GOALAN

INTRODUCING GREEN HORTICULTURE AT LAKE NAIVASHA IN KENYA

Local And International Market Analysis Reports

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Project Partners: Collaborating Centre on Sustainable Consumption
and Production (CSCP) gGmbH and WWF Kenya

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This report is published using sustainable materials and processes.

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EXECUTIVE SUMMARY

BACKGROUND & OBJECTIVES OF THE REPORT

The Lake Naivasha Basin, in Kenya, makes a significant contribution to fresh fruit and vegetables (FFV) supply in the country. Agriculture around the Lake Naivasha Basin, especially in the upper catchment, has been on a rising trend for rural smallholder farmers. Most of the farmers in the basin are micro, small and medium enterprises (MSMEs) and are spread across both the upper and lower zones of the basin (91 % of these farmers are in the upper zone). Tomatoes are grown in the lower zone, while Irish potatoes, cabbage, carrots, spinach and kale (*sukuma wiki*) are grown in the upper zone. Other vegetables grown include cabbage, spring onions, capsicum, Saget (Spider plant), snow peas and garden peas. The types of fruit grown are mainly tree tomato, peppino, plums and watermelon. Existing local fresh produce markets for fruit and vegetables within Naivasha and its surroundings include hotels, restaurants and educational institutions, the Naivasha farmers' market, supermarkets like Naivas and Tuskys, and export companies. Rural domestic consumers also share in the market base for fruit and vegetables from the basin. The basin area also plays a key role for a wide array of additional stakeholders including horticultural companies, out growers and smallholders (producer traders), local and international traders, county governments, local NGOs, inhabitants and in general all actors relying on the basin and its products in the wider national economy.

To support the existing horticultural practices, farmers and markets in the Lake Naivasha Basin and further contribute to the achievement of a green economy in the country, the European Union recently funded WWF-Kenya a four year (2018-2021) project (Green hOrticulture At LAke Naivasha (GOALAN)) (WWF-Kenya, 2019). The project supports micro, small and medium enterprises (MSMEs) to access ready markets and reduce post-harvest losses as well as to adopt resource-efficient and sustainable consumption and production (SCP) practices to minimise negative impacts on climate, water and land, while ensuring social inclusion (by targeting youth and women) thus contributing to poverty reduction through the creation of green jobs. To reach these objectives, the GOALAN project thus engages and works directly with Kenyan MSMEs by providing capacity-building, especially on issues surrounding SCP practices, and linking the producers with local governments, financial institutions and suppliers (exporters). Furthermore, to enhance the demand for sustainable products, the GOALAN project also analyse markets to identify opportunities and possible challenges for Kenyan producers (MSMEs).

Since the project's kick-off in 2018, the target MSMEs have adopted various SCP practices, including the use of certified seeds to enhance product quality, mulching to reduce water consumption, intercropping as part of integrated pest management, the safe use of pesticides, proper harvesting and post harvesting practices, as well as value addition and record keeping at farms.

This document introduces the key findings from two distinct studies: the first – conducted by WWF-K – focuses on Kenya's local market for FFV in the Lake Naivasha Basin; the second – produced by the Collaborating Centre on Sustainable Consumption and Production (CSCP) – presents the analysis of international markets for FFV, with a particular focus on the European market trends, opportunities, its accessibility and related standards to comply with.

KENYAN FFV AND THE EUROPEAN MARKET: KEY FINDINGS

Specifically, the first report highlights how the production and marketing of fruit and vegetables has become increasingly important to Kenya's economy. There has been a steady rise in the production, local consumption and marketed quantities of fruit and vegetables across the country. However, this increase in supply has not met the ever-increasing demand. The latter being driven firstly by changing food consumption patterns as Kenyans adapt to healthy eating habits, attributed to an increased awareness of sustainable lifestyles and secondly to greater levels of disposable income.

In the country, niche markets still offer new possibilities for MSMEs with limited capacity to produce fresh fruit and vegetables in large quantities to serve export markets as well as informal markets (e.g. include those who buy at farm gates or open-air markets, such as traders (brokers) and retailers). These buyers also include brokers targeting export markets. The challenges represented by these markets include buyers defining the terms of engagement (although without using written contracts) and producers becoming price takers: buyers do not share any market information with producers and usually define prices, quantities and units of measurement for all parties involved. This puts small producers at a disadvantage since the prices tend to be very low, especially during periods of glut. As fruit and vegetables are highly perishable products, producers have no option but to become price takers. Even after forcing producers to take any price that is offered, brokers often fail to fulfil their obligations. This is evident in the frequent occurrence of brokers rejecting produce supplied by producers, claiming that the rejection has come from the export companies. Furthermore, producers often face challenges due to orders of small quantity, the value of which do not even cover the necessary transportation costs, and irregular supply due to FFV seasonality, meaning producers cannot ensure a regular supply for their buyers. Despite these challenges and the fact that local demand for FFV in Kenya is not currently being met, many producers and micro, small and medium-sized horticultural enterprises (MSMEs) in the country would like to expand into the export market as they believe this market will fetch higher prices.

In Europe there is a growing demand for healthy and sustainable food. This has triggered increased volumes of imported FFV from non-EU countries including Kenya. In particular, six key fruit and vegetables offer huge potential due to their high demand in the EU market, namely fresh peas, green/French beans, cabbage, passion fruit, mangoes and avocados. In 2017, Kenya dominated the EU market for cabbage with a market share of more than 45 %. Nonetheless, serving an export market, particularly the European one, requires producers to meet specific standards of product quality and safety. This is due to stringent healthy and quality regulations as well as to the increasing attention given to sustainable consumption and production (SCP) practices, especially after SCP became a standalone Sustainable Development Goal (SDG 12) in 2015. Food safety, product quality and traceability are, accordingly, the key requirements for FFV entering the EU market. The practices of eight European food retailers from four EU countries (the Netherlands, the UK, Germany and Belgium) analysed in the second report show how retailers need to comply with a series of national and EU regulations resulting in a variety of environmental and social standards required from suppliers. In addition, other non-legal and common requirements also need to be met alongside consumers' expectations. Given these stringent requirements, it has emerged from the analyses that only few players from the Naivasha Lake Basin and elsewhere in Kenya are currently able to meet these conditions, indicating a need for further training and capacity building provided to Kenyan MSMEs.

Both reports highlight the need for strategies that target local, regional as well as international market regulations and requirements, e.g. ensuring compliance with standards (such as KS1758 and GLOBALG.A.P.) by supply chain actors; improving access to finance; establishing the necessary infrastructure (roads, grading and value adding facilities); and developing policies that facilitate a sustainable value chain. Enhancing the quality and quantity of the key products and establishing a lean supply chain will strengthen Kenya's export market and, in turn, its local MSME sector that contributes to the country´s vision of establishing a national inclusive and green economy.

MARKET SURVEY REPORT OF THE FRESH FRUIT AND VEGETABLE SECTOR IN THE LAKE NAIVASHA BASIN, KENYA

Prepared by John Mburu for WWF Kenya
2019

1.1 ECONOMIC IMPORTANCE OF THE HORTICULTURAL SUB-SECTOR IN KENYA

The production and marketing of fruit and vegetables has become increasingly important to Kenya's economy. Since 2011, there has been a steady rise in the production, local consumption and marketed quantities of fruit and vegetables in the country (KNBS, 2019). However, the increase in supply has not met the ever-increasing demand. This demand is partly driven by changes in food consumption patterns as people adapt to healthy eating habits, which are attributed to greater consumer awareness and an increase in the middle-income population. Indications of these changing habits include greater consumption of fruit and vegetables for a diversified nutritional diet rich in fibre, plant proteins and micronutrients (Kadenyi, 2017).

Horticulture contributes more than 30% to the agricultural sector

According to data from the KNBS Economic Survey (KNBS, 2019), about 90 % of the fruit and vegetables produced are used domestically, with only about 10 % exported and less than 5 % imported to fill the gap in terms of non-locally produced fruit and vegetables. Despite their small proportion of exported quantities, horticultural products rank among the top export earners. Fresh flowers account for more than 70 % of the value of marketed horticultural products, while fruit and vegetables account for about 25 % of the market share (KNBS, 2019). Furthermore, horticulture ranks second overall in agriculture after tea in terms of foreign exchange earnings (worth Ksh 124,267 million in 2018) and contributes more than 30 % to the agricultural sector GDP (KNBS, 2019). This makes the sub-sector an important contributor to food security and a source of livelihood for many households in rural areas.

Horticultural products are among the most consumed food groups in Kenyan households. According to the 2009–2019 Economic Survey by KNBS, fruit and vegetables account for 14 % and 8 % of the annual per capita food consumption respectively. Irish potatoes, tomatoes and cabbage are the most popular vegetables produced and consumed in Kenya, while bananas (ripe or cooked), pineapple and citrus are the most popular fruit (KNBS, 2019). Fruit and vegetables are mainly consumed fresh from the farms or bought at local markets. This indicates a high consumer preference for fresh produce and little value addition activity, such as drying, processing and canning, taking place in the industry. Value-added fruit and vegetables also tend to cost more, further reducing their popularity among Kenyan consumers.

1.2 RATIONALE FOR A FRUIT AND VEGETABLES MARKET SURVEY

Given the importance of fruit and vegetables in the Lake Naivasha Basin and concerns about the low uptake of certified produce by Kenyan households, there are opportunities to increase the level of commercialisation and marketing. In addition, the value addition activities for farm produce are inadequate and there is a lack of the necessary knowledge and skills among most smallholder farmers in the basin to trade effectively (WFP, 2015). Therefore, there is a need to promote the adoption of sustainable consumption and production (SCP) practices to raise the level of local production and consumption of sustainable produce. AGRA (2017) notes the need to strengthen farmers' access to markets as an incentive for the adoption of new agricultural practices for increased production and income.

There is a need to promote the adoption of sustainable consumption and production (SCP) practices to raise the level of local production and consumption of sustainable produce

Smallholder farmers in the basin are facing a myriad of challenges that negatively affect their production systems and livelihoods. Key is inadequate market access to sell farm produce. The current marketing system is poorly organised and is mainly controlled by exploitative middlemen. Coupled with the fact that the production and harvesting cycles depend on rainfall patterns, this means that much of the produce goes to waste due to lack of market access. Consequently, addressing the challenge of market access, based on market intelligence, is a key outcome of the GOALAN project. Linking the enterprising farmers to reliable formal markets will propel the adoption of SCP practices, create jobs for young people in villages and contribute to Kenya's green economy goals.

In the high-end as well as international markets, the demand for certified and traceable fruit and vegetables has been rising. The consumers in advanced economies prefer high quality and safe products. This can be achieved through a transparent supply chains where information about product source and quality can be communicated clearly throughout the supply chain via a certification or label. A certified produce means there is an assurance that the produce meets certain quality and safety standards. This entails good agricultural practices, which include postharvest methods, marketing and labelling standards that ensure the safety of the global food supply chain and environment (ISO, 2018). These standards are set by specific inspection and

standardisation bodies, such as the Approved Inspection Service (AIS) in Kenya. According to Kenya Bureau of Standards (2016), the fruit and vegetable code of practice KS 1758-2:2016 specifies the requirements for legal compliance, the responsible procurement of inputs, safe production, handling and marketing of all edible horticultural products such as fresh fruit, vegetables, herbs and spices. This standard applies to all players in the sector, including growers, propagators, plant breeders, seed merchants, consolidators, transporters, traders, shippers and cargo handlers. Some of the key requirements for fruit and vegetables at farmer level include traceability, maximum levels of chemical residues, and well-kept records (especially on farm inputs). Indeed, these requirements can be hard for horticultural MSMEs to meet. However, adopting SCP practices can help MSMEs improve their farm operations and, in turn, achieve a compliance with KS 1758-2:2016 standard.

Given the stringent requirements relating to certification, few players in the Naivasha basin and country manage to meet them, while those who do comply have to charge a premium price on their produce. On the supply side, there are low quantities of certified produce, despite the country having many smallholder producers of commercial vegetable and fruit tree propagation materials. This is because most of them do not meet the standards set to ensure the supply of clean quality materials for planting (ASCU, 2012). As a result, the consumption of certified horticultural produce remains relatively low in Kenya. This forces farmers to rely on international markets, which are vulnerable to global fluctuations in prices and demand. The ability to serve both domestic and export markets offers an opportunity for the majority of fruit and vegetable producers (MSMEs) in the basin. By applying SCP in their farms, MSMEs can produce sustainable fruit and vegetables with high quality that not only meet domestic demand, but also demands from export market.

To encourage the uptake of SCP practices, there is a need to close the gap in MSMEs' access to market, value adding activities, and adequate supply of certified produce. This market survey in the basin and surrounding cities, including Nairobi, is therefore necessary to help address the gap.

1.3 OBJECTIVES OF THE MARKET SURVEY

The broad objective of the market survey was to establish market requirements, opportunities and challenges faced by the horticultural sector, particularly fruit and vegetables, with the aim of improving the market access of producers (MSMEs) and creating opportunities for improved incomes, creation of green jobs and, ultimately, enhanced water security in the Naivasha Lake Basin.

THE SPECIFIC OBJECTIVES ARE:

1. **Mapping the existing and potential organised horticultural markets** within the Basin (Nyandarua and Nakuru counties) and surrounding cities (including Nairobi);
2. **Identifying potential buyers** of sustainable horticultural produce (fruit and vegetables) and their level of commitment to purchase;
3. **Establishing requirements** of each of the potential organised horticultural produce markets;
4. **Identifying the value adding methods** preferred by most buyers of horticultural produce for possible adoption by MSMEs;
5. Creating a list of potential value adding partners from the private sector for potential linkages;
6. **Analysing market access** and **sustainability challenges** and **providing recommendations**; and
7. **Identifying other players** (both private and public) in the fruit and vegetable value chains and pinpointing their specific roles.

METHODOLOGICAL APPROACH 2

2.1 STUDY AREAS AND GENERAL APPROACH

The scope of the study follows the terms of reference of the GOALAN project. Hence, this market survey covers the counties of Nakuru, Nyandarua and Nairobi. In terms of horticultural produce, this market survey focuses on those already identified by the GOALAN project as the key income sources for local MSMEs. This survey specifically focuses on vegetables since very few MSMEs that are involved in the project are selling fruit.

Mapping the existing and potential organised horticultural markets

The focus was on identifying the existing buyers of fruit and vegetables within the basin and surrounding towns. This included their diversity, numbers and names; for example, supermarkets, hotels and exporters. This was informed by focus group discussions (FGDs) with MSMEs and primary data already collected by WWF-Kenya, combined with information from the key informant interviews (KIIs) collected from other market actors in the value chain. Ultimately, the study mapped out the FFV value chain actors in a diagram (value chain map) to show the major buyers (supermarkets, hotels, exporters, individual buyers, wholesalers). The maps also included the market prices and of the actors.

Establishing potential buyers of fruit and vegetables and their level of commitment to purchase

The potential buyers were identified from the KIIs conducted with other market actors. Several categories of buyers, including individuals, supermarket managers, hotel managers, exporters, etc. were identified and their interest in buying fruit and vegetables from the basin was determined. They were also requested to indicate their level of commitment to buying the produce. This was done in terms of readiness to buy and quantities on offer. The consultant ensured the KII respondents were people in decision-making positions, able to meaningfully state their level of commitment to purchase if their specified conditions were met.

Establishing the market requirements of potential buyers of fruit and vegetables

This was done in conjunction with (a) (mapping the existing and potential organised horticultural markets), since only the buyers could provide insights into the market requirements. The KIIs with potential buyers provided information about specific market requirements for different types of fruit and vegetables. The requirements were disaggregated in tables in terms of the type of produce and its variety, expected source of the produce, average

price, quantity per week, quality, frequency of supply, time of delivery, peak demand periods/months, mode of payment to suppliers, frequency of payments, availability of supply contracts/possibility of their use, trading documents needed including permits, certification of the produce, record keeping and digitalisation, etc.

Identifying the value adding methods preferred by most buyers

The value adding methods preferred by most buyers were assessed through information gained from the KIIs. This was done by first establishing how the buyers preserved their horticultural produce and the reasons for their preferred approaches. This included facilities and equipment used, shelf life and ability to retain the original quality of the fruit and vegetables by using the preservation/value adding techniques. In addition, a list of reliable value adding partners was created. The consultant also sought to analyse which of the identified value adding methods could easily be adopted by MSMEs and scaled up in a sustainable way.

Analysing the market access and sustainability challenges

The market access and sustainability challenges were assessed by, first, identifying challenges faced by different market actors on the supply and demand sides through the FGDs and KIIs. The information was further disaggregated in terms of price, quality, quantity and regulatory challenges. Challenges identified through analysing the existing data on producer traders were also included. All emerging issues in the horticultural business were explored with the market actors.

Identifying other players (both private and public) in the fruit and vegetable value chains and their specific roles

The FGDs and KIIs provided the consultant with knowledge of most of the actors in the fruit and vegetable value chains. Their roles and interactions with other actors were also captured. This information was combined with data from the internet, such as the National Horticulture Market Information System and relevant official county and national government sources.

2.2 CONCEPTUAL FRAMEWORK

The study employed a simplified framework of value chain analysis (VCA) adopted from Porter (2001) to facilitate identification of value chain actors, their roles, linkages and value adding activities, and analysis of the data (Figure 1). This helped to capture market information from diverse actors across the fruit and vegetable value chains and to estimate their marketing margins. The

value chain analysis was useful for explaining commodity flow and market prices from producers to consumers and for identifying the points or stages presenting major marketing challenges, i.e. the weak parts of the chain. The analysis also included the roles and responsibilities of different value chain supporters and enablers, and the challenges they face when promoting sustainable consumption and production practices among the main value chain actors.

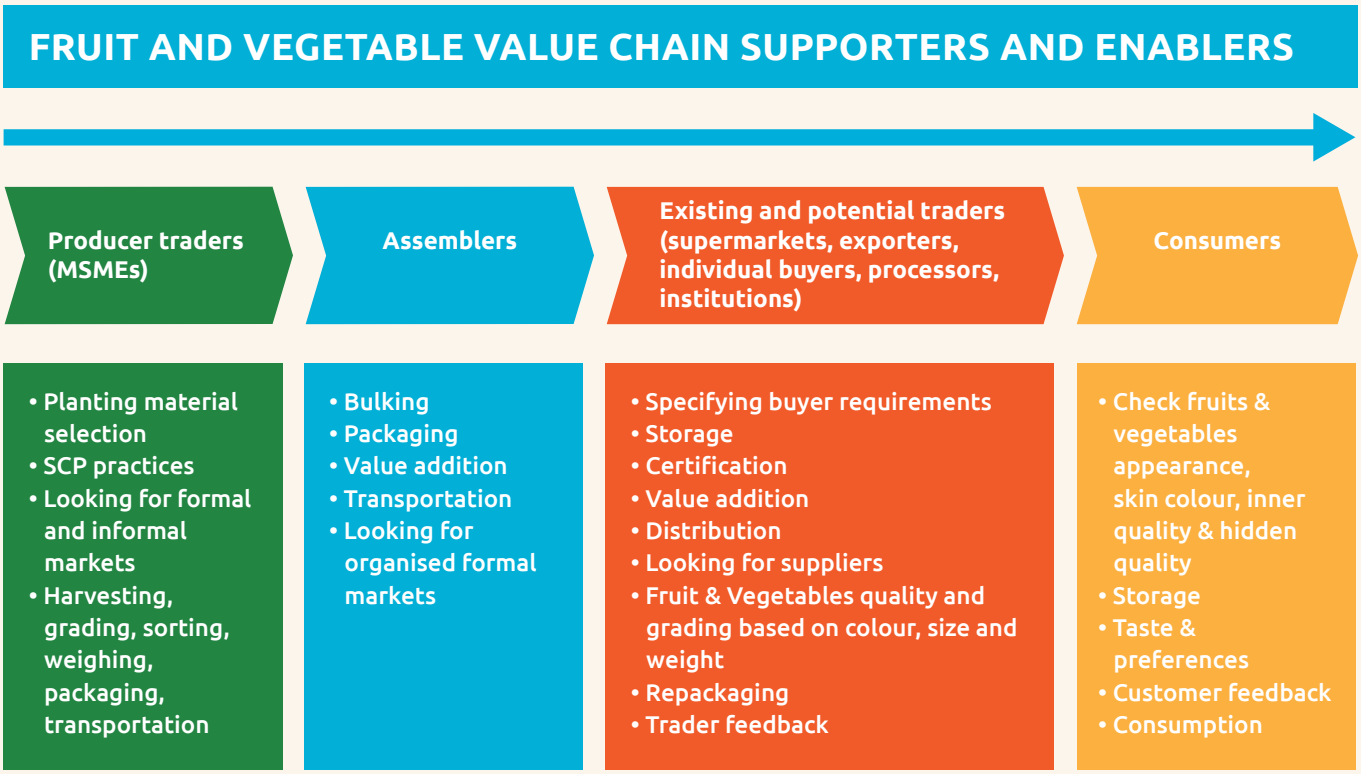


Figure 1: A simplified schematic presentation of the value chain analysis of fruit and vegetable actors in the Lake Naivasha Basin

To complement the VCA, the structure, conduct and performance framework was used to facilitate the analysis of interactions and performance of the main and support value chain actors. As shown in Figure 2, important market structure attributes included the number and size of buyers and sellers in a market, barriers to entry (e.g. licenses, taxes, access to credit and group marketing leading to different levels of transaction cost), the type of product and information asymmetry between buyers and sellers.

The structure influences the way market actors are organised along the value chain, thus determining their behaviour, which results in market conduct (Gachena and Kabebew, 2014). The conduct of MSMEs and other market actors includes price setting behaviour through collusion and buying and selling

practices including, for example, product promotion and non-transparency of prices and side marketing, which often affect contractual arrangements. Market conduct also showed how different actors adapted and adjusted to market requirements, including value adding, processing and the reduction of post-harvest losses (PHLs) at different stages of the value chain. Performance represented the economic results of an organised value chain, particularly the market margins for different actors in the chain and the level of access to organised formal markets by MSMEs. All the dimensions of the VCA and the structure, conduct and performance frameworks were influenced by institutional, physical and socio-economic characteristics of the environment (institutional environment) and their indirect effects on market access and sustainability challenges were analysed.

