprises involved in global development. In addition to its three components, the programme has three strategic cross-cutting components:

- Gender and social inclusion (GESI);
- Nutrition and food security;
- Climate change and the environment.

Component A will demonstrate high-impact interventions in the three target countries (Malawi, Uganda and Nepal) leading to: (a) mobilisation of investments for partner agri-businesses (which can include commercially-minded farmer associations and cooperatives) and expanded outreach to smallholders; and (b) improved access to markets for smallholders. The ultimate target group for CASA is the 'missing middle' of 'stepping-up' smallholders¹ – that is, those that wish to engage in commercial agriculture but have largely not done so to date. (Among the missing middle, 40% live on less than \$2 a day, while 50% of women in the missing middle live on less than \$2 a day.)

Component C is a learning and knowledge-sharing component. Among other things, it will leverage knowledge gains from Component A interventions and other research to inform

¹ 'Stepping-up' smallholder farmers are described as those that sell or wish to sell at least 50% of their cash crops/produce.

donors and investors about the merits of investing in agribusiness SMEs with significant outreach to smallholders.

2 Sector description

2.1 Basic information

The agriculture sector is still the mainstay for the livelihoods of a large part of the Ugandan population. But while the contributions to GDP (37% in 2017/18), exports (54% in 2016) and employment (72%) are high, growth in the agriculture sector lags average GDP growth. The low growth rate can be attributed to changing climate, economic downturns, limited availability of improved inputs, diversion of investment into the industrial sector and insurgencies or civil war in neighbouring countries.

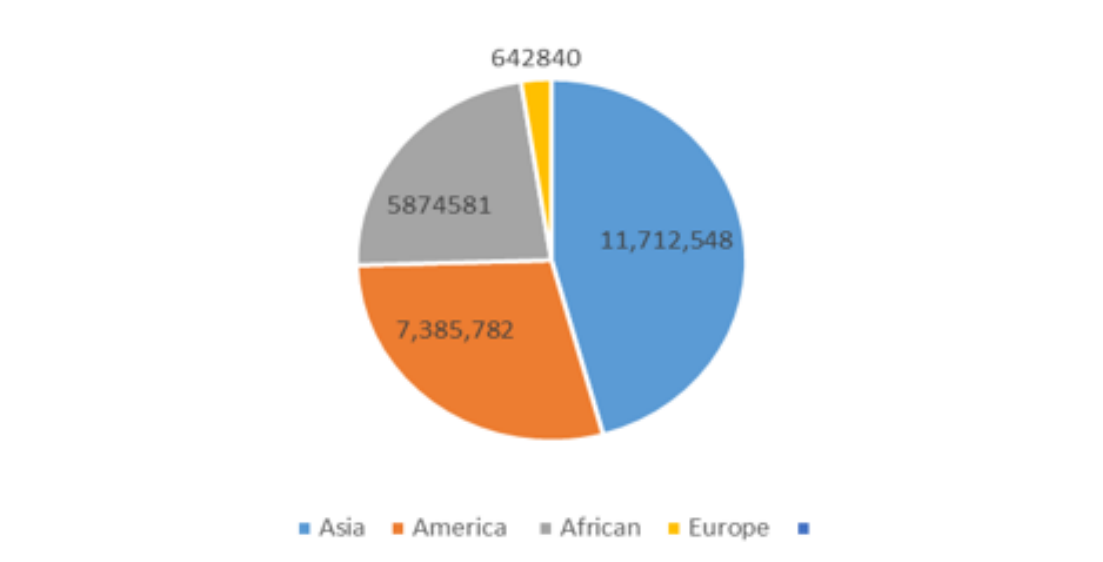
Ugandan agricultural production is dominated by an estimated 2.5 million SHF households – that is 90% of the total farming community. Most of these households own less than 2 acres of land. Despite good agro-climatic conditions, including two annual rainy seasons in most parts of the country, SHF productivity is low. Major sectoral constraints include limited access to quality inputs, low adoption of modern technology, and lack of storage and market infrastructure.

2.1.1 International context

Globally, beans are the most important legume for human consumption. They are estimated to be the second most important source of dietary protein and the third most important source of calories. It is estimated that about 20 million tonnes are produced annually with a market value of \$10 billion² (FAOSTAT, 2012).

Demand for pulses has reached an all-time high, driven by demand for a substitute nutritious protein, as consumers shift from traditional protein sources such as meat due to rising awareness of healthy foods. They enable poorer households to avoid rising meat costs. By continent, Asia is the leading producer, followed by the Americas, Africa and Europe (See Figure 1). The world's leading producers are India, Burma, Brazil, United States, China, Mexico, Tanzania and Uganda. In Africa, Uganda is second to Tanzania, according to 2018 United Nations Food and Agriculture Statistics.

Figure 1: Global bean production in tonnes



Source FAOSTAT, 2018

South Asian countries, especially India, are increasing their bean imports from East Africa, driving global pulse demand. Factors favouring East African producers include logistical

² FAOSTAT, 2012

convenience, the availability of raw materials for processing and low Indian processing costs³. Other major exporters to India are Myanmar and China, which each supply about 40% (2013-17 average) of India's total dried bean imports.⁴ Dried beans comprise 75% of imported bean products globally. The leading importing countries include Brazil, which imports 0.24 million tonnes annually, the United States (0.19 million tonnes) and India (0.15 million tonnes). Uganda's exports are small, supplying less than 1% of India's imports (See Table 1). This is attributable to issues related to quality and variety. However, there is potential to increase exports to India through increased production of sugar beans and red kidney beans of the right quality.

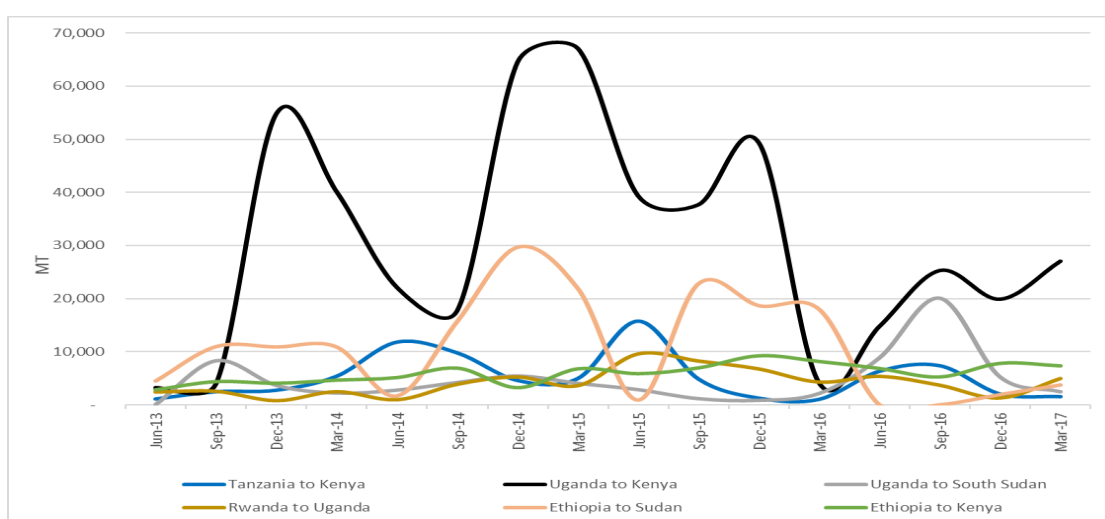
Table 1: Trends in Uganda's dry bean production and export volumes (in tonnes), 2010 to 2016

Year	2010	2011	2012	2013	2014	2015	2016
Production (ha)	949,000	915,445	869,607	941,182	1,011,435	1,012,446	1,008,410
Export (international) volume in tonnes)	4,640	5,857	8,208	21,034	9,967	3,894	3,691

Source: Production statistics – FAOSTAT, 2018; Export Volume – ITC 2018

At the intra-regional level, dry bean exports from Uganda have grown over the last decade due to favourable policies such as regional integration, promotion of non-traditional export commodities and demand-supply deficits in neighbouring countries. The volume of beans exported from Uganda increased from 157,152 tonnes in 2015 to 200,000 tonnes in 2017. The most important markets are South Sudan, Kenya and the Democratic Republic of Congo (DRC). Major competing countries supply the same markets, including Tanzania and Rwanda. Most cross-border bean exporting is informal. Intra-regional trade is driven by seasonal deficits in neighbouring countries, as well as proximity and favourable treatment in terms of free and easy movement of goods. Kenya is the region's intra-regional importer of Ugandan beans (See Figure 2).