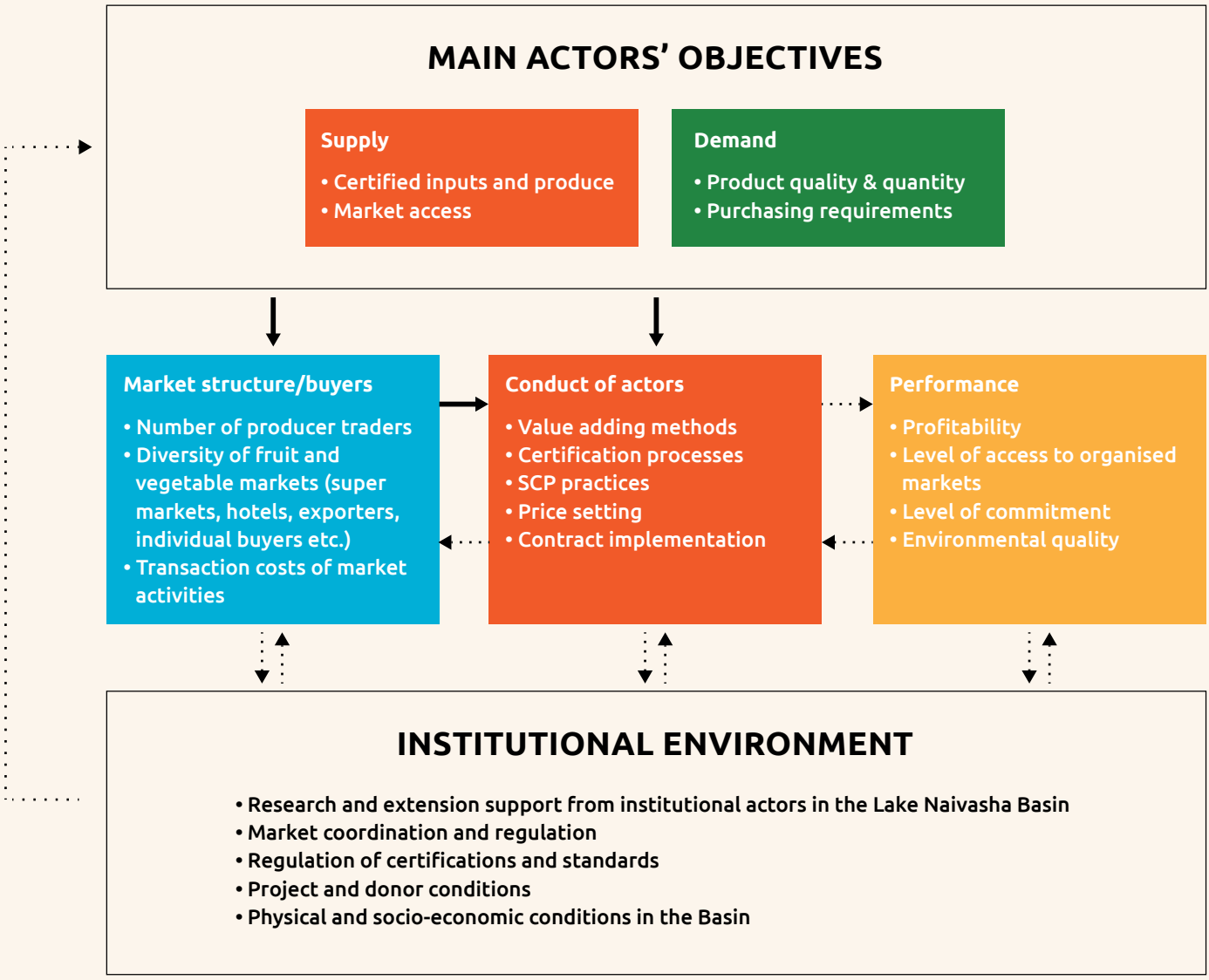


Figure 2: Adaptation of the structure, conduct and performance framework for fruit and vegetable value chain actors in the Lake Naivasha Basin

2.3 DATA COLLECTION

2.3.1 Collection of secondary data

The consultant conducted a detailed desk study on most of the issues that were not captured directly from the interviewees. This included data and information on actors in the FFV value chains, markets, crop production, standards and requirements. The literature materials for this review were collected from the GOALAN project, Kenya's National Horticulture Market Information System (NAHMIS, 2019), Fresh Produce Exporters Association of Kenya (FPEAK), County Agricultural Offices and relevant national government ministries. The consultant worked closely with GOALAN project leaders and relevant technical staff involved in the study to gather, document and analyse both qualitative and quantitative data and any additional information. In addition, information gathered during this review helped inform the interpretations of the primary and secondary data.

2.3.2 Collection of primary data

Sampling procedure for the collection of primary data

A non-probability sampling design was applied to select participants for the MSMEs' focus group discussions (FGDs) and key informants for the other market actors. This approach was chosen because inference of the results generated from qualitative data was not required. For the FGDs, about 5 farmers were selected in each zone, depending on their availability and geographical proximity to the meeting venue. Steps were taken to ensure representation of at least 33 % of male and female entrepreneurs.

For the other main value chain actors, supporters and enablers, a purposive sampling approach was adopted whereby a combination of chain (starting with individuals known by the project staff), extreme case (participants with unique or special characteristics) and typical case (meeting average selection criteria) sampling techniques were employed. A snowballing approach was also used to identify some of the markets and support actors. The key informants included markets (supermarkets, hotels, organised individual buyers/processors, organised vegetable markets and exporters) and support actors (including among others WWF-Kenya and officials from relevant county and government ministries). The objective of this design was to reach key respondents who were easily accessible and had diverse opinions and adequate knowledge of – or linkages to – relevant FFV produce marketing issues, interventions and other value chain activities.

Collection of primary data from the main value chain actors

A qualitative method was used to collect primary data from the main value chain actors, including MSMEs and commodity buyers. Qualitative data collected included challenges related to the production and marketing of fruit and vegetables, value adding activities, quality assurance and certification, SCP practices, environmental quality, opportunities and possible solutions to value chain problems. All the issues highlighted in Section 2.1 were also included. At the MSME level, data collection was guided by a non-structured checklist of issues. The key informant interviews with the main value chain actors from different market categories were conducted using a KII tool (see annexes).

Collection of primary data from value chain support and enabling actors

A qualitative approach using key informant interviews (KIIs) guided by a non-structured tool was used for the various fruit and vegetable value chain supporters and enablers in Naivasha, Nyandarua and Nairobi. Open informal discussions with representatives of these organisations (see annexes) were held to draw out issues and challenges that might not have been captured using the tool.

3.1 DESCRIPTIONS OF KEY PRODUCTION AREAS

The GOALAN project engages with 207 MSMEs which are organised into seven farmer groups spread across the upper and lower zones of the Lake Naivasha Basin. Over 90 % of these MSMEs are located in the upper zone. The upper zone, which sits at the foot of the Aberdare Ranges, mainly covers the Kinangop and Kipipiri Sub-Counties. These sub-counties are characterised by fertile soil and a cool and temperate climate with reliable rainfall distribution throughout the year. The average annual rainfall is 1,500 mm (Nyandarua County Integrated Development Plan 2018–2022), which favours the production of vegetables such as Irish potatoes, cabbage, garden peas and snow peas.

Over 90 % of these MSMEs are located in the upper zone of the Lake Naivasha Basin

The lower zone of the Lake Naivasha Basin covers Naivasha Sub-County of Nakuru County, that sits in the Rift Valley floor. This sub-county falls under Agro-ecological Zone III and has favourable soil for farming, an annual average rainfall of 719.5 mm and temperatures ranging between 24 °C and 29.3 °C (Naivasha Sub-County farm management guidelines 2018/2019). Due to the relatively dry climatic conditions, irrigation and alternative production methods (such as greenhouse) are necessary for the year-round production of crops. Six greenhouses are currently being used and 11 'water pans' for rainwater harvesting are expected to be installed by Nakuru County as a measure to increase the adoption of climate change adaptation and mitigation measures (Nakuru County Integrated Development Plan 2018–2022). Major crops grown in the area include tomatoes, onions, cabbage, lettuce, capsicum, spinach and kale.

From focus group discussions with producer traders (MSMEs) participating in the GOALAN project, the main vegetables produced from the lower zone include lettuce, tomatoes, beetroot, courgette, capsicum (yellow, red and green), cucumber and dhania (ranked in order of importance in terms of income generation). Production is on an average of 0.125 acre of land, using both open field and greenhouse methods. In the upper zone, the main crops include snow peas, Irish potatoes, carrot and cabbage. Production of snow peas and Irish potatoes is on an average of one acre of land per household, while carrot and cabbage cover an average of 0.25 acre of land per household.

3.1.1 Compliance with standards and sustainable consumption and production (SCP) practices

The focus group discussions with the farmers revealed that all MSMEs in the project had been trained on KS 1758 standard. The entrepreneurs could explain various practices advocated in the standard. However, none of the entrepreneurs had obtained the KS 1758 certification, although they indicated that they were 'working towards it'. As explained by key informants from Nakuru County's Ministry of Agriculture, the certification process usually takes at least 3 seasons of assessment before a farmer can be termed to be compliant. It was found that Kenya Plant Health Inspectorate Services (KEPHIS), Horticultural Crops Directorate (HCD), Ministry of Agriculture Livestock and Fisheries (MoAL&F) and WWF-Kenya were the main organisations providing training on the KS 1758 standard. The Equity Bank is a financial institution that is expected to provide credit to enable farmers to comply with the standards.

The main SCP practices already adopted by the MSMEs include the use of certified seeds, mulching, intercropping, soil testing, integrated pest management, safe use of pesticides, proper harvesting and post harvesting methods, value adding activities and record keeping. The main constraint to the adoption of SCP practices highlighted by the farmers was the lack of capital to buy relevant equipment and farm inputs. For example, prior to the training farmers could borrow equipment from each other, such as knapsack sprayers and pumps, but afterwards every farmer was supposed to have their own to avoid negative effects associated with shared equipment – such as increased costs incurred for cleaning the equipment. Similarly, buying certified seed is expensive, especially for crops such as potatoes and snow peas. Furthermore, some farmers felt that extension services such as soil testing, which is part of the SCP practices, are expensive. Due to the cost, most of the farmers were yet to conduct soil testing.

3.1.2 Profitability of vegetable enterprises

The summaries of gross margins (GMs) for various vegetables grown in the upper and lower zones of the Lake Naivasha Basin are presented in Table 1. The GMs are important as they indicate the production and marketing costs that farmers incur and the minimum break-even selling price. The minimum price must be above the variable production cost per kilogram. The gross margins were obtained from the agriculture offices in Naivasha Sub-County and Kinangop Sub-County and verified with the farmers through the FDGs.

GROSS MARGIN SUMMARIES FOR VARIOUS VEGETABLES GROWN IN THE LAKE NAIVASHA BASIN

Crop	Yield per ha (kg)	Gross value per ha (Ksh)	Total variable costs per ha (Ksh)	Gross margin per ha (Ksh)	Variable production cost per kg (Ksh)
Outdoor tomato	25,000	390,000	160,453	229,547	6.42
Greenhouse**	10,000	200,000	74,653	125,347	7.47
Potato	13,750	275,000	131,119	143,881	9.54
Cabbage	40,000	330,000	72,821	257,179	1.82
Carrots	10,000	150,000	100,734	49,266	10.07
Bulb onion	18,000	480,000	88,168	391,832	4.90
Kale	12,000	160,000	80,134	79,866	6.68
Spinach	10,000	150,000	75,396	74,604	7.54
Snow peas	9,000	540,000	269,191	270,810	29.91
Courgette	10,000	360,000	115,360	244,640	11.54
Beetroot	5,000	250,000	70,967	179,033	14.19
Capsicum	12,500	375,000	103,927	271,073	8.31

*Table 1 – **Note**:** For greenhouse tomatoes, the size of the greenhouse is 15m x 8m and its construction and depreciation costs are accounted for in these figures. The gross margins presented in Table 1 reflect the third year of production. The farmer is only able to break even in the second year.*

The GM figures indicate that if market access is guaranteed, bulb onion and capsicum are the most profitable crops in the lower zone, while snow peas and cabbage have a comparative advantage over other crops in the upper zone. In both zones there was evidence that farmers were cultivating these as their target crops.

3.2 MAPPING OF THE EXISTING MARKETS

3.2.1 General description of existing markets

Two types of existing markets were identified: informal and formal organised markets. Informal markets include buyers at farm gates or open-air markets, such as traders (brokers) and retailers. They also include brokers targeting the export market. The buyers in the informal market do not offer written contracts specifying the terms of engagement. The market requirements are not negotiated and buyers can easily manipulate the buying price, quantities and units of measurement in their favour.

In informal markets, farmers do not incur marketing costs for transport or market information research as the traders (mainly brokers) are the ones who establish where the MSMEs are located and collect the produce direct from the farms or nearby collection centres. The mode of payment is cash and is immediate. The informal buyers do not grade the produce and no value addition is required.

The formal and organised buyers identified have formal written contracts with the farmers stipulating the agreed prices. Other requirements in the contracts include produce quantities, value addition methods, mode of payment and timeframes for delivery. The main formal buyers are exporters, hotels and wildlife conservancies operating near the production areas. When accessing these markets, the farmers incurred marketing costs (both visible and hidden) for transporting the produce to the buyer and searching for market information such as prevailing prices, and value addition costs such as washing, grading and packaging. Units of measurement are determined before contracts are agreed and methods of payment are strictly by cheque or money transfer on delivery of the produce and submission of delivery notes and invoices.

Farmers expressed their preference for formal organised buyers because the market is more secure and the prices offered are higher than those in informal markets, even after factoring in value addition costs and all visible and hidden costs. During contract negotiation, farmers use gross margins as the basis for setting the prices. Farmers can also get lump sum payments, which can then be better allocated to farming and other household needs. Some buyers, such as exporters, also offered inputs in kind and, once trust was established between the supplier and the buyer, emergency loans, which are later recovered from the sale of the produce, could be offered.

3.2.2 Value chain mapping of the existing markets

The main vegetables considered when drawing the value chain map are tomatoes, green vegetables (sukuma wiki and spinach), potatoes and snow peas (Figure 3). The vegetables basically flow from the farmer to informal markets – but also to formal markets comprising actors such as processors, exporters and retailers – and finally to the consumer in domestic and international markets. Due to value addition activities such as grading, cleaning, processing and repackaging, the prices tend to rise along the chain. Farmers selling to informal markets (to neighbours, brokers and at open-air markets) fetch the lowest prices, with tomatoes, green vegetables and potatoes sold on average for Ksh 20, Ksh 10 and Ksh 10 per kg respectively. Processors mainly buy under contract and tend to offer constant prices, which are higher than in informal markets. For example, potatoes are bought at an average of Ksh 20 per kg. Similarly, the export market where farmers mainly export snow peas and sugar snap peas is under contract and these vegetables command on average Ksh 50 per kg. The exporters sell to international buyers at an average price of Ksh 120 per kg and finally the international buyers sell to the end consumers in their countries at about Ksh 220 per kg.

Locally, there are diverse retail outlets ranging from supermarkets, organised grocery stores and hotels. The prices offered to the farmer by the retailers are lower than those offered by other actors. For example, the retailers buy tomatoes at an average of Ksh 40 per kg from the farmers, but offer an average of Ksh 50 per kg to other actors. Some special retailers buy in bulk and sell to final consumers but also sell to other buyers like vendors and hotels. These include Twiga Foods and Manna Supplies. The hotels also form a unique set of retailers, since their prices are higher than all other retailers. For example, hotels buy tomatoes at an average of Ksh 70 per kg.

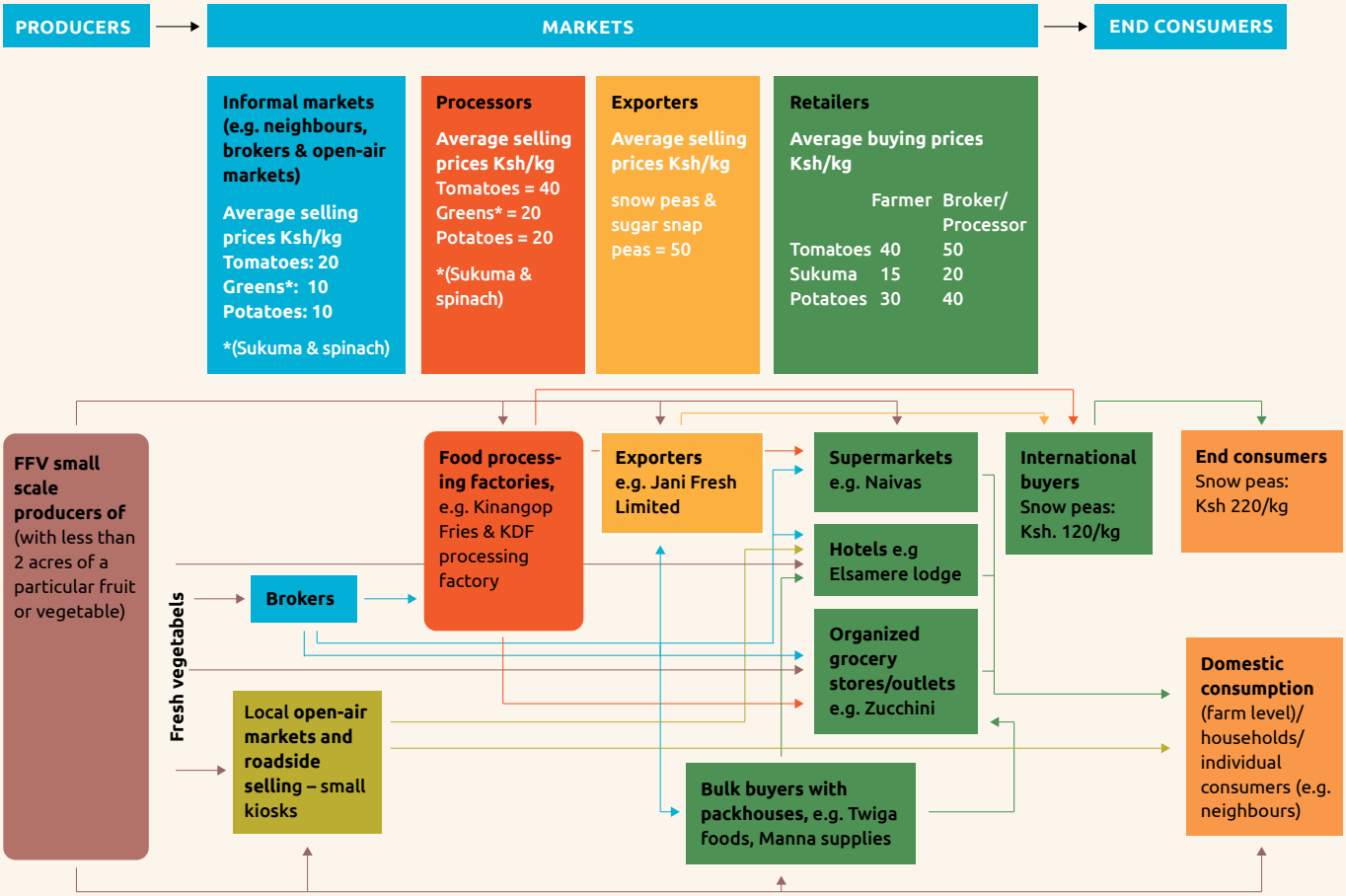


Figure 3: Value chain map of assorted vegetables

3.2.3 MSMEs' constraints in the existing informal and formal markets

The main disadvantage that the farmers (MSMEs) highlighted in terms of selling to informal buyers is that the prices are always very low – especially low during glut periods. As vegetables are highly perishable, the MSMEs are generally price takers. This leads to farmers making losses as the informal market prices are simply dictated by the buyers and are not based on gross margins.

Another challenge with the informal markets is the frequency of rejected produce – particularly when supply exceeds demand. For instance, farmers of the Geta Community Forest Group explained that during such periods brokers sometimes fail to make payments, claiming that the export companies have rejected all the produce.

In the formal or organised markets, the MSMEs often incur losses due to orders of small quantities which are requested by hotels. As an example, the Momaki Green Growers group received orders of 5 kg vegetables from the hotels. For

the delivery, the motorbike[1] transport costs the MSMEs about Ksh 300 which is equivalent to the vegetable value. Similarly, a group from the upper zone of Naivasha Lake Basin was unable to deliver two sacks of potatoes due to the high transport costs. Consequently, the MSMEs often have to rely on the informal market.

Another constraint in tapping into the formal market is the seasonality of some vegetables, particularly the ones under rainfed condition. This results in unstable supply of vegetables, where farmers are not always able to meet the demands. However, one MSME group has successfully mitigated this challenge by synchronising the vegetable production using irrigation and greenhouses to ensure a stable supply throughout the year.

3.2.4 Buyers' constraints within the existing markets

Reportedly, buyers in the informal market do not face any constraints. Most of the buyers are brokers who dictate market requirements to the producers (MSMEs). Therefore, only constraints linked to the formal and organised markets are discussed in this section.

Based on key informant interviews, the main constraint hindering hotels to develop an effective business with MSMEs is associated with the nature of hotel business. Most hotels rely on walk-in guests and for MSMEs it is particularly difficult to meet instant orders (unlike the suppliers). The second

1) Use of motorbikes for transportation is preferred because they are readily available and can quickly deliver well-packed produce in crates in line with market requirements.

constraint facing the buyers is lack of diversity of produces supplied by MSMEs. MSMEs can provide only a few types of vegetables and herbs that hotels need, so hotels have to rely on the more established suppliers.
The next constraint is linked to produce requirements. MSMEs are at times unable to deliver potatoes and tomatoes in the preferred size. For example, most hotels demand long potatoes for potato chips, and large tomatoes that can be sliced thinly for salads. Some hotels even prefer tomatoes that are grown outside as opposed to the ones grown in greenhouses. This is due to the preference of their guests who presume that outdoor-grown tomatoes are tastier, juicier and have a longer shelf life.