Figure 2: Quarterly sum of formal and informal cross-border trade of dry beans in main market corridors in Eastern Africa



Source: FEWSNET and EAGC, April 2017

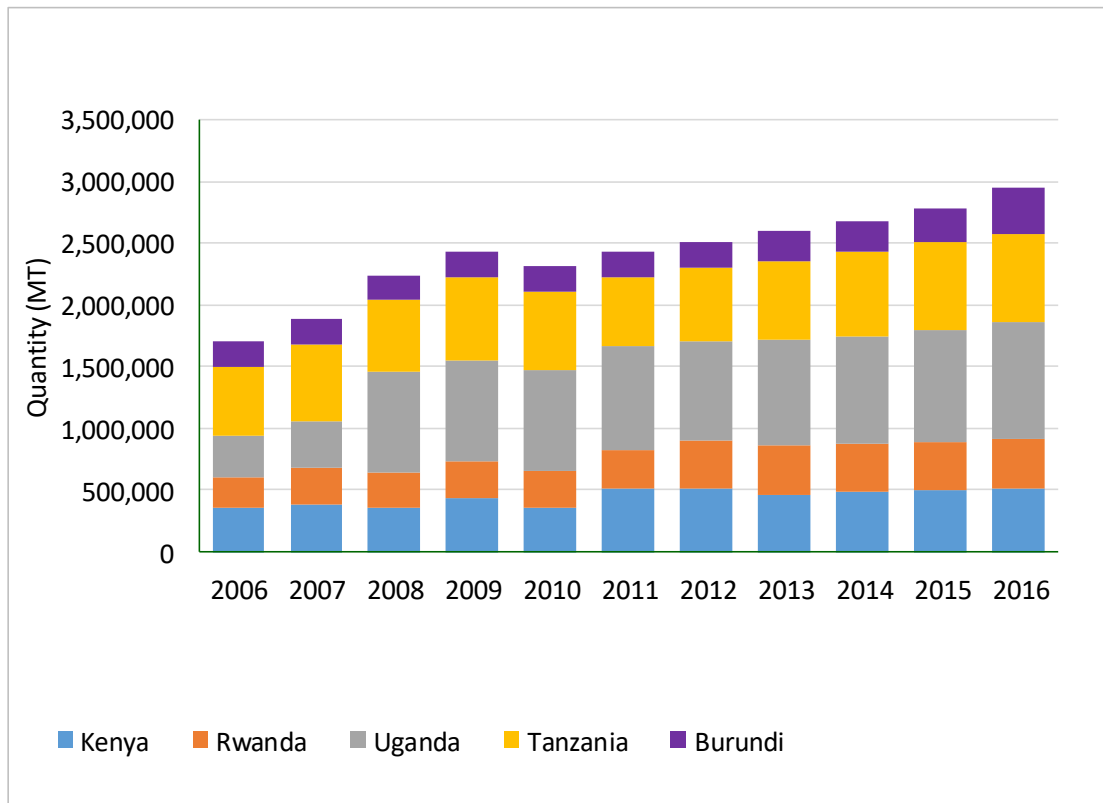
Bean consumption in the East Africa Community (EAC) has been increasing ever year for the past decade (See Figure 3). Out of the 2.95 million tonnes consumed in the EAC during 2016, Uganda's bean consumption accounted for 32%, followed by Tanzania with 24.5%

³ ITC, 2018

⁴ FAOSTAT, 2018 and ITC, 2018

and Kenya with 17.2%. Rwanda and Burundi each accounted for about 13% (See Figure 3). It is projected that by 2030, total demand for beans in the EAC will almost double due to growing populations, political stability and sustained yearly economic growth of around 7%. These factors will increase the importance of beans as a staple and an affordable protein source across the region.

Figure 3: Bean consumption in EAC



Source: FAOSTAT 2018

2.1.2 National context

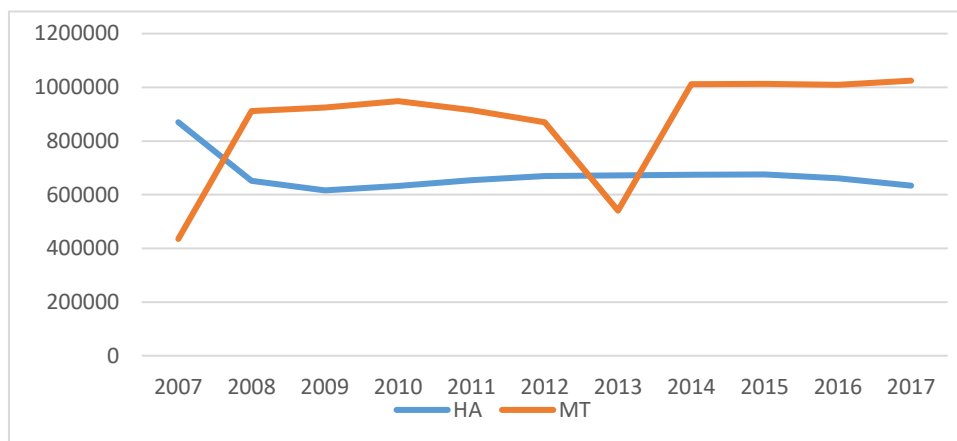
Agriculture is the lifeblood of Ugandan SHF households. It also is the sector most vulnerable to climate change due to high dependence on unpredictable climate and weather for mostly rainfed production. Projections show that agriculture systems will suffer from climate change, threatening food production systems. That, in turn, will threaten the livelihoods and food security of millions of people, especially women, who depend on agriculture¹. Agriculture also provides the primary sustenance of SHF households, giving them food and income.

Southwestern Uganda is the leading producer region of beans, contributing approximately 44% of national production. Top growing districts include Isingiro, Kabale, Kamwenge, Kisoro, Ntungamo and Ibanda. Typical of this region, especially Kabale and Kisoro, are a high population density and high levels of land fragmentation. The region grows both the dwarf and climbing bean varieties. Climbing beans are mainly grown in the highland areas, where population density is greatest and production land is limiting. These beans were promoted by the International Centre for Tropical Agriculture (CIAT), and their adoption is aimed at coping with the problem of land degradation and land scarcity, while also increasing food security (Gabiri, 2013). Growing climbing beans maximises the use of limited space (both horizontally and vertically). Climbing bean varieties have been reported to yield two to four times more than bush beans. However, they require a lot of staking. Growing climbing beans allows for piecemeal harvesting – harvesting and eating early pods as pod

loading continues – which enhances food security. Climbing beans are also more tolerant of heavy rains and wet soil (Katungi et al., 2009), making farmer households more resilient to climate-change shocks.

Uganda is Africa’s second largest bean producer, with 1,008,410 tonnes produced on 670,737 ha in 2016. (Tanzania is Africa’s top producer.) The production of beans has increased over the last decade (See Figure 4).

Figure 4: Uganda bean production volume (tonnes) 2007-17



Source: FAO STAT

Beans are prioritised under the National Development Plan 11 (2015/16-2019/20) for improving SHF living conditions. They offer tremendous potential for contributing towards achievement of the revised sustainable development goals (SDGs) on food security, nutrition, health, and poverty reduction among small landholders. Average bean yields are 0.8 tonne/ha, but the potential is 2.5 tonnes/ha. Per capita bean consumption is about 9.8kg annually¹, although some sources report higher consumption (19kg to 22kg)¹. Bean consumption is higher in Uganda compared to other EAC countries and provides 25% of the total dietary calorie intake and 45% of the protein intake.

With their short growing cycle and adaptability to a wide range of growing conditions, beans are a vital source of income for many families, contributing up to 9% of household income in some areas¹. According to a market assessment and baseline study by USAID in 2014, a large part of the bean production in Uganda takes place on small farms ranging in size from 0.4 to 4 ha. It is estimated that 80% of bean growers are smallholder producers on less than 1 ha. Most are women who produce mainly to improve their livelihoods, nutrition and incomes. However, less than 20% of women control the outputs of their efforts¹. The limited return on their labour is a factor that undermines their participation in commercial agriculture and confines them to production for household subsistence.

According to the Uganda National Household Survey (UNHS) for 2012/13, 77% of women in Uganda are involved in agriculture, yet most do not own or control the land. They thus lack security of ownership of the agricultural enterprise on that land. Combined with their lack of ownership and control over land and labour, as well as their disproportionate burden of unpaid care work, women farmers also have limited access to finance, extension services and technological innovation. Additionally, the high cost of improved seed and other technologies forces most farmers, particularly female farmers, to save and use seeds from the previous season, resulting in low production. Beans have also become a significant source of income for farmers and traders. This is partly because beans have a short growing cycle and adaptability to a wide range of conditions, but also because there is increasing demand from both the domestic and export markets, especially Kenya (Larochelle et al., 2016). Production of beans was reported to be increasing at an average annual rate of 5.9%

from 2006 to 2016, and major producing districts include Kibale, Kiboga, Mubende, Iganga, Isingiro, Kabale, Masaka, Mbale, Mbarara, Sironko and Kisoro¹.

2.1.3 Relevant donor and government activities

Numerous initiatives have been funded by development partners, such as the World Food Programme's (WFP) Purchase for Progress (P4P), with its warehouse receipt system, and the UN-FAO's Farmer Field School (FFS). Others include the National Bean Programme (NARO), CIAT, the Pan Africa Bean Research Alliance (PABRA), numerous USAID initiatives, the Integrated Seed Sector Development Programme (ISSD Uganda), Harvest Plus, aBi Trust, AGRA – Kilimo Trust and Sasakawa Global 2000. DFID has a programme called Northern Uganda: Transforming the Economy through Climate Smart Agri-Business Market Development (NUTEC), which is focusing on developing the capacity of medium- to large-scale agricultural initiatives¹.