Although producers breaking their contracts by failing to deliver the agreed quantities is not common, on occasion this leads to buyers incurring losses. For example, one hotel cited that a group of MSMEs in the upper zone of the Basin failed to deliver potatoes without giving explanation. This has forced the hotel to buy from an old supplier, when actually the hotel wanted to procure sustainable potatoes from the MSMEs. Also, MSMEs sometimes practice side selling. While they may have already a contract to supply to an exporter, the MSMEs sell to brokers, especially during a high season when demand outstrips supply. This happens when brokers offer higher prices than other buyers in the market.

3.3 POTENTIAL SOLUTIONS TO THE MARKET CONSTRAINTS

3.3.1 Fruit and vegetable aggregation hubs

To address the constraints related to quantities and the vegetable type and varieties supplied by MSMEs, aggregation hubs need to be established. These are collection centres where MSMEs can bring their various produce before supplying to the existing as well as potential markets which will be elaborated further in the subsequent sections of this report. Each MSME group can establish its own aggregation hub, which it can manage efficiently to address the constraints associated with group dynamics. Since MSMEs are dealing with highly perishable produce, the aggregation hub will need a cold storage and diverse value addition activities. The hubs can also sell to non-contracted buyers and walk-in customers.

From a discussion with one of the hotels, there is willingness among the buyers to support the MSMEs to set up hubs. With a proper management, the aggregation hubs can help MSMEs maintain their existing markets and expand their businesses to more lucrative markets, as they will be able to stock all sorts of fruit and vegetables and supply these to the formal markets whenever

needed. While setting up such aggregation hubs is an expensive undertaking, the long-term benefits far outweigh the costs and can contribute to the adoption of sustainable production and consumption (SCP) practices among horticultural MSMEs and buyers alike.

3.3.2 Product labelling and promotion

MSMEs need to create an awareness of their sustainable produce and compliance to certain standards among their consumers and buyers. Product labelling is an approach that can be used to communicate MSMEs' sustainability performance and certification. A product label can reduce the risk of product rejection by exporting companies. A label also allows MSMEs to sell with premium prices and increase profitability – provided the production costs do not increase significantly.

The MSMEs can take advantage of various forums organised by the government as well as private companies, such as trade fairs and farmers' markets, to showcase their sustainable products. Good examples are the Naivasha farmers' market that takes place at Longonot Farm on specific dates, and the Agricultural Society of Kenya Show in Nakuru and other counties. The MSMEs can also consider creating a wider awareness of their sustainable products via radio as well as digital platforms and social media such as Facebook, Instagram and Twitter.

3.3.3 Product diversification and differentiation

Since the vegetable supply depends largely on local agroecological conditions, MSMEs can invest in product diversification. This would mean sourcing other types of vegetables from farmers who are not members of their producer groups. To ensure product quality and safety, the MSMEs will have to select farmers who have implemented SCP practices or complied with commonly accepted standards, such as KS 1758 and GlobalG.A.P. However, many farmers or farmers groups in Naivasha basin have not yet applied SCP practices or obtained certification. Hence, the MSMEs which have been trained by the GOALAN project on SCP and KS 1758 standard can reach out to other farmers or farmer groups to transfer their knowledge via peer-to-peer training. This training can take place through the use of farmer's field and local business schools where farmers are trained to train others. At press time, this peer-to-peer training has taken place within the formal export market for snow peas.

In the event that the demand in the formal and organised markets exceed the supply and if the MSMEs cannot train other farmers to meet certain product quality, they still can source from other farmers. To differentiate the products,

MSMEs can use product labels for sustainable and 'other' products which will sell at different prices. By doing so there will be a separation of products, i.e. own and outsourced products. This differentiation serves to create consumer awareness of the product standards and traceability, and provides justification for premium prices for sustainable produce that meet high quality standards.

3.3.4 Further support of the value chain activities

To ensure MSMEs remain competitive and able to meet the market demand, a support is needed to provide continuous training on production and value addition techniques. Through training the MSMEs can keep abreast of the latest information and farming techniques. For example, as suggested by an agri-business extension officer in Naivasha Sub-County, incorporating calcium nitrate into the production of greenhouse-grown tomato will make it as good as the outdoor-grown one. The use of calcium nitrate as opposed to calcium ammonium nitrate is recommended because it provides soluble calcium that is readily taken up by tomatoes and is, therefore, effective in preventing cracking and blossom end rot. It was found that most of the farmers were unaware of this method and did not top dress their greenhouse tomatoes with calcium nitrate.

3.4 POTENTIAL MARKET OPPORTUNITIES AND CONSTRAINTS

Even within the limited existing markets for fruit and vegetables grown under sustainable production and consumption (SCP) methods in the Lake Naivasha Basin, there are untapped potential opportunities. These potential markets can be categorised as: (i) organised markets with contracts; (ii) organised markets without contracts (informal organised markets); and (iii) organised markets where trade is blended with financial support. The three market types share similarities and have differences in terms of requirements, constraints and opportunities.

3.4.1 Organised markets with contracts

Private sector organisations: the survey found out that there is a market offering formal contracts to fruit and vegetable producers participating in the GOALAN project. This potential market includes hotels, organised vegetable market chains, supermarkets, educational institutions, processors and exporters. The market buyers offer formal contracts with stipulated terms and conditions, particularly relating to product quality and quantity. Some buyers and particularly public institutions tend to use open tender, whereby a supplier or producer must bid for the contract.

Examples of organised markets with contracts include processors in Nyandarua, such as Engineer Food Processors (Kinangop Fresh Fries), which currently buys Irish potatoes, and assorted vegetables – mainly cabbage, sukuma wiki and spinach. In addition, Naivas Supermarket, with branches in the Nakuru, Nyandarua and Nairobi regions, buys a wide range of vegetables. All these potential buyers expressed their interest in working with producers participating in the GOALAN project.

The prices in this type of market are fixed and mostly set by the buyer (prices are rarely negotiated). Before entering into a contract, a producer is required to provide samples of their produce for evaluation. At the point of delivery, the buyers are keen to ensure that the specified requirements are met. Most of the key requirements relate to the quality of the produce. They include size (medium is generally preferred), freshness, colour (must be attractive), recommended post-harvest interval (PHI) levels, maturity (nearly ripe for fruit), cleanliness and absence of defects. To verify quality standards that cannot be detected by general observation, such as PHI levels and the use of prohibited agrochemicals, some buyers conduct random independent analysis on the produce delivered. It was also found that some buyers, such as supermarkets and exporters, do checks on the farming practices by conducting random field visits to ascertain adherence to good agricultural practices (GAPs). The visit includes checking for appropriate record keeping at farm level.

Further, in this market buyers specify the quantities to be delivered at stipulated times. If the producer (as supplier) is unable to deliver the required amount on time, they must inform the buyer in time. In certain cases, failure to deliver products as agreed is heavily penalised by hotels – the cost of sourcing alternative vegetables is usually transferred to the contracted supplier. In this market, payments are usually made at regular intervals, every two weeks or monthly.

Collecting small quantity of produces from individual farmers will incur the so-called bulking costs. This can be costly for the buyers

Buyers in this type of market report some challenges when dealing with small producers. Collecting small quantity of produces from individual farmers will incur the so-called bulking costs. This can be costly for the buyers. Therefore, they often define the minimum quantity in the contract to reduce the bulking costs. For example, the Engineer Food Processors only pick above one tonne of potatoes at farm gate. Other challenges facing the buyers are similar what has been laid out in Section 3.2.4.

In this type of organised market, the main challenge facing producers (suppliers) is delayed payments. In some cases, payments are delayed for more than a year. Often this happens with public institutions such as local schools and Kenya Defence Forces (KDF) food processing factory. Farmers also fear that buyers might breach the contracts by failing to purchase the agreed quantity, especially when there is a production surplus. This contract breach is quite common with exporters of fresh produce such as snow peas and French beans.

Public sector organisations: the government, particularly educational institutions, form a potential market for selling a wide range of fruit and vegetables in huge quantity due to their large numbers of target consumers. The main vegetables in demand include lettuce, spinach, sukuma wiki, cabbage, cauliflower, broccoli, pumpkin, cucumber, Irish potatoes, celery, onion and garlic.

Greater potential lies in the public institutions' preference for non-genetically modified (GMO) fruit and vegetables, making those produced using SCP practices highly marketable to this type of buyers. For example, Kenya Wildlife Service Training Institute (KWSIT) in Naivasha makes it clear about their preference for non-GMO fresh vegetables of high quality, that are not grown using grey water. Other public institutions include the Morendat Training and Conference Centre in Naivasha and KDF food processing factory in Gilgil. KDF food processing factory has expressed an interest in working directly with the MSME producers participating in the GOALAN project, following some negative experience of the bureaucracy involved in working with other farmer groups.

For public institutions, a potential supplier must follow the procedures set under the Public Procurement and Asset Disposal Act 2015, which include participating in an advertised free and fair tendering process where the lowest bidder with quality products is considered. Tenders are usually advertised at the end of a financial year. If a supplier secures a tender, it is given a contract as the sole supplier of the agreed produce for one or two years. Quantities are measured in kilograms (kg) and payment is made through bank transfer or by cheque within one month.

It is often difficult for MSME producers to supply to public institutions due to very stringent requirements that they set. Furthermore, a supplier must provide copies of valid statutory documents, such as company registration certificate, business permit certificate, tax compliance from Kenya Revenue

Authority (KRA) or exemption certificate, KRA pin certificate, VAT certificate, and certificate of registration as a target group issued by the National Treasury (for people with disabilities, women and young people in the Preference Reservation Scheme). The potential supplier must quote their net prices (including transport costs, marketing costs, and tax). Other conditions include having a viable grocery store, an email address, and postal address. To increase the chance of a farmer group securing a public tender, it is prudent to register under the Access to Government Procurement Opportunities (AGPO) scheme at national and county levels. This allows the group to be considered as marginalised, since 30 % of government procurement opportunities are awarded to marginalised groups.

3.4.2 Organised market without contracts

The organised market without contracts is relatively informal in their operations, although purchase orders and payment modes are usually formal. Most of the buyers in this market have well-stocked fruit and vegetable outlets in upmarket areas of Nairobi. This type of market shares some characteristics with the formal organised market, particularly in relation to product quality requirements.

This type of market does not offer contracts to suppliers because buyers do not believe contracts to be binding, as there has been a tendency in the past where suppliers did not meet the agreed product quality or breached their contracts. Therefore, buyers only provide purchase orders that specify the quantity and quality requirements, and whoever complies will get the order. Some of the buyers go even further by requiring potential suppliers to provide samples of produce for an evaluation before they can get the order. Prices are usually negotiated between buyers and suppliers, but mainly lie within the range of prevailing market prices. Most frequently the suppliers (farmers) have to deliver the products to the buyer's premises where payment is made by cash on delivery, if the order quantity is small. For large quantities, cheques are issued within one to two weeks. In general, buyers in this type of market are not familiar with sustainability issues and therefore are unwilling to pay a premium price for sustainable or certified products.

Buyers in this type of market include Manna Supplies Limited, Twiga Foods Limited, Zucchini Greengrocers Limited, and Jarin Investment Limited – a supplier to Quickmart supermarket in Nairobi, Mama Jane Green Grocery in Naivasha, and Jamaa supermarket in Nyandarua and Nakuru. These buyers have shown a keen interest in working with MSME producers involved in the GOALAN project, provided that the famers could meet their requirements.

3.4.3 Markets where trade is blended with financial support

There is an untapped potential in this market where buyers also offer financing for farm production and marketing. The buyers recognise that lack of capital can be challenging for the enterprising farmers. By offering financing, buyers can support farmers produce high quality fruit and vegetables and obtain access to market (which requires some marketing efforts). Not only that, the financial support helps reduce breaches of contracts by small producers due to economic pressure. Farmers serving this type of market also benefit from assistance in acquiring capital to finance not only good agricultural practices but also a timely produce collection ('bulking'), transportation and value addition activities. An example is the agri-wallet fintech innovation developed by the Dodore Kenya Limited. It offers a blended market and financial support, whereby a farmer is linked to buyers and input suppliers through a saving and borrowing platform that prevents the diversion of financial resources meant for agricultural production. The platform connects farmers to buyers and input suppliers in a closed loop system. It allows farmers to save funds intended for the next production cycle, use an overdraft facility, receive payments from buyers, and make payments for farming inputs (such as fertilizers and pesticides) to agro-dealers. The savings can be used to finance marketing costs, such as value addition (packaging etc). This not only ensures that the credit is not diverted to non-agricultural activities, but also farmers automatically save for the next production cycle and have access to their financial records from the system. Over time the financial records may improve the farmers' creditworthiness.

In relation to marketing, the agri-wallet can pre-pay farmers when they have secured a business with a particular buyer that usually grants approval for all financing. It ensures that farmers receive timely payments which are made via M-Pesa, a mobile phone-based money transfer, and automatically creates savings from a proportion of the money to buy farm inputs. For buyers, agri-wallet improves their working capital, stimulates a steady supply of produce to consumers or other markets, and reduces administrative costs associated with handling payments to farmers.

3.5 VALUE ADDING METHODS ALONG THE VALUE CHAIN

Actors along the vegetable value chain have adopted various value adding activities. **At producer level**, farmers tend to opt for value adding activities that require low levels of capital investment, basic equipment, and limited set of skills. These simple value adding activities include cleaning, sorting, grading and packaging of produce in clean crates or bags for transportation

to the markets. Following a training on value adding activities provided by the GOALAN project, some farmers in the lower zone of Naivasha Lake basin start to add value by making tomato jam. This value adding activity, however, is on a small scale and mostly for household consumption. The farmers are still to see the new business opportunity that the jam offers to invest in the value adding activity and expand the production scale.

At processor level, a number of factories obtain raw fruit and vegetables from farmers and implement value adding activities on a large scale. The value adding activities include cleaning, cutting, drying, and packaging vegetables such as *sukuma wiki*, spinach, carrots, potatoes, and cabbage. The value adding activities increase the value of horticultural produce and offer high quality produce and convenience for consumers. For instance, the KDF food processing factory sells dried vegetables to local retailers in Naivasha, that prolong the vegetable's shelf life. The Manna Supplies and some supermarkets make salads out of assorted vegetables, and peel and pack uncooked potato chips, while the Engineer Food Processors in the upper zone of the basin produce uncooked potato chips. These value-added products are sold to retailers (such as hotels at Naivasha Lake) and end consumers (households). For this purpose, processors generally have to invest in cold storage and transport. Hence, the value-added products usually fetch a premium price compared to the fresh produce.

At retail level, value adding activities include cleaning and repackaging fruit and vegetables. Some retailers, like supermarkets and green grocers (e.g. Zucchini), add value by making salad and fruit juices although not in large quantities. These supermarkets and grocers also buy packaged salads from processors to sell to their customers. It was found out that hotels buy raw fruit and vegetables to make packaged salads and juices, and sell it at their premises[2].

Interestingly, some retail companies also operate like wholesalers, buying large quantities of produce directly from suppliers. The companies will sort, grade, repackage fruit and vegetables before selling it to other retailers. Examples of these are the Keringet Community Social Economic and Environmental Development (KCSEED) programme in Nakuru County buys potato from farmers, process and sells it as 'cham cham' potato to retailers. The Manna Supplies in Nairobi repackages various fresh fruit and vegetables before selling it to hotels and airport food suppliers.

2) For example, 1 kg of dried and packaged potato made out of 15 kg of fresh potato at KDF food processing factory is retailed at Ksh 700. This offers a profit margin of Ksh 26 per kg, given that the potato is bought at Ksh 20 per kg. The Engineer Food Processors' uncooked and packaged potato chips are retailed at Ksh 90 per kg of Grade 1 potato and Ksh 70 per kg of Grade 2 potato, while the buying price of raw potato is Ksh 20 per kg. This represents a profit margin of Ksh 70 per kg and Ksh 50 per kg respectively.

3.6 ROLE OF VALUE CHAIN SUPPORTERS AND ENABLERS

3.6.1 Market linkage

The main role of value chain supporters and enablers is to link farmers to new markets through lobbying for market access and information provision to create awareness of emerging markets. These actors use both digital and conventional platforms to link buyers and sellers of fruit and vegetables. The Horticultural Crop Development Authority (HCDA), Fresh Produce Exporters of Kenya (FPEAK), and Ministry of Agriculture, Livestock and Fisheries (MOAL&F) are known to provide the service through non-digital platforms. On the other hand, the National Potato Council of Kenya (NPCK) establish linkages through digital platform *Viazi soko*. This is a web-based SMS platform that links potato buyers to sellers. The farmers are required to be in a group which then registers with NPCK. The farmers, through their group coordinator, post the quantities available for sale on the platform and buyers can log onto the platform to check what farmers are selling. When a buyer makes a purchase from a farmer, NPCK directly pays the farmer in cash and then waits to receive reimbursement from the buyer. To create awareness of price trends, NPCK constantly updates the market price information in major towns in the country (usually on Tuesdays and Thursdays).

Most famers taking part in the survey have not used existing market linkages. Capacity building and information provision to farmers are therefore needed. The market linkages can, for example, be promoted widely in the public domain through mainstream media such as local radio and TV stations.

3.6.2 Extension services

Specialised extension services aimed at supporting fruit and vegetable production and marketing are provided by both governmental and non-governmental actors. These actors offer capacity building on value adding methods and provide market information and advice on where to sell fruit and vegetables. In the Lake Naivasha Basin, the extension services focus on collective marketing, record keeping, identifying markets before production, selling produce per kilogram (especially for potatoes), and contract farming to support organised markets. This service is provided through farmer field schools, field days, agricultural shows, organised training programmes and digital platforms. Key actors providing the extension services include the Ministry of Agriculture, Livestock and Fisheries (MOAL&F) through their county extension staff, Horticultural Crops Development Authority (HCDA), Fresh Produce Exporters Association of Kenya (FPEAK), National Potato

Council of Kenya (NPCK), and Nakuru Farmers Call Centre which is mainly a digital platform. The platform gives the chance to farmers to request and access agricultural information ranging from farm inputs, good agricultural practices, and market information from experts. Farmers can also call or send text messages to the Call Centre to obtain market price information of fruit and vegetables in major markets in Nakuru County. The information is provided via phone calls, SMS, Facebook or Twitter.

The extension services are no longer supply driven, but demand driven. Hence, farmers should be encouraged to be proactive and seek extension services regularly. Farmers can also be encouraged to consider contract farming, which generally comes with additional benefits such as free extension services.

3.6.3 Capacity building on SCP practices, GAP and certification

Organisations offering capacity building on good agricultural practices (GAPs), SCP practices and agricultural certification include the World-Wide Fund (WWF), NPCK, HCDA and MOAL&F. Their goal is to enhance the quality of agricultural produce and farmer compliance with common standards that will enable farmers to access the markets. These capacity-building support activities range from promoting the use of appropriate farm inputs, especially eco-friendly agrochemicals, to soil testing, record keeping, food safety, and proper harvesting and post-harvest handling practices.

From the survey it was found out that many farmers have adopted SCP practices in the production of some crops. However, there is still room for improvement, especially among farmers in the upper zone of the Naivasha Lake Basin. The lower level of SCP adoption among the upper zone farmers may be due to their failing to see its benefits. This also can partially be attributed to low level of formal education among the farmers. To enhance the uptake of SCP practices, WWF Kenya need to continue promoting the long-term environmental, social and economic benefits to farmers. The WWF Kenya can consider taking farmers for peer-to-peer learning visits to model farmers (early adopters) who have reaped the economic benefits (better prices due to better quality) of investing in SCP practices.

3.6.4 Contract enforcement

Institutions like HCDA, NPCK and FPEAK are involved in the provision of training on contract farming and the drafting and enforcement of contracts between horticultural farmers and buyers. Farmers are usually advised to share any form of contracts with these institutions that help the farmers understand the terms and conditions and check whether the contract is legally

binding. This is to ensure farmers do not fall prey to unscrupulous buyers that may breach contracts or agreements, especially during glut periods when market prices are low. In addition, contract enforcement entails protecting buyers from farmers who may choose to side-sell when market prices rise above the contract prices. Furthermore, some contracts support product traceability and pay premiums for local products, which benefits both buyer and seller.

It was found that the HCDA office in Nyandarua is very active in contract enforcement. For instance, it does not allow farmers to sign contracts with more than one exporting company of a particular produce. It also works closely with FPEAK to ensure contractual compliance. In some instances when buyers fail to pay, HCDA liaises with FPEAK to ensure payments are made promptly to farmers. Failing to do so can result in the exporter's licence revoked.

3.6.5 Infrastructural support

To strengthen fruit and vegetable markets, infrastructure such as certified seeds (farm inputs), rainwater harvesting structures, storage facilities, feeder roads, and sufficient open market space (stalls) in public markets are key investments that public and private actors need to consider. It is known that NPCK is currently supporting 22 farmer groups in Kenya to construct aggregation stores (ambient stores) for potato storage. These are dome shaped stores made from local materials, where potatoes can be stored for up to two months, so that farmers can have enough time to search for markets. There are two such stores in the Lake Naivasha Basin, which are at Ol-Kalou. Also, Keringet Cseed (KCSEED) foundation in Nakuru County has built a potato storage warehouse, where farmers can store their potatoes for Ksh 100 per 90,000 bag/year.

It is gathered during the survey that farmers in the Basin still require support in acquiring equipment for value adding activities. For example, solar driers that can prolong the shelf-life of horticultural produce. Dried fruit and vegetables may create new business opportunities for farmers (producers) and offer additional source of income.

Building feeder roads from farms to markets and main roads can greatly improve farmers' access to market. This work falls under the authority of the county governments. At press time, farmers in the upper zone of the Basin are facing huge challenge to access the market because during rainy season most of the roads are impassable.

3.6.6 Financing

Finance for capital and logistical investments is needed at every stage of the fruit and vegetable value chain. In the Basin, farmers, wholesalers and retailers tend to rely on personal savings. These value chain actors have to reinvest business profits or borrow from financial institutions such as mobile money platforms, banks, and saccos (savings and credit cooperative societies) to finance their operations.