Meanwhile, Operation Wealth Creation (OWC) was launched by the Ugandan government as an intervention to create a system that facilitates effective national socio-economic transformation by raising household incomes for poverty eradication and sustainable wealth creation. The target is to ensure that all households are continuously engaged in commercial farming. While the initiative has been active in distributing seeds to farmers, it has not been complemented by extension and advisory services. There may be potential for CASA to collaborate with OWC in the bean sector.

The Government of Uganda (GoU), through the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), has formulated the National Agricultural Extension Strategy to guide, harmonise and implement agricultural extension services countrywide to farmers, farmer groups, and other actors in agricultural value chains. This strategy is in response to the GoU's commitment to realise an agricultural revolution in the country in line with the National Agriculture Policy (2013) and the National Agricultural Extension Policy (2016). It is intended to effectively and efficiently provide agricultural extension services to support the sustained progression of smallholder farmers from subsistence agriculture to market-oriented and commercial farming. Furthermore, the Government through MAAIF is promoting the village agent model, which works through private sector intermediaries to deliver demand-driven services closer to farmers, hence bridging the gap between extension workers and farmers. The model has been piloted and tested by Sasakawa Global 2000, USAID Feed the Future Commodity Production and Marketing Activity and NU-TEC, among others.

The World Bank is currently working with the Uganda Ministry of Agriculture to intensify on-farm production of cassava and beans. Additionally, it is investing in improving post-harvest handling and storage and the capacity of farmer associations to enhance their ability to market produce. USAID is investing in market development infrastructure projects that especially benefit SHFs, including improving bean and maize storage, while also working to strengthen value chain management, service delivery and overall institutional knowledge.

2.2 Common farming practices, seasons and trade dynamics

2.2.1 Common farming practices

Beans are mainly grown for subsistence (60% of the total crop), and production is dominated by SHFs who grow on farm holdings between 0.1 and 4 ha, with an average of 0.4 ha/household. SHFs comprise 85% of all Uganda farmers, followed by medium-scale farmers who produce on 5 to 15 ha (12%), while 3% are large-scale farmers with more than 15 ha. SHFs also typically own a few head of cattle and may rear some animals and produce fish – mainly for household consumption, with a little surplus for the market.

Farming is labour intensive and undertaken using rudimentary technology, notably the hoe. All farming is done by the family, particularly women and children in Uganda. There is limited ability to hire farm labour. As SHFs, especially women, typically lack means of transport to

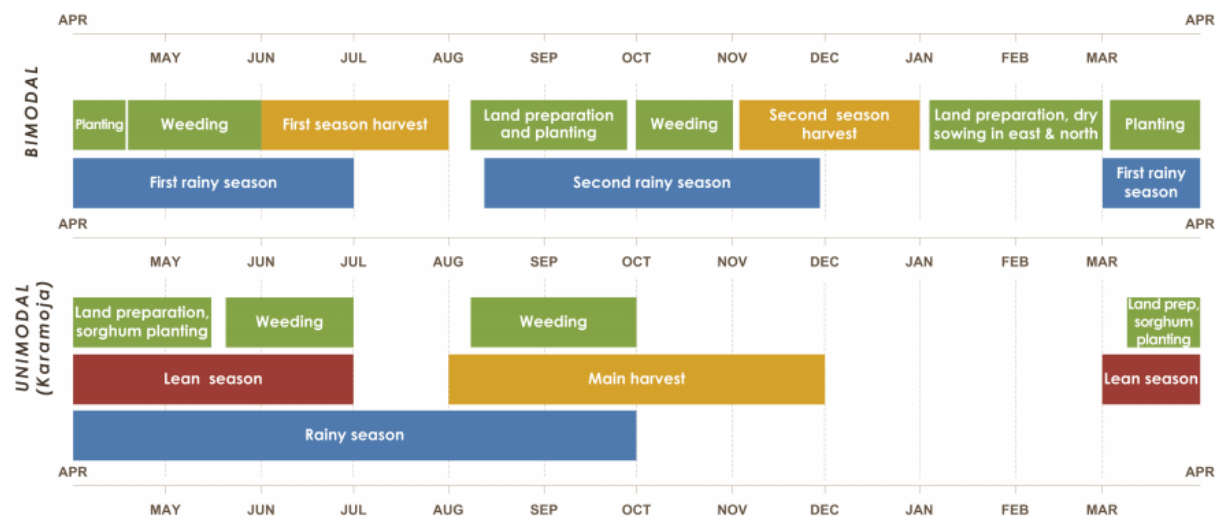
take produce to market centres, they sell their produce to local traders at low prices. Beans are usually transported in sacks on motorcycles, pick-ups or small trucks. Clearly, some SHF have realised the importance of farming as a business and are moving towards semi-commercial production of beans through the adoption of low-input technologies. The team will access stepping-up SHFs in target CASA areas early in the coming quarter.

Most SHFs use low-quality recycled seed or else use grain as seed, despite the introduction of many improved, high-yielding varieties. A few semi-commercial farmers buy seed from seed companies, registered input stockists or local seed producers. Some use agro-inputs, especially foliar fertilisers and pesticides, to improve their yields. Land preparation is key to bean production and is labour intensive. Gardens for planting beans are finely tilled using hand hoes to ensure a clean seedbed. Semi-commercial farmers use tractors to prepare land.

2.2.2 Seasons

The two rainy seasons (a bimodal rain pattern) in most of the country allow for two cropping seasons for many crops, including beans, and they play a major role in food availability and bean trading (See Figure 5). Beans are short maturing crops with two annual cropping seasons: March-June and September-December (Larochelle et al. 2015). Market supply is lower during March, April and September, which are mainly planting months with corresponding increases in bean prices. Supply is high during June-August and December-January. Bean production and yields are vulnerable to adverse weather changes, as they are intolerant of prolonged rainfall or drought.

Figure 5: Bean season calendar



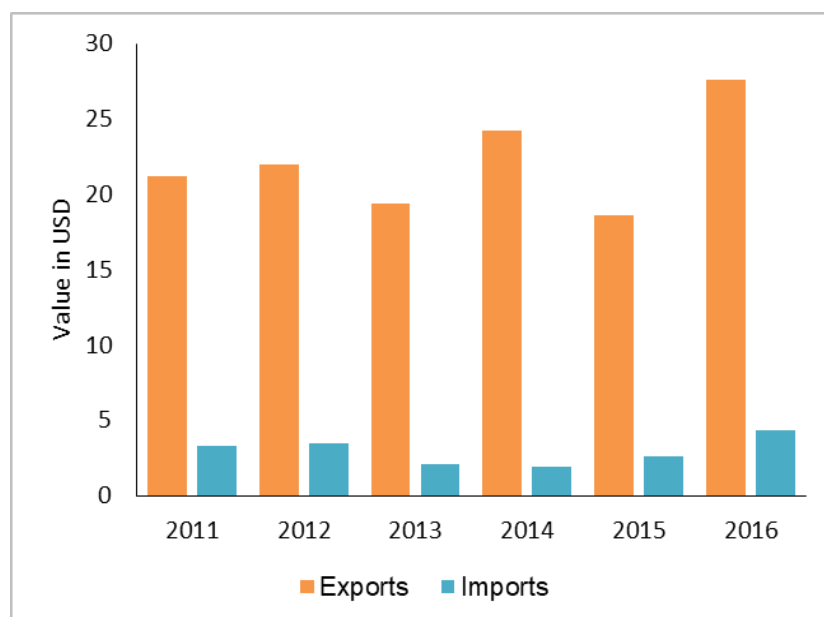
Source: FEWS NET (2010)

2.2.3 Trade dynamics

The growing population, coupled with increasing prices of alternative protein sources, are key drivers of bean demand for most rural and middle-class consumers – beans are a cheap source of protein. Beans have a short window for trading, and farmers typically sell immediately after harvesting to village aggregators or through farmer-based organisations. Traded beans constitute 40% of total bean production, 80% of which is domestically traded and consumed and the remaining 20% exported to regional and international markets. The Bank of Uganda and UBOS (2016) reported that the value of informal bean exports from Uganda increased between 2011 and 2016 from \$21.2 million to \$27.6 million. Most were sent to South Sudan, Kenya, Rwanda or DRC (See

Figure 6).

Figure 6: Informal cross-border trade of beans (\$ million) in Uganda



Source: UBOS 2016

Uganda imports canned beans mainly from Rwanda, Egypt and the United Arab Emirates (UAE), for sale in urban supermarkets. There is currently no local processing or sale of canned beans.

As with most agricultural produce, bean prices are volatile and dependent upon demand and supply as well as consumer preferences. At seasonal harvest points, prices are low. But they increase during the off-seasons. Fresh beans fetch higher prices than dried beans, while different bean varieties fetch different prices. For example, sugar beans and yellow beans fetch higher prices while single-colour beans are more expensive than mixed beans. Demand for beans among poor rural and urban households is more responsive to changes in price compared with urban, non-poor households, making poor households more vulnerable to price volatility.

There are diverse economic activities within the main southwest bean growing region due to its proximity to neighbouring Rwanda, one of the major importers of Ugandan staple foods. There are three crossing points, the most significant of which is Gatuna-Katuna, where approximately 120 trucks enter and 100 leave Rwanda daily, although 75% of those leaving Rwanda are empty. Kagitumba-Mirama Hills is less congested than Katuna in terms of economic activity on both sides of the borders. A third important border post is Kyanika-Musanze, close to DRC, where popularly traded produce includes maize, cassava and beans. Though the segmentation is not known, several women and youth are engaged in cross-border trade.