It was found that formal financial institutions in the basin have developed financial products targeting horticultural MSMEs (enterprising farmers). These products combine financial support with capacity-building on good agricultural practices (GAPs), agri-business management skills, use of agricultural credit, and marketing. This is done to ensure a prudent use of credit. To offer the capacity-building activities, the financial institutions work with farm input suppliers, buyers (such as exporters) and government extension staff. However, farmers' access to agricultural finance from formal financial institutions is still rather limited. This can be attributed to farmers having irregular cash flows, being listed under the Credit Reference Bureau (CRB) due to defaulting on loans borrowed from mobile money platforms, and lacking financial management skills (such as basic bookkeeping).

A good example of a formal financial institution in the Lake Naivasha Basin is the Equity Bank Naivasha Branch, which operates schemes such as Financial Access to SMEs & Rural Population (FAS-RAT) and Young African Works Kenya (YAWK). The bank offers a *Kilimo* loan at 13 % per annum on reducing balance (with flexible repayment terms) and agri-insurance at about 4 % of the value of the expected output. The basic requirements to access this credit, which is pegged at five times the saving amount, include having had an active account with the bank for at least six weeks, having experience in producing the target crop for at least one season, and having basic training in agriculture. The bank has partnered with input suppliers and exporters like FrigoKen and Kenya Fresh to train and offer credit for horticulture to farmers in the upper zone of the basin.

The agri-wallet innovation already described in Section 3.3.3 also provides farmers with solutions for agricultural finance. Despite its ability to address both financial and market challenges, this product is not so popular with the farmers in the Lake Naivasha Basin. Institutions like WWF Kenya could partner up with Dodore Kenya Ltd (proprietor of the agri-wallet) to create an awareness of the financial product among the farmers.

Other financial institutions also offer financing. These include the Agricultural Finance Corporation (AFC), a government institution with branches across the country, including in Naivasha and Nyahururu. AFC offers farmer-friendly loans at an interest rate of 10% per annum with flexible repayment terms customised to production seasons. Recently, AFC also adopted crop index-based insurance and is partnering with organisations such as Acre Africa in offering such services.

CONCLUSIONS AND RECOMMENDATIONS 4

This study examined the market requirements of existing and potential markets, as well as challenges and opportunities relating to MSME finance, to enhance the sustainable production and marketing of fruit and vegetables in the upper and lower zones of the Lake Naivasha Basin, with the aim of improving the MSMEs' market access and incomes. It is expected that solutions identified in this report can contribute to significant enhancement of local livelihoods through green job creation (from new business opportunities) and improved water security in the basin.

From the study it is clear that WWF Kenya, through the EU-funded Switch Africa Green GOALAN project and in collaboration with various stakeholders, has provided extensive training on sustainable consumption and production (SCP) and that farmers have adopted the practices. Crucially, farmers have realised that when SCP practices are not followed, this affects not only the end consumers (through unsafe and low-quality produce), but also the farmers' own livelihoods as they cannot sustain the production of fruit and vegetables. Similarly, farmers now fully comprehend how the environment and natural resources around them are interrelated and that if they do not take care of the environment, future generations and their descendants will suffer the consequence.

The study identifies a wide range of existing as well as potential markets to target, for an organised marketing of locally produced vegetables in the Lake Naivasha Basin

The study identifies a wide range of existing as well as potential markets to target, for an organised marketing of locally produced vegetables in the Lake Naivasha Basin. Although full market access is yet to be achieved, with further market support from WWF and other stakeholders, farmers should be able to fully exploit the market opportunities and turn their smallholdings into viable businesses while ensuring the sustainable use of natural resources at their disposal.

A number of challenges to accessing market have been identified by farmers and buyers. For farmers, the key challenges are high rejection rates by exporting companies and costly orders in small quantities by some buyers such as hotels. For buyers, the challenges include unstable supply, limited product ranges, side-selling, and low-quality produce. Some solutions have been elaborated to address these challenges – particularly from the demand side. These include establishing aggregation hubs (which can also address

some of the supply challenges), promoting vegetables produced using SCP principles, product diversification both at production and retail levels, and better articulated support of value chain activities by supporters and enablers.

The potential market buyers have expressed a high level of willingness to work with MSMEs (producers) participating in the GOALAN project, by buying their produce and supporting the use of SCP practices. Details of the market requirements of these buyers are annexed to this report. It is anticipated that farmers will be able to increase their incomes by participating in these markets.

Key potential investments that WWF could prioritise in the short term to enhance market access and address sustainability challenges include:

1. Piloting the aggregation hubs with one or two producer groups

Active farmer groups, such as Momaki Green Growers in the basin's lower zone, could be supported to create an aggregation hub – preferably located near the hotels on the South Lake Road in Naivasha. This could be done in collaboration with buyers such as Elsamere Lodge, who expressed their interest in supporting such an initiative. The aggregation hub could be housed in a rented shop or modular container, and branded.

2. Fast-tracking compliance with KS 1758 standard and certification

WWF, in partnership with HCDA and other buyers, could support the certification process of MSMEs with KS 1758 standard. This certification could open up new markets and increase buyer participation. This action would specifically increase MSMEs' access to export markets.

3. Enhancing promotion of SCP practices among various stakeholders, e.g. farm input suppliers, buyers and direct consumers

This entails creating awareness in the public domain (through agricultural shows and exhibitions) and in the local media about the sustainably produced fruit and vegetables, and how the produce is better from other produce in the market. This could help consumers understand the need to pay a premium price for sustainable produce and encourage them to adopt sustainable consumption for better health and environmental conservation. Promotion of SCP practices could also be enhanced through rewarding lead farmers who have adopted SCP practices. They could be awarded with a certificate as model farmers or trainers in their localities.

4. Initiating stakeholder meetings and digital platforms that link MSMEs to buyers

The buyer and seller forums, whether physical or digital, are useful for networking and enhancing social capital – eventually leading to a reduction in risky behaviour among actors and an increase in public welfare. These forums would help farmers to clearly understand what products that the buyers seek and buyers could access sustainable produce. The forums could include regular (e.g. quarterly) farmer-buyer meetings to review progress in the delivery of produce and address any emerging issues or trends in the market.

5. Organising farmers exchange visits to enhance capacity in the production and marketing of fruit and vegetables

The WWF could organise farm visits to successful model farmers to promote knowledge exchange and peer-to-peer learning. In particular, farm visits within Nyandarua and Nakuru counties would help encourage MSMEs to adopt various innovations in their vegetable agribusinesses.

6. Supporting the scaling up of adaptable value adding methods at MSME level

Some producer groups have adopted value adding methods, but more support is required to upscale activities that could increase the economic benefits to producers (MSMEs). For instance, the producer group which makes tomato jam could be supported to produce higher quality jam, through training sessions, and to access markets for value-added products. Not only supporting with the acquisition of relevant certifications, such as KS 1758, WWF could also assist the MSMEs in acquiring value-adding equipment, such as vegetable solar driers, fruit blenders, etc.

7. Blending financial support with trade through platforms such as Agri-wallet

WWF could partner up with buyers and financial institutions, such as Dodore Kenya Limited and Equity Bank respectively, to introduce MSME financing for agricultural activities through controlled systems that restrict the diversion of credit to non-agricultural activities. This type of financing could be piloted before being scaled up. The WWF's support in accessing finance could be provided to producers through such a system, which would enhance the sustainability of the GOALAN project beyond its lifetime, as farmers would start saving and reinvesting in their own farms. The saving would greatly increase the MSMEs' creditworthiness when they would like to expand their agribusiness, for example, by selling value-added products.

INTERNATIONAL MARKET ANALYSIS REPORT FOR FRESH FRUIT AND VEGETABLES

Prepared by Joshua Aseto, Kartika Anggraeni,
Francesca Grossi and Connor McNee, CSCP, October 2019

INTRODUCTION

1

Today's consumers enjoy year-round access to good quality and affordable food products from many parts of the world, due to globalised and interconnected value chains. Not only consumers but also farmers, producers and other actors in the food industry have benefited from this increased access to markets and business opportunities without geographical limits. However, this supply chain interconnectedness has come at a high price, including adverse environmental (e.g. climate change issues, such as biodiversity loss, water and soil degradation, deforestation and desertification), social (e.g. poor working environments and occupational health standards, precarious employment and competing land rights) and economic impacts (e.g. reduction of the economic capacity of smallholders, despite the fact they actually contribute 70 % of the world's food production; high levels of poverty as a result of price fluctuations and poor agricultural investments; unfair trading practices, lack of supply chain transparency and traceability, price fixing, and greenwashing…) (Fairtrade, 2013).

Over the years, the European Union (EU) has been a prominent leader in driving the sustainable consumption and production (SCP) agenda[3]. With respect to the food sector, the EU has invested considerable resources in developing, regulating and ensuring the implementation of standards for sustainable food and agriculture. These standards, given the interdependence of food supply chains, have also acted as guidance to actors outside of the EU's territory who wish to operate in the European market.

Against this background, and in view of the key objectives of the EU-funded Switch Africa Green "Introducing Green Horticulture in Lake Naivasha in Kenya" (GOALAN) project, this report aims to provide an overview of the European market for fresh fruit and vegetables (FFV), particularly its import market from third countries and existing market demand, standards and requirements. The aim is to support actors operating within the Kenyan horticultural sub-sector (including smallholders and MSMEs) in identifying key market opportunities for leverage and better understanding the necessary adjustments and changes to their daily procedures and business operations; enhancing the grasp of the needs and expectations of European companies and consumers; and ultimately to shed further light on the role played by SCP practices driven by the increasing demand for sustainable fresh fruit and vegetables in Europe and worldwide.

The findings derived and presented in this report are based on a qualitative analytical method building on scientific and grey literature, as well as on European retailers' common procurement and sustainability practices.

3) In 2008, the European Commission also launched its SCP action plan as part of the EU's commitment towards the United Nation's Marrakech Process. The EU's efforts to advance sustainability have continued and SCP is now the standalone Sustainable Development Goal 12 (SDG 12).

2.1 EUROPEAN MARKET FOR FRESH FRUIT AND VEGETABLES: LOCAL PRODUCTION & IMPORT TRENDS

The European Union's single market is the world's largest trading block and the world's second largest economy (Eurostat, 2016). It comprises the European Union (EU), a political-economic union of 28 Member States (EU28), and the European Free Trade Association (EFTA). It is home to more than 500 million people and hosts five of the global top 10 importing countries.

Accordingly, the EU offers a prime market for the trade of FFV that is large, stable, mature and dynamic. It boasts significant purchasing power. Looking at our specific interest sector, it is interesting to notice that the handle of FFV in the is dominated by certain countries: Spain and Italy are the main producers of FFV in the EU (Eurostat, 2019). Spain is by far the highest EU producer of fruit, whereas Italy leads in vegetable production, as portrayed in Figure 1. Over the past few years, Spain´s role as a trade hub has continued to grow (CBI, 2019). Italy is an exception, as it has a very large market for FFV but meets the vast majority of this demand through local production, complemented by minimum levels of imports.

EU top producing countries of fresh fruit and vegetables
(by the size of cultivated area)

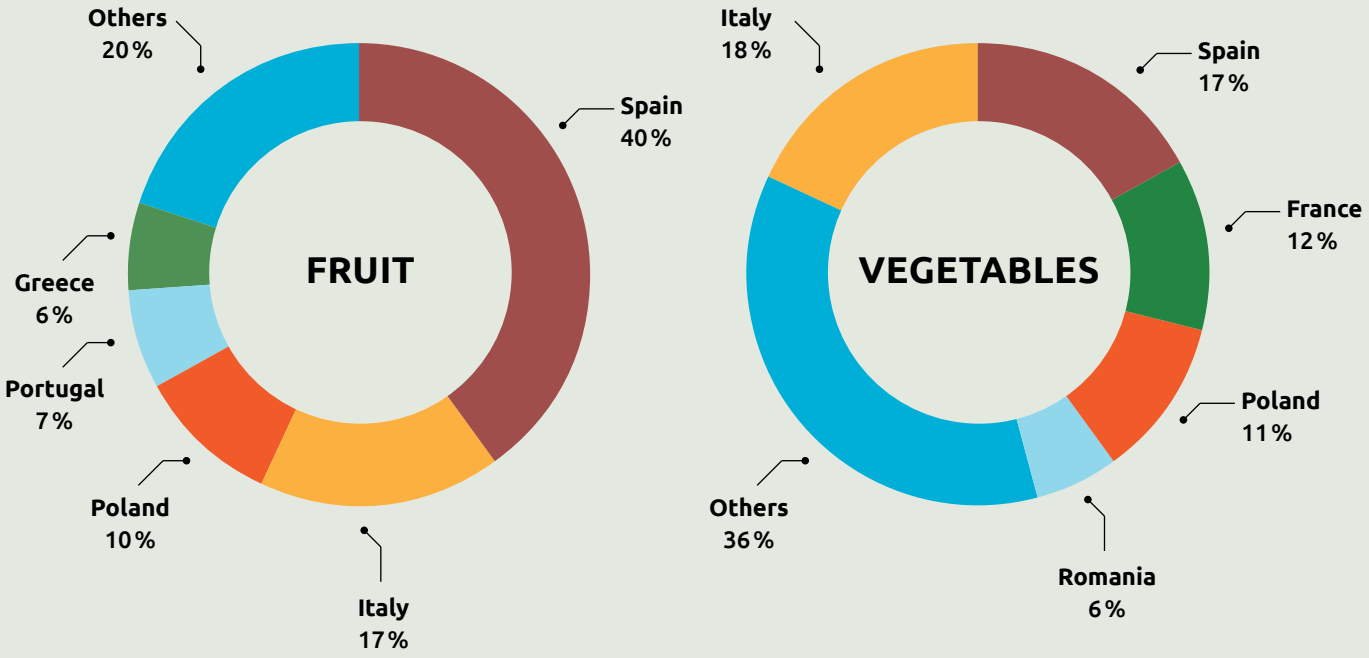


Figure 1: Authors, adapted from Eurostat, 2019

FRUITS PRODUCED IN EU COUNTRIES

Fruits	Proportion to EU Total cultivated area for fruits
Nuts (almonds)	33.8 %
Pome fruits (apples and pears)	19.2 %
Stone fruits	18.6 %
Citrus fruits	14.9 %

Table 1 – Source: Authors, adapted from Eurostat, 2019

VEGETABLES PRODUCED IN EU COUNTRIES

Vegetables	Proportion to EU Total cultivated area for vegetables
Tomatoes, pepper, aubergines, melons, courgette, cucumbers, gherkins	27.1 %
Root, tuber & bulb vegetables (carrots, radishes, onions, shallots, garlic)	20.3 %
Leafy and stalked vegetables (lettuce, spinach, chicory, endives, asparagus, artichokes, etc.	18.6 %

Table 2 – Source: Authors, adapted from Eurostat, 2019

Although, most of the FFV produced in the EU is traded within the EU and it is almost self-sufficient in terms of vegetable production, the European Union also has to rely on FFV imports in order to meet the current demand. Specifically, the EU's FFV trade accounts for more than 45 % of the global total of FFV (CBI, 2019). It imports 13 % of vegetables from non-EU countries, with Morocco, Israel and Egypt being the top vegetable exporters (Eurostat, 2019). The share is higher for fresh fruit imports, amounting to 40 % in 2017 (Table 3). Most of the fruit is imported from Costa Rica, Colombia, Ecuador and South Africa.

MAIN IMPORTED FRUITS TO THE EU

Main imported fruits	Contribution to FFV Import total Value
Fresh and dried nuts	20.5 %
Bananas	19.5 %
Dates, figs, pineapples and avocados	14.2 %
Citrus fruits	9.9 %
Grapes	9.1 %

Table 3 – Source: Authors, adapted from Eurostat, 2019

The Netherlands (see Figure 2) is the main European trade hub for FFV. It is responsible for more than 20 % of the FFV that enters the EU from developing countries. Even though Germany is the largest European market for FFV and pays the highest prices for FFV in Europe, most fresh produce from developing countries enters the German market either through the Netherlands or Belgium, due to logistical reasons linked to access to seaports. Germany and France both use the Rotterdam and Antwerp seaports as logistical hubs. With regards to the United Kingdom, at least 40 % of the FFV imports come directly from developing countries based on 2018 estimates (CBI, 2019). This makes the country the second largest destination market for fresh produce exports from developing countries after the Netherlands.

IMPORT VALUE OF FFV FROM DEVELOPING COUNTRIES IN MILLION EUR

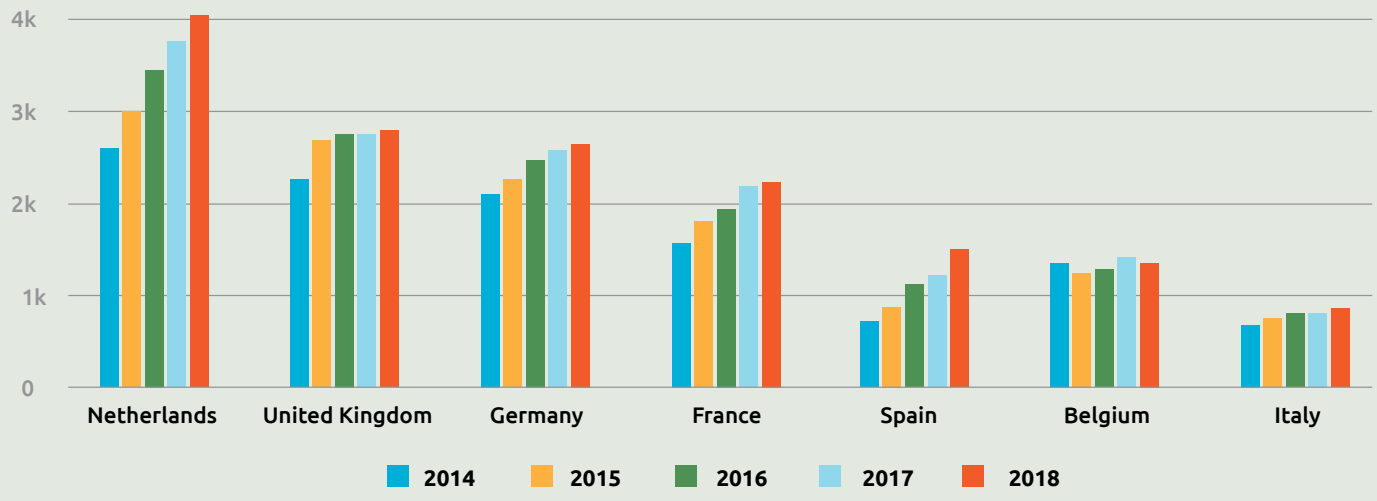


Figure 2 – Source: CBI, 2019

When analysing the combined value of FFV imports to the EU, the following countries dominate the trade: United States (12 %); South Africa (9 %); Turkey (9 %); Morocco (8 %); and Costa Rica (7 %). Kenya's FFV market share in the EU accounts for only 1 % (Figure 3).

MAJOR FFV IMPORTS FROM NON-EU COUNTRIES

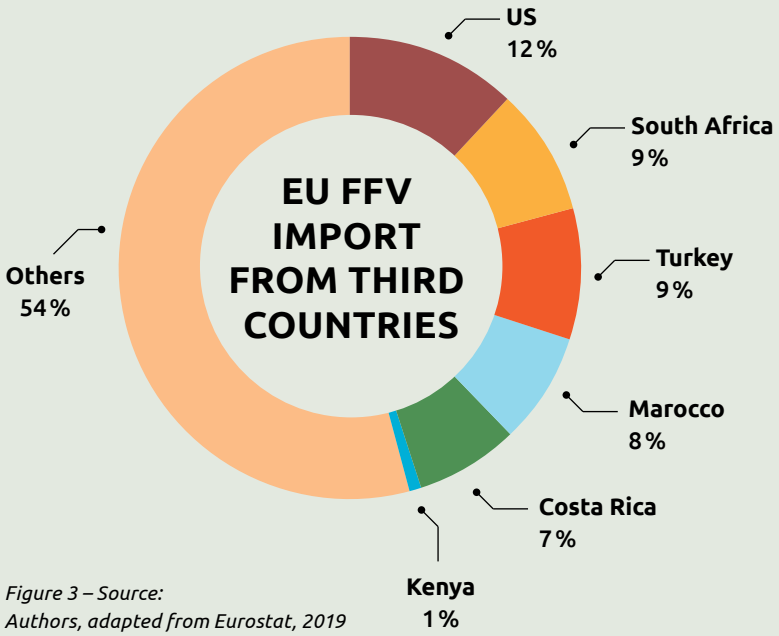


Figure 3 – Source: Authors, adapted from Eurostat, 2019

The EU experienced significant growth in the value of FFV imports from developing countries between 2014–2018. In 2018 this trade had a value of EUR 18.2 billion (CBI, 2019c). Fruit imports accounted for over 80 % of this total value (Eurostat, 2019) as shown graphically in Figures 4 and 5.