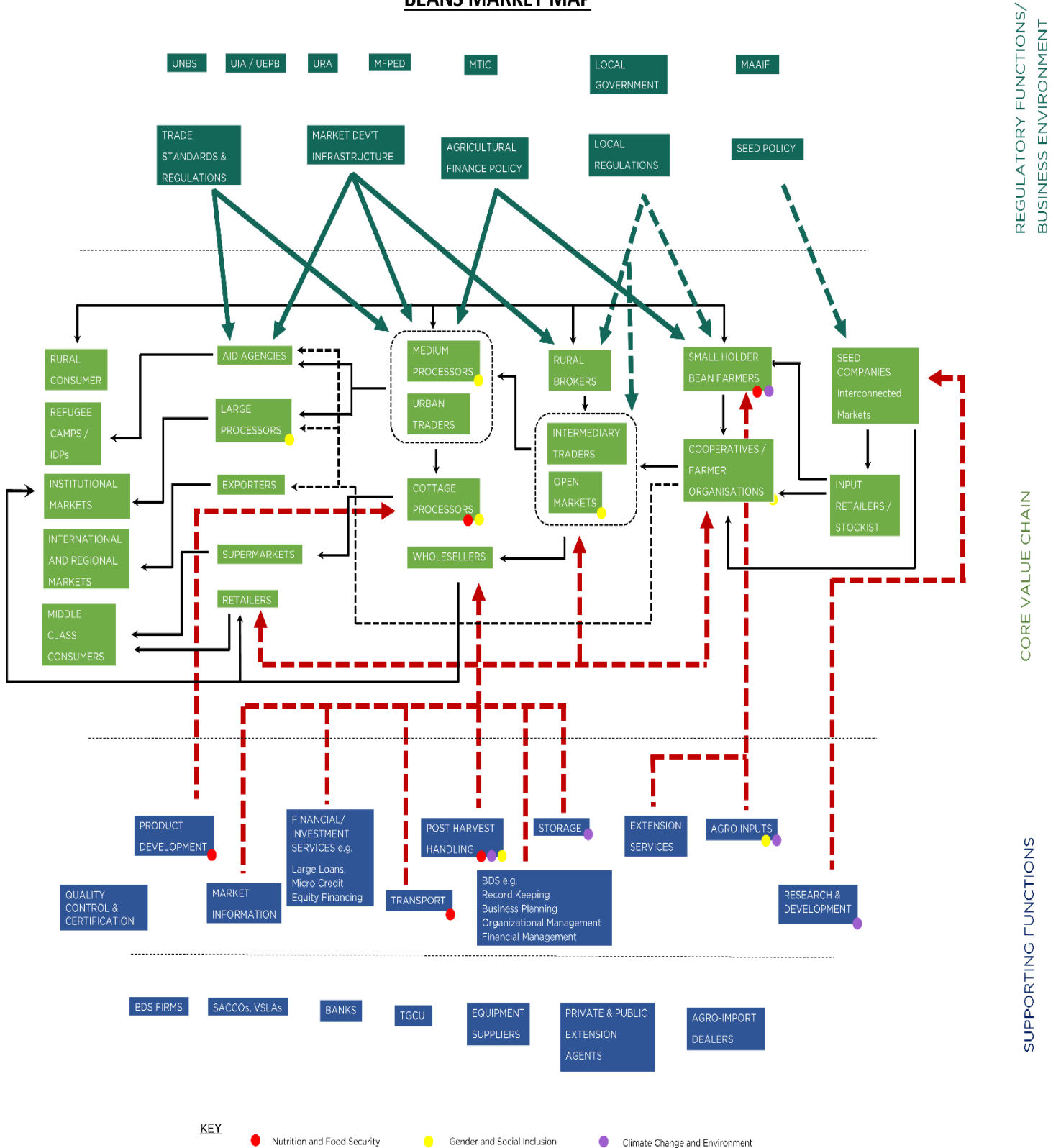
2.3 Sector map: core functions, supporting functions, rules and market actors

2.3.1 Sector map

Figure 7 provides a snapshot of the existing market system and an understanding of the existing flows of product, services and information between various actors. It also serves as the first step towards analysing the problems and underlying causes of market failure by identifying weak or missing links in the support functions and regulatory environment.

Figure 7: Bean sector market map

BEANS MARKET MAP



2.3.2 The core value chain

The core value chain consists of all the transactions and linkages through which a primary product is produced and reaches the final consumers. The main actors in the bean core value chain are producers; brokers, aggregators and middlemen; wholesalers; processors; retailers; exporters; and consumers.

Producers

Production is dominated by SHFs, and 40% of production is sold. Bean production uses low inputs (improved seed and foliar fertilisers) despite a proven return on investment from a combination of other inputs. Women are heavily involved in production.

SHFs include tenured, seasoned, experienced farmers who have lived through the successes and difficulties that accompany farming, as well as younger, newer farmers who bring with them more-modern perspectives, vitality and an ambitious mindset. Younger farmers are better educated and may consider pursuing commercialisation activities if a strong business case is demonstrated – or they may consider leaving agriculture if a compelling alternative arises. The SHFs' situation is characterised by stagnation, low productivity, low incomes and rising vulnerability to shocks of marginalised people, including women, youth, the disabled and the very poor.

Women and disadvantaged groups are often excluded from formal markets. That is, they cannot participate systematically in interactions between different market actors. They may periodically sell some produce, but because of several factors (such as poor access to affordable inputs and lack of access to credit), they may have minimal quantities to sell and lack information on prices and market opportunities. They typically have little bargaining power. Many have limited control over resources or no access to resources at all. Women also have limited capacity to make decisions or ability to become more-active market players. Simply encouraging these marginalised groups to increase their production is not effective if they cannot gain access to the inputs necessary for production; to finance; and to services such as storage, transport, infrastructure that help them sell surplus produce for a decent return. Due to the stringent sourcing criteria of formal markets, small-scale farmers are usually excluded from agriculture value chains. These fundamental issues need to be addressed to facilitate their engagement in commercial markets.

Ugandan SHFs from the target region typically own their land plots either through a lease certificate or under customary law. Under the latter, land law is patrilineal and usually accords women fewer land rights. Women mostly receive secondary usage rights through husbands, sons, or other male relatives. With no titled land, women have limited access to credit. SHFs in Southwestern Uganda primarily grow popular staple crops for subsistence. Maize and beans are the most common, followed by cassava, sweet potato and groundnut. Only small percentages of SHFs grow cash crops such as coffee and sugar cane.

Resource-poor farmers with very few inputs grow beans primarily on a small scale with minimal or no access to fertilisers or other yield-enhancing inputs or practices. Not surprisingly, average yields are low. Much of the bean crop is lost to disease, as well as to insects, pests, drought, low soil fertility and other factors. Beans are popularly intercropped with cereals, bananas, coffee and other crops. Only in a few cases are beans grown as sole crops by organised farmer groups engaged in local seed production. Beans are also grown as cover crops during the establishment of perennial crops, and they are key rotational crops.

Independent studies have shown that SHFs in bean-growing regions exhibit complex attitudes to risk and investment that are coloured by more than simply cost-benefit analysis. A 2015 study

by IFPRI, ODI and UEA³¹ found that not only does risk aversion matter for fertiliser uptake, but several other dynamics are at play as well. Traditional farmers avoid profitable investment, even when the probabilities of investment failure are minimal. The pursuit of profitable investment opportunities is reduced by 'learned helplessness': expecting safety makes farmers cautious; expecting risk increases their risk investment appetite; farmers rapidly adjust to social norms on risk taking; when farmers share losses, they invest less; when profits can be shared with people they care about, farmers invest more; and disagreements on how much risk to take are a powerful source of conflict, hindering agricultural development.

Most producers engage in farming as their primary source of livelihood. Together with their families, they contribute most of the labour force at this level. Women represent most bean producers, but often have lower factor endowments than their male counterparts in land, labour and capital. As a result, women have comparatively greater difficulty in accessing key productivity-enhancing resources such as improved seed varieties, fertiliser and information. Women dominate the production and harvesting stages – planting, weeding, harvesting, threshing, winnowing and sorting. Several bean varieties are commercially available in the market. Women producers make their own choices when it comes to the selection of bean variety, and these include taste and preferences. But in the case of some specialised markets, the choice of variety is dictated by market demand (See Table 2).

Table 2: Cost-benefit analysis for beans using three methods of farming

Cost Category	Cost Type	FARMING METHOD		
		Traditional (USHS)	Low input (USHS)	High input (USHS)
Inputs	Improved seed	-	50,000	80,000
	Bean clean	-		40,000
	Foliar fertiliser	-	42,000	42,000
	Basal fertiliser			120,000
	Round up			15,000
	Pesticides (2 ltr2)	-	30,000	30,000
Field operations	1 st ploughing	100,000	100,000	100,000
	2 nd ploughing			80,000
	Fine harrowing		40,000	40,000
	Planting	40,000	60,000	60,000
	Weeding/spraying	40,000	40,000	52,000
Harvesting	Harvesting	10,000	30,000	50,000
	Drying and Threshing	10,000	20,000	40,000
	Winnowing/Cleaning		40,000	80,000
Marketing	Transport to market		10,000	2,000
	Packaging bags	3,000	5,000	10,000
Total production cost		203,000	467,000	841,000
Expected weight (kg)		200	500	1,000
Production cost/kg		1,015	934	841
	Price per kg (USHS)	Profit margins per kg		
	1,000	(15)	66	159

	1,500	485	566	659
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Most post-harvest activities are manual, with substantial contributions by women. Threshing is done using sticks and is also assisted by youth. Drying is done on the ground with beans subsequently piled in heaps or packed in sacks or tins for storage within the household. A few semi-commercial farmers have designated storage. The SHF bean-handling process from harvesting to marketing is estimated to result in post-harvest losses of up to 40%. SHFs sell at the farm gate to rural aggregators or in nearby towns and open markets. A few producers are organised into producers' organisations and cooperatives, which provide services to members that may typically include seed access, training in GAP, storage, access to credit and grain marketing. Producer organisations and cooperatives have both men and women as members. There are a few women-led farmer-based organisations, especially in local seed businesses and rural aggregators. The main challenge for women is to manage time for crop activities together with household management responsibilities and the other productive roles they play in their communities. Time poverty for women is a 'double workday' phenomenon, often leading to a 'time trap'¹. The risk is that women might make pragmatic choices to remain in or move back to traditional subsistence farming in order to manage other key time commitments.

Traders

Several types of actors, including women, are engaged in bean trading from farm gate to the final consumer, both locally and across borders. Kampala is the major trading hub, followed by cross-border points such as Kabale -Katuna (to Rwanda), Busia, Mbale and Lwakhakha (to Kenya), Kasese (to DRC), and Amuru and Gulu (to South Sudan). Beans are mostly traded by informal actors at cross-border points.

At the farm level, SHFs sell fresh and dried beans either directly to local consumers or to a range of intermediary traders that include middlemen or brokers; local and village traders; and urban wholesalers and retailers. The majority of SHFs sell their products individually. Trading at farm level is mainly dominated by women and usually done in small quantities. They do, however, lack control over the proceeds from their farm work. Therefore they cannot reinvest sales income to increase production.

Rural collectors/aggregators/middlemen are sometimes referred to as 'village agents' depending on the functions they carry out. A majority of the village agents are male, although female agents do exist. They buy from farmers and conduct primary aggregation. Then they sell to medium-sized traders who are either individuals or cooperatives, especially Area Cooperative Enterprises (ACE), which are based mainly in the rural trading centres. When volumes rise after gradual deliveries, they hire temporary storage facilities of 5-10 tonnes capacity. Sometimes they further condition the produce through screen cleaning and drying. They are incentivised by the commission obtained per kilogram bulked and delivered to the traders. The commission received ranges from 20 to 100 Ugandan shillings/kg bulked depending on the season. Many of them handle commodities from along various value chains depending on the location and season.

Medium traders or cooperatives typically own storage capacity of 20-50 tonnes and own or hire trucks. They sell to either large traders or processors such as Aponye Uganda Limited with processing facilities, institutions such as schools, wholesalers like those in Kisenyi and Owino markets, and cross-border markets. The trading of beans at this level is dominated by men since it requires considerable travel. Beans are bought based on volume rather than quality. However, a few buyers, especially exporters and the WFP, are quality-conscious and buy from organised farmer cooperatives that can meet their quality requirements.

Wholesalers are usually based in urban centres, and they sell to institutional buyers such as schools, prisons, the police and retailers. They conduct cross-border trade (or deal with cross-border traders) with large volumes. They typically deal in several agricultural products.

Retailers operate mainly from small shops, open markets and supermarkets – largely serving end consumers demanding less than 5kg. They deal in several varieties of beans, and they are recognised for their role in breaking down volumes to suite customer needs. Numerous women are engaged in the retailing of beans.

Processors

Value addition, from producers to end consumers, mainly includes the cleaning, grading and packaging of bean grain. Value addition is mainly undertaken in Kampala, although some aggregators like Aponye Ltd have established regional grain handling and buying centres in the major bean growing hubs of Mubende and Masaka. Other regional processors include Agroways in Jinja, Grainpulse Ltd in Mukono district, Lira Resort Enterprise in Lira district, AFGRI and Export Trading Group.

Some companies have adopted processing technologies, including cottage level processing, to transform bean grain into different bean products. An example is Nutreal (U) Ltd, incubated by Makerere University Food incubation centre and Peak Value Company, which processes composite bean flour from dried beans. However, bean processing consumes only about 1% of total national production.

Exporters

Bean export covers intra-region (cross-border) trade and international markets. The intra-regional market is dominated by informal cross-border trading, which accounts for over 80% of bean exports. Most exporters are men, although women within the vicinity of the border trading locations are also engaged. Most beans are destined for markets in Kenya, South Sudan, DRC, Rwanda, and Burundi.

Several companies are exporting internationally, especially into lucrative markets, notably India. Their focus is increasingly on specific bean varieties, such as red kidney and sugar beans. However, there is unmet demand for beans due to high quality requirements that are still out of reach of SHFs. Obtaining the right varieties in sufficient volume and quality for export markets remains a major challenge for producers and exporters. The challenge goes back to the point of seed inputs and planting, where the required varieties are not used.

Growmore Seeds is an exporter that has invested resources in developing the input and export market. It has worked with NARO secure F1 seed, which it distributed to selected communities under contracts for seed multiplication and later to farmer groups for commercial production. The company develops the capacity of farmer-based-organisations (FBOs) to meet export market requirements by delivering services, including training, local demonstrations and PHH services. But it still cannot meet its annual export demand. In some cases, exporters import bean grain varieties of better quality, such as the red kidney, from neighbouring countries like Kenya and at a lower price for re-export.

Consumers

Bean consumers include both rural and urban households, institutions and camps for refugees or internally displaced persons. Over 80% of all Ugandan households consume beans (Larochelle et al. 2016), and beans are consumed on average three days a week, making them an essential part of the household diet (Larochelle et al. 2015). Annual per capita bean consumption is around 22kg, much of which is institutional (schools, WFP, prisons, police,

Ministry of Defence, and Prime Minister's office for relief distribution). But there are also individual buyers. Beans are consumed at various stages of growth: fresh (green leaves), immature green pods or fresh grains, dry (to a lesser extent), and in powder form (soups, porridge and confectionary). The dried grain is most popular and is consumed throughout the year. Consumer preference for different varieties is driven by certain varietal attributes such as a short cooking time, suitability for a thick soup, swelling characteristics, good taste, familiarity, long shelf-life after cooking, bean size, colour and susceptibility to weevils (Kilimo Trust 2012).

2.3.3 Key supporting functions

To meet market standards, all market actors operating in the core market require support services to improve their business practices and enhance efficiencies in both production and marketing processes. Such services include inputs supply, extension, transportation, warehousing, market information and intelligence, research and development, financial and investment services and a wide range of BDS.

Inputs Supply

In Uganda, there are two co-existing seed supply systems through which farmers access seed. The formal system is regulated by the government and contributes about 15% of the total seed supply. The remaining 85% is produced through the informal system, which is un-regulated and depends on farm-saved seed from previous cropping (ISSD, 2019). Suppliers include seed companies; urban and rural agro-input dealers (mostly registered under UNADA, the Uganda National Agro-dealers Association) or the Uganda Seed Traders Association (USTA); and local seed businesses¹ (LSBs), which also access capacity building services from both government and non-governmental programmes. For the past 10 years, WAGENINGEN, in collaboration with NARO and MAAIF, has implemented the Integrated Seed Sector Development in Uganda and registered key successes.

Extension services

Extension services for farmers are provided by both the public and private sectors, though the role of the latter is very limited (extension services delivery by village agents is increasing). The Directorate of Agricultural Extension Service unit under MAAIF is mandated to streamline extension services and empower farmer organisations through farmer institutional development to enhance knowledge sharing, information flow, value addition and marketing skills.

Several factors significantly influence farmer demand for extension support and the adoption of improved technologies and GAP. These include crop, livestock and fish productivity, the sale of output and household income. The main factors include the gender and age of the household head, education (including access to information), income sources, land and non-land productive assets, reliance on rain-fed agriculture and access to all-weather roads. Currently, 68% of SHF households remain trapped in subsistence production outside the money economy.¹

Cleaning and storage

According to one report, market demand for storage capacity exceeds 2.2 million metric tons, but only 550,000 metric tons of capacity is currently available.¹ This lack of capacity, combined with the assessment that more than 18% of agricultural productivity does not generate economic benefit due to post-harvest losses, points to a scenario in which significant additional investment in the market would be merited.

Whereas cleaning is not a standalone service but rather embedded in aggregation services, storage is an essential function in the value chain for ensuring quality preservation. Regardless of the volumes, beans need to be stored properly since they lose viability quickly and are also very prone to pest damage. Storage facilities vary from simple storage – like the use of granaries, tins and bags – to improved hermetic bags, metallic silos, stores and warehouses. Although the number of storage facilities at farmer organisations is not well established, a few cooperatives offer cleaning and storage services for their members. However, beans are stored for only a short period before they are sold out. In contrast, registered farmer cooperatives engaged in local seed production offer cleaning and storage services as they await off-takers (seed companies).