THE EUROPEAN IMPORT OF FRESH FRUITS IN BILLION EUR

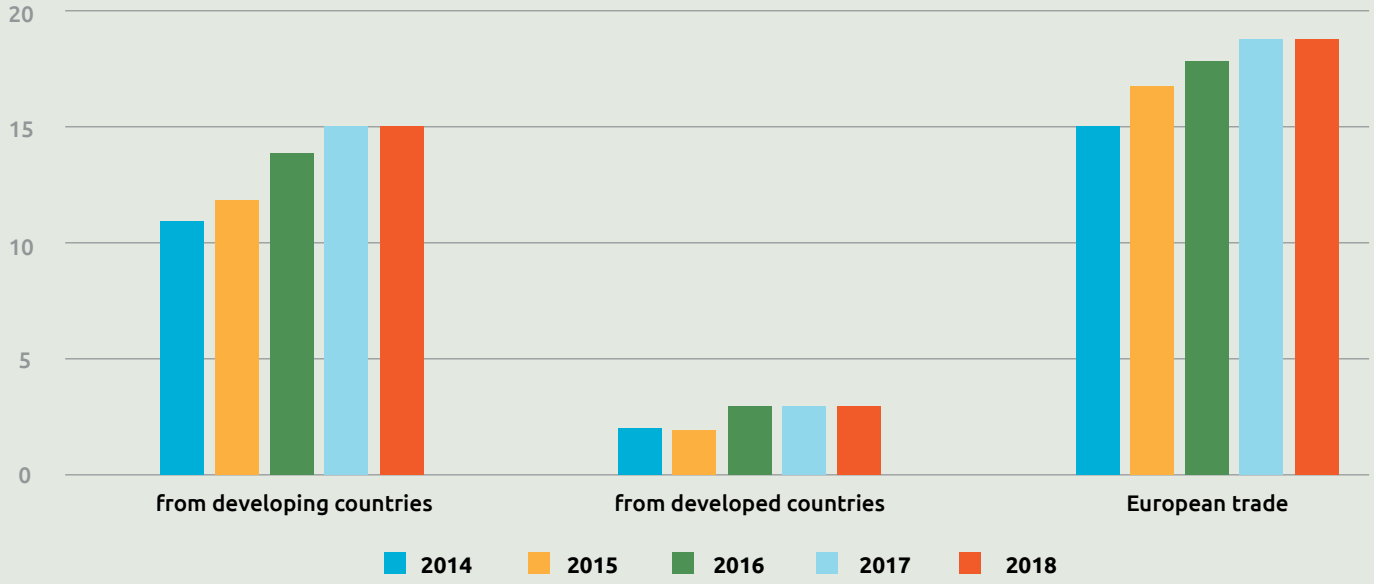


Figure 4 – Source: CBI, 2019 page 4

THE EUROPEAN IMPORT OF FRESH VEGETABLES IN BILLION EUR

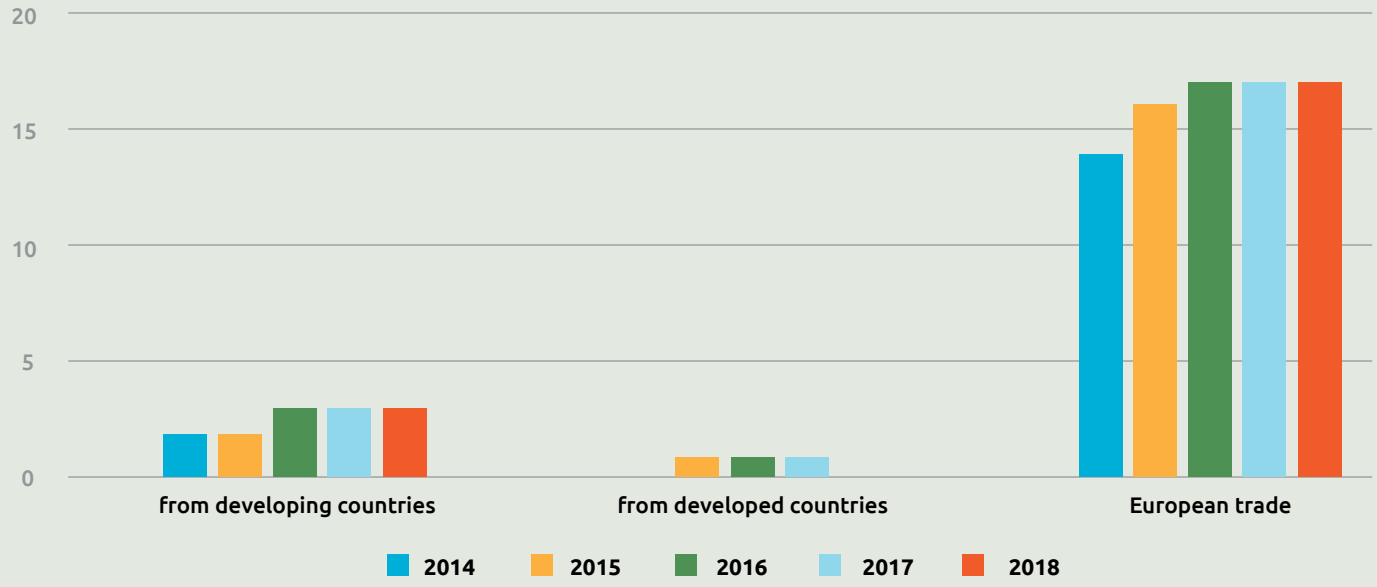


Figure 5 – Source: CBI, 2019 page 4

Finally, it should also be noted that FFV are not only consumed directly or traded as raw commodities but are also processed into a range of products that are in demand in the EU markets (Table 4).

SOLD PRODUCTION, EXPORTS AND IMPORTS BY GROUPS OF PROCESSED PRODUCTS BY 28 EU COUNTRIES IN 2017 IN MILLION EUR

	Sold Production	Exports	Imports
Juices	10 070	868	2 245
Frozen, dried and preserved fruits and vegetables	37 322	2 617	10 890
Tomato ketchup and other tomato sauces	1 640	153	23
Prepared meals and dishes based on vegetables	2 116	:	:
Drained, glace or crystalised fruits, nuts, fruit-peel and other parts of plants, homogenised fruits and vegetables	645	132	39

Table 4 – Source: Authors, adapted from Eurostat, 2019

: Not available

The EU is the world's biggest market for canned fruit and vegetables and accounts for more than 42 % of total world imports (CBI, 2018c). Processed fruit and vegetables in the EU can roughly be grouped into frozen, dried and preserved fruit and vegetables, juices, tomato ketchup and sauces, prepared vegetables, and drained and homogenised fruit and vegetables (Table 4). According to Eurostat (2019), the processing of fruit and vegetables is concentrated in five EU countries and has a value of EUR 51.5 billion, or 6.5 % of the overall value of the EU food industry's output.

A number of factors contribute to shape the EU's demand for FFV imports from non-EU countries:

- **Complementing local production:** Spain and Italy are the largest producers of FFV in Europe, accounting for more than 42 % of total production. While vegetable production has remained stable for a number of years, there has been a sizeable decrease in fruit production capacity. The small size of the majority of FFV farms in Europe (over 70 % are smaller than 5 ha) has led to inefficiencies and high costs of production. This has put the small FFV farms in the EU at a comparative disadvantage and made them less competitive globally. To increase production, improve the quality of the produce and extend production seasons, most farmers resort to the use of technology and modern farming techniques. However, although this has led to enhanced product quality, there has been minimal growth in overall production volumes. As a result, the EU still depends on imports to meet its demand for FFV (CBI, 2019).

- **Year-round availability:** Most European retailers strive to guarantee the availability of an assortment of FFV on their shelves all year round so that their customers can buy the produce at any time, regardless of the season. To achieve this, European retailers look for suppliers or partners who can provide continuous supply. Consequently, imports from developing countries play a crucial role in ensuring the year-round availability of FFV to consumers in supermarkets (CBI, 2019).

- **Seasonality of FFV:** Most of the EU's domestic production of FFV takes place during the summer season, and it can meet local demand for some produce through domestically grown FFV. However, during the winter season, some FFV are not available as they are out of season. In addition, the production of some FFV require specific seasons or climates that are not found in Europe. Imports are, therefore, crucial in managing the seasonality of FFV products (CBI, 2019).

- **Diversity and niche products:** There is a growing interest in, and demand for, exotic FFV in Europe, particularly for exotic fresh fruit. Most of these exotic fruit varieties can only be cultivated outside Europe; for example, tropical fruit like passion fruit, lychees and rambutans. This presents an opportunity for FFV exporters and producers from non-EU countries (CBI, 2019e).

In terms of consumption volumes and patterns, Europe can generally be divided into three different regions with distinct characteristics: Northwest Europe, Southern Europe and Eastern Europe (CBI, 2019).

- **Northwest Europe:** is the most economically mature and the strongest market for FFV due to its highest average purchasing power and greatest demand for tropical and exotic fruit and off-season vegetables. Larger retail chains dominate this region and are characterised by the highest standards of quality and food safety (CBI, 2019).

- **Southern Europe:** also serves as a strong production region of FFV in the EU and is characterised by consumers who prioritise taste over the technical quality of the product. In this region, Spain, Italy and Portugal have substantially higher FFV consumption, especially of fruit. However, the local supply is not sufficient to meet the market demand, leading in particular to imports of tropical fruit to fill the gap (CBI, 2019).

- **Eastern Europe:** is the least developed in terms of international FFV trade. In general, expectations around food standards and requirements are not as high as those in the rest of the EU. FFV consumption is generally lower and gravitates towards local produce rather than imports. Notwithstanding, the Eastern European market is developing at a steady pace, implying an increasing potential for future foreign supply (CBI, 2019).

2.2 KEY FFV IMPORTS FROM KENYA TO THE EUROPEAN MARKET

Kenya produces a wide range of FFV that are in high demand in the European market. These include French beans (extra fine, fine and bobby), snow peas, mango, avocado, passion fruit, red onions, sweetcorn, red cabbage, coriander, sugar snap peas, courgettes, asparagus and baby corn. However, the current FFV exports from Kenya to the EU consist of nuts, dates, cabbage and leguminous vegetables (Eurostat, 2019). Kenyan fruit and vegetables in the EU face stiff competition, particularly from Ecuador, Colombia, Chile, Peru, Israel, Egypt and Morocco, all of which produce similar FFV and export it to the EU in large quantities, thus dominating the market (Table 5).

KEY EU FFV IMPORTS FROM KENYA

FFV product	FFV product variety exported from Kenya	EU country destination(s)	Season for Kenyan imports	Other suppliers to the EU/ Competitors
fresh peas	Sugar snaps and snow peas	UK, Netherlands	All year round Oct – Nov (peak season) April – May	Guatemala, Zimbabwe and Peru
green beans (extra fine, fine beans)	Amy, Teresa, Samantha, Serengeti, Julia, and Paulista	UK, Netherlands and France	All year round Oct – Nov (peak season)	Morocco, Egypt and Senegal
Cabbage	No data available	No data available	No data available	No data available
Passion fruit	Purple passion fruit	UK, Netherlands	All year round	South Africa, Colombia, Zimbabwe, Burundi
Mangoes	Apple and kent	UK, Netherlands, France and Germany	Mar – April (peak season) Nov – Dec	Israel and the United States
Avocado	Fuerta and Hass	Netherlands, France and UK	June – Oct (peak season)	Peru, South Africa and Colombia

Table 5 – Source: Authors, 2019 adapted from CBI, (2018), CBI, (2018a), CBI, (2019a), Eurostat, 2019

Despite the competition, Kenya has key produce that it can continue to strengthen and capitalise on, such as:

- **Fresh peas:** The demand for imported fresh peas (especially sugar snaps and snow peas) has been increasing over recent years and amounted to 30,000 tonnes in 2017 (CBI, 2019a). European consumers consider sugar snap peas and snow peas to be special vegetables compared to other common peas and

beans and there is year-round demand for them. This demand is met almost entirely through imports from developing countries: mainly Guatemala, Zimbabwe and Kenya. Most of the fresh beans, peas and other leguminous plants are exported to the United Kingdom and the Netherlands, especially in the off-season period from September to June. Scandinavian countries are also witnessing increasing demand for sugar snap pea imports (CBI, 2019a). Currently, **Kenya is the only country that supplies sugar snap peas and snow peas to the EU all year round**, with peak exports from October to December, and it was the third leading supplier in 2017 (CBI, 2019a).

- **Green beans (also known as French beans)** are popular among European consumers. Even though the EU is the second largest producer of green beans and pulses, its production levels have been declining. With local production unable to meet the EU's domestic demand, imports of green beans and pulses have been increasing in recent years. Despite the fact that France is the main producer and supplier of green beans to Europe, the country also functions as the gateway for developing countries to export green beans. Current statistics show that most of the green bean imports to the EU are from developing countries; namely Morocco, Egypt, Kenya and Senegal. Over the years, these countries have played a key role in meeting the EU's out-of-season green bean demand (local production of green beans in Europe only takes place during the summer season from July until October) (CBI, 2019a). Suppliers from Morocco and, to some extent, from Senegal cover the March to June period, while imports from Egypt and Kenya dominate the EU market between October and December. It is important to note that Kenya was the leading supplier of green beans to the European market until 2000 (GTI, 2018). However, it is currently the second largest supplier after Morocco. Over 50 % of Kenya's green beans are exported as fresh produce to Europe, with the Netherlands, the UK and France being the main importers. In addition, Kenya also exports processed (e.g. canned) green beans to Europe with France, followed by Belgium and the United Kingdom, the main importer (VCA4D, 2018).

- **Cabbage:** Kenya is the main non-EU supplier of cabbage to the EU, with a dominant market share of over 45 % in 2017 (Eurostat, 2019)

- **Passion fruit** is one of the varieties of tropical fruit whose demand in the EU has been steadily growing. There are generally three types of passion fruit: yellow passion fruit, purple passion fruit and sweet granadilla. Brazil is by far the largest producer of passion fruit, but it only trades processed passion fruit products (i.e. concentrated juice) internationally – not the fresh fruit. Colombia is the main supplier of fresh passion fruit (particularly yellow

passion fruit) to the EU. The supply of passion fruit to the EU is year-round, with almost all the main suppliers, except Israel and South Africa, able to meet this demand. Kenya is one of the main suppliers of purple passion fruit to the EU, together with South Africa and Colombia. Zimbabwe and Burundi also export purple passion fruit to the EU, but irregularly and in smaller quantities. The UK imports the biggest percentage of passion fruit from Kenya. British companies process the raw fruit into puree and 're-export' the blended fruit juice to other countries in Europe (CBI, 2019e).

- **Mangoes:** The EU market for mangoes has been growing since 2013 and it imports 360,000 tonnes annually. However, Europe has set stricter phytosanitary controls for mangoes due to the many reported cases of the presence of harmful organisms in the mango imports to the EU from third countries (CBI, 2018d). Mango is the second product, after pepper, with the most interceptions at the EU border (FreshPlaza, 2019). Despite the fact that the EU imports a relatively small portion of Kenyan mangoes, Kenya is keen on increasing the volume. Currently, the UK, France and Germany are the main importers of Kenyan mangoes in the EU.

- **Avocado:** The EU market demand for avocados continues to grow. The hass avocado variety is the most popular (in contrast to the green varieties) and it continues to increase its market share (CBI, 2020). Kenya is the world's third largest producer of avocados. It is also Kenya's leading fruit export, accounting for nearly one-fifth of its total horticultural exports (IFPRI, 2020).

EU MARKET REGULATIONS AND ENTRY REQUIREMENTS

3

The EU market of FFV is largely dominated by large supermarkets that control more than 60 % of the produce sold. The supermarket share varies across the regions of Europe, with supermarkets in Northwest Europe having the largest share. In fact, some of the largest European supermarkets include the Schwarz Group (which includes Lidl), Tesco, Carrefour, Metro Group, Auchan, REWE Group, EDEKA, Leclerc, ITM (Intermarché) and Sainsbury's (CBI, 2018a). This centralised supply chain has naturally resulted in supermarkets having a significant influence on product requirements across Europe as it will be presented.

When entering European markets, exporters from non-EU countries need to follow specific requirements and regulations which differ depending on the product specifications. Whereas most requirements are a result of regulations and standards, product specifications are generally an arrangement between the EU importer and the producer and vary from one product to another. Accordingly, the entry of any FFV produce into the European market is subject to compliance with requirements and regulations that can be divided into three broad categories: (1) mandatory or "must" requirements; (2) common requirements; and (3) niche market requirements for specific segments (Figure 6) (CBI, 2014 & IPD/CBI, 2016).

PYRAMID OF INSTRUMENTS AND STANDARDS/CERTIFICATION SCHEMES CONCERNING FFV

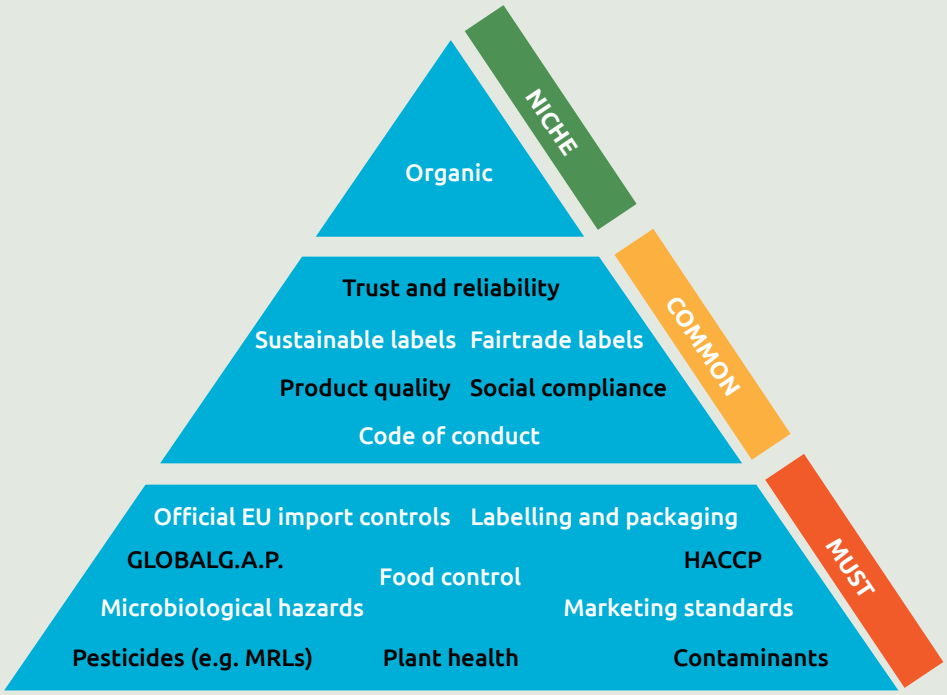


Figure 6 – Source: Authors, adapted from CBI, 2014 & IPD/CBI, 2016

Supermarkets (retailers) require adherence to very high food safety and quality levels, as well as to strict logistical procedures as detailed in the previous section. Furthermore, most large supermarkets have their own standards, which sometimes exceed the already-strict EU regulations on product safety and quality. In view of this, the supermarkets have special service providers to deal with importers (who buy FFV from non-EU countries), exporters and local producers (farmers) in the origin country, to source and deliver high quality products (CBI, 2016). A simplified FFV supply chain is shown in Figure 7.

EU IMPORTED FFV SUPPLY CHAIN

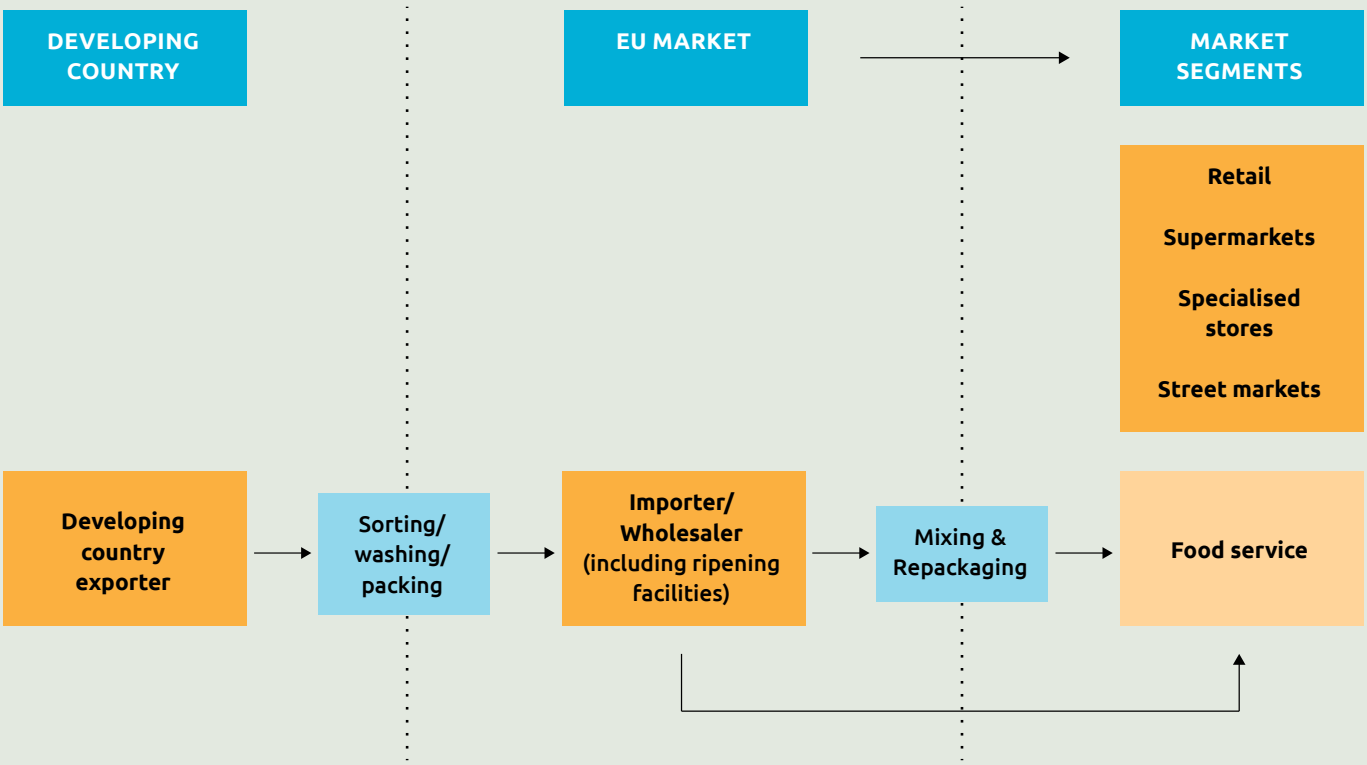


Figure 7 – Source: Authors, adapted from CBI 2018a

Some general trends are common to the largest supermarkets in the four primary importing countries of FFV in the EU (the Netherlands, the UK, Germany and Belgium): Ahold Delhaize and Lidl in the Netherlands, Sainsbury's and Tesco in the United Kingdom, EDEKA and Kaufland in Germany, and Carrefour and Colruyt in Belgium. In an analysis of their communicated priorities on FFV imports, all eight chains use a mosaic of the available certification schemes and sustainability initiatives available (Table 6).