Transportation

Transportation businesses are dominated by men because women are socially excluded from driving commercial vehicles for long distances, and there is limited involvement of women in the manual work of loading and offloading. From the point of production to primary aggregation points, and depending upon farmer volumes, produce is mainly transported by bicycle and motorcycle, though sometimes by small pick-ups. Produce from primary collections centres is transported through the chain by trucks of various capacity. Transport costs vary according to the distance between the farmer and the market, the mode of transport and whether it is a single route or double trip (backloading).

Market information

Access to market information is an essential factor for promoting competitive markets and improving agricultural sector development. Current information on commodity prices for each buying location supports farmers and other value chain actors to make informed decisions and minimise their risks. Detailed market information includes selling prices of produce, potential buyers, the quality and quantities needed, the price of inputs and other data. Agricultural market information services support effective SHF access to commercial markets.

Research and development

Research and development in the bean sector focus mainly on the production of improved seed, integrated pest management and soil conservation practices, the production of technologies to strategically alleviate malnutrition, increased yields and stability of the crop to mitigate climate change, and how to minimise the risks of food insecurity and increase surpluses for sale. Examples include newly released improved bean varieties that have been bio-fortified (iron-rich) and are high yielding.

Financial and investment services

The agribusiness investment landscape in Uganda is relatively young but developing⁵. Being part of the wider East Africa Community, Uganda is often regarded as the second-best market after Kenya. Indeed, according to impact investors, private equity firms and venture capital funds, Uganda presents opportunities for investments across the whole investment and sector spectrum. Though often based in Nairobi for operational reasons, most of the actors recognise Uganda's potential.

In terms of sectors, most of the investments are directed at agribusiness value chains (60-70%). Energy (renewable) is second at 10-15% and increasing. Financial services, healthcare and

⁵ CASA Investment Landscape Mapping, Malawi and Uganda, September 2019

logistics are increasing too; together they receive between 5% and 7% of the investments. Other key findings are:

- Impact investors dominate the scene, a sign that the ecosystem is not yet mature;
- Average investment tickets range from \$200,000 to \$2m, with a disproportionately large number of small investments; this average also supports the known challenge of the 'missing middle': few actors want to invest between \$2m and \$5m in SMEs that are too big for monetary financial institutions (MFIs) and yet too small, too risky and too unattractive for conventional private equity investors looking for financial returns;
- The preference is for short-to-medium-term debt and quasi-equity (mezzanine, convertible etc.) instruments, enabling investors to both reduce risks and satisfy promoters' fear of losing control via equity investments;
- Investments from private equity and venture capital investors above \$2m are limited in number relative to: (i) existing SME funding needs; (ii) the locally based opportunities available; and (iii) risk perception of investing in agribusiness in Uganda;
- Though fairly well developed in Uganda, business incubators and accelerators could be further supported financially to make them sustainable over the long term. Partnering could teach them entrepreneurship, capital raising and pitching the way investors expect it.

In terms of sectors, investors suggest that opportunities exist within the following agribusiness value chains: cereals and seeds; poultry and horticulture (especially for export); and apiculture. Investors normally shy away from the primary sector, which is perceived as too risky (too many non-controllable risk factors) and has expected returns that are too low. They favour large-scale production with processing, especially for export markets. If those aims can be reconciled with investments in SHFs, they will attract a social bonus – but the main objective is financial return.

Evidence gaps identified include: the limited number of case studies and examples of profitable and impactful business models; limited actors involved in agricultural access to finance; scarce crop and country-specific data on productivity and markets; and a limited number of exits to stir the interest of investors.

Other opportunities investors have suggested are infrastructure, early stage businesses with donor funding and technical assistance, and aggregation, processing and mechanisation initiatives.

CASA's finance landscape mapping exercise is on-going, and interim findings on constraints highlighted by commercial banks in lending to SMEs include:

- Limited bankable agri-business deals;
- Limited acceptable collateral;
- Fragmented agricultural value chains;
- Price instability and weather-related risks;
- Lack of market information on agri-sectors.

Insurance Services:

As with crop production in general, the bean value chain is associated with many risks (unstable prices, drought, pests and diseases), which have contributed to low productivity. This prompted the GoU to introduce the 5 billion-Ugandan shilling Agriculture Insurance Premium Subsidy Scheme in 2018, targeting both crop and livestock farmers. Ugandan insurance companies with agricultural insurance products include APA, Gold Star Insurance, Lion Insurance, Phoenix

Insurance, Jubilee Insurance, UAP Insurance, CIC General, First Insurance Company, National Insurance Company and Pax Insurance. Despite this, and except for some modest uptake by livestock owners and coffee producers, agricultural insurance has largely not been embraced by farming communities.

Business development services (BDS)

Agri-entrepreneurs require both financial and technical support to start and expand their businesses, while stepping-up farmers require the same to commercialise. Technical support includes BDS to improve business administration (policies, procedures, internal controls) and financial management systems. Dedicated firms provide these services to larger urban-based firms, but support for agribusiness SMEs and farmers in rural areas is limited. Some organisations offer free or subsidised BDS to women-led businesses. These include the Uganda Association of women lawyers and the Uganda Women Entrepreneurs' Association Limited. NGOs fund some BDS for farmer groups.

2.3.4 Supporting rules and regulations (enabling environment) and enablers

Rules (formal or informal) and regulatory functions comprise structures, norms, cultural customs and institutions that are beyond the control of the actors involved in the core value chain. Rules may also include localised regulations from local government, informal norms (land ownership, for example) and codes of conduct such as gender roles. They include the following:

Government and regional plans, policies and programmes

Government plans and policies include:

- The Agriculture and Pulses sector Policy, under the National Development Plan II (NDPII, 2015/16-2019/20), focusing on issues of strengthening agricultural research, technology adoption at the farm level, increasing access to and effective use of critical farm inputs, promoting sustainable land use and soil management delivery;
- The National Agricultural Extension Policy (NAEP) and the National Agricultural Extension Strategy (NAES).
- Agriculture Produce Marketing Bill
- National Agriculture Advisory Development Services (NAADS)

Regional programmes include:

- The Regional Comprehensive Africa Agriculture Development Programme (CAADP); and,
- Common Market for East and Southern Africa (COMESA).

Dry beans standard

The harmonised dry beans standard for the East African Community (EAC) is intended to foster intra-regional trade by enhancing the movement of produce in the EAC and improving access to international markets.

Social norms and gender imbalances

Men and women 'have complex and shifting roles', and decision-making on agricultural production, marketing and spending is complex. In Uganda, women are generally disadvantaged in terms of domestic decision-making power, and they have little ultimate

authority over marketing, sales, income and spending.¹ Heavy workloads with multiple economic and household responsibilities still frame household decision-making dynamics and limit the agency of women, which has important implications for how assets are converted into positive outcomes.

The scaling up of women's cash-related activities in the context of these changing dynamics has resulted in significantly increased responsibilities for women. Women's time poverty is particularly acute in Uganda given large family sizes and changes to household dynamics, which have seen women take on the dual role of breadwinner and home carer.

Women continue to face legal constraints on their ability to own, inherit or otherwise use property that limit women's incentives to invest in land. Legal barriers discourage women's participation in markets and make it more difficult for them to leverage land rights to become entrepreneurs, with broader consequences for communities and national economies. While Uganda recognises international laws that guarantee women's rights to land and property, implementation of these rights is often weak. Social norms also influence whether women can, or cannot, participate in decision making about important family questions, such as how to use land and the income that land generates. However, when women have more decision-making power in their households as a result of more secure land rights, they invest in their children, increasing spending on education, health care and nutrition.

3 Analysis

This analysis seeks to understand the underlying causes of the issues observed on the surface prior to devising solutions. It also seeks to understand the impact of gender and social inclusion; nutrition and food security; and climate change and the environment.

3.1 Problems and underlying causes

The bean sector plays a critical role in the national economy but faces several challenges that impede SHF productivity and marketing impacting on SHF capacity to commercialise, especially women. For the bean sector to begin to impact poverty reduction and food security, key challenges within the sector need to be resolved.

3.2 Problems in the core Functions and underlying causes

3.2.1 Smallholders have low productivity

Low productivity is a common feature of smallholder beans production in most growing areas, including Southwestern Uganda. The productivity (yield/acre) has been reported at 0.25 tonne per acre, compared to a potential of 0.8 -1.2 tonnes depending on the variety. Low productivity is perpetuated as farmers, especially women, have low access to quality inputs; SHFs do not perceive the benefits of using quality inputs, and farmers are often not trained in how to use the inputs. Women, already suffering from time poverty, are also influenced by the extra labour needed to utilise the inputs. Moreover, the risks associated with an investment in higher productivity and higher quality inputs are high, and the rewards uncertain, with no guaranteed market that offers a price premium for higher quality beans.