These schemes correspond to the three broad categories of "Niche", "Common", and "Must", as illustrated in Figure 6. As far as the basic "Must" category is concerned, which covers factors such as labelling, contaminants, food health, food control, pesticides, etc., most of these obligations are covered by national and EU laws. Exceptions, however, are the German supermarkets EDEKA and Kaufland, which enforce a stricter pesticide limit (70 % or stricter for EDEKA and 80 % for Kaufland); the six other major supermarkets appear to set their maximum pesticide limits (MRL) in accordance with legal requirements (CBI, 2016).

NON-EXHAUSTIVE LIST OF CERTIFICATION SCHEMES AND INITIATIVES THAT MAJOR SUPERMARKETS ADOPT OR ADVERTISE ON THEIR PRODUCTS

Supermarket	GlobalG.A.P.	Environmental	Social
Ahold Delhaize	Yes		CFSI
Lidl	Yes	USDA - Organic Non-GMO project	Rainforest Alliance Fairtrade
Sainsbury's	Yes	In-house standards	In-house standards
Tesco	Yes	FSC PEFC	Fairtrade Red Tractor Rainforest Alliance
EDEKA	Yes	Naturland EU-Bio FSC	Rainforest Alliance Fairtrade
Kaufland	Yes	EU-Bio FSC	Rainforest Alliance
Carrefour	Yes	FSC PEFC	Partners with International Federation of Human Rights
Colruyt	Yes		

Table 6 – Source: Authors, 2019

As far as the "common" certification schemes are concerned, the eight retailers are either fully certified by the GLOBALG.A.P initiative or expect their suppliers to be. There are some minor exceptions, however, for small-scale farmers. Ahold Delhaize, for example, communicates in its sustainability reports that if acquiring GLOBALG.A.P certification is difficult for small-scale farmers, the supermarket may still be willing to purchase FFV from the producers or growers. This appears to affect a minority of imports, but still presents a potential opportunity for uncertified producers.

Finally, as far as the "niche" schemes are concerned, the eight supermarkets implement a large number across their product lines. These schemes can present themselves as both opportunities or barriers to market entry, depending on the resources and compliance level of the exporters.

Accordingly, to become a regular supplier to the large retail chains, suppliers must be able to guarantee very high standards, provide reliable volumes, make timely deliveries and be flexible around seasonality or increased demand. Consequently, importers who are consolidated, large and well-organised are most likely to be able to meet these conditions. These importers, therefore, are the ones who supply the fresh produce from developing countries to retailers, since existing market requirements and legislation create barriers that are too complex for small-scale growers. Some of these large importing wholesalers also act as service providers to supermarkets by investing in added-value services, such as state-of-the-art ripening and packing houses, and mixing. Others hire or rent these services when needed. Despite the dominance of large importers in the EU market, smaller importers can still find opportunities, especially in the niche markets, by offering unique, exotic or organic products.

3.1 EU LEGAL AND NON-LEGAL REQUIREMENTS

The legal or mandatory requirements that must be met in order to enter the European market are mostly regulations stipulated by the EU that call for total adherence. In general, the requirements include food safety, product quality (or marketing standards including freshness, size, quality, presentation, tolerances etc.), and traceability.

- **FOOD SAFETY:** The EU has a detailed system and related procedures to ensure food safety for its citizens. It has set regulations addressing various issues and product categories, with which non-EU exporters must comply. There is a list of requirements for products that exporters and suppliers

can check online at the EU Trade Helpdesk. There are both general requirements set by the EU and country-specific requirements set by individual EU member states (CBI, 2018d).

The EU online helpdesk provides information on both EU and country-specific export/import procedures for specific agricultural products. This information includes the control of pesticide residues, the control of contaminants in foodstuffs, the health control of genetically modified food, the health control of foodstuffs of non-animal origin, traceability, compliance and responsibility in food, labelling of foodstuffs, marketing standards and voluntary criteria for organic production (CBI, 2018d).

For example, the EU regulates the maximum residue levels (MRLs) for **pesticides** in and on food products that enter the European market. However, it is worth mentioning that some major European retailers impose even stricter MRLs that go beyond the levels set by the EU. To enforce this regulation and ensure that producers and exporters comply, most European retailers and other key buyers require upfront information about pesticide spray programmes and records (CBI, 2019).

As well as pesticide residue, the EU also sets limits for certain **contaminants** (particularly nitrate and heavy metals, such as cadmium, lead, mercury and inorganic tin) and **microbiological hazards** (such as Salmonella and E. coli) in pre-cut fruit and vegetables, as well as unpasteurised juices and sprouted seeds. The EU has also laid down phytosanitary requirements for FFV to prevent the introduction and spread of organisms that are harmful to plants and plant products in Europe (CBI, 2019).

- **PRODUCT QUALITY:** The EU has put in place legislation surrounding the general and specific marketing standards for minimum quality and minimum maturity to ensure product quality. The marketing standards define the characteristics of various FFV categories or classes, i.e. “Extra Class”, Class I and Class II products, their different size codes and the allowable tolerances in quality and size. FFV categorised as “Extra Class” or Class I are generally preferred in most EU markets. Accordingly, FFV producers must have very specific marketing standards and importers/exporters are required to present certificates proving the conformity of their produce before the produce is allowed entry into the EU market (CBI, 2019). Closely analysing the different European supermarket segments, it is clear that FFV are divided into three main categories and price levels, namely premium, mid-range and low. This is exemplified in Figure 8.

THE THREE EU SUPERMARKET SEGMENTS AND CHANNELS FOR FFV

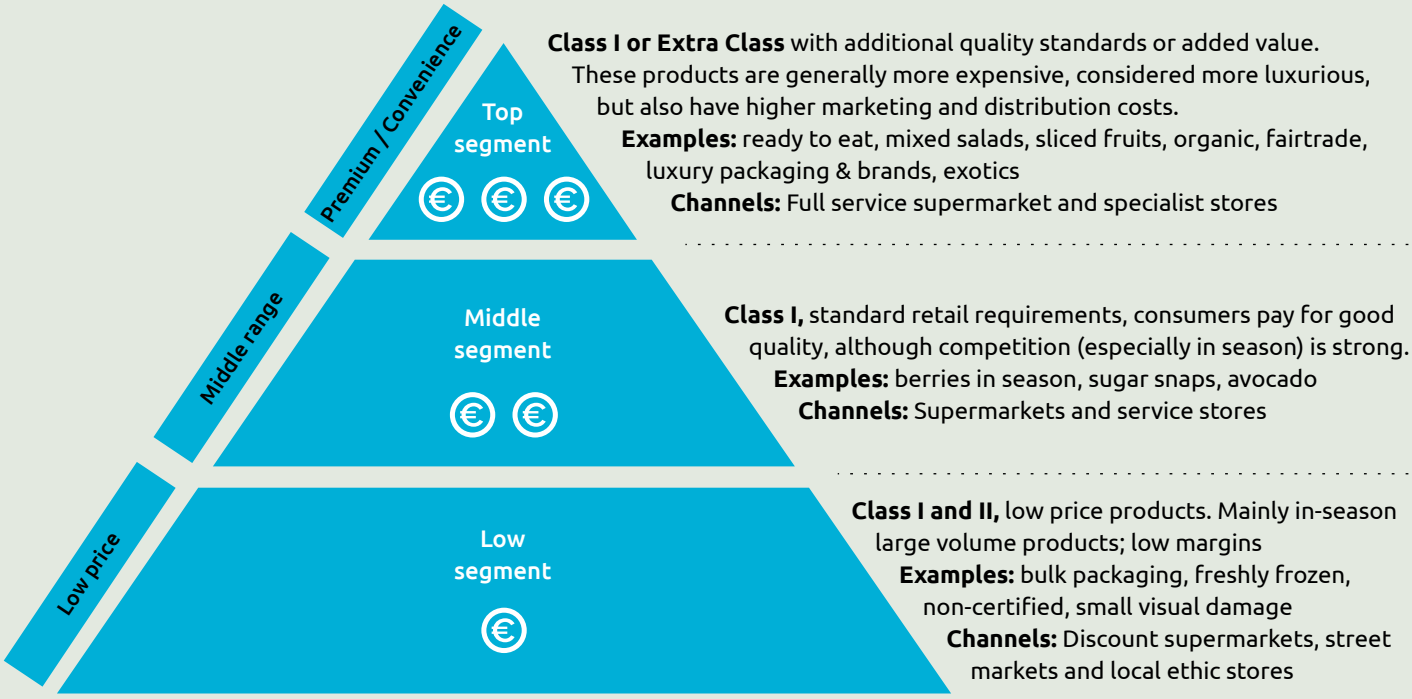


Figure 8 – Source: Authors, adapted from CBI, 2018b

- **TRACEABILITY**: EU Law defines traceability as *"the ability to trace and follow any food, feed, food-producing animal or substance that will be used for consumption, through all stages of production, processing and distribution."* FFV suppliers and exporters need to apply adequate labels (product information) to facilitate the traceability of products that they sell to European markets. Traceability also entails relevant documentation or information on the product particulars (CBI, 2018d).

3.2 NON-LEGAL AND COMMON REQUIREMENTS

Non-legal and common requirements often come from European buyers and include social, environmental and business compliance, as well as soft skills and company performance. Given the importance of food safety and quality in the FFV trade, most European retailers and buyers request specific forms of certification to ascertain social, environmental or business compliance from their suppliers. For instance, all buyers (traders and retailers) have to implement a food safety management system based on hazard analysis and critical control points (HACCP). **The good agricultural practices** as described in the GLOBALG.A.P. certification have become a minimum standard requested by most European buyers of fresh fruit and vegetables (CBI, 2018d). Almost all retailers in Northwest Europe also require compliance with the BRC

Global Standards on **hygiene and safety standards**. Obtaining certifications that are common in Europe will help suppliers and exporters to enter European markets. Although there are many commonalities in the certifications and standards requested, requirements and compliance with specific certification schemes will depend on individual EU countries and the trade channel used.

Europe is increasingly focused on social and environmental aspects of production. Therefore, most European buyers will have some sort of **code of conduct** that suppliers or exporters must adhere to. Attention to corporate social responsibility (CSR) varies across Europe, but in Western Europe most big companies now have their own **CSR** programmes; for example, Unilever's 'Sustainable Agriculture Code' and Tesco's 'Nurture'. Increased focus on sustainable consumption and production (SCP) – which encompasses social, economic and environmental issues – can be seen through the proliferation of sustainability labels for fresh fruit and vegetables, such as Fairtrade, Rainforest Alliance, Fair for Life and GRASP (CBI, 2018d).

Soft skills and company performance are also important: EU buyers also value reliability and trust in the supply of FFV. This calls for a high degree of professionalism and should be reflected in the form of timely delivery, proactive communication and commitment to agreements.

3.3 INFLUENCE OF CONSUMER PREFERENCES AND KEY TRENDS ON THE TRADE OF FFV IN THE EU

Demand for fresh fruit and vegetables is also influenced to a large extent by European consumers. Consumption patterns, behaviour and trends tend to define how FFV production and trade are structured. Some notable consumer preferences and trends that are likely to have profound effects on FFV trade include:

- **Health:** this plays a significant role and is a major consideration for most European consumers. As such, it is a key selling point and has contributed to the increasing popularity of products perceived as clean, more natural, and thus healthier. Given their prominence, products deemed healthy, such as organic or sustainable products, are constantly increasing in demand and have become a major consideration for retailers (CBI, 2019d).

- **Food safety – traceability, hygiene and control:** this is closely linked to trends in health. To ensure that the fresh fruit and vegetables bought are safe, many consumers are now resorting to buying products with labels or

certifications that communicate adherence to high standards, such as strict compliance with pesticide maximum residue limits (MRLs) and traceability. European consumers are increasingly holding retailers and suppliers accountable for food safety and are willing to pay a premium for this assurance (CBI, 2018d).

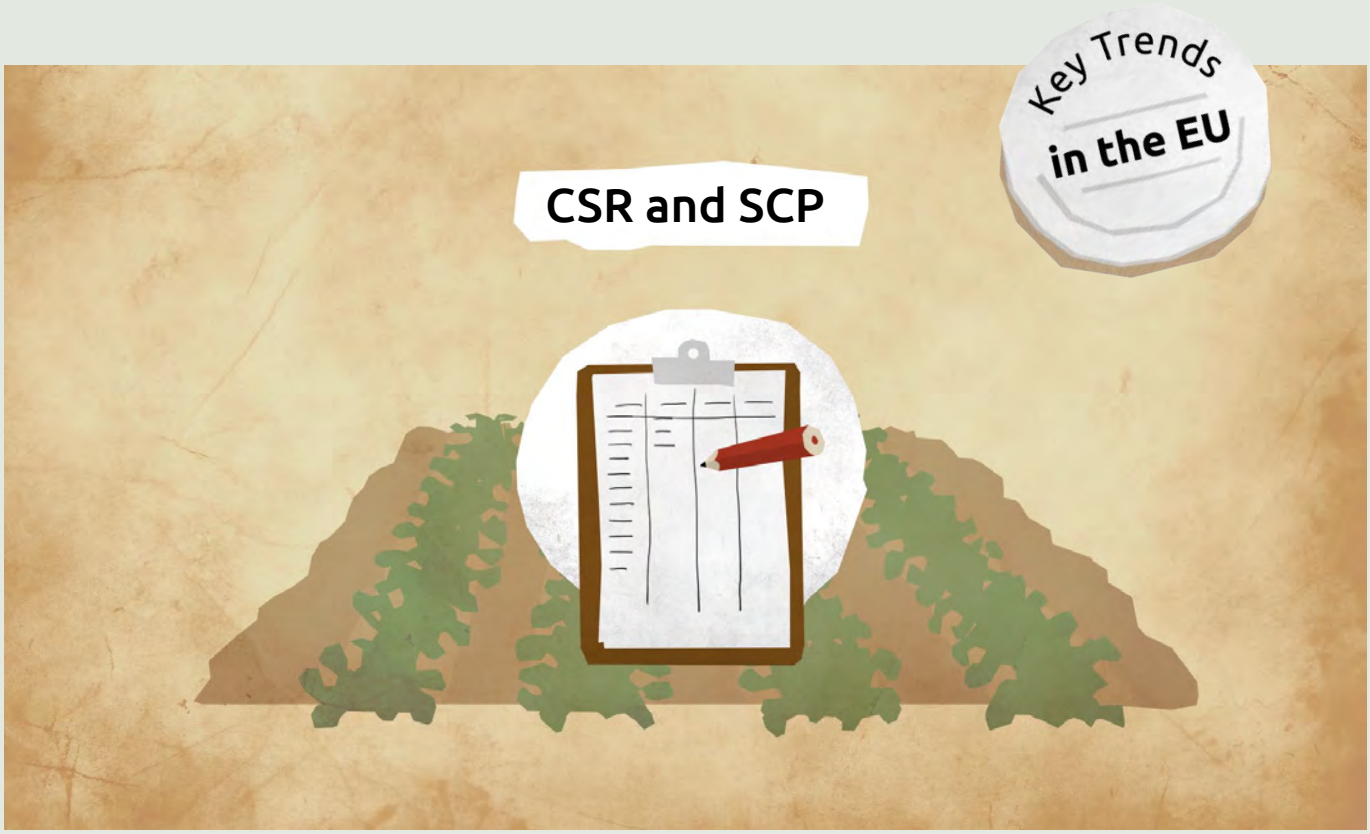
- **Corporate Social Responsibility (CSR) and SCP:** these are also increasingly important factors influencing consumer behaviour. As sustainability becomes mainstream in Europe, consumer awareness about sustainability is also growing and sustainable sourcing is becoming the norm. Consumers are increasingly interested in FFV produced and traded under sustainable and responsible practices and favour retailers and producers with corporate social responsibility (CSR) certifications. In order to meet consumer these expectations, large retailers and wholesalers push the expectation down the supply chain to suppliers and producers (farmers). In the case of ethical consumers, feelings of responsibility towards Sub-Saharan societies, for example, translate into a willingness to pay more for fresh fruit and vegetables sourced from that area (CBI, 2018d).

  Increasing attention to sustainability aspects has also been internalised by retailers. Sustainably produced and sourced FFV attract premium prices in the EU and constitute a growing niche market (CBI, 2019d). FFV producers applying SCP in their farming practices can, therefore, leverage sustainability as a strategic selling point to access such markets. Some of the key sustainability issues that concern consumers include actions to significantly reduce and record the use of pesticides and thus decrease environmental pollution, actions to minimise the use of water and assurances about workers' safety and working conditions.

In addition to consumer expectations, two further trends are evident in the European markets:

- **Demand for niche products** that are considered unique (deemed as 'organic and sustainable' and, therefore, good for the environment) or exotic ('coming from faraway countries'), and which offer extra value in comparison to standard products in terms of taste, shape, colour or nutritional value, etc. As mentioned earlier, the EU offers a growing market for 'niche' fruit and vegetables, and this trend is predicted to continue. Niche products are growing in popularity and appeal to high-end consumers who tend to care more about their health, wellbeing and the environment. More often than not, these types of consumers are willing to pay extra for premium products that reflect their lifestyles (CBI, 2018d).

- Convenience is also important for European consumers whose lifestyles have become increasingly fast-paced, leading to a growing interest in convenient foods. This can seem counterintuitive when considering consumers' concerns about their health and the sustainability of fresh fruit and vegetables, so creative retailers have started tapping into this niche market by combining convenience and sustainability in the products they offer. For example, retailers procure organic produce and prepare ready-to-eat fruit and freshly cut produce, varieties of seedless fruit that can be consumed on-the-go, products that are easy to peel and that have a longer shelf life, and individually-sized fruit. Other retailers offer on-the-go products that are wrapped in biodegradable packaging, appealing to consumers who wish to avoid plastic usage (CBI, 2019d).



OTHERS REGIONAL & NICHE MARKETS FOR KENYAN FFV

Despite being well-positioned in the international trade of FFV, Kenya is at a comparative disadvantage when it comes to regional markets with its neighbours, Uganda and Tanzania, dominating the field. This is due to the fact that Kenya imports more fresh produce from these countries than it exports (TIAPD, 2004). Some of the FFV that Kenya exports to the regional market include potatoes, onions and coconuts to Tanzania (through Arusha, Tanzania) and passion fruit, carrots and cabbage to Uganda. Although regional markets are still largely untapped by Kenyan producers and suppliers of FFV, they offer a huge opportunity. Specifically, regional blocks such as the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA) and the African Continental Free Trade Agreement, as well as individual countries such as Tanzania, Uganda, Rwanda, South Sudan and DR Congo, present very good opportunities for Kenyan FFV (TIAPD, 2004).

Moving away from the European and regional markets, the United Arab Emirates has been identified as the biggest importer of Kenyan avocados and mangoes

Moving away from the European and regional markets, the United Arab Emirates has been identified as the biggest importer of Kenyan avocados and mangoes. Saudi Arabia, Bahrain, Qatar, Kuwait, Lebanon and Egypt are the other key importers, highlighting the huge market for these Kenyan commodities in the Middle East. Kenya also exports fresh and chilled cabbage, cauliflower and kale to the United Arab Emirates (UN COMTRADE database, 2018). Although the volumes are still limited, they are expected to increase with time. Furthermore, Kenya and China recently signed a deal allowing frozen Kenyan avocados to be exported to China, opening up the avocado market even further (Fruitnet, 2019). The two countries also signed deals that would allow other FFV (i.e. green beans, pulses, beans, peas, green grams, vegetables and fruits, herbs and peanuts) entry into the Chinese market. Finally, the US market also offers potential for Kenyan avocados and mangoes, especially when viewed within the framework of the African Growth and Opportunity Act (AGOA). Direct flights introduced recently between Nairobi and the US are also expected to further open up the US market for Kenyan FFV (US Chamber of Commerce, 2018).

In terms of niche markets, they serve a group of EU consumers with specific interests and needs. For example, consumers of organic products favour produce that respects environmental and social aspects and has been

produced and processed using natural means. In the EU, niche products such as organic or Fairtrade fruit and vegetables are mostly marketed through specialised stores (CBI, 2018d). However, in recent years an increasing number of conventional supermarkets have been offering niche products on their shelves. To supply to niche markets, FFV suppliers and producers from non-EU countries need to pay attention to specific market requirements including organic production methods – which are clearly laid down in EU legislation[4] – at least two years before their products can enter the EU and be labelled as organic. Obtaining Organic and/or FLOCert certifications from IFOAM (International Federation of Organic Agriculture Movements), for example, and Fairtrade International will help ease market entry (CBI, 2018d).

4) Some of the production and processing techniques of organic fruit and vegetables include crop rotation, biological crop protection, green manure and compost etc.

OPPORTUNITIES AND RECOMMENDATIONS FOR HORTICULTURAL MSMES

5

Building on the knowledge and data collected and presented in the previous sections, several recommendations can be made for Kenyan horticultural micro, small and medium-sized enterprises (MSMEs) who are interested in entering the EU market and beyond.

5.1 STANDARDS AND CERTIFICATIONS

It is important for horticultural MSMEs (including farmers as producers) who seek to export their fresh fruit and vegetables to follow a step-by-step process with respect to standards and certifications. Firstly, MSMEs need to gather information about the quality requirements for a specific market. More often than not the quality requirements are communicated through certain standards and certifications required by the EU through the importers and retailers. Secondly, MSMEs should start keeping proper farm records, which will enable them to align their operations and produce the correct documentation to obtain the necessary certifications. For example, when dealing with the German market, famers must be aware of local seasons and provide information on the origin of products, as well as farming and production methods.

In view of the EU's high requirements on FFV quality and safety, in 2017 the Kenyan government issued Kenyan Standard KS 1758 for horticultural produce to help MSMEs better understand and meet the quality standards of export markets (KFC, 2017). Specifically, KS 1758 provides a common reference point for assessing the quality of FFV in terms of safety, reliability and quality. Accordingly, obtaining KS 1758 certification ensures proper documentation, particularly related to pesticide residues and quarantine pests, which should avoid farmers' produce being rejected for import by EU countries (KEBS, 2016). The challenge for MSMEs in terms of obtaining the KS1758 is represented by their size, limited resources and capacity.
In addition, in terms of certification, it is fundamental to implement integrated pest management (IPM) to reduce the amount of pesticides. As explained above, IPM is an agricultural pest control strategy promoting the use of natural control, such as the application of a pest's natural enemies, and is also part of the good agricultural practices advocated by GLOBALG.A.P (GLOBALG.A.P., 2017). Efficient use of chemicals and harvesting at the correct time after pesticide application enhances the safety and quality of produce. This would increase the chance of the MSMEs selling their produce to export markets via exporting companies.

5.2 STABLE SUPPLY AND ORGANIC PRODUCT AND NICHE MARKETS

Serving export markets can be a challenge for many MSMEs due to their unstable FFV supply. This issue could be overcome by MSMEs forming a producer group and organising their farming to ensure there is no shortage of supply to the exporters. Furthermore, being part of a producer group would enable MSMEs to support each other to comply with specific sustainability requirements. This would eventually increase the MSMEs' chance of entering the growing European niche market for organic and sustainably produced fruit and vegetables. Through these specific food products, Kenyan MSMEs could enter a growing market, where they could exploit the uniqueness of their products and business as small-sized enterprises. However, the organic niche market is also by far one of the most challenging segments in terms of compliance.

5.3 MARKET FOR PROCESSED PRODUCTS WITH ADDED VALUE

To grow their businesses, MSMEs could consider adding value to their horticultural produce. According to Eurostat (2017), the EU as a whole is a net importer of processed fruit and vegetables. As mentioned previously, the EU also imports frozen, dried and preserved fruit and vegetables. When MSMEs have harvest surpluses, they could consider preserving their FFV by drying and making powders, for example. This leverage point could also be combined with the increasing demand for convenient and sustainable fruit and vegetable products (see Section 3.3).

5.4 ACCESS TO FINANCE

Selling to export markets often obliges MSMEs to use high quality seeds and farm inputs. In turn, this requires considerable upfront financial investment by MSMEs. Formal sources of financing for MSMEs to consider include banks (e.g. Equity Bank), micro-financial institutions (MFIs) and saving and credit cooperatives (SACCOs). Depending on their preference and needs, informal sources of financing could also be considered by MSMEs, which could include their own capital and 'chama' (a group of people who pool and invest their savings for particular needs). The recommendation for MSMEs is to establish producer groups and create chama, especially when other sources of formal financing are unavailable in their villages. As a group, MSMEs could, for example, share transportation costs to take their produce to local markets or exporting companies or build a grading facility.

High quality fresh fruit and vegetables are vital for EU countries and are currently in great demand, with around 13 % of vegetables and 40 % of fruit consumed in the EU imported from non-EU countries (Eurostat, 2019). The value of FFV is further reflected through the EU's import value of EUR 18.2 billion in 2018 (CBI,2019c) with fresh fruit accounting for 80 % of that value (Eurostat, 2019).

According to Eurostat (2019), Kenya's market share of fresh fruit and vegetables is still around 1.2 % of the 50 top countries exporting to EU countries. In 2017, Kenya's main export to the EU was cabbage, dominating the market and accounting for 45.1 % of the value of EU imports of cabbage from non-EU countries. Six types of horticultural produce retain huge potential for Kenya, based on the existing EU market demand: **fresh peas, green/French beans, cabbage, passion fruit, mangoes and avocados** (Eurostat, 2019).

Notwithstanding, these established trade connections, the market analysis has clearly demonstrated that in order to remain competitive and further tap into the EU market – in view of emerging and evolving trends around sustainability and niche markets (offer new possibilities for micro, small and medium-sized enterprises (MSMEs) that generally have a limited capacity to produce fresh fruit and vegetables in sufficiently large quantities to serve export markets) – Kenyan MSMEs (as well as larger companies) must comply with rigorous and evolving food quality and safety standards as set out in various certifications and requirements demanded at EU, regional and country levels.

The EU's mandatory requirements concerning fresh fruit and vegetables are amongst the strictest in the world. Despite this, the EU's FFV market offers huge potential to non-EU countries such as Kenya and, consequently, understanding how to meet the EU's rigorous product quality and safety standards for FFV will benefit exporters, suppliers and producers alike. Furthermore, **food safety, product quality and traceability** are the key requirements for FFV entering the EU market. The practices of eight European retailers from four EU countries (the Netherlands, the UK, Germany and Belgium) show how large retailers seek to comply to their national laws, as well as EU laws, through a variety of environmental and social certifications that they demand from their suppliers.

This demands coherent policy action in Kenya at national and local levels to enable FFV producers and other actors in the FFV supply chain to access the necessary knowledge and tools to enable them to improve their day-to-day operations and meet the quality and safety requirements demanded by

different markets. At national level, Kenya has already implemented a number of initiatives, such as the development of KS 1758. However, further steps and support are needed at county government level (such as in Nyandarua, Nakuru and Narok where the GOALAN project takes place). Administrators and policymakers need to ensure not only that MSMEs correctly adopt and implement national standards, but also offer support to enable them to access export markets by promoting measures to enable e.g. easier access to finance; a more transparent supply chain from upstream (producers or farmers) to downstream (consumers) in terms of quality, quantity and price; the provision of support in keeping the necessary farm documentation required for export processes; actively encourage measures to guarantee a stable supply of sustainable FFV with increased product diversity and value-added products.

Furthermore, county governments need to put in place local capacity-building programmes through a variety of targeted training programmes. In the context of the GOALAN project, targeted MSMEs (producers) have already expressed their need for regular training programmes that provide specific sustainability knowledge and technical skills. This could be done, for example, through revitalising existing agricultural training centres and by increasing the so-called demonstration activities. These 'demo' activities should range from the provision of specific technical knowledge about sustainably growing certain crops to value addition methods.

The combination of national and local policies, complemented by targeted training programmes and awareness-raising communication, will enhance the adaptive capacity of Kenyan MSMEs. This, in turn, will enable them to grow their business opportunities by tapping into new markets (such as organic and niche markets) and increase their competitive advantage.

In summary, strengthening the capacity of Kenyan MSMEs to access local and foreign FFV markets requires: ensuring that supply chain actors obtain certification (such as KS 1758 and GLOBALG.A.P.); support them in establishing transparent supply chains; improve their access to finance; establish the necessary infrastructure (such as roads, grading and value addition facilities, and cold rooms in agriculture centres) and governance.

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8.1 Potential horticultural produce buyers

A. Processors

Produce type (horticultural)	Engineer Food Processors (Kinangop Fresh Fries) NO 1
Variety / type of vegetable	Irish Potatoes, currently buys Shangi, would prefer Jelly/Markees
Quantity required	15 tonnes
Average purchase unit price (Ksh)	20/kg
Frequency (daily, weekly, fortnightly)	Weekly
Pick up / delivery point	If the factory buys at least one tonne, it collects the potatoes at the farm gate; any amount less than that the farmer has to deliver to the factory at his/her own cost.
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Gives contracts • Mature (1.075-1.09 specific gravity). Can also be observed by a skin which is not peeling off. • A field officer first visits the farm to check crop maturity • Egg size and above • No observable diseases • Not physically damaged (allowed 5-10 %) • No green patches • Not rotting (allowed 0.5 %)
Mode of payment (cash, cheque)	• Mpesa cash for amounts of Ksh 20,000 and below • Cheque for amounts above Ksh 20,000
Frequency of payment (immediate, after 2 weeks, after 1 month)	Within 2 weeks
Probability of buying SCP-produced crops (high, medium, low)	High
Contact(s)	**Mr. Joseph Munene** (Accountant) 0718733793 **Mr. Muchemi** (Field officer) 0722548574 **Office number** 0716814677

Produce type (horticultural)	Manna Supplies Limited NO 2						
Variety / type of vegetable	Potatoes	Kale	Spinach	Green pepper	Coloured capsicum	Courgette	Tomatoes
Quantity required	2 Tonnes	500 kg	500 kg	200 kg	40 kg	150 kg	
Average purchase unit price (Ksh)	17-25/kg	15-20/kg	40-50/kg	100/kg	180/kg	50-60/kg	
Frequency (daily, weekly, fortnightly)	Daily						
Pick up / delivery point	Manna Supplies factory at Rosters along Thika Road, Nairobi.						
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• No contracts • Visits farms to check on observation of good agricultural practices and random checks take place thereafter • Level of maturity • Observed recommended PHI levels • Cleanliness • Mainly buy from suppliers with HCDA certification • No pest/disease marks • No marks/traces of pesticides/fungicides • Tomatoes: outdoor varieties preferred						
Mode of payment (cash, cheque)	Cash/Mpesa/ Bank transfer						
Frequency of payment (immediate, wafter 2 weeks, after 1 month)	Smallholder farmers are paid within 1 day; large suppliers are paid within 2 weeks						
Probability of buying SCP-produced crops (high, medium, low)	High						
Contact(s)	**Mr. George** (Manager) 0720209505						

NO 3

Produce type (horticultural)	KDF Food Processing Factory								
Variety / type of vegetable	Cabbage	Sukuma wiki	Spinach	Onions	Potatoes	Carrots	Managu	Kunde	Terere
Quantity required	20 tonnes				30-40 tonnes				
Average purchase unit price (Ksh/kg/bunch)	Ksh 20/kg			Ksh 40/kg	Ksh 20/kg	Ksh 25-30/kg			
Frequency (daily, weekly, fortnightly)	Daily				Daily				
Pick up / delivery point	Farmer to deliver								
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• All quality conditions enforced by KEPHIS & KEBS • Low PHI levels								
Mode of payment (cash, cheque)	Cheque								
Frequency of payment (immediate, after 2 weeks, after 1 month)	Can take up to a year								
Probability of buying SCP-produced crops (high, medium, low)	Low								
Contact(s)	**LT. Col. J. M. Mwasaru** (General Manager) 0775575746								

NO 4

Produce type (horticultural)	Molly Flowers
Variety / type of vegetable	The buyer asked to visit the farmers and talk to them first. The willingness to buy is very high.
Quantity required	
Average purchase unit price (Ksh/kg/bunch)	
Frequency (daily, weekly, fortnightly)	
Pick up / delivery point	
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	
Mode of payment (cash, cheque)	
Frequency of payment (immediate, after 2 weeks, after 1 month)	
Probability of buying SCP-produced crops (high, medium, low)	
Contact(s)	

NO 5

Produce type (horticultural)	Mama Jane Green Grocer Naivasha												
Variety/ type of vegetable	Lettuce	Sukuma	Spinach	French beans	Dhania	Tomato	Beetroot	Potato	Green pepper	Coloured capsicum	Cabbage	Broccoli (mix of broken & heads)	Cauliflower
Quantity required	100 kg	70-100 bunches	70-100 bunches	50-100 kg	2,000 bunches		50-100 kg	100 kg	50 kg	50 kg		35 kg	50 kg
Average purchase unit price (Ksh/kg/ bunch)	Varies												
Frequency (daily, weekly, fortnightly)	Daily												
Pick up / delivery point	At Mama Jane Delamare shop												
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Does not give contracts • Fresh produce • Size – mostly medium and large • Appealing appearance (good shape & no pest holes/ chemical colouring) • Nearly ripe fruit • Mature • Clean												
Mode of payment (cash, cheque)	• Cash on delivery (sometimes paid via Mpesa)												
Frequency of payment (immediate, after 2 weeks, after 1 month)	Immediately												
Probability of buying SCP-produced crops (high, medium, low)	High												
Contact(s)	**John** (0715189316)												

NO 6

Produce type (horticultural)	Zucchini Green Grocers							
Variety / type of vegetable	Tomato	Sukuma	Spinach	Onion	Potato	Courgette	Broccoli	Cauliflower
Quantity required	1 tonne	600 bunches	600 bunches		800 kg			
Average purchase unit price (Ksh)	40/kg	6-8/ bunch	6-8/ bunch		30-35/kg	40/kg	50/kg	35/kg
Frequency (daily, weekly, fortnightly)	Daily							
Pick up / delivery point	Zucchini Green Grocers, ABC Place, Westlands, Nairobi							
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Different sizes – majority should be medium • Perfect shape • Colour – appealing • Ripeness – mature but not very ripe e.g. for tomatoes • Tomatoes: greenhouse varieties preferred • Clean • Good taste • The less packaging the better to avoid pressing the vegetables							
Mode of payment (cash, cheque)	Cash on delivery for amounts below Ksh 50,000; higher amounts paid by cheque							
Frequency of payment (immediate, after 2 weeks, after 1 month)	Immediately							
Probability of buying SCP-produced crops (high, medium, low)	High							
Contact(s)	**Mr. Raju** (Purchasing Manager) **Ben** (Supervisor) 0722371200							

B. Organised Vegetable Groceries

NO 7

Produce type (horticultural)	Twiga Foods	
Variety / type of vegetable	Assorted fruit and vegetables – mainly bananas, potatoes, tomatoes, onions and watermelons	
Quantity required	Potato	Tomato
Average purchase unit price (Ksh)	17/kg	35/kg
Frequency (daily, weekly, fortnightly)	Daily	
Pick up / delivery point	Collection centres in different regions e.g. one centre is in Naivasha region	
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Currently no contracts with farmers • Chemical residue levels to be low – 3-4 days after spraying • For potatoes: egg size and above • For potatoes: only white variety • Tomatoes: mature but not ripe • Tomatoes: outdoor varieties preferred • Fresh produce	
Mode of payment (cash, cheque)	Mpesa/ Bank transfer	
Frequency of payment (immediate, after 2 weeks, after 1 month)	Within 2 days	
Probability of buying SCP-produced crops w(high, medium, low)	Medium	
Contact(s)	**Mr. Kenneth** (Sourcing Manager) 0758712308 **Mr. James Koome** (Head of Collection Centre, Naivasha) 0723684888	

C. Supermarkets

NO 8

Produce type (horticultural)	Jarin Investment limited – Supplier to Quickmart supermarkets
Variety / type of vegetable	Assorted fruit and vegetables e.g. cauliflower, lettuce, sukuma, spinach, tomato, broccoli, green and coloured capsicum
Quantity required	
Average purchase unit price (Ksh/kg/ bunch)	Varies
Frequency (daily, weekly, fortnightly)	Every 2 days
Pick up / delivery point	Park House in Rurai, Nairobi
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Does not give contracts • Farmer has followed basic good agricultural practices
Mode of payment (cash, cheque)	Cheque
Frequency of payment (immediate, after 2 weeks, after 1 month)	Within 14 days
Probability of buying SCP-produced crops (high, medium, low)	Medium
Contact(s)	**Mr. Joseph Wokabi** (Accountant) 0722178235

NO 9

Produce type (horticultural)	Jamaa supermarket							
Variety / type of vegetable	Broccoli	Cauliflower	Snow peas	Garden peas	Courgette	Dhania	Cucumber	Beetroot
Quantity required	30 kg	10 kg	10 kg	5 kg	10 kg	50 kg	10 kg	10 kg
Average purchase unit price (Ksh)	50 /kg in season 80-100/kg off season	50/kg		80/kg	70/kg	10/bunch	80-90/kg	50/kg
Frequency (daily, weekly, fortnightly)	3 days	Weekly	3 days	Daily	3 days	Daily	3 days	3 days
Pick up / delivery point	Jamaa supermarket - Olkarau							
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Clean • Medium size – e.g. for cabbage • Outdoor tomato preferred • Relatively ripe fruit e.g. tomatoes • No use of unrecommended chemicals (procurement manager checks)							
Mode of payment (cash, cheque)	Cheque							
Frequency of payment (immediate, after 2 weeks, after 1 month)	15 working days							
Probability of buying SCP-produced crops (high, medium, low)	High							
Contact(s)	**Ms.Josephine Wambui** (Procurement Manager) 0704018889 **Ms. Mary Njoli** (0727173032)							

NO 10

Produce type (horticultural)	Naivas Supermarket								
Variety / type of vegetable	Sukuma	Spinach	Sarget/ Kunde/ Kahurura/ Managu/Soro	Cauliflower	Broccoli	Lettuce	Celery	Leeks	Cucumber
Quantity required	200 bunch-es of at least 500 gm each	300 bunch-es of at least 500 gm each	100 bunches each						
Average purchase unit price (Ksh)	15-20/ bunch	15-20/ bunch		140/ kg	140/ kg	35/ head	150/ kg	100/ kg	80/ kg
Variety / type of vegetable	Courgette	Tomato	Onions	Turmeric	Potatoes	Baby potato	Capsicum		
Quantity required									
Average purchase unit price (Ksh)	90/kg	60/kg	55-60/ kg	250/ kg	40/ kg	60/ kg	180/ kg		
Frequency (daily, weekly, fortnightly)	Daily								
Pick up / delivery point	Most vegetables are delivered to specific Naivas branches. Only onions and butternuts are delivered to Head Office, Sameer Industrial Park, Mombasa Road, Nairobi								
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Naivas does random farm visits to check on good agricultural practices like record keeping • Naivas conducts own independent lab analysis of vegetables to check for chemical residues • Conservation agricultural practices are an added advantage to supply Naivas • No contamination of vegetables by bacteria and chemicals • Clean								
Mode of payment (cash, cheque)	Cheque								
Frequency of payment (immediate, after 2 weeks, after 1 month)	15 working days								
Probability of buying SCP-produced crops (high, medium, low)	High								
Contact(s)	**Mr. Mwangangi** (Sourcing Manager) 0722693499 **Mr. Chrispus Githiori** (Commercial Manager) 0700152540								

C. Supermarkets

NO 11

Produce type (horticultural)	The Corner Shop –supplier to Chadarana Food Plus Supermarket
Variety / type of vegetable	Buys all assorted vegetables
Quantity required	
Frequency (daily, weekly, fortnightly)	
Average purchase unit price (Ksh)	
Pick up /delivery point	Suppliers deliver to the warehouse for redistribution to supermarkets and branches
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• No contracts are given • Farmers to present a list of produce they intend to sell plus prices they are offering • Not particularly interested in SCP practices and would not pay a premium price
Mode of payment (cash, cheque)	Cash on delivery; large amounts are paid by cheque
Frequency of payment (immediate, after 2 weeks, after 1 month)	Immediately after delivery
Probability of buying SCP-produced crops (high, medium, low)	Low
Contact(s)	**Mrs. Wadhwa** (Owner) Yaya Centre Shop **Mr. Sandeep** (Diamond Plaza Shop)

D. Hotels (existing markets but demand not yet met)

NO 11

Produce type (horticultural)	Elsamere lodge, Naivasha		
Variety / type of vegetable	Tomato	Lettuce	Beet-root
Quantity required	20 kg	10 pieces	4-5 kg
Average purchase unit price (Ksh)	70/kg	35/ piece	70/kg
Frequency (daily, weekly, fortnightly)	Weekly		
Pick up / delivery point	Elsamere Lodge, Naivasha		
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Offers open contracts to suppliers • Fresh from the farm • Clean crates – no need for packaging • Tomato: dark red • Tomato: medium size • Tomato: outdoor grown, since it is juicy	• Lettuce: medium size • Lettuce: compact not leafy ones • Lettuce: not bruised • Lettuce: freshly harvested • Beetroot: medium to large size	
Mode of payment (cash, cheque)	Cheque		
Frequency of payment (immediate, after 2 weeks, after 1 month)	Within 1 month		
Probability of buying SCP-produced crops (high, medium, low)	High (already buying from the target farmers)		
Contact(s)	**Mr. Anam Echari** (Operations Manager) 0720209629		

NO 12

Produce type (horticultural)	Camp Carnelleys, Naivasha					
Variety / type of vegetable	Tomato	Onion	Potato	Green/ coloured pepper	Red cabbage	Green cabbage
Quantity required	150 kg	50 kg	360-540 kg	10-15 kg	2 pieces	
Average purchase unit price (Ksh)	70/kg	70/kg				
Frequency (daily, weekly, fortnightly)	Weekly					
Pick up / delivery point	Camp Carnelleys, Naivasha					
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Provide different colours of capsicum • Requires assorted vegetables in small quantities on a daily basis					
Mode of payment (cash, cheque)						
Frequency of payment (immediate, after 2 weeks, after 1 month)						
Probability of buying SCP-produced crops (high, medium, low)	High (already buying from the target farmers)					
Contact(s)	**Mr. Lovat** (Managing Director) 0721502585					

D. Hotels (existing markets but demand not yet met)

NO 13

Produce type (horticultural)	Lake Naivasha Crescent Camp			
Variety / type of vegetable	Potato	Tomato	Onion	Garden Peas
Quantity required	100 kg	25 kg	3-4 kg	
Average purchase unit price (Ksh)	30/kg	100/kg	100/kg	
Frequency (daily, weekly, fortnightly)	Weekly			
Pick up / delivery point	Lake Naivasha Crescent Camp			
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Potato: medium size for chips • Have a contract with suppliers • Potato: shangi variety – good taste • Clean packaging material e.g. crates • Have a health certificate for food handlers			
Mode of payment (cash, cheque)	Cheque			
Frequency of payment (immediate, after 2 weeks, after 1 month)	Monthly			
Probability of buying SCP-produced crops (high, medium, low)	High (already buying from the target farmers)			
Contact(s)	**Mr. Ephantus** (Camp Manager) 0720807296 **Mr. Nicholas** (Accountant) Musembi - 0728536450			

NO 14

Produce type (horticultural)	Kongoni Lodge, Naivasha			
Variety / type of vegetable	Tomato	Onion	Potato	Green / coloured pepper
Quantity required	150 kg	50 kg	360-540 kg	10-15 kg
Average purchase unit price (Ksh)	70/kg	70/kg		
Frequency (daily, weekly, fortnightly)	Weekly			
Pick up / delivery point	Deliver to the hotel			
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	• Provide large and long potatoes • Provide different colours of capsicum • Requires assorted vegetables in small quantities on a daily basis			
Mode of payment (cash, cheque)				
Frequency of payment (immediate, after 2 weeks, after 1 month)				
Probability of buying SCP-produced crops (high, medium, low)	High (already buying from the target farmers)			
Contact(s)	**Peter** (Managing Director) 0726709930			

E. Exporters

Produce type (horticultural)	Jani Fresh
Variety / type of vegetable	The exporter is already buying snow peas from the upper zone farmers. However, there is scope for increasing quantities. The exporter must visit the farmers first.
Contact(s)	Diana (Marketing Consultant) 0726758227