3.2.2 Smallholders have substantial post-harvest challenges

Smallholder farmers suffer high post-harvest losses at the farm level due to poor post-harvest handling practices. Farmers have limited information on appropriate PHH technologies, including quality standards and equipment. They also lack appropriate PHH supporting services such as drying, threshing and cleaning beans due to limited finance to procure improved PHH technologies. This has kept farmers into continuous use of rudimentary processes of threshing beans using sticks resulting in broken grains, and clean beans using local winnowers. The poor post-harvest handling often leads to poor produce quality, including a high prevalence of mycotoxin contamination (fungal attacks) posing a significant problem in the sector. Poor PHH further reduces sales prices and lower nutrition value, including for the farming household. Also, poor storage at farm level is still a common problem. SHFs still exhibit limited use of high-quality storage techniques towards ensuring that crops maintain their value between the farm gate and the processor, retailer or consumers.

Adoption of hermetic grain storage equipment (HGSE) though still low, has shown to reduce post-harvest food losses (PHL), improve nutrition and increase households' income. For this reason, the World Food Programme (WFP) launched an intervention in Uganda to deliver these improved technologies. Since 2014, WFP has succeeded in building a strong supply chain and delivering almost 100,000 storage solutions. Nevertheless, equipment is provided through substantial subsidies, and the HGSE market is still highly dependent on WFP's coordination. To ensure the sustainability of the project beyond WFP's involvement, the project was planned with an exit strategy where the private sector would take over the provision of equipment as a profitable business. This is compounded by lack of SME warehousing services.

3.2.3 Poor market linkages between SHFs and processors

The trading of bean grains in Uganda is highly informal and unstructured with limited product differentiation or value addition. Smallholder farmers are not integrated into markets because they usually operate individually (highly fragmented) or they are organised into weak farmer organisations characterised by weak leadership (lack of trust among members) and poor management capacity. The FOs lack the commercial acumen and business skills to effectively deliver required services to members, including the ability to create and sustain access to commercial markets. Relationships between farmers and buyers are poor and are often one-off due to informal trade practices governing transactions along the bean value chain. Individual SHFs and weak producer organisations have low bargaining power and are usually offered low farm-gate prices due to lack of business acumen. The poor relationship between producers and buyers, weak rules governing trading and poor information flows constrains SHFs from exploiting better commercial market opportunities.

Limited aggregation at FBO level (farmer cooperatives, associations, SMEs, etc.) is still prevalent. Reasons include weak management capacity; lack of commercial acumen; fragmented producer members; and weak services delivery to members including the inability to create and sustain access to commercial markets other than for seed. Processors/buyers incur high aggregation costs working with fragmented supply, where volumes of beans from FBOs are too small to attract serious offtakers. In addition, poor rural road networks increase buyer transaction costs. On the other hand, FBOs do not aggregate due to lack of incentives such as differentiated pricing, lack of cash during the peak season and poor quality beans that do not attract a premium price. There is high potential to adapt/replicate integrated cooperative services models such as that of Baban Gona in Nigeria the development of which was financed by DFID-funded interventions.

A lack of contractual agreements limits access to competitive markets. Poor enforcement of contract farming disputes in Uganda, especially by local governments, reinforces unstructured, informal bean trading, which often involves numerous profit-taking trading actors. Contracting may be easier for all parties (of takers and SHFs) when a third party, typically a government agency or NGO helps facilitate and monitor contracts. Additional public roles include registering and upholding land rights, providing model contracts, and possibly some regulation of contracts. To this effect, there has been limited success by large buyers/processors in building trust and relationships directly with smallholder farmers and farmer organisations. Also, contracts are rare due to beans being one of the major staple foods in rural communities with high levels of side selling.

3.2.4 All actors along the value chain lack access to finance

At the farm level, the lack of access to credit limits the farmer's ability to invest in improved pre-production and post-production technologies for increased productivity, and crop quality that builds reliable supply chains. The existing loan products offered by monetary financial institutions (MFIs) and non-monetary financial institutions (NFIs) may not be suitable for agricultural production due to high-interest rates as well as poor repayment terms. At the same time, financial institutions do not offer tailored loan products appropriate for the various segments of the clients. Farmers are perceived as riskier customers due to higher rates of default (repayment issues). Financial institutions often consider SHFs to be unattractive clients because of insufficient collateral, lack of written records, small loan sizes, and high transaction costs.

At SME and FO level, traders and aggregators also lack appropriate credit facilities (working capital) that can facilitate volume purchases, medium-term storage and other financial needs. In

addition, high transaction costs due to long distances and poor rural transportation infrastructure limits the expansion of financial institutions into rural areas. Large grain off-takers also require improved access to finance as they rarely have enough timely working capital to finance buying agents to offtake from and pay SHFs. Local financial institutions (LFIs) are a major source of finance to Uganda's private sector, but due to high economic risks, debt financing has been very costly cost.

3.3 Services and enabling environment problems

Many issues shape the way market actors in the value chain and supporting markets do business and secure their livelihoods. Examples of enabling-environment issues include macro-level economic and market trends; laws, policies and regulations; quality, trading and other standards; or informal norms in the economy, society, and/or culture. These issues can be leveraged to improve the flow of goods along the value chain. There are several services functions and enabling environment factors which affect the underlying causes of the problems faced by the bean sector core actors highlighted above. In order to strengthen the bean market system, it is vital that identified weaknesses in these services and enabling environment factors are addresses, if not by CASA, then by other partners.

3.3.1 Problems with the support functions and underlying causes

Weak extension services for farmers

Despite well-intended GoU extension reforms, central-government funding for extension services is low. This limits the capacity of extension workers to reach out to the large numbers of scattered smallholder farmers to provide appropriate knowledge, technologies and all necessary information on the entire value chains for the economic growth of SHFS. The current ratio of extension worker to farmers is estimated at 1:15,000. SHFs are lucky to receive even one extension visit during a production cycle. The extension system is primarily farmer-focused with little attention to other value chain actors and service providers despite their functions in the market system.

Limited Access to BDS

The lack of business development services (BDS) in Uganda has been considered as one of the major constraints for identifying investable SMEs for portfolio development. FBOs and SMEs lack the business skills and capacities to successfully manage their operations. In many cases, they seem not to be aware of the importance of BDS. Unless funded by development partners, BDS providers are unlikely to seek out markets for their services in rural areas. To avoid taxation, SMEs may prefer to remain informal, so paying for BDS is not attractive.

Limited access to financial services and investment capital

(i) Finance:

Access to finance for SHFs can create a virtuous cycle. Pre-harvest finance allows farmers to access high-quality inputs that boost productivity and crop quality while helping ensure a more reliable supply chain for agribusiness companies. Post-harvest finance is critical for cost-efficient aggregation of crops. Considering the risks in dealing with SHFs, improving access to finance is an opportunity to make agribusiness companies and their business operations more efficient and resilient¹.

While various agricultural financing products have been developed, awareness is still low amongst SMEs and SHFs. Banks are largely disconnected from farming communities by whom they are perceived to be expensive while the requirements to access credit facilities is beyond

the reach of most farmers. Traders also lack appropriate credit facilities (working capital) that can facilitate volume purchases, medium-term storage and other financial needs.

(ii) Investment Capital:

CASA's feedback to date from lending and impact investment professionals highlights several realities in the market that would shape the ability of agri-businesses to gain their confidence:

- Investment is still primarily led by individuals and families.
- There is a small but increasing presence of private equity/debt investors.
- There are concerns that many potential investees are not yet investable.
- Credible information on sub-sector growth prospects and benchmarking metrics are lacking.
- Credible data on borrowers' historical credit activities and performance are lacking.
- Adequate collateral for debt investment is lacking.

The criteria of impact investment actors met to date by CASA are unlikely to match the financing needs profile of most SMEs in the value chain that would directly engage large numbers of SHFs. The capital injection needs of many of these agri-enterprises are at 'small ticket' levels of £20,000-75,000. But impact investors seek a minimum placement of €100,000.

Inadequate research and development

Despite concerted collaboration among various institutions on research and development, there is very limited dissemination of information and technology and consequently low adoption among SHFs. There is also limited work on value addition and limited product differentiation.

3.3.2 Problems with supporting rules and regulations

Weak regulatory environment

The government's ineffectiveness at regulating and controlling counterfeit agro-inputs, coupled with an ineffective bean seed production and certification system, has deterred private investment and constrains SHF commercialisation. In addition, the poor state of rural infrastructure, notably roads and power supply, restricts local SME expansion and SHF commercialisation prospects. Additional transaction costs incurred by SMEs are usually either transferred to SHFs via lower purchase prices or to consumers via higher terminal market prices, or sometimes both.

Bean standard not enforced

Aggregators and brokers typically do not buy beans based on quality parameters. There is scarcely any enforcement of quality standards based on the EAC Bean Standard. Traders purchase beans based on subjective visual criteria such as variety, colour, size, moisture content, insect damage and foreign matter. There are no incentives for traders and processors to promote or adopt the Standard apart from those few supplying WFP and international markets.

Social norms and gender imbalance

Women face severe barriers to participation in markets. They are overloaded with household and farming work, which affects their access to resources – in particular to agricultural information (for example on new crop varieties), GAP and market conditions. This, in turn, limits women's ability to make informed decisions on production.