NO 15

F. Institutions

NO 16

Produce type (horticultural)	Kenya Wildlife Service Training Institute (KWSIT)
Variety / type of vegetable	Buys assorted vegetables – list and quantities required annually, attached separately.
Quantity required	Buys assorted vegetables – list and quantities required annually, attached separately
Frequency (daily, weekly, fortnightly)	Every 2-3 days or weekly. Depends on perishability of the type of fruit or vegetables.
Average purchase unit price (Ksh/kg/bunch)	Quoted by the potential supplier when bidding for a tender.
Pick up / delivery point	Delivered to the Institute
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	Fresh vegetables of high quality not grown or harvested from sewage water and should be non-GMO
Mode of payment (cash, cheque)	Bank transfer or by cheque.
Frequency of payment (immediate, after 2 weeks, after 1 month)	One month after delivery or more depending on availability of funds
Probability of buying SCP-produced crops (high, medium, low)	Medium
Contact(s)	**Mr. Peter Nyamondo** (Procurement Officer) 0729476405

NO 17

Produce type (horticultural)	**Morendat Training and Conference Centre**
Variety / type of vegetable	Tomatoes, Spinach, Bell pepper, Garlic, Potatoes, Cucumber, Onions, Ginger
Quantity required	Not provided
Frequency (daily, weekly, fortnightly)	Every 2-3 days or weekly. Depends on perishability of the type of fruit or vegetables.
Average purchase unit price (Ksh/kg/bunch)	Quoted by the potential supplier when bidding for a tender.
Pick up / delivery point	Delivered to the Institute
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)	Fresh vegetables of high quality
Mode of payment (cash, cheque)	Bank transfer
Frequency of payment (immediate, after 2 weeks, after 1 month)	Two weeks or more than a month after delivery depending on availability of funds
Probability of buying SCP-produced crops (high, medium, low)	Medium
Contact(s)	**Emma** 0720781936

8.2 LIST OF KEY INTERVIEWEES

	Institution	Location	Contact
POTENTIAL BUYERS			
	Processors		
1.	Engineer Food Processors - Kinangop Fresh Fries (buys Irish Potato)	Kinangop	• Joseph Munene (Accountant) 0718733793 • Muchemi (Field Guy) 0722548574 • Office0716814677
2.	Manna Supplies Limited	Rosters along Thika Road, Nairobi	George (Manager)0720209505
3.	KDF Food Processing Factory	Gilgil	LT. Col. J. M. Mwasaru 0775575746
4.	Midlands Limited	Kinangop	Major Wanyeki
5.	KCSEED	Keringet, Nakuru	John Rotich 0721698162
	Organised vegetable groceries		
6.	Mama Jane Green Grocer, Naivaisha	Naivasha - Bufallo Mall & Delamare Shop	John (Manager, Buffalo mall Outlet) 0715189316
7.	Zucchini Green Grocers	Nairobi - Head Office, ABC Place, Westlands	• Raju (Purchasing Manager) • Ben 0722371200
8.	Twiga Foods Limited	Nairobi - Head Office, Riverside Drive, Westlands	• Kenneth (Sourcing Manager) 0758712308 • James Koome (Head of Collection Centre Naivasha) 0723684888
	Supermarkets		
9.	Jarin Investment Limited – supplier to Quickmart supermarkets	Nairobi - Head Office, Ramco Court, Belle Vue, Mombasa Road Collection Centre - Park House in Rurai Nairobi	Joseph Wokabi 0722178235
10.	Jamaa supermarket	Olkarau - Head Office	• Josephine Wambui (Procurement Manager) 0704018889 • Mary Njoli 0727173032
11.	Naivas supermarket	Nairobi - Head Office, Sameer Industrial park Mombasa Road, Nairobi	• Mwangangi (Manager) 0722693499 • Chrispus Githiori (Commercial Manager) 0700152540
	Hotels		
12.	Elsamere Lodge	Naivasha	Anam Echari 0720209629
13.	Camp Carnelleys	Naivasha	Lovat 0721502585
14.	Lake Naivasha Crescent Camp	Naivasha	Nicholas Musembi 0728536450
15.	Kongoni Lodge	Naivasha	Peter 0726709930
	Exporters		
16.	Jani Fresh Limited	Nairobi - Embakasi	Diana/Office 0726758227
VALUE CHAIN SUPPORTERS AND ENABLERS			
17.	Naivasha County MOAL&F Office	Naivasha	• Mr. Sammy Maguru (Sub-County Agribusiness Officer) 0714497505 • Mr. Moses Wakahora 0724664385
18.	Nyandarua County MOAL&F Office	Engineer – Nyandarua	Mr. Kibe Mwaura (Gathara Ward Agricultural Officer) 0723749789
19.	HCDA – Nyandarua	Miharati - Nyandarua	Esther
20.	National Potato Council of Kenya (NPCK)	Waiyaki Way –KALRO, Nairobi	Henry Chemchor (Value Chain Manager) 0725626763
21.	Fresh Produce Exporters of Kenya (FPEAK)	New Rehema House 4th Floor, Rhapta Rd Parklands, Nairobi	Edwin Mutune (Administrator) 0728448571 emutune@fpeak.org
22.	Equity Bank, Naivasha	Naivasha Town	Eric Kataka 0763389787 / 0721389787
23.	Nakuru Farmers Call Center	Nakuru Town	0737032032
	Institutions		
24.	Kenya Wildlife Service Training Institute (KWSIT)	Naivasha	Mr. Peter Nyamondo (Procurement Officer) 0729476405
25.	Morendat Training and Conference Centre	Naivasha – along Nakuru Naivasha Highway	Emma 0720781936

8.3 DOCUMENTS REQUIRED BY POTENTIAL BUYERS/MARKETS

Potential market	Documents required
Engineer Food Processors (Kinangop Fresh Fries)	• Location of farm(s) • National Identity Card/Kenyan passport for individuals • Copy of group registration certificate – for groups • Registered Mpesa number or proof of a bank account for payments above Ksh 20,000
Manna Supplies Limited	• Location of farm(s) • Present samples for assessment • Proof of a bank account for payments or registered Mpesa number
KDF Food Processing Factory	Statutory requirements following public procurement Act of 2015. Examples include original scans of: • National Identity Card/Kenyan passport • Business Registration Certificate/Certificate of Incorporation • CR12 for Limited Company from Registrar of Companies (system generated soft copy) • Partnership Deed for partnership businesses • Tax compliance certificate • Proof of a bank account for payments
Molly Flowers	• Written contract with contact details • Copy of National Identity card • Registration in Agri-wallet
Mama Jane Green Grocer Naivaisha	• Present samples for assessment • National Identity Card/Kenyan passport for individuals • Copy of group registration certificate – for groups • List of names and contact persons/leaders – for groups • Registered Mpesa number
Zucchini Green Grocers	• Present samples for assessment • Proof of a bank account for payment • Contact details
Twiga Foods	• Location of farm(s) • Written contracts for anyone with 20 acres or more • Should register online in their platform • Registered Mpesa number or proof of a bank account for payments
Jarin Investment Limited – supplier to Quickmart supermarkets	• Present samples for assessment • Location of farm(s) • National Identity Card/Kenyan passport for individuals • Group registration certificate – for groups • Proof of a bank account for payments
Jamaa supermarket	• Present samples for assessment • Provide all contact details • Registration certificate in the case of farmer groups • Copy of National Identity Card for individuals • Proof of a bank account for payments
Naivas Supermarket	• Present samples for assessment • Location of farm(s) • Written contract with contact details • Registration certificate in the case of farmer groups • Copy of National Identity Card for individuals • Proof of a bank account for payments
The Corner Shop –supplier to Chadarana Food plus supermarket	• Provide samples for assessment • Provide a price list for produce • Proof of a bank account for payments
Kenya Wildlife Service Training Institute (KWSIT)	• Must have a viable grocery store • Provide a Registered Company Certificate of Incorporation • Provide a Valid Business Permit Certificate • Provide a Valid Certificate of Tax Compliance from KRA/Exemption Certificate • Provide a Valid PIN Certificate from KRA • Provide a Valid VAT Certificate • Provide a Valid Certificate of Registration in a target group issued by the National Treasury (for people with a disability, women and the Youth for Preference Reservation Scheme)

Potential market	Documents required
Kenya Wildlife Service Training Institute (KWSIT)	• Prices quoted should be net (inclusive of transportation costs, tax etc.) • All the documents provided must be duly filled and signed/stamped • Sister companies will not be allowed to compete in the same bid • The procuring entity's employees, committee members and their relatives are not eligible to compete in the bids to avoid conflict of interest. • You must have an email and address • Proof of a bank account for payments
Morendat Training and Conference Centre	Statutory requirements following public procurement Act of 2015. Examples include original scans of: • National Identity Card/Kenyan passport • Business Registration Certificate/Certificate of Incorporation • CR12 for Limited Company from Registrar of Companies (system generated soft copy) • Partnership Deed for partnership business • Tax compliance certificate • Proof of a bank account for payments
Vegetable	**Value addition option(s)**
1. Cruciferous – lettuce, spinach and sukuma, cabbage, cauliflower and broccoli.	• Sorting and grading • Cleaning • Packaging/repackaging fresh produce • Slicing into salads • Cleaning, cutting, drying and distributing the vegetables • Labelling packaged/re-packaged value-added vegetables • KEBs certification
2. Tomato	• Sorting and grading • Cleaning • Packaging • Labelling • Slicing into salads • Tomato jam • Labelling packaged/re-packaged value-added tomatoes • KEBs certification
3. Root – Irish potato and sweet potato	• Sorting and grading • Whole raw unpeeled repackaged potatoes in small bags e.g. 5 kg or 10 kg • Whole raw peeled potatoes • Raw sliced potatoes • Ready to cook potatoes • Sliced/cubed potatoes • Labelling packaged value-added potatoes • KEBs certification
4. Fresh fruit	• Cleaning • Sorting and grading • Packaging/repackaging the fresh fruit e.g. fruit baskets • Fresh cut packaged fruit • Solar dried fruit • Fruit juices • Labelling packaged/re-packaged value-added fruit • KEBs certification
5. Peas – snow peas and sugar snap	• Cleaning • Sorting and grading • Packaging/repackaging the fresh produce • Labelling • KEBs certification
6. Marrow – pumpkin and cucumber	• Cleaning • Sorting and grading • Packaging/repackaging the fresh produce • Labelling
7. Edible plant stem – celery and allium – onion and garlic	• Sorting and grading • Packaging/repackaging the fresh produce • Labelling

8.4 TOOL FOR MSME (FARMER) FOCUS GROUP DISCUSSIONS

To target agribusiness producers

1. Which types of fruit and vegetables do you grow at your farm? (cabbage, tomato, spinach, potato, carrots, lettuce, tree tomato). State the leading three in terms of income.

Type of fruit/vegetable	Rank (1 = highest income)

2. How do you decide on your selling price? (Probe: is the price given by the buyer? Is it negotiated?). Does the price fluctuate during the year?

_____

_____

_____

3. Do you know the gross margins of the crops in Q1? If yes, complete the table below.

Crop	Gross margin/ season (in Ksh)	Average yield (Ksh)	Average price (Ksh)

4. Who among you has heard of KS 1758 standard? How would you describe it?

_____

_____

_____

5. How many of you have already received certification of KS 1758 standard?

6. Which organisations have previously provided you with certification standards?

7. Have you been trained on sustainable consumption and production (SCP) practices? Which ones have you already adopted?

8. With the training and adoption of all or some of the SCP practices, are you ready to carry on using these practices regardless of the market you will access (organised or non-organised), or whether it depends on the extra costs that may ensue?

9. What are some of the challenges you are likely to encounter, even after your compliance with SCP practices?

10. How would you go about solving some of these likely challenges?

_____

_____

_____

11. Where do you sell your fruit and vegetables? (Complete the table below.)

a) Organised markets

Name of organised market e.g. exporters, hotels, supermarkets, schools and hospitals	Benefits of selling here e.g. contract, good prices	Challenges e.g. high levels of rejects

b) Non-organised markets

Name of non-organised market e.g. brokers, open-air market, retailers, wholesalers	Benefits of selling here	Challenges

12. If you answered yes to 11a (above), do you have any contractual agreement with the buyers?

_____

_____

_____

13. What are some of the production and marketing requirements that you need to comply with to access markets?

_____

_____

_____

First probe for any standards known by farmers

_____

Then follow up on the table below:

Specific requirement	Tick if able to meet	Constraints to meeting requirements
Minimum quantity and maximum quantity (kg)		
Quality specs acceptable		
Are you supposed to wash the produce before delivery?		
What kind of packaging is needed?		
For potatoes, what size of a bag is accepted or is the measurement done in kg as opposed to bags?		
Are you required to have registration documents from authorities, such as a business permit, tax compliance certificates, good conduct?		
Are you required to observe standards such as GLOBALG.A.P, KS 1758, etc? If yes, do you require a certificate showing compliance?		
Is there a traceability mechanism when producing?		
Do the buyers dictate how to grow i.e. by using a particular technology, or in terms of the amount of agrochemicals/fertiliser to use and labelling requirements?		
What is the one mistake in terms of requirements you can make as a farmer which will cause your contract to be terminated?		

14. Are you able to supply the fruit and vegetables throughout the year? If no, where do you source fruit and vegetables in case of a deficit?

_____

_____

_____

15. On average, what is the distance to the markets named above?

_____

_____

_____

16. Are you members of organised groups when selling your fruit and vegetables?

Average size of the group	Reasons for the group's formation	Reasons for not belonging to any groups

17. What value addition methods do you currently employ? (Probe: drying, washing, packaging etc.)

_____

_____

_____

18. What nature of post-harvest losses are normally incurred? (Probe: bruising of fruit while harvesting, rotting, wilting of vegetables.) What do you do to control for PHL?

_____

_____

_____

19. What other challenges do you face when selling your fruit and vegetables, either individually or as a group (if in a group set up)?

_____

_____

_____

8.5 INTERVIEW TOOL FOR POTENTIAL BUYERS

To target supermarkets and organised vegetable market chain actors

To be adapted for the formal assemblers and cooperatives

1. Which types of fruit and/or vegetables do you buy?

_____

_____

_____

2. Please provide information on the source of vegetables and the quantities you purchase in an average week:

Type of fruit/ vegetables	Supplier e.g. broker, farmer	Quantity per week	Buying price/ unit	Retail price/unit

3. How are the prices set? Do you negotiate the prices with suppliers? If yes, what do you consider? Do the prices vary with the seasons?

_____

_____

_____

4. Are there specific requirements in terms of quantity and quality that your suppliers must meet? Please list these requirements

Type of fruit/vegetables	Supplier e.g. broker, farmer
a. Minimum quantity and maximum quantity (kg)	
b. Quality specs acceptable	
c. Is the supplier supposed to wash the produce before delivery?	
d. What kind of packaging is needed?	
e. For potatoes, what size of a bag is accepted or is the measurement done in kilogram as opposed to bags?	
f. List the suppliers' statutory requirements	
g. Do you observe standards such as GLOBALG.A.P, KS 1758? If yes, do you require certification from the farmers showing compliance with such standards?	
h. If yes to (g), what mechanisms have you put in place to ensure compliance?	
i. Is there a traceability mechanism put in place?	
j. Do you dictate how the supplier should grow their vegetables, i.e. by using a particular technology, or in terms of the amount of agrochemicals/fertiliser to use and labelling requirements?	
k. What is the one mistake a farmer/supplier can make in terms of the requirements which will cause their contract to be terminated?	

5. Do you prefer suppliers who are organised in groups or individuals? Why do you have this preference?

_____

_____

_____

6. Are there any regulations requiring the quality control of the fruit and vegetables you sell? Do you hire quality assurance managers to ensure the set standards are met?

_____

_____

_____

7. For how long (in days) can you keep your produce fresh? What storage facility do you have?

_____

_____

_____

8. For supermarkets, is there any value addition done before selling the fruit and vegetables

Value addition	Buying price /unit	Selling price /unit
Washing		
Packaging		
Juicing		
Other		

9. What are the procedures in place (procurement processes) if a small-scale farmer wishes to supply you with fruit and vegetables? (Probe: key factors to consider when choosing a supplier, point of collection or modes of delivery, mode and frequency of payments and if there are signed contracts).

10. Would you be willing to buy sustainably produced fruit and vegetables from small-scale farmers? (If they do not buy from farmers directly)

11. What are the challenges that you face when buying and selling fruit and vegetables? (Probe: financial challenges, regulatory challenges)

12. For which produce do you experience shortages in supply? Please give quantities and prices.

13. Which key factors do you consider while choosing a supplier?

_____

_____

_____

14. What is the mode and frequency of payment to suppliers?

_____

_____

_____

15. Peak demand period per produce

Vegetable/fruit	Peak demand period	Buying price/unit

16. What is the point of delivery of produce or do you collect from the farms?

_____

_____

_____

17. Do you have any contracts with smallholder farmers or suppliers?

_____

If not, why? _____

_____

8.6 SUMMARY OF MARKET REQUIREMENTS OF POTENTIAL BUYERS/MARKETS

Name of buyer _____

No	1.	2.	3.	4.	5.	6.	7.	8.
Produce type (horticultural)								
Variety/ type of vegetable								
Quantity required								
Purchase unit price (Ksh/kg/bunch)								
Frequency (daily, weekly, fortnightly)								
Quality requirements (size, ripeness, colour, freshness, defects, maturity, taste, food safety, cleanliness, firmness)								
Mode of payment (cash, cheque, MPESA)								
Frequency of payment (immediate, after 2 weeks, after 1 month)								
Probability of buying SCP-produced crops (high, medium, low)								
Contact(s)								

8.7 INTERVIEW TOOL FOR VALUE CHAIN SUPPORTERS AND ENABLERS

To target support actors

Horticultural associations, relevant county and national government officials, development partners, etc.

Interviewer to specify the name:

i. Do you work directly with small-scale fruit/vegetable farmers?

_____

ii. What is the nature of support provided to the farmers regarding access to markets?

_____

_____

_____

iii. What challenges do farmers face as observed over the years in relation to market access and certification processes, including SCP practices (more recently)?

_____

_____

_____

iv. What measures have been put in place to address some of these challenges?

_____

_____

_____

v. Other emerging issues/aspects etc.

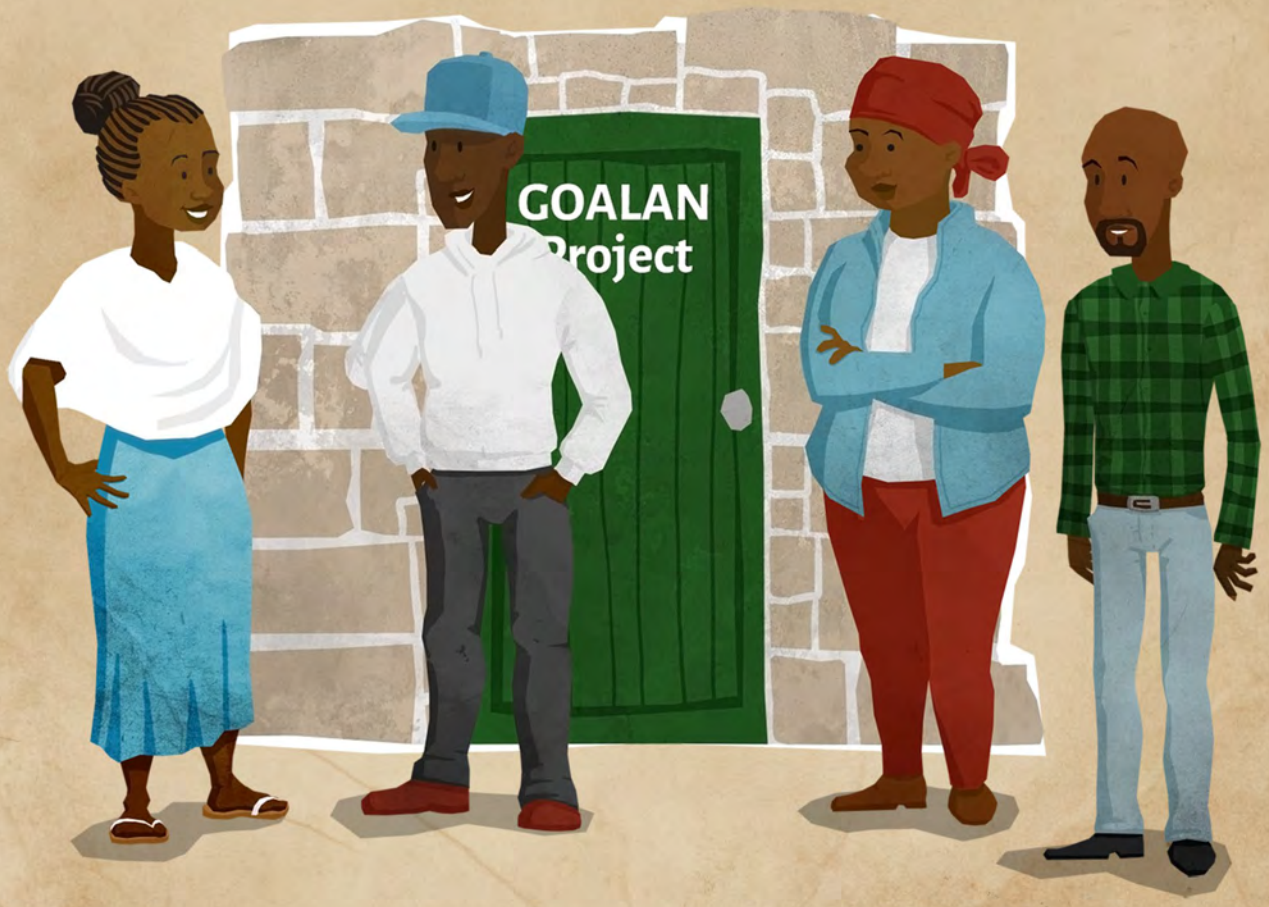
_____

_____

_____

wwfkenya.org

scp-centre.org/goalan



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