4 Strategy for change

CASA's bean strategy is founded on optimising engagement with SMEs seeking investment to drive growth, while addressing constraints on smallholder producers' commercialisation and engagement of more. (In many cases, these consist of business opportunities that are not taken up.) Out engagement is typically expected to involve a journey with partner SMEs from preparations for receiving investment (such as business model development and BDS support) through to matchmaking with commercial finance providers and impact investors.

4.1 Process leading to strategy and project outlines

During the inception phase, CASA employed the Inclusive Markets approach to arrive at the inception deliverables of this Inclusive Growth Strategy document and the Project Outlines within. Supported by the project's technical advisors, the CASA country teams completed the following steps of the IM approach:

- i) Development of the sector dynamics and institutional landscape (combination of desk research and key informant interview);
- ii) Analysis of systemic constraints and underlying causes of rather slow investment uptake for commercialisation of the bean sector including validation with market actors;
- iii) Development of the inclusive growth strategy for stimulating greater investment in poultry sector along with theory of change and vision of change;
- iv) Mainstreaming of CASA crosscutting areas in (i) and (ii) above;
- v) Identification of intervention areas and design of outline projects, including initial interactions with potential SME and other partners and service providers, and completing pre-due-diligence assessments of SMEs;

The next steps in the IM process are: (a) scoping of at least five project concept notes⁶ (first three months of implementation), including mainstreaming of CASA crosscutting areas; (b) design of project plans, including mainstreaming of CASA crosscutting areas and monitoring and results measurement activities, as well as partner due-diligence exercises, negotiations and contracting; (c) implementation, monitoring, results measurement and evaluation (most projects expected to commence from 1 April 2020 but possibly some quick wins beforehand); and (d) collaborating with Component C on preparing bean SME success stories and engaging with investment actors.

For DFID to agree that a project is relevant, it may be necessary to make some changes to the outline bean projects portfolio during scoping of the project concept notes and, subsequently, for the second round of projects.

CASA employs the following criteria to select relevant projects for producers, SMEs and the enabling environment:

- Does the project directly or indirectly target smallholders, especially women, with the capacity to step up – that is, increase production, productivity and quality to meet market requirements?
- Are there suitable actors available to partner with?
- Does the project avoid distortion of the market and create a sustainable market?
- Does the project create access to commercial markets for target smallholders?

⁶ Initial samples of project concept notes were provided to DFID during the Inception Phase for feedback.

- Does the project demonstrate a business case or new business model that will attract investment to commercialise smallholder supply chains?
- Is the project feasible, sustainable, scalable and relevant (in terms of factors such as resources and timelines)?
- Are the cross-cutting issues incorporated where relevant?

CASA employs the following criteria to select SME partners:

- Annual turnover under \$2.0 million, or less than 50 employees;
- Must want finance in the range of \$100,000 - \$1,000,000 either immediately or in the foreseeable future. (Exceptions could be possible to the lower limit, where there is expected to be a second round of finance meetings or the limit is expected to be exceeded during the life of the CASA project);
- Ideally has not received finance in the past. (An exception may be an SME seeking finance within the above range for a new stage of expansion);
- Engages or will potentially engage large numbers of smallholders in the supply chain; and passes CASA's due-diligence assessment.

Work on identifying a roster of potential BDS providers for engagement, including assessment of service and delivery capacity building needs, will commence early in implementation. CASA expects to focus on a small number of the most relevant providers. Capacity building may centre on services development, testing and service evaluations and consumer and other research. Provider selection criteria are expected to include:

- Capacity to deliver services;
- Close to SHFs and SMEs in culture, operating environment and geography;
- Low cost structure;
- Commercial focus, business culture and accounting and management systems;
- Organisational independence, especially from donor funds;
- Focus on services for SHFs and agri-business SMEs.

CASA has completed an initial mapping of the investment landscape in Uganda. The lists of actors from these exercises will be updated periodically.

4.2 Market potential and growth opportunities

Beans are among the government's 12 strategic priority crops under the National Development Plan 11 (2015/16 to 2019/20) for improving SHF living conditions through increased food security, higher household income and improved nutrition. Ugandan bean production has been increasing steadily in response to increasing national and inter-regional populations, and the country is a net exporter to countries such as DRC, South Sudan and Kenya, where demand exceeds local production. Premium varieties in demand include red-kidney and sugar beans. Other factors driving growth include the EAC Common Market and its harmonised standards.

Immediate opportunities for SMEs identified by CASA include filling large gaps in business services and financing provision for producers. Integrated business structures and contracting schemes between major downstream off-takers and producers are likely to require intermediary management by local SMEs, especially for expanded production of premium varieties.

Processing opportunities such as precooked beans have not yet been taken up, while flour processing has expansion potential.

The introduction and promotion of bio-fortified iron beans in Uganda by Harvest Plus should increase their production and projected demand. Processors and buyers are still operating below their current installed capacities with interviewed processors' utilisation at less than 75%. Export markets can be further exploited, especially in South Asia (India in particular). The largest estimate for global pulse consumption is 32 million tonnes by 2030 (ITC 2016).

The following three drivers of commercialisation have been identified:

1. Increasing aggregation of quality beans for commercial markets

Currently, many bean products supplied to market are of mixed variety with limited differentiated, and much of the trade is informal. Various changes are needed to ensure that high-value varieties are produced and aggregated in greater quantities for premium markets. Farmers also need access to finance to upgrade their production.

2. Supporting SME growth and expansion

Lack of awareness and of opportunities and access to finance and investment is holding back SME expansion. CASA will facilitate access to BDS for SMEs to prepare to receive investment, as well as helping to match make with sources of commercial finance and investment.

3. Improving the business environment for inclusive sector growth

The absence of a proper business climate where enterprises can initiate and prosper economic development. Proper policies, institutions and services will enable the private sectors to successfully promote investments attract capital and engender economic growth. CASA will support multi-stakeholder platform to address barriers to conducive business enabling environment.

4.3 Vision of change

For the bean sector, a vision of change has been outlined at four levels:

4.3.1 Vision of change for smallholders

- *SHFs increase incomes by delivering greater volumes of better-quality beans to competitive markets that offer better prices. This leads to better incomes, food security and nutrition.*
- *Women farmers increase their control over proceeds from their farm income and re-invest their earnings to increase production and improve their welfare.*

4.3.2 Vision of change for SMEs and FOs

- SMEs and FBOs increase aggregation of quality beans and strengthen their ability and capacity to access better markets through sustainable market linkages built on strong business relationships.
- SMEs and FBOs access finance and investment to grow their operations. They increase agribusiness investment in the expansion of services delivery to SHFs, leading to higher growth and greater resilience to climate change and the environment.
- *And established network of women-owned agribusiness SMEs addresses constraints specifically faced by women.*

4.3.3 Vision of change for processors and exporters

- Processors and exporters move towards full capacity utilisation of their storage and processing facilities.
- Processors build strong business relationships with farmers and have sustainable systems the reward farmers through quality differentiation payments.

4.3.4 Vision of systemic change for the sector

- An inclusive bean sector offers growing opportunities for investment. It will increase the potential for smallholder farmers to move into sustainable commercial agriculture.

4.4 Intervention areas and project outlines

To realise the vision described above, the CASA team employed an Intervention Logic Analysis Framework. After identifying potential projects and activities linked to each core problem, the team further streamlined the activities across all the ILAFs and grouped them into three broad project areas that cut across all the ILAFs. These and their linkages to growth drivers and investment are summarised in the table below.

Table 3: Intervention areas and their links to growth and investments

Intervention area	Link with drivers for growth	Potential project	Link to investment readiness	Possible investors in future
Increase aggregation of quality beans for commercial markets	Growing domestic and inter regional demand	<ul style="list-style-type: none"> - Developing outgrower seed production models to increase availability of quality seed - Strengthen producer aggregation of quality bean products for commercial offtakers 	BDS for producer groups on business skills, resource mobilisation and financial management	MFIs, SACCOs FIs (Opportunity Bank, Centenary Bank)
Support SME growth and expansion	Demand from SME processors and producers	<ul style="list-style-type: none"> - Support SMEs to prepare for investment. - Stimulate interest in investing in bean sector Opportunities. 	<ul style="list-style-type: none"> TA/grant support for business model and innovations development BDS to prepare the partner for receiving investment Matchmaking with commercial finance providers and 	<ul style="list-style-type: none"> FIs (Opportunity Bank, Centenary Bank, DFCU, Stanbic bank, Equity Bank) Impact Investors (Pearl Capital Partners, AgDevCo, Yield Uganda, aBi)

			impact investors	Trust, Uganda Development Bank
Improving the business environment for inclusive sector growth		Support the Uganda Grains Platform to promote widespread adoption of the Grain Standard	N/A	N/A



Commercial Agriculture for Smallholders and Agribusiness

The CASA programme makes the commercial and development case for investing in agribusinesses that source produce from smallholders. It does this by demonstrating how this can be done effectively, by bridging evidence gaps and by ensuring investors and policymakers have access to the right information and people to make inclusive agribusiness models succeed.

By showcasing successful models for businesses that source produce from smallholders and pulling together the evidence base supporting the commercial and development impact of their business models, CASA will attract more investment into the sector, boosting economic growth and raising demand for smallholder produce.

